

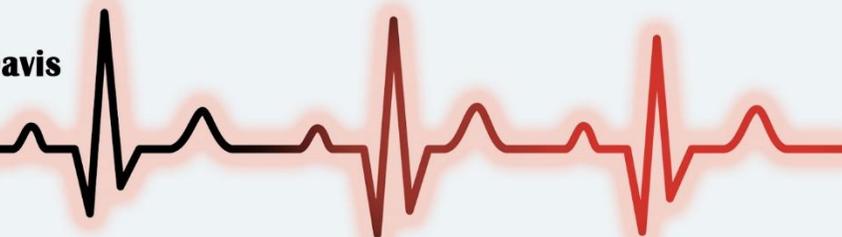


*PRACTICAL MEDICINE
FOR EVERY HOUSEHOLD*

Home Doctor



Dr. Maybell Nieves, Dr. Rodrigo Alterio, Claude Davis



Home Doctor: Practical Medicine for Every Household

Dr. Maybell Nieves, Dr. Rodrigo Alterio,
Claude Davis

Home Doctor

Practical Medicine for Every Household

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ABOUT THE AUTHORS

We created this project to help people take care of themselves and their loved ones when medical assistance is unavailable or while waiting for it to arrive.

We are a team of three people: **Dr. Maybell Nieves**, who is still working as a front-line doctor in Caracas, Venezuela, **Dr. Rodrigo Alterio**, who lived and treated isolated native communities deep in the Amazon jungle where there are no doctors or pharmacies for thousands of miles, and **Claude Davis**, a wild west history expert who studied and applied the forgotten survival knowledge of our great grandparents for most of his life.

Together we realized we can create something unique, a practical guide for when there is no doctor, pharmacy or hospital available. Our mission is to empower every household to be able to take their health into their own hands when the situation calls for it.

We do not recommend using the guide as the first line of defense if the medical system is still available.

Dr. Maybell Nieves



Dr. Maybell Nieves is the head surgeon of the Unit of Breast Pathology and general surgeon at Caracas University Hospital in Venezuela.

Dr. Maybell studied at the prestigious European Institute of Oncology in Milan, Italy, under Professor Umberto Veronesi, the man who revolutionized modern breast cancer surgery worldwide, who was her guide and mentor.

She is known for developing new, ingenious methods of treating patients after Venezuela's economy collapsed and hospitals and pharmacies ran out of medicines, supplies, electricity, and running water.

The methods she developed and pioneered are now studied and applied in conflict zones all over the world.

Meet Dr. Maybell Nieves - in her own words:

"At a very young age I discovered my great skills in manual activities. That's how I eventually became a surgeon.

I am an expert Breast and General Surgeon with over 10 years of experience in the operating theater.

I am the head surgeon of the Unit of Breast Disease of the University Hospital of Caracas. I am also in charge of academic and clinical activities of the students in our Breast Surgery Fellowship."

Dr. Rodrigo Alterio



Dr. Rodrigo Alterio is currently working in the surgery department at UT Southwestern Medical Center in Dallas, Texas.

Most of his ongoing research is mainly based in Surgical Oncology.

But in 2017 Dr. Alterio lived with and was the primary care physician of an indigenous community called “Kamarata” (Pemóns), deep in the Amazon jungle, many hundreds of miles from civilization. There are no roads there and the community is only accessible by small planes; no Pharmacies or Hospitals either.

Away from civilization, Dr. Rodrigo had to make do with what he had on hand to perform a wide range of medical procedures for accidents, diseases, and delivering babies.

Meet Dr. Rodrigo Alterio - in his own words:

“I grew up in Caracas, Venezuela, in a time when the signs of economic collapse were already starting to show.

I practiced medicine at the three main hospitals in the capital: Hospital Miguel Perez Carreño, Hospital Universitario de Caracas, and Hospital Domingo Luciani.

In 2017 I went to live and practice medicine deep inside the Amazon jungle.”

Claude Davis



Meet Claude Davis - in his own words:

“I’m NOT what some people would call a Doomsday prepper. I don’t think the world is going to end anytime soon, but I do believe that all of us will end up facing some hardships during our lifetime.

Me personally...this is what I prep for. I don’t like to place my family’s lives in the hands of others. I like to think I am in charge of my own destiny, just as our grandparents and great-grandparents were in charge of theirs.

They stockpiled food for winter and for dark times. They created their own remedies from wild plants so when they couldn’t afford meds during the Great Depression, they could still treat injuries and diseases.”

INTRODUCTION

- by Dr. Maybell Nieves -

A little over a year ago, we wouldn't have imagined that the whole world would be paralyzed due to a contagious virus that threatened the lives of the most susceptible. This situation is literally one of the worst scenarios for having an accident or an emergency at home: The health centers are collapsed, and by leaving the safety of our homes, we are exposed to contagion.

This book comes to provide a source of medical information that we should all be familiar with and, at the same time, to be a practical tool for the care of chronic diseases and emergencies at home when seeking help is not a viable option.

I am a surgeon from Venezuela, a country where health has deteriorated in the last ten years. Due to extreme situations such as protests, serious insecurity, failures in the electrical and communication system, and failures in transportation, it is often impossible to find prompt assistance for any health problem.

Frequently these delays lead patients to serious complications—even death—that could have easily been stabilized at home.

The idea behind this text is to introduce our readers to some handy and efficient tools that go a step beyond first aid care on a variety of common medical situations and emergencies that can occur at home or far from a healthcare center.

At absolutely no time do we try to substitute professional experience for home treatment, but there are events when we are forced to stay indoors or when seeking the necessary help on time is an impossible task.

My belief is that you can easily solve problems or at least gain precious time if you cannot immediately reach assistance for some reason. Whether you are away from a hospital or without an immediate phone signal or for any situation of confinement, whether a health crisis, an armed conflict, or social events.

In the case of a somewhat serious health situation, the ideal solution would be to go to the emergency room and be attended by a specialist physician.

However, we do not always have the optimal conditions, and it is important to know some techniques and procedures that we can apply at home.

Another of my goals is that you can recognize to what extent you can handle an emergency by yourself and when you must necessarily seek specialized help. It is important for everyone to know some basic treatments for both chronic and acute illnesses, such as traumatic accidents or heart attacks, as these procedures can save the life of the affected person even if that person is yourself.

Through the text, efficient natural and pharmacological treatments are addressed to be used in the safest possible way at home, until the necessary assistance can be found.

I know sometimes it is not enough to seek emergency care quickly or to call the local assistance service. There are pathologies in which a second lost means the deterioration of the patient or even their death.

I do not intend to prepare expert paramedics but hope that the reader can hold in their hands a basic and simple guide to cope safely and efficiently with common health issues.

Before I enter fully into the information, I want to clarify some basic concepts that will be repeated throughout the chapters of this manual as it is important to have a clear understanding of them.

Concepts You Must Know in Order to Understand This Handbook

Acute and Chronic Disease

An acute illness is one that occurs suddenly and improves in a short amount time with the right treatment, for example, conjunctivitis.

On the other hand, chronic diseases are those that last over time. Some examples of chronic diseases are arterial hypertension and diabetes mellitus.

Emergency and Urgency

An urgent situation is one that arises suddenly and must be dealt with in the short term. It can be improved with some measures and can wait some time to be completely resolved.

An emergency, on the other hand, is a condition that threatens the life of the affected person. It should be treated immediately.

HEALTH AND WELLNESS: WHAT IS HEALTH?

According to the World Health Organization (WHO), health is defined as a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.

This concept is important because it embraces psychological and social well-being, which is not present in other definitions. Therefore, we understand that mental health is an element to be taken into account. As for physical health itself, the concept, which is understood by almost everyone, refers to the absence of visible disease.

Through the general physical examination, we can make diagnostic approaches. Semiological evaluation is an assessment we should all be aware of since it is an important tool to establish the diagnosis as the first step in the approach to the disease.

A proper evaluation begins with an interview to find out the medical history of the affected person and when the present illness began. It is important to take into account whether the person is allergic to any medication or component in case drugs are administered later. The physical exam is a simple evaluation of the entire body.

It is important to be systematic, which means to have a methodical evaluation so nothing is left behind and forgotten. Remember to pay special attention to the part of the body where the patient refers to the symptoms, and focus on that area.

Below is an example of a current illness interrogation and a simple way to perform the physical examination in an orderly and efficient way.

| | |
|----------------|--|
| PAST | <ul style="list-style-type: none">• Cancer or chronic illness in the family• Medical and surgical history• Allergic reactions (to food or drugs). What kind of reaction? Did you need hospitalization?• Use of medication• What kind of work do you do?• Sleeping hours• Physical activity |
| PRESENT | <ul style="list-style-type: none">• When and how did the symptoms start? Do you associate them with anything in particular?• Have you ever had these symptoms before?• Are you taking any medication to improve? Which one? How many times a day? Does it work? |

In the case of specific pains, I like the patient to point out exactly where the pain is, and I ask them to do so with only one finger. That way I can make sure they point out the place where they have the most pain rather than scattering it.

The questions in the table are general, and it is important to delve as deeply as necessary into the patient's main symptom in order to take a diagnostic approach. When you can't ask for specialized help, interrogation is the main tool available. Therefore, it is necessary to use all the time that is required to orientate yourself.

If the patient is a child or an elderly person with dementia, the history is taken with the help of a family member or from what you yourself have witnessed. Try to remember important information, such as recent falls or a decrease in normal activities.

It is also important to know the person's recent contacts if an infectious disease is suspected. Currently, with the issue of the COVID-19 pandemic, this is one of the most important questions since it is a disease with a high rate of contagion. Remember that the therapy to be applied will be based on the diagnosis; therefore, we must be as precise as possible.

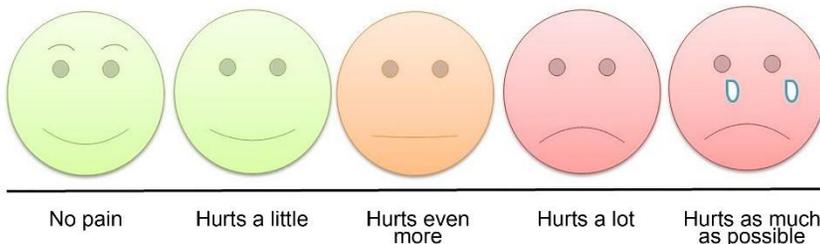
Physical Examination

In the physical examination, we must go from the biggest to the most specific. The observation of the face and the position that the person adopts can take us closer to the diagnosis.

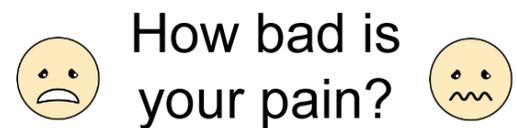
If the patient has pained face or *facies dolorosa* or if he or she is held in a position that looks uncomfortable or out of the ordinary to relieve the pain, this is an analgic position.

Thus, when a patient complains of pain, for example, we first check his vital signs (heart rate, number of breaths per minute), and from there, we continue to palpate.

When the patient cannot adequately express the intensity of the pain, a scale of numbers from 1 to 10 is used, where 1 is the lowest and 10 is the highest. If the patient cannot speak and has problems communicating, there is also the scale with facial expressions. Both are shown below.



Robert Weis, Own work, CC BY-SA 4.0



- 1: Huh, I guess it's there...
- 2: It's mildly distracting
- 3: I can usually ignore it
- 4: It's there, but I can do stuff
- 5: It interferes with some things
- 6: It disrupts daily life
- 7: I can barely do anything
- 8: It's hard to talk & listen
- 9: I can barely move
- 10: I am bedridden. Help!

MissLunaRose12, Own work, CC BY-SA 4.0

To make the physical evaluation more comfortable for the patient, try to get to the site of the discomfort by the end of the exam.

If his or her left leg is painful, examine the entire body before reaching that leg. This helps the person to be relaxed and confident that you will not hurt them or cause pain.

For those who are traumatized, always remember to examine the patient from the front and the back. When I did my surgery residency, I remember being on call when I received an emergency call about a decompensated patient who had a gunshot wound that appeared to have caused no damage beyond a burn on the skin. However, the patient had been in the emergency room for 24 hours and was getting worse.

When I arrived, the patient was in bad condition, with a very high heart rate and in a lot of pain. When I turned the patient over, he had another wound on his back that no one had noticed. That wound had penetrated the abdominal cavity, and the patient had to undergo emergency surgery.

Sometimes amid the stress of being in front of one or more injured people, we can inadvertently skip some parts of the physical examination. That's why we have to be methodical. You can start the evaluation at the head and finish at the feet without leaving anything out.

Find your method and practice it.

10 Medical Supplies You Need to Have in Your House

As times change, we must change alongside it. If the year 2020 has taught us anything, it is that life itself is fragile and good health is underrated. We really never know what is going to happen and so there is a need for us to be prepared. March 2020 left the entire world standing in utter surprise and confusion as the COVID 19 spread like wild fire throughout countries and continents. The world was thrown into a state of chaos, not knowing the adequate reaction to such a deadly pandemic. Lives were lost from the disease, hunger, other health issues, and lack of access to the health centers and medications. In 2020 it was the pandemic, but it could be any disaster such as an earthquake, a tsunami, or an economic crisis. Therefore, we must have certain medical supplies at home that are useful in the event of an emergency.

Having the right medical supplies ranging from medical equipment to medications is key to surviving any medical emergency in the face of a disaster.

Naproxen is a medication that belongs to the NSAID (Non-Steroidal Anti-inflammatory Drug) family. It is very effective in treating moderate pain, swelling, and even in cases of a fever. It has proven to be very effective in relieving pain caused by osteoarthritis, rheumatoid arthritis, bursitis, gout attacks, muscles pains, headaches, sprains, menstrual cramps, and dental pains. Naproxen generates rapid and long lasting relief. Definitely a necessity at home.

Loratadine is also a fundamental supply in homes, useful in cases of allergies such as allergic rhinitis (hay fever) and urticaria (allergic skin rash). It is effective in the relief of pruritus, watery eyes, runny

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nose, and sneezing associated with seasonal allergies or flu. It is a second generation antihistaminic medication which can be used both in older people and children above the age of 2.

Having a **thermometer** at home makes it easy to determine body temperature. A thermometer measures the temperature of the body and tells us if a person has a normal temperature, a fever (temperature above 38 degrees Celsius) or a low temperature (less than 35 degrees Celsius). This comes in very handy in pediatric emergencies. Fever is frequent in kids and they frequently suffer convulsions from high temperature. Having a thermometer at home helps us know when to control body temperature and prevent convulsions or other complications of a fever.

Acetaminophen is the number one drug for fevers and headaches. It is a non-opioid analgesic (pain-relieving) and antipyretic (fever-treating) drug used for treatment of mild to moderate pain and fever. Acetaminophen can be administered to kids and adults alike as it comes in the form of pills, liquids, injections and rectal suppository. It has proven to be effective in treating flu like symptoms.

Gauze sponges come in handy in the home as good materials for cleaning wounds, dressing wounds and applying pressure on a bleeding surface of the body. Since they are sterile, they serve as a protective barrier between the injured part of the body and the external surface.

Bandages are very effective for treating and protecting minor injuries permitting a germ-free healing process. They are useful in cases such as small cuts, scratches etc. They have a protective function that allows the injured person to go about their daily activities without exposing the injury to infections.

Medical gloves should be a house hold item. In cases of injuries, bleeding, wound dressing and cleaning, you must wear gloves. As we all know, our hands carry a large number of germs as we go about our activities touching surfaces, objects or people; therefore the use of gloves to access injured parts of the body, remove foreign objects from an airway, etc. is very important.

Alcohol and alcohol swabs have become one of the most sold medical supplies in recent times as COVID 19 taught us the importance of disinfecting surfaces and objects. It is also a well-known fact that many people are prone to injuries such as minor cuts, burns or scrapes. In such cases, a little amount of alcohol or an alcohol swab is your best bet. Alcohol can be used to destroy germs that could be present in open wounds. Sniffing alcohol/alcohol swabs has demonstrated effectiveness in reducing nausea and vomiting too.

Oral rehydration solution (ORS) should be readily available in every home. There are many reasons why people may present with gastrointestinal upset leading to vomiting and diarrhea. In such cases there is loss of liquid and electrolytes causing the affected person to suffer dehydration which can in turn lead to shock. This is frequent in kids below the age of 5. Having ORS at home helps us prevent complications from diarrhea and vomiting by replacing lost liquid and electrolytes.

Omeprazole is the go-to medication for stomach upset, heart burns and other acid related issues. It works by blocking acid production in the cells of the stomach. Many people suffer from gastritis and ulcers and sometimes eating certain foods or overeating might cause stomach upset. In such cases omeprazole will be functional in eliminating the discomfort and bring relief.

The above mentioned medications are over the counter drugs that could be bought in stores or pharmacies without prescription, which makes them readily available for home use. However, it is always important to consult your physician before use. These supplies and medications are all very

useful in emergencies and having them at home can help save lives and in other cases prevent health complications. Remember, that in the past year people have suffered losses that could have been prevented if they only had some or all of these medical supplies in their homes. Venezuela as we know is experiencing an economic crisis that has made foods and medical supplies very scarce. People have died due to the absence of these simple medical supplies in Venezuela. So yes, there is a very strong need for us to equip our homes with medical supplies and stay prepared.

An Ingenious Way to Stockpile Prescription Medicines

If you're like many Americans these days, it's likely that you have at least one medication that you need to take regularly. It is also likely that this medication is one that is essential, meaning that being without it may constitute an emergency. Things like insulin, inhalers, and blood pressure medications are part of daily life for millions of people; yet most of those people do not have a plan in place for what they'd do if the medication were suddenly unavailable.

In the wake of the COVID-19 pandemic, many are seeing that this scenario is becoming closer and closer to reality. Between the public scrambling to fill prescriptions out of fear for their health to pharmaceutical production being halted due to quarantines and shut downs, many medications became temporarily scarce. While pharmacies and pharmaceutical companies have done their best to mitigate the effects of various shortages, the situation highlighted for many that they would be in nearly immediate danger if their medication became suddenly and indefinitely unavailable.

Becoming suddenly unable to acquire necessary medication is certainly a frightening thought, but there are some ways in which you may be able to build a stash of emergency medication. It may take a while to stockpile a reasonable supply – prescription medications are relatively well-controlled, both by pharmacies and health insurance companies.

Some “easy” methods for stockpiling meds (like purchasing illegally online or skipping doses) should be avoided for safety reasons, but the following are a few ways to start building a stash of your medication safely and legally:

1.) Refill Your Prescriptions as Soon as Possible

It is standard practice to have prescriptions refilled a day or two before they run out, but most insurances will allow for refills to be filled and covered up to a week in advance of the current supply running out. The best way to find out when you can get a refill is to call your insurance directly, as medical providers typically don't know the ins and outs of insurance coverage. Building up a backup medication supply this way is slow but takes minimal effort. By refilling prescriptions three to five days before they run out you can put aside three to five days of medication for emergencies.

This method is slow, and if you want to have more of a supply for peace of mind you may also be able to get a full refill if you claim to have lost your medication. Most insurance companies only allow full replacement of a lost prescription once or twice a year, but even once is enough to have a full month worth of your medication for a stockpile. It can't hurt to ask at your pharmacy whether they are able to replace a lost prescription.

2.) Manage Symptoms Alternatively when Possible

This is not to say “stop taking your meds and try alternative treatments”; rather, it is just to say that many conditions requiring pharmaceutical management can also be greatly affected by lifestyle changes as well. Take insulin for example – while it is less the case for type 1 diabetics, both type 1 and type 2 diabetes can benefit from dietary changes and more physical activity. Consuming fewer sugars and processed carbohydrates can result in a more stable blood sugar, often requiring less insulin.

If you use insulin on a scale according to blood sugar readings, try making some lifestyle changes and you may see that you have more insulin left over at the end of each month. If this becomes the case, refill as soon as possible but continue using the existing supply before opening the refill. Try to keep the newest supply as your backup or stockpile supply, keeping in mind that expired insulin is better than nothing but may be less effective as time passes.

Managing conditions alternatively can also be useful in setting aside some medications for things like pain or heart conditions. With pain, many alternative therapies have been proven effective – things like ice, relaxation techniques, certain foods, and even music can curb the need for medication, allowing you to save as many doses as you’d like for a stockpile. Skipping doses of pain medication, unlike other medications, is not harmful and can even have a positive effect on pain tolerance in general. For things like blood pressure or heart rate, calming routines and managing stressors can result in less frequent need for medication. Doses of things like metoprolol or lisinopril should absolutely not be skipped without physician approval, but these medications are often used within parameters which means that if your heart rate or blood pressure is within an acceptable range, there is no need for the dose.

3.) Ask Your Doctor about Using Your Medication with Parameters

As previously mentioned, sometimes medications for heart rate and blood pressure are used with parameters. This is also the case with some insulin use, referred to as being on a “sliding scale”. If you feel that your medication may be able to be used on an as-needed basis, ask your physician! Putting parameters on the use of a particular medication involves more work in the short term; to use parameters you will need to be checking things like heart rate, blood pressure, or blood glucose (sugar) levels more frequently. However, by doing this you may also notice that taking your regular dose as scheduled might not be needed. Your doctor can tell you what the appropriate parameters are for your condition and personal circumstances, and monitoring your numbers closely may mean that you’re able to skip and stockpile quite a few doses of your daily medications. Just be sure to refill your prescription at the usual rate, even if you aren’t using it all.

4.) Always Say Yes to Antibiotics

Many people have heard that taking antibiotics too frequently can have negative side effects. While this is certainly true, most physicians are still happy to offer and prescribe them if they see a potential need. Things like ear infections, sinus infections, and some minor skin infections are indications for taking antibiotics, however they are also pretty easy to manage without medication and often go away on their own. Never hold off on taking a prescribed antibiotic if your condition is getting worse, but if it seems to be getting better and alternative treatments at home are working, it’s likely that you won’t need it. If you find yourself in one of these situations and think antibiotics are unnecessary, you’re probably right – but you should still see a doctor and if they are willing to write a prescription, take it!

There’s no harm in filling an antibiotic prescription as they are generally quite inexpensive with and without insurance, and if you don’t end up needing them you will have a nice, unopened course of

antibiotics for your stash. It is important to keep in mind that antibiotics are not a one-size-fits-all medication, and certain antibiotics are used for certain problems. A good tip is to write on the bottle what it was prescribed for, and some internet searching can also tell you what other conditions may be treated with that particular antibiotic.

5.) Over the Counter Insulin

This one is for insulin-dependent diabetics specifically, but insulin is of particular importance as managing diabetes is a constant task and even a day or two without needed insulin can be detrimental to one's health. What many people don't know is that some insulin is available without a prescription. These insulins are older, less effective versions of the newer insulins used today, but they are absolutely still effective and better than nothing in a pinch. Pricing for over-the-counter insulin varies, but if you can afford it, it's a great option to have in your stash. Not all pharmacies stock OTC insulin so you'll need to ask around, although Wal-Mart pharmacies are known for having plenty of it. If you do choose to keep a supply of OTC insulin, be sure to consult your doctor as he or she can provide guidance for using those formulas in an emergency.

With these five tips you should be able to get started on building a decent supply of emergency medication. Having a stockpile can provide great peace of mind, and should you ever find yourself unable to refill your medications you can be prepared. Just remember, a medication stash should be tended to regularly, checking for long-past expiration dates and some prescriptions that may have changed according to your condition. Keep instructions for use on all medications, as well as instructions on what to do if you are completely out of medication and have no access to more. Lastly, consider building a great first aid kit as an excellent complement to a medication stockpile! During uncertain times, it is always best to be overprepared.

Medicines that Are Safe to Take After Their Expiration Date

Should we throw away every medication in our homes once they expire? Now that is a question many people have asked and are still asking.

You see, in 1979 the FDA (Food and Drug Administration) passed a law that required every manufacturer to provide a possible expiration date for all medications sold. This date was supposed to guarantee full potency and safety of the drugs. Since then all medications have carried an expiry date. However, the expiration date is only a guarantee from the manufacturer of how long said medication can maintain its stability and potency while in its unopened container. Once the medication is opened, the expiration dates no longer carry much weight.

As a result of the introduction of expiration dates on drugs, billions of dollars have gone down the drain in an effort to get rid of unused expired medications due to possible loss of effectiveness and health risk. This level of wastage inspired a need to investigate the possibility of using said medications even after their expiration date. So the FDA and U.S department of defense carried out a study to test medications' safety and stability after expiration. Prescribed drugs and OTC (over the counter) drugs were tested. This study found that most of the tested medications remained stable and effective beyond their expiration date. In fact, they found out that 90% of the tested expired medications maintained their safety and potency.

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According to Francis Flaherty, a former director of the testing programme of FDA, “expiration dates put on by manufacturers, typically have no bearing on whether a drug is usable for longer. A drug maker is required to prove only that a drug is still good on whatever expiration date the company chooses to set. The expiration date doesn't mean, or even suggest, that the drug will stop being effective after that, nor that it will become harmful. Manufacturers put expiration dates on for marketing, rather than scientific reasons. It's not profitable for them to have products on a shelf for 10 years.”

Irrespective of this fact, it was also discovered that the forms (liquid or solid) and method of storage (light, heat, humidity, oxygen etc.) influenced the potency of the medications over time. For instance, solid drugs (tablets and capsules) are more stable than liquids (solutions and suspensions) and therefore tend to remain intact and potent long after expiration. Many OTC medications, especially tablets and capsules, remain effective and safe for use after their expiration date.

Ibuprofen tablets, which is a non-steroidal anti-inflammatory drug (NSAIDs), has been found to be potent for 4 to 5 years after opening the container. These medications are used for the relief of moderate pain such as menstrual cramps, joint pains, arthritis, gout attacks etc. In cases of a fever they can function as antipyretic drugs.

Tylenol or acetaminophen doubles both as an antipyretic medication to treat fevers and as an analgesic to treat mild to moderate pains such as headaches. Studies have shown that Tylenol or acetaminophen can maintain its potency for up to 4 or 5 years of having opened the container. Liquid forms of acetaminophen should be used by the expiration date since liquid forms deteriorate faster than solid ones.

Aspirin or acetylsalicylic acid has proven to remain potent within 5 years of opening. Aspirin also belongs to the NSAIDs family but aside functioning as an anti-inflammatory drug, it functions as an analgesic, antipyretic and antiplatelet medication. However, one side effect of aspirin is bleeding, therefore utmost care must be taken with the consumption of this medication.

Anti-histamine tablets such as loratadine (second generation antihistamine) and diphenhydramine (first generation antihistamine) are very efficient for treating and managing allergies, such as hay fever and skin allergies. Based on studies carried out, antihistaminic drugs can be used for over 5 years after opening.

Other medications are advised to be used before or by their expiration dates.

Antibiotics, which are excellent medications for treating bacterial infections, are prescribed for a full course which means there should be no left overs. Both liquid and solid forms of antibiotics should be consumed by the expiration date.

Cough syrups have components that break up easily and do not remain stable over a long period of time, therefore it's recommended that you consume cough syrups before their expiration date.

Nasal syrups have certain preservatives that make them safe to use, however these preservatives degrade overtime reducing the safety of the syrup after a long period of time. Use your nasal syrup before expiration.

Eye drops are liquid medicines and so can easily get contaminated and because the eye is a very sensitive organ, it is advisable to dispose of expired eye drops. Use them as prescribed and before expiration.

Insulin, vaccines, and epi pens must be replaced once expired as they tend to degrade quickly over a period of time.

OTC or prescribed sleeping pills and valium lose their potency overtime making patients to take more pills to achieve same effect and thereby leading to overdose or addiction. These sleeping pills and valium must be used within one year of opening.

Prescription drugs like Adderall and Mydayis should be taken according to physician's instructions and also within one year of opening. The loss of potency over time can interfere with its function in cases of ADHD.

In as much as most medications remain potent and effective past their expiration date, it's important to store medications in the right environments to maintain their potency. Do not store medications in the bathroom as the heat and humidity from the hot water shower can destroy drug's potency. Always store drugs in cool and dry places away from children's reach.

Remember to close medicine containers properly after use. Frequently check your medications for signs of deterioration such as discoloration, powdery texture, bad smell and in cases of liquid medications, look out for cloudy or filmy solutions and suspensions.

Remember, if you have any doubts regarding the consumption of expired medications, consult a physician or a pharmacist.

The 10 Most Sought-After Bartering Items in Venezuela

They say you never know what you have until you lose it. If anything, the past few years have taught us a lot from the pandemic to the economic crisis, especially how Venezuela got to its present state. The take away from these last few years is to be prepared.

Before the year 2013, Venezuela was a country people wanted to visit, a country that flourished with a good economy. Money had value and goods and products were abundant. People could buy what they needed when they wanted. Things seemed great until gradually goods became scarce and prices hiked. Household items, foodstuff, and medications were no longer available in supermarkets and pharmacies, and when they were, the prices were outrageous.

As the crisis grew worse, money lost its value, it became a useless commodity, people no longer wanted money, they needed food, they needed to survive; money was no longer enough to survive. This event brought about trade by bartering as people began to barter what they had for what they needed.

We do not pray for an economic crisis like that of Venezuela but we must admit that the pandemic gave a free pass to economic instability worldwide and that is more reason why we should be prepared. And to be prepared, there are certain supplies that we must have handy in our homes taking into consideration the items that were most sought after in Venezuela.

Number One

Food should be readily available in our homes. During the pandemic people couldn't go out and most restaurants and markets were closed. In Venezuela people couldn't find rice to buy anywhere and when

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they found it, the price was tripled. Having rice, a very good source of carbohydrates, is definitely a must.

Number Two

Another very important supply that should be stockpiled are detergents used for washing clothes and for general cleaning around the house.

Number Three

One of the house hold supplies people ran out of quickly during the pandemic was toilet paper and the same happened in Venezuela when the crisis started. Toilet paper is very useful not just after using the toilet, but in cases of a flu and cleaning off dirt. So make sure to have enough toilet paper at home.

Number Four

Milk comes in liquid and powdered forms, representing a rich source of protein, calcium and vitamin D. Milk has so many benefits both for kids and adults, such as development and maintenance of strong bones and teeth, promoting muscle growth etc. There are different types of healthy milk like almond milk, coconut milk, soy milk and even lactose free milk, just in case you are lactose intolerant.

Number Five

Cooking oil is a very essential food supply for preparing different foods ranging from breakfast, lunch, to dinner. There are different types of oils and each one is packed with great health benefits, since they belong to the monounsaturated fat group.

As monounsaturated fats they help increase the levels of good cholesterol in the blood, help with cholesterol metabolism, and help prevent heart diseases. Whichever works for you should be available in your home.

Number Six

Flour is rich in vitamins, calcium, and proteins. Flour types range from wheat flour, to white flour, corn flour, coconut flour, almond flour, etc.; all of which are used in many homemade recipes and therefore should be stockpiled.

Number Seven

Deodorants are one of many products that can easily become scarce in the event of a crisis just like in Venezuela. They are a must have at home as they leave you feeling fresh while concealing bad odor and destroying bacteria that generate odor.

Number Eight

Now we all know the importance of having a good shower. Bathing soaps tend to be scarce during crisis, which was evident in Venezuela as people could not find bathing soaps to buy. Make sure you have enough bathing soaps in your home.

Number Nine

The main culprit of almost every breakfast and lunch pack, bread is a fiber rich food and also contains proteins and micronutrients giving our bodies the fuel we need for our daily activities. You definitely want to have a body fueling food at home.

Number Ten

Diapers and sanitary pads tend to disappear at the sight of a crisis. These are very important supplies that need to be readily available in the home since a very important percentage of the world's population require these products; women and children being the percentage in question of course. However, diapers also come in handy for some senior adults as they advance in age. Make sure to stock up enough diapers and sanitary pads.

There are so many supplies that we need to stockpile. The supplies mentioned in this chapter are just a few important ones. In Venezuela, people had to queue all night long hoping to find these supplies at the stores very early the next morning. Sometimes they got robbed while queuing and other times they went home with empty hands after queuing for days because these items were just not available. So the next time you go shopping, remember to buy the right quantity of the right supplies.

The Biggest Mistakes You Can Make in a Blackout

Electricity is a basic life necessity. Many of life's processes are powered by electricity. Food and water require electricity to remain intact. Electricity has been used over the years to pump water, store food and medications, generate heat, generate cold, make certain devices work and illuminate spaces. However, heavy rains, thunderstorms, hurricanes etc. tend to interrupt electricity functions especially when they result in a blackout. Blackouts can last for few minutes, sometimes hours, and other times for days. A power outage is an unpredictable event, which means we must be prepared for such. Knowing what not to do and what to do in a blackout is essential to survive one.

Most people make mistakes that could cost them their life in a blackout. Some of the frequent mistakes people make in a blackout putting their health, and therefore their life, at risk are:

1. Emergency Kit

Most people do not have an emergency kit in their homes in case of a disaster. In a blackout, accidents are bound to happen; there could be cuts or scrapes. An emergency kit will come in handy.

Your emergency kit should contain certain over the counter medications that can be useful in a disaster, such as acetaminophen, Ibuprofen, and oral rehydration solution. Other medications such as medications for chronic diseases like diabetes, high blood pressure, Asthma etc. must be readily available in your emergency kit if you have family members suffering from these illnesses. Other things you should have in your kit are a first aid kit, flash lights, extra batteries, perishable foods, extra water, and blankets.

2. A Backup Oxygen Tank

Administering oxygen to sick people at home has been made easy with the help of oxygen concentrators. Oxygen concentrators are used in patients who suffer from breathing difficulty, such as in Asthma, COPD (chronic obstructive pulmonary disease), lung cancer, COVID 19 etc. Oxygen concentrators function by pulling the air around us and filtering the nitrogen content before administering it to the patient. The downside however is that they run on electricity, which means in the case of a power outage, the patient will not receive oxygen and this could lead to complications and death. Having a backup oxygen tank is necessary to avoid depriving patients of oxygen as a result of a blackout. Oxygen tanks administer liquid oxygen to the patient manually without the use of electricity and so they are the best thing that can happen to an oxygen-dependent patient in a blackout.

3. A Backup Generator

In the US and many other countries, most patients and the elderly are no longer being hospitalized for long periods or sent to nursing homes for care, as studies have shown that they thrive better around family members.

Most of these patients require long term treatments through medical devices that obviously need to be plugged in to electricity. Since these devices are now portable and can be installed in the homes of patients, they receive their treatments at home. Some of these devices are CPAP (continuous positive airway pressure), BiPAP (bi-level positive airway pressure), dialysis devices, power wheel chair, electric beds, oxygen concentrators etc.

In a blackout, these devices shut down and can no longer function which is a very good reason to have a backup generator at home. With a backup generator, even in the event of a power outage, these medical devices can still work.

4. Charcoal Grills and Stoves

In winter, a power outage can lead to very low temperature which is very uncomfortable. In order to heat their homes, some people use charcoal grills or stoves. This is a very dangerous practice as these equipments release carbon monoxides into your living space.

Carbon monoxide poisoning (CMP) can lead to tissue damage and death. When a large amount of carbon monoxide is inhaled, it enters into the bloodstream and displaces oxygen, meaning our body gets blood and carbon monoxide but not oxygen, which of course is deadly. And because carbon monoxide is an odorless gas, it is difficult to detect its presence in your home. CMP can cause tension headaches, dizziness, nausea, vomiting, confusion etc. Beware of these symptoms.

5. Downed Wires

If you are outside your home during a power outage, avoid touching any and all downed wires as these can still have live energy in them leading to electrical injuries. Electrical injuries will vary based on the path of the electric current. Having contact with a live downed wire can cause burns, respiratory arrest, cardiac damage, brain injuries, and death. Make sure to avoid any downed wire in a blackout.

6. Candles

Lighting a candle is the first response to the absence of electricity irrespective of the cause of the blackout. Whether the blackout will only last for few minutes or for hours or days, it is not recommended to light candles in these situations. Candles are highly flammable and can easily be knocked down thereby starting a fire. A fire can cause smoke inhalation, second- or third-degree burns, death and destruction of properties. If you must use candles, place them in a protective container and keep an eye on them or better still, use battery powered LED lights and flash lights.

7. Medication that Requires Refrigeration

Throwing away medications that require refrigeration is a waste and puts the health of the patient at risk. An important thing to note is that these medications can be safely stored in the event of a blackout, without losing their effectiveness or potency.

To keep medications such as insulin, humira, eye drops, and vaccines safe and effective, maintain the fridge closed; a closed fridge will keep these medications intact for 2 – 3 hours. If a longer blackout is expected, take out these medications immediately and place them in an ice chest or a cooler packed with ice or cold packs. Make sure the medications are not directly in contact with the ice, wrap them with paper or towel to avoid freezing. Frozen medications lose their potency and effectiveness. Remember to use a thermometer to check the temperature within the ice chest.

In addition, most Insulins now come in vials that remain intact opened or unopened outside the fridge. They can stay outside the fridge for 4 weeks and not lose their potency.

We never know how long a blackout is going to last, so not being prepared is the greatest mistake you can make. Not being prepared can cost you your health and that of your loved ones. Not being prepared can lead to complications of chronic conditions and death. Staying prepared is the best thing you can do for you and your loved ones. Stay prepared.

The Only 4 Antibiotics People Should Stockpile

Antibiotics will become priceless in times of need once they become scarce. Having these four at home for you and your family is at least as important as having food stockpiles. But under no circumstance should you take them without consulting a doctor first.

Knowing about certain animal antibiotics can come in handy when and only if the need arises. For instance, in the case of a shortage of medications or in cases where people run out of their medication and require urgent treatment, these medications might be very helpful.

During the pandemic people died not just from the virus but from lack of access to healthcare centers and medications. People ran out of medications, others got sick but could not access hospitals or pharmacies; in such cases certain over the counter veterinary drugs can save a life.

It's been said that humans are simply higher animals and regardless of our differences, we share a lot of similarities with animals. One of the so many things we have in common is health.

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Animals suffer from certain diseases that humans suffer from as well, such as mastitis, digestive infections, respiratory infections, abscesses, etc. Likewise, they also require treatment just like humans do. One of the frequently used medications in animals are antibiotics which are used mainly for three reasons: therapeutic reasons, prevention of diseases (prophylaxis), and to promote growth in animals. Animals also require regular health checkups by a veterinarian, just as humans require the same from a physician. Based on the veterinarian's examination a medication can be prescribed if need be.

However, there are certain veterinary medications that are over the counter and do not require prescription. Antibiotics treat bacterial infections whether it is an infection in the human body or an animal body. So, the same antibiotics will function both in animals and humans alike.

The function of an antibiotic is to destroy bacteria either by stunting their growth or by directly killing them. This function remains the same, whether they are acting on a human body or an animal body. Yet due to differences in the gut system of animals and humans, animals might tolerate certain antibiotics better than humans and for that reason, certain medications specify animal use only.

There are some over the counter veterinary antibiotics that can be used in humans in extreme cases, when the need arises. Nonetheless, it is important that you consult your physician before taking any of these four veterinary antibiotics.

Azithromycin is an antimicrobial drug that belongs to the family of the macrolides, containing an active ingredient called azithromycin. It is used in the treatment of respiratory infections such as pneumonia, pharyngitis, and tonsillitis in humans. It can also be used to treat uncomplicated skin infections caused by staphylococcus aureus, genital ulcers, urethritis, and cervicitis in women. In the case of a shortage or in an emergency where there is no access to azithromycin, a veterinary over the counter antibiotic called Eritromycin, which belongs to the same family of drugs, can be taken as a replacement.

Doxycycline is an antibiotic of the tetracycline family; it is used in humans to treat a variety of bacterial infections such as pneumonias, skin infections, urinary tract infections, STIs (sexually transmitted infections) and in the prevention of malaria. However, in the absence of this drug, Tetracycline, which is used in treating infections in poultry, cattle, sheep, and swine can come in handy to replace doxycycline.

Neomycin is used in the treatment of bacterial gastrointestinal infections in cattle, sheep and goats. It belongs to a family of antibiotics called aminoglycosides and can be used in the place of other aminoglycoside family members such as gentamycin and amikacin. Gentamicin and amikacin are effective in treating abdominal and urinary tract infections and are also used in the treatment and prophylaxis of endocarditis in humans. However, precaution must be taken as aminoglycosides in excess dosage can lead to renal failure or deafness.

Lincomycin belongs to the lincosamide group antibiotics. It is used in animals such as dogs, cats, pigs, and birds to treat gram positive infections. It can be used in the absence of clindamycin, which is used in treating the following conditions in humans: skin and soft tissue infections, osteomyelitis, septic arthritis, acute sinusitis, pharyngitis, and otitis media.

It is important to note that the above-mentioned medications will only treat infections caused by bacteria. They are useless in the presence of infections caused by viruses such as a cold or flu. Also taking into consideration that every antibiotic has adverse effects, it is imperative that you consult your physician for an accurate diagnosis before consuming any of the above-mentioned drugs. If you run out of medications and have any of these veterinary drugs in your home, please consult your physician before consumption.

MENTAL HEALTH

Mental health is a state of psychological and emotional well-being that is easily influenced by the environment. Our emotional strength or lability depends on many factors. In recent years, elements such as the social environment at home and at work and even the climate have been studied as important to our state of mind and perception of things.

We have changes in our behavior on a daily basis depending on the situations we face during the day. Thus, we can feel happy, angry, and sad on the same day without that meaning that there is any problem with our mental health.

Situations that put us in a high level of stress activate the fight or flight response, which includes important drastic changes in our mental health state. Circumstances that present themselves unexpectedly that we don't know how to cope with can usually trigger stress responses.

New situations, diseases, bad news, and worrisome world information, such as fires, environmental pollution, deaths, or famine, are facts that alter our mental state to a greater or lesser degree. Some people tolerate the changes that come through worrying better than others. Just as there are people who have higher thresholds for pain, there are those who can tolerate a higher level of stress.

Stress can present itself in different ways depending on biological and environmental factors.

It is sometimes difficult for people to notice a change in their usual behavior. Changes as subtle as feeling bored or not wanting to do anything, being sleepier than usual, or not finding fun in activities that normally entertain us are warning signs that something is disturbing our mental health.

No one is prepared to face every scenario simply because some are unfamiliar. If we have never had to be in that situation, we won't know how to deal with it. Facing these new events will generate changes to which we can adapt as much as possible.

The most common mental health issues are: stress, depression, anxiety, and dementia.

1. STRESS

Stress is the physical response to a tense situation. This response occurs due to the hormones that are released in the face of the situation we detect as "dangerous." It is a normal physiological reaction that may be beneficial and necessary at some times but causes discomfort and unpleasantness at others.

Feelings of sadness, anger, and worry, among others, are manifestations of this tension. Other types of symptoms, such as insomnia, muscle contractions, headaches, abdominal cramping, and diarrhea, are also a presentation of stress.

Stress is present in our lives from birth. When the fetus passes through the birth canal, a strong response is generated that helps to activate the descending movements and start the breathing process. Later in life, we respond better or worse to different situations depending on the impact they have on us. Perhaps before an important interview or exam, you have had a stomachache or back pain. These symptoms are caused by the body in response to the stress.

There are people who cannot adequately handle stressful situations, and in some cases, they must be hospitalized or taken to mental clinics for rest.

What Symptoms Can Intense Stress Cause?

Momentary loss of vision, speech, or hearing is one of the most alarming symptoms of an extreme state of stress. In these cases, you should try to stay calm, and the symptom will disappear completely after a few minutes.

If you are a nervous person by nature, it is important that you practice relaxation techniques. At the end of this chapter, you will find some guided relaxation exercises that can help you cope with daily stress and improve in extraordinary situations.

2. DEPRESSION

Depression is a state of mind characterized by deep, often unexplained sadness that impairs our ability to perform daily activities. The male to female ratio presentation is 1:2. It should not be confused with “being sad,” since depression goes beyond that and does not improve as a result of a behavioral change on the part of the person concerned.

It is important to recognize the changes in behavior that occur gradually in a person who is depressed since in its early stages, it can be treated with therapies that can be carried out at home.

Symptoms and Signs

- **Mood:** anxiety, general discontent, guilt, hopelessness, loss of interest or pleasure in activities, mood swings like sadness or anger, among others
- **Behavioral:** agitation, unusual crying, irritability, social isolation
- **Changes in sleep patterns:** early awakening, excess sleepiness or insomnia, restless sleep
- **Changes in dietary patterns:** excessive hunger or loss of appetite
- **Cognitive:** lack of concentration, slowness in activity

The best way to recognize depression is with the mnemonic **SIG E CAPS**:

Sleep (Am I sleeping too much or less than normal?)

Interest (loss of interest or pleasure in activities)

Guilt (feelings of worthlessness or inappropriate guilt)

Energy (decreased or fatigued)

Concentration (decreased concentration)

Appetite (increased or decreased appetite/weight)

Psycomotor (agitation or slower movements)

Suicidal ideation

Diagnosis requires a depressed mood or anhedonia (loss of interest/pleasure) and ≥ 5 of the signs and symptoms from the “SIG E CAPS” mnemonic. If you recognize some of these signs in yourself or in a family member or neighbor, you or they are likely to be in a state of depression.

Relaxation techniques and breathing exercises are treatments that can be used as an alternative therapy to drugs for this type of disorder.

When Should I Worry?

If you or your family member are talking about death too often or having suicidal thoughts that include a suicide plan or are simply considering it as an idea to escape from problems, depression is at an advanced stage.

It is very important in these cases to contact a specialist, either a psychologist or a psychiatrist. There are many totally anonymous support websites.

Remember that seeking psychiatric help does not mean you are crazy but rather that you know what is best to maintain your health in cases of stress.

3. ANXIETY

Anxiety is a natural response to a state of stress. You may have felt anxious before an important presentation, when starting a new job, or before an interview. However, this response becomes pathological when it is exaggerated and intervenes in our daily activities.

Symptoms and Signs

- **Mood:** sense of hopelessness and desolation
- **Behavioral:** irritability, unease, restlessness, excessive worry, fear
- **Changes in sleep patterns:** insomnia
- **Cognitive:** lack of concentration, racing or unwanted thoughts
- **Whole body:** unusual fatigue, sweating, shortness of breath, palpitations

These symptoms can lead to unpleasant reactions, such as a sense of impending death, disproportionate despair, and panic attacks.

Anxiety states can be controlled through diet, some lifestyle changes, relaxation techniques, and breathing exercises. If necessary, natural medications can be used to improve sleep and mood.

How to Preserve Your Mental Health in Spite of a Rough Situation

As I explained before, none of us are prepared for new situations that our psyches perceive as alarming. Although some are more positive or have a more determined personality, the truth is that unexpected situations cause stress, and we are all exposed to this.

Exercise is always a good option for draining energy, thinking about different things, and, as it is colloquially said, “resting the mind.”

Any exercise you do will be beneficial. I’m very sporty. I practiced CrossFit for three years, and before that I went to spinning classes and TRX. I climbed and now have a gym routine that I like to do five to six days a week.

Exercise relaxes us, helps us to rest better, disconnects the mind from problems, and, as an additional benefit, improves our physical appearance.

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When I'm too anxious, I can't sleep. Talking to a friend of mine who is a psychologist, she recommended doing an hour of yoga. Yoga is a discipline that requires a lot of concentration and body control combined with breathing exercises. It is an excellent resource to achieve the state of rest we desire.

Looking for basic yoga trainings, I found instructor Adriene Mishler and really like her since she is clear and her voice conveys peace, so I am sharing two of the routines on her YouTube channel.



Adriene Mishler, yoga for
beginners



Adriene Mishler, yoga for
seniors



Kim Eng, 10-minute guided
breathing meditation

Relaxation and meditation techniques with breath control are very good, especially if you are suffering from anxiety, panic attacks, or insomnia. They do not take long, as the concentration is deep so you can reach a state of relaxation in a short time.

One of the problems you must solve in order to achieve proper mental health is insomnia. Lack of sleep is a common symptom in stressful situations since the brain feels it must be in an alert mode at all times. There are many effective home remedies to **improve sleep quality**.

I work with oncologic patients. Giving the patient the news that they have cancer is a very complicated issue that leads to sadness, confusion, and anger, among other feelings, often with a high stress load.

I tell my patients to call me anytime if they have any question, and one of the main complaints during treatment or while waiting for surgery is lack of sleep. In addition to sending my patients to psychological therapy, I always recommend some of my favorite techniques.

When patients have been coming to my office for a while, I always ask for new recipes for insomnia, and I immediately try it out to see how effective it is and to expand my repertoire. I have tried all of these therapies, and they have been very helpful.

First of all, I recommend creating a bedtime routine. Maybe turn off the TV half an hour before, relax a bit, take a bath or shower if you are used to doing it at that time, and prepare the room for rest.

I particularly prefer a dark bedroom because I feel that I rest much better, but the room should be adapted to personal preferences.

Infusions such as chamomile or linden tea are very good choices before bedtime. Lavender tea and preparations with essential oils as an aromatherapy are also very relaxing.

I recently discovered the Indian recipe for *golden milk*, and it has been one of the infusions that has worked best for me, especially for getting restful sleep. I prepare it with 1 cup of milk (I use almond

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milk), 2 teaspoons of turmeric, 1 teaspoon of cinnamon, and half a teaspoon of grated ginger. I drink this infusion very hot and I really feel that it relaxes me.

Golden milk is an ancient drink that has many uses because of its anti-inflammatory and analgesic power, through the use of turmeric and ginger, in addition to helping with relaxation.

If you are not allergic to any of the ingredients, I recommend this drink as it is one of the best discoveries I have made.

Melatonin is a fairly popular remedy. It comes in tablet form and is a supplement to the hormone that occurs naturally in the body. Taking a tablet of melatonin before bedtime helps you to sleep and rest better.

Although it is widely used, I have not had a good experience with this product. I have felt some side effects, such as apathy and anxiety, and I have not found it beneficial. However, many acquaintances have consumed it, and their experiences have been excellent.

Melatonin can have mild interactions with some medications, so I recommend always consulting with your doctor before you start taking it.

In case you cannot consult him or her, you should be very alert to all the changes you experience and, if possible, write them down to have evidence if they progress or improve with the passing of time.

If the side effect continues for more than 48 hours, it is best to stop this treatment and continue with the other recommended methods.

The use of anxiolytics is delicate and must be controlled by a doctor. In my patients, I indicate them only for extreme cases of insomnia, and I try to limit their consumption since they have multiple side effects.

4. DEMENTIA

Dementia is a syndrome of mental deterioration that is not disease specific, although about 65% of cases are due to Alzheimer's disease. It is known as a decline in cognitive functioning with global deficits. It's important to clarify that the level of consciousness is stable.

For our intellect to function properly, there must be a combination of good irrigation, electrical, and hormonal activity and specific proteins that are balanced to exchange signals.

In dementia, this balance is broken at some point, which causes the deterioration of the passage of signals, gradually breaking down the communication.

If the disease is chronic, like Alzheimer's or vascular problems, dementia advances and is irreversible.

Frequently dementia is associated with memory loss; the truth is that dementia comprises another series of behavioral changes as well, such as anxiety, sadness, depression, anger, and even psychosis, in which the patient is in a state of hyper-excitement.

Although "senile dementia" is commonly referred to as a normal process, this term is not correct since no type of dementia is related specifically to aging.

Causes

Alzheimer's disease is responsible for about 70% of the cases of dementia; however, there are other causes that generate dementia to a greater or lesser degree.

Vascular dementia is the second most prevalent (20%) cause of dementia.

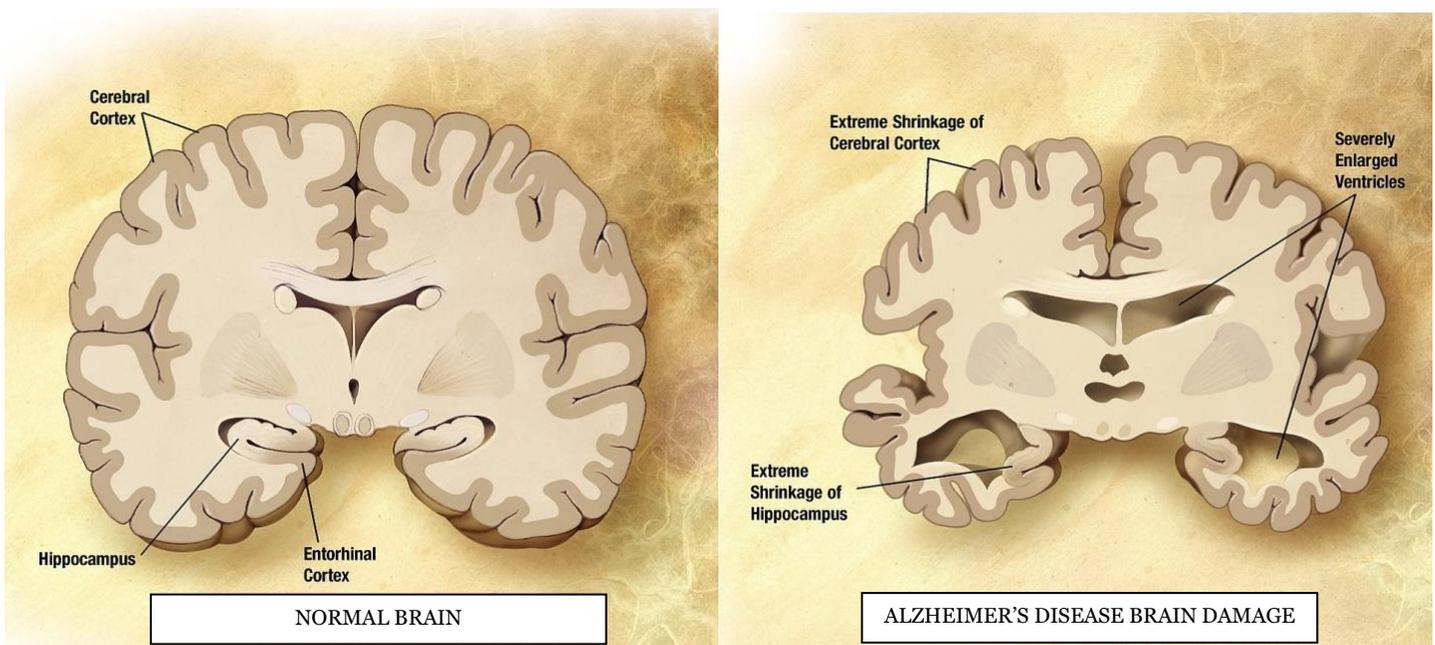
Problems such as atherosclerosis, poorly controlled high blood pressure, and vascular damage caused by diabetes and smoking eventually lead to permanent dementia.

Dementia due to the use of some medicines, excessive alcohol use, use of illicit drugs, thyroid problems, and life-threatening infections are reversible, and complete improvement is observed when the product is discontinued or the disease is controlled.

Do I Have Alzheimer's Disease?

Alzheimer's disease is a neurological disease that develops because the brain stops producing some proteins that are necessary for the communication processes of the neurons. We associate it with memory loss since the first part of the brain affected is the hippocampus, which is the area where memories are processed.

The loss of proteins and enzymes causes a progressive deterioration of the brain, causing evident physio-pathological changes later on in the disease.



That is why the diagnosis is clinical rather than laboratory tests since by the time these are altered, it is because the disease is already very advanced.

Thus, at first the person with the disease will lose short-term memory and will still recover old memories, even from childhood, which were thought to be forgotten forever. This is very characteristic of the disease.

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There is no specific test to diagnose Alzheimer's disease. Having several relatives with the disease can give us a genome clue; however, it is not always 100% reliable.

In any case, we must be aware of the early signs of the disease in order to identify them and go to a specialist.

In the early stages, memory loss is common as well as difficulty finding frequently used words and names of family members. Behavioral changes such as sudden changes in the sleep cycle and sadness for no apparent reason, among others, are also signs that we should take into account.

Neurologists and psychologists are the professionals who can give the most precise diagnosis. Generally, with an adequate questioning, one can have the suspicion and indicate lifestyle changes and some treatment if there is the presenting of some symptoms, such as insomnia or anxiety.

In the elderly, a regular visit to the geriatrician is important; since he or she specializes in the problems of the elderly, he or she can identify changes that may go unnoticed by others.

Treatments

There is no specific treatment for dementia. Lifestyle changes that make the patient's quality of life more comfortable are recommended at first, rather than drugs. When drugs are used, it is done in order to treat specific symptoms, for example, depression or anxiety, and not to improve the state of dementia.

The changes in daily life that I am referring to consist of creating routines that can be easily followed, both for the home and for the street. Dementia patients should always be accompanied, even if the symptoms are mild.

Problems such as not remembering how to get home or to turn off the kitchen appliances are common and can occur at any stage of the disease.

Family collaboration is of the utmost importance. When faced with a patient with memory loss, we must have a lot of patience.

Remember that this person is not trying to bother you or play tricks on you; they genuinely do not remember the most normal things, so getting angry is not the best way to help them.

Try to create a comfortable environment at home where there are characteristics that this person recognizes.

When there is frustration or sadness about having forgotten something, help him or her to come up with another activity that will distract him or her.

Unfortunately, dementia due to chronic illness inevitably progresses. As the years go by, the patient will become less and less independent.

There are support groups for relatives of patients with Alzheimer's and dementia that are very helpful in sharing experiences and tips.



Alzheimer and dementia support
group

Are There Ways to Prevent Dementia?

There is no way to prevent dementia as an evolutionary process of a chronic disease, but there are ways to exercise the brain to slow that process.

Maintaining proper control of chronic diseases that can lead to dementia is important. Regular visits to the specialist to check blood pressure levels or to evaluate the effectiveness of diabetes treatments should be a priority.

In medical practice, we very often see hypertensive patients who have been diagnosed and prescribed treatment and have not returned for an evaluation for years. They are used to following that same treatment without knowing if the disease has evolved or if it is causing any harm.

Remember that hypertension is called the “silent killer” because the body is able to adapt to high blood pressure without causing any symptoms until the damage is severe. The main damage is vascular, and among the organs that are damaged most quickly are the kidneys, the eyes, and the brain. By recognizing any of the symptoms that make up the dementia state, treatment can be initiated that improves the patient’s condition and quality of life.

A gluten-free diet, which has become trendy in recent years, has been shown to improve behavior in those with conditions such as autism and ADHD. Some professionals recommend it as a way to improve cognitive and intellectual processes as well, but there is no scientific evidence to support it.

The evidence is through the testimony of patients that have had a positive response to this type of diet.

Brain exercise is recommended to preserve the thinking skills. Activities such as learning another language or a musical instrument, word or number games, crossword puzzles, reading groups, and puzzles are always a good and entertaining idea.

- **Crosswords:** <https://puzzles.usatoday.com/> and <https://www.boatloadpuzzles.com/playcrossword>
- **Sudoku:** <https://sudoku.com/>
- **Games for the brain:** <https://www.gamesforthebrain.com/>
- **Scrabble Club:** <https://isc.ro/index.php>

One of my best friends is an Alzheimer’s and dementia nursing home coordinator in Florida. She has been in this job for about ten years, and I always wonder how she does it.

This is a very hard disease, and it must be frustrating for a health care worker to watch a patient deteriorate without being able to do much. However, she does not think about any of the things that worry me and instead does her job cheerfully.

Recently she explained to me that sometimes people come in who are very deteriorated, almost unable to speak. However, she notices their expressions according to what each experience makes them feel.

She is in charge of preparing new caregivers and one of the first things she makes them understand is that the person may not remember your name or your face but will always remember what you made them feel the first time. Always be kind.

SKIN AND SKIN APPENDAGES

Before the third year of medical training, I didn't know that the skin was an organ; in fact, it's the largest organ of the body and constitutes the first barrier of defense against microorganisms and traumas. It is considered a neurological organ since it has nerve endings that allow us to communicate with the environment.

It also has the function of lowering body temperature through sweating. In addition, through its changes, we can guide the diagnosis of many skin and non-skin conditions. Its changes in color, odor, and texture are good indicators of a number of systemic diseases.

The cutaneous annexes are complementary structures to the skin that protrude from it. They include body hair, nails, and sweat glands.

The easiest way to keep skin in good condition is to keep it clean and moisturized. Cleaning should be done with a special soap for this purpose. In my case, I always use specific face care products. These types of soaps are milder and adjust to the pH and moisture of the skin.

In my country, it is very common to use a laundry soap bar to clean infected skin, as if it had bacteriostatic properties.

It is so common, that when a patient with a wound or allergy arrives to the hospital, it should be specified that they should not wash with "Jabón Las Llaves," which is a local brand so well known that any soap bars are called by that name.

This soap has been traditional throughout Venezuela since 1877. I cannot say when it became part of wound care in popular culture, but I do know that it is deeply rooted, especially in the interior of the country.

If you've ever wondered what it would be like to bathe with a laundry soap bar, you have to know they have very alkaline detergents that alter the surface layer of the skin, making it susceptible to damage.

Instead of providing the correct moist and oily environment, it dries out the skin.

If you are allergic or you get skin reactions easily, it is best to use hypoallergenic or non-detergent soaps.

Moisturizing the skin is easy. Just by staying well hydrated, we already have 80% of the work done. You'll complete the other 20% by applying a moisturizing cream, preferably unscented or soft or some natural oil.

Dermatologists, as well as many models and artists, always share a useful tip that helps them to better absorb the moisturizer. This is to apply it after a shower or bath, when the skin is still wet.



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Some people, though, do not like the wet feeling that the application of the moisturizer leaves. However, there are many products available that dry almost immediately without leaving any residue.

I always use moisturizing body cream, day and night facial cream, and eye and under-eye cream. I am a bit obsessive about using them because taking care of our skin is what gives it elasticity and a healthy look.

I have a ritual in which I use a specific product with charcoal to clean my face, and after drying well without rubbing the towel, I apply the corresponding face cream. I only use the eye cream at night.

After bathing, I use moisturizer, and once a week, I like to use essential oil of coconut or almonds, which helps maintain the normal oily layer of the skin. When I can't put cream on, I feel my skin is very dry. That's why I recommend its daily use as that sticky feeling is only at the beginning.

It is important to say that the care of the skin is for both men and women.

WHAT DERMATOLOGICAL PRODUCTS SHOULD I HAVE AT HOME?

Neutral soap for cleaning hands and body is a must. Remember that if for any reason you must wash your hands frequently, there may be a tendency toward dryness of the skin, so it is important to have a moisturizing cream on hand.

Sunscreen is important, with SPF over 30 in the summer. Also, special skin moisturizers for the winter can prevent cracking and small wounds that can cause inflammation and infection.

An antibiotic cream is also useful. There are many brands sold over the counter, but the active ingredients are almost always the same: *Bacitracin* or *Mupirocin*.

Products that contain many compounds combined, such as steroids and antifungals, are not recommended as they tend to mask some conditions and make them worse over time.

It is best to buy a specific product for each disease. In the end, it is more cost effective than having to go to the dermatologist for an advanced disease.

The most common skin diseases are: corns, warts, burns and scalds, dermatitis, fungal infections, insect bites and stings, cellulitis and abscesses, ulcers, open wounds, and nail trauma.

1. CORNS

Corns are calluses that form on the toes over the joints. They can become very uncomfortable when fully developed and can even become inflamed, ulcerated, bloody, and infected.



The best way to prevent their development is to use moisturizing cream and a pumice stone and to wear comfortable footwear.

When these measures are not enough, it is convenient to have some corn plasters at home, but if you do not have this, there is nothing to worry about. The corn plaster is nothing more than a small cylinder that forms a cushion between the shoe and the corn, smeared with a little solution of acetyl salicylic acid that is supposed to reduce inflammation and diminish the corn. The main objective of the treatment is to avoid ulcers since wounded skin can easily lead to infections.

When it is not possible to go to a pharmacy to buy these types of items, measures such as dipping your feet in warm water for ten minutes daily or every two days can be used to improve the condition of the thickened skin.

Moisturizing cream or Vaseline are great tools to help as well as wearing comfortable footwear, if possible of a type that is not closed or has enough space at the top.

Infection is easily recognized when the skin of the affected toe is red and warmer compared to the temperature of the rest of the foot, either with or without discharge.

2. WARTS

A wart is an abnormal growth on the skin, commonly found on the palms and soles, that is characterized by a painless, cauliflower-shaped lesion.

It usually has no major complications, although rubbing can make it lose the top layer of skin that covers it, leading to uncomfortable symptoms. It can also become ulcerated and trigger skin infections.



3. BURNS AND SCALDS

Burns and scalds are skin injuries that are almost always painful, and they have similar consequences even though their origins are different.

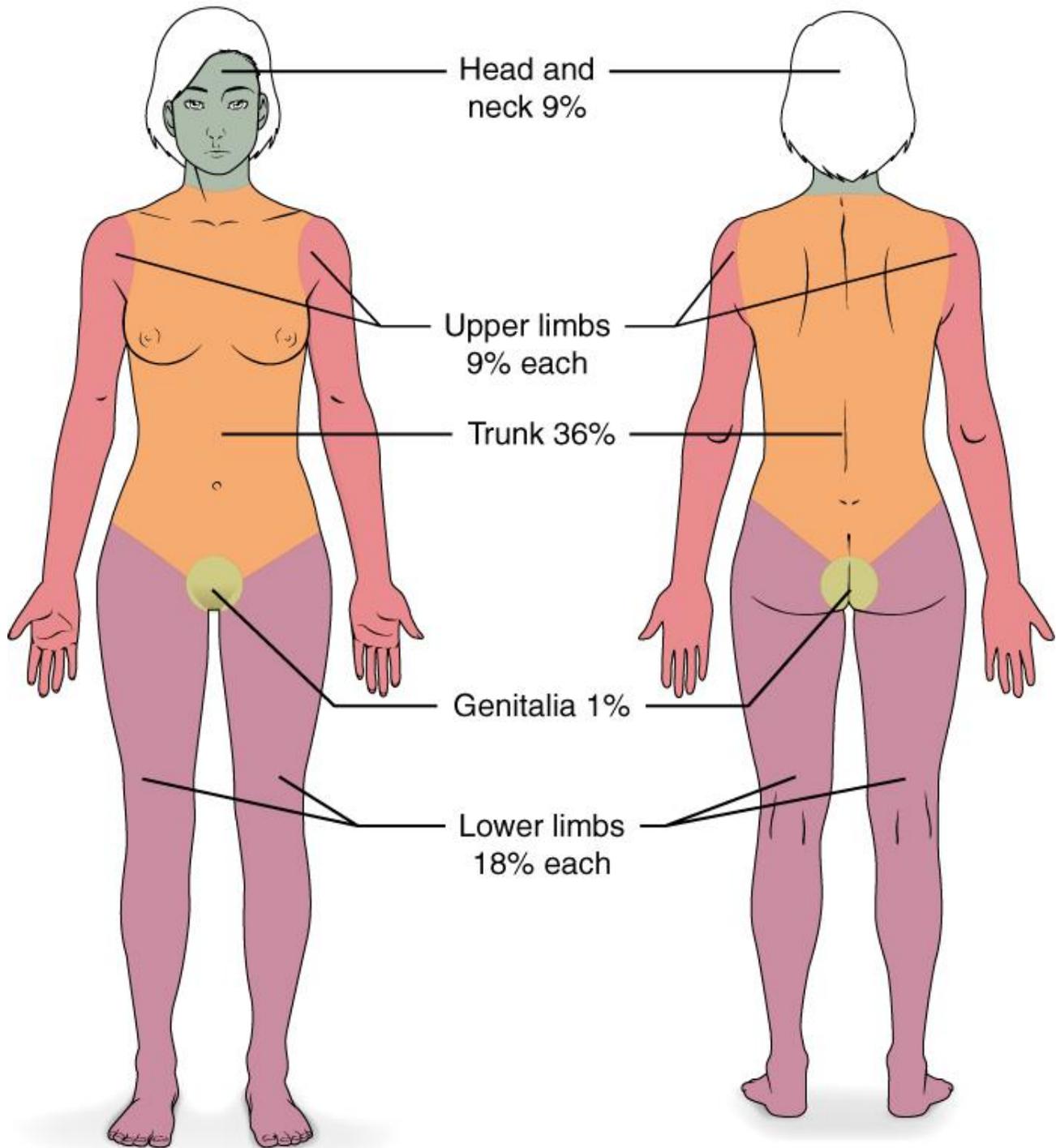
A scald occurs most often from excessively hot moisture on one area of the body, causing the outer layer of skin to be lost. Burns are caused by contact with fire, hot or extremely cold surfaces, chemicals, and electricity, among other causes.

Diagnosis and Physical Examination

In these cases, the diagnosis is simple, and it must be treated immediately to avoid complications. There are simple methods for assessing the extent of burns. One of them is the so-called Wallace rule of nine, which divides the body into several areas that are assigned a value of 9% or a multiple of 9; from there we can know how serious the damage has been.

In the next figure, you can see the percentage that each area represents of the total body mass.

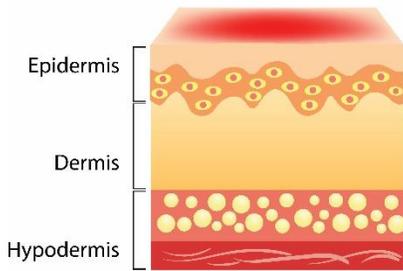
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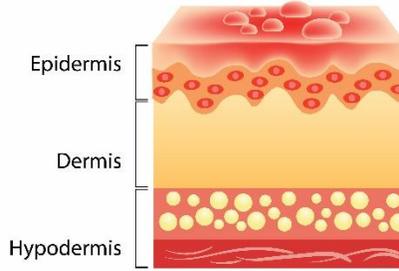
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Types of Burns

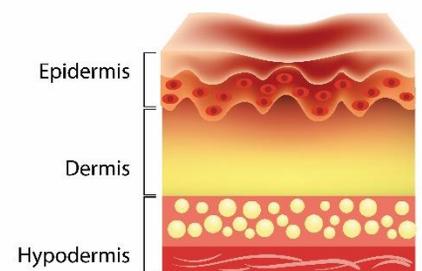
There are three degrees of burns depending on their extension into the skin layers. A fourth degree, that involves the extension of the burn to all layers of the skin and down to the bone, is often included.



First-degree Burn



Second-degree Burn



Third-degree Burn

First-degree burns are superficial. They only involve the epidermis without reaching deeper layers. A sunburn is a first-degree burn.



Bejinhan - Own work, CC BY-SA 3.0

Second-degree burns extend to the second layer of skin and often form blisters. They are painful and cause redness and swelling of the skin. Burns caused by boiling water or hot oil are second-degree burns.



Third-degree burns involve the entire thickness of the skin. They are lesions that leave large scars and must be cleaned through surgical debridement of the dead areas.



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In some texts, we find the description of **fourth-degree burns**, which are those that involve the entire thickness of the skin, subcutaneous fat, muscle, and even bone.

They are characterized by being painless as the nerve roots are completely damaged, and they lead to serious complications, including death.

The most important thing is to learn to observe the burned areas in order to calculate the extent of the damage and thus put together a plan of action. It is rare to see a type 4 burn unless it is from a serious accident or fire.

Patients with this type of burn require urgent hospital care.



Treatment

There are many natural therapies and treatments for burns and scalds. Some are quite effective, and others are unusual and dangerous (such as those who use urine or other body fluids from themselves or animals, which can cause a lot of contamination).

Egg whites over second degree burns are effective. I have seen this product stop the process and improve the burning sensation. I do not recommend applying any product that is not for the skin unless it is absolutely necessary. However, let's avoid applying butter or toothpaste.

The process that is damaging the tissue must be stopped as soon as possible. Thus, if it is a fire or chemical burn, the burned surface must be placed under running water for at least 20 minutes. The water should not be ice cold.

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If blisters form, it is important to leave them until a doctor can examine the area and see if a superficial surgical **debridement** must be performed. A debridement is a procedure in which bad skin and tissue is removed, secretions are cleaned, and clean tissue is left to facilitate scarring.

Sometimes blisters break or begin to leak fluid. In these cases, it is better for you to proceed yourself and debride the area with this **simple technique**:

With a clean scalpel or scissors, carefully remove only the thin layer that forms the blister, without cutting farther on the healthy skin. Underneath the blister is a pink inner layer of skin, which will help in the formation of a new epidermis.

This layer should be covered with an antibiotic cream. These types of creams are oily, so apply enough to cover the wound without being excessive. Its oily consistency can become liquid from the heat of the skin and spill over the sides of the wound, which is very uncomfortable.

The wound is then covered with gauze so that it is not exposed to the air, which will dry it out and make it lose its natural moisture, an important part of the process by which new epidermal cells are created. If you do not have antibiotic cream, petroleum jelly may be used. Damaged skin should be kept clean and covered with sterile gauze.

Burns are usually very painful, especially those that are superficial (first and second degree). For this reason, it is important that the patient takes **analgesic** and **anti-inflammatory treatment** for at least three days. If you are not allergic to NSAIDs (aspirin, profenid, ibuprofen), an excellent option is ibuprofen, 200mg every eight hours for three days.

You can take up to 600 mg of ibuprofen every eight hours without any impact on your health.

Be sure not to extend the treatment too long over time. I recommend it for three days, but up to five days is also a good option. If you are allergic to those kinds of painkillers, you can use paracetamol, 500 or 650 mg every six hours for three to five days.

If you see that the most superficial layer of the skin was burned, exposing the deeper tissue, the patient should be treated with oral antibiotics like Cephalexin or Ciprofloxacin for at least eight days.

You'll know that the damage is deep if you can see yellow or pearl white tissue. This is the subcutaneous cellular tissue or hypodermis that is formed by fat and fascia.

When Should I Worry?

About 95% of burn injuries can be treated without specialized supervision. However, there are exceptions to this rule:

- When the burn involves mucous membranes, such as the eyes or esophagus (by accidental or voluntary ingestion), the patient should be evaluated in a center where he or she can be treated.
- In the case of fire burns, you need to know how close the person was to the accident site. Hot vapors can burn the respiratory mucosa, causing serious damage. If the person manifests pain or difficulty in breathing, it is important that they receive specialized help.
- When there is a high-voltage electrical burn, they are not as easily evaluated as others since they can produce alterations in the electrical mechanism of the heart that can lead to arrhythmias and even heart attacks.

- If the total extent of the burn, using the Wallace rule, is greater than 20%.

In any of these situations, first aid measures can be taken, but it is important to consider the help of a specialist.

Clinical specialties involved in caring for burn patients can be internal medicine, emergency, and/or the intensive care unit. Firemen and paramedics are part of the staff that are also trained to care for a patient with severe burns. Depending on the complications of the burn, the patient will be referred to other specialists.

4. DERMATITIS

The term dermatitis is used to describe skin irritation from a variety of causes. It is a very common condition that has no specific age of onset. The symptoms caused by these irritations are very uncomfortable and sometimes embarrassing for the one who is suffering from them.

Types of Dermatitis

Atopic dermatitis, also called eczema, is an allergic skin reaction that often occurs in areas where skin flexes, such as inside the elbows and behind the knees, but is also common in the neck.

It is rare for a person to have acute atopic dermatitis. It is usually a condition seen beginning in childhood. It initially presents as a very itchy rash that may progress to a red patch of thickened skin.

With scratching it, can present fluid secretion and form real scalds and even cellulitis due to skin infection. Treatment includes adequate hydration of the skin and oral antihistamines.

Contact dermatitis is due to an allergic reaction of the skin when it comes in contact with some material (some fabrics, some kinds of wood, wool, animals). It is related to other types of allergies (rhinitis, for example). It can range from itchy red skin to real blisters that secrete fluid. It gets better with antihistamines and topical creams.

Seborrheic dermatitis is a chronic and often annoying condition that starts on the scalp and can extend to the face and ears. It is caused by a fungus and can be very irritating, although it usually does not significantly damage the skin.

It occurs on the scalp as dandruff and on the face and ears as scaly patches and red skin. It has periods when it is not active and others when it is very visible.

Atopic Dermatitis and Contact Dermatitis Treatment

One of the characteristics of dermatitis is that it causes a lot of itching. This symptom must be treated because it worsens the skin's condition and causes small wounds that can become contaminated and further aggravate the problem.

Anti-allergens or anti-histamines are medications that serve to decrease the body's response to allergens. Many of them are over the counter and effective.

Some are:

- Brompheniramine (Dimetane)
- Cetirizine (Zyrtec)
- Chlorpheniramine (Chlor-Trimeton)
- Clemastine (Tavist)
- Diphenhydramine (Benadryl)
- Fexofenadine (Allegra)
- Loratadine (Alavert, Claritin)

Claritin and Zyrtec are two of the most popular anti-allergens. One of their advantages is that they do not cause dizziness or sleepiness as side effects, so medicine can be used during the day without danger.

It is very important to read that the active ingredient of the medicine is not a combination of two different antihistamines. In some cases, there are day and night presentations, in which the day medication is the desired one and the night medication is an antihistamine that causes sleep.

I have had negative experiences with this type of combination because I did not pay attention to the ingredients of my treatment.

If your job requires concentration or if you must drive or care for a child or elderly person, avoid the use of diphenhydramine (Benadryl). While it is an effective and excellent antihistamine, its sedative effect is strong and should be taken into account.

Seborrheic Dermatitis Treatment

Its treatment is combined and consists of the use of a special shampoo for this condition and soap and creams that complement the action of the former. Recommended shampoos are those containing selenium sulfide, such as Selsun Blue, or those containing zinc, such as DHS Zinc.

The shampoo also has an effect on the rest of the body but it is recommended to use a specific wash with benzoyl peroxide to improve the results.

You should be aware that benzoyl peroxide can bleach clothing, so you should be completely dry before dressing or lying in bed. I was never given this warning when I used benzoyl peroxide for back acne, and several black shirts ended up with orange spots.

The product is very effective both for some skin conditions and for giving clothes a new look.

5. FUNGAL INFECTIONS

When we talk about fungal infections, we mean a contamination of the skin caused by fungi, which mainly reproduce in places on the skin's surface where there is a great amount of moisture.

Fungi are hard-to-control infections that lead to long treatments where you have to be consistent in order to see the desired results. Anyone can get a fungal infection, but those undergoing chemotherapy or those who have chronic diseases such as HIV are most affected.

Symptoms are common to all types of infection, regardless of the type of fungus and where it is located. You'll see red, scalded, itchy, blistered skin and fluid discharge in more advanced stages. The most common fungal infections are athlete's foot (Tinea pedis), nail fungus, ringworm, jock itch (Tinea cruris), and yeast infections.

Athlete's Foot (Tinea Pedis)

This type of infection is one of the most common mycoses worldwide. It can occur in men and women of any age. It is easy to get because it lives on humid surfaces for a long time.

We are exposed to this infection by walking barefoot in public showers or saunas. Also, when we do not wear proper socks and our feet sweat, this creates an environment conducive to the development of the fungus.

In addition, there may be foot to hand spread by scratching the foot as a result of the infection, although it is rare to find it in the hands.

Tinea pedis can cause very uncomfortable symptoms as it is usually found in the interdigital space of the toes. This type of fungus causes pain, itching, and discharge of a yellowish cellular fluid.

Treatment consists mainly of changing some habits, such as using open-toes shoes to keep the feet dry instead of closed-toes shoes or, if necessary, using cotton socks that absorb the sweat better. If for any reason your footwear gets wet or damp, it is important to let it dry well—at least 12 hours—before using it again.

It is also recommended to use deodorant foot powder, such as orthoboric powder. If you use the shower service of the health center or gym, wear appropriate footwear. Also try to keep your toenails short.

Drug therapy consists of topical antifungal cream whose active ingredient is Clotrimazole. (You can find it over the counter by the names of Lotrimin and Mycelex). This cream should be applied to the site of the lesion twice a day for at least three weeks.

Sometimes the symptoms improve before the treatment ends; however, it is very important to continue it for the indicated time so that the fungus becomes completely inactive.



Nail Fungus

Onychomycosis, or nail fungus, is an infection that is closely linked to athlete's foot. Contamination of the nail can occur adjacent to the athlete's foot.

This type of fungus is quite common in the elderly and has nothing to do with personal hygiene. Yeasts prefer moist sites, so it is common for them to grow in areas where the level of moisture is high.

Over the years, we see changes in the skin and nails; some are normal, and some are not. We often associate this increase in thickness and change in the color of the nails with age. However, this is far from a natural condition.



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Lack of hydration, age, and tight shoes create small cracks in the nail that allow the fungus to lodge easily in that area. This type of fungus does not produce itching or burning like the other ones we have reviewed. Its symptomatology is limited to the morphological changes observed in the affected nail.

Treatment for nail fungus is long and you must be constant in order to achieve the desired result. There are over-the-counter treatments with very effective active ingredients against this infection.

Soaps, medicated nail polish, and combined therapies are excellent options for improving this condition.

Treatments must be applied daily for a minimum period of 12 weeks, even if improvement is observed in symptoms before that.

In my practice, I have seen excellent results by combining several products, such as a medicated soap for hygiene and a cream or nail polish to work on it the rest of the time.

Home treatments are also very popular. In Venezuela, mouthwash (especially Listerine) and Vicks VapoRub are used for multiple infections, including this one. The truth is that these products contain several ingredients that guarantee them as powerful antiseptics.

In the hospital where I work, as there are not always all the necessary materials, we use a lot of Listerine for different types of bacterial and fungal infections, wounds, gangrene, and diabetic foot, among others, with satisfactory results.

Obviously, this type of treatment does not replace what a drug designed specifically for that condition does. But I have to say that they are tools that you have to know about and that give very effective results when it is the only thing you have on hand.

Ringworm (Tinea Corporis)

Tinea corporis is a superficial mycosis that mainly affects people with little body hair. Although it can be located in any part of the body, it is most common on the arms and legs.

It is very contagious from person to person, so it should be treated as soon as it is diagnosed. The spread from animals to people is also frequent, especially from cats and cows.

Like other types of fungi, it can be spread by skin contact in damp places where the organism can remain active for a long time. The name “ringworm” comes from the shape of the skin lesions, a fairly regular red ring with a white flaking center.

In my country, this type of infection is known as “beach fungus,” and for many, it is associated with some kind of beach microorganism. What really happens is that the areas with fungus do not get a tan like the rest of the skin. Therefore, in a light-skinned person, the fungus may not be visible, but by darkening the rest of the skin, whiter patches are left and the infection is evident.



Grook Da Oger - Own work, CC BY-SA 3.0

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Since the microorganism that causes the disease is part of the normal microbial flora of the skin, some individuals are more likely to become infected, such as those who sweat profusely or suffer from hyperhidrosis as well as athletes who practice high-contact sports such as wrestling or soccer.

Once the characteristic lesions are observed, a series of measures must be taken to start treatment properly and prevent further contagion.

a) Natural Treatments

The locals at the beach towns always have some kind of prevention or cure for the “beach fungus,” and it is common to see women and men applying any product to avoid or heal it.

Some of the recommended household cures are to place garlic paste daily on each of the stains for 20 minutes for two weeks.

Cold thyme infusion is also used on the skin to improve any fungal infection. Tea tree oil is said to be very useful in these situations as it acts as a powerful, natural anti-fungal and restores the skin to its healthy state.

They recommend using it on each of the fungal stains and drying it well, if necessary, with a hair dryer. This procedure is performed for a whole week.

b) Medication

First the skin must be kept dry, and the person infected should avoid contact with people who have these types of lesions. If someone in the family has the mycosis, the surfaces they have come into contact with should be disinfected, and bedding should be changed frequently. Hands should be washed after petting any animal, especially cats and cows.

Drug therapy consists of topical antifungal cream whose active ingredient is Clotrimazole. (You can find it over the counter by the names of Lotrimin and Mycelex). This cream should be applied to the site of the lesion twice a day for at least three weeks.

It is very important to be consistent with the treatment for the indicated time so that the fungus becomes completely inactive.

Ringworm of the Scalp (Tinea Capitis)

Scalp ringworm is a mycosis that belongs to the group of superficial mycoses, the same as Tinea corporis. It occurs as a scalp lesion that causes hair loss in a specific area.

The type of damage that occurs has to do with the severity of the disease and the type of fungus it is. Usually a hairless, non-inflamed, scaly area is seen. It is also common to see a red ring with a white center (ringworm) that expands when untreated.

This infection can occur at any age and the mode of transmission, like its predecessor, is by direct contact with an infected person or animal, or by contamination in moist places.



Treatment of choice for Tinea capitis is an oral antifungal called Griseofulvin, which you can find by the name of Grifulvin V or Fulvicin. However, to acquire it, you need a medical or a veterinarian prescription. Griseofulvin can be found in spray form and is sold over the counter by the name of Grisol 1%. It will help contain the infection but not cure it completely.

Oral therapy consists of 500mg a day to be administered in two doses (1 tablet of 250mg in the morning and another in the evening) for about three months. The spray, which is not the treatment of choice, needs to be applied to the alopecia area twice a day.

Treatment should not be stopped if improvement is seen before three months since before that time, the medication has not finished deactivating the fungus; therefore it can reappear. Once the infection is gone, the hair comes back without any problem.



Jock Itch (Tinea Cruris)

Tinea cruris is a superficial skin infection caused by fungi that affects either sex but is more common in overweight men. Despite its name, its location is diverse. It can be seen in the groin, in the intergluteal fold, or in skin folds.

It is very common in obese people, but it is not exclusive to this condition. In any area where there is rubbing and excessive sweating, this infection can occur.

In some cases, especially in people with immunosuppressive conditions, athlete's foot can contaminate the lower limb and develop into jock itch.

It is characterized by the formation of a large red plate, which is very itchy and surrounded by a halo of more intense color that marks the limit between healthy and contaminated skin. It's easy to confuse it with skin irritation. The way to differentiate them is that in irritated skin, there is no clear limit as there is in jock itch mycosis.

Treatment is similar to that of athlete's foot, with topical antifungal creams that are OTC medications. Clotrimazole in cream form for at least three weeks (Lotrimin 1%) is usually very effective when combined with the necessary hygiene measures.

You must keep the area dry and clean, and try not to apply local steroids unless directed by your health care provider; apply the appropriate therapy for athlete's foot, if present. Remember that the application of the cream should not be stopped before three weeks even if the symptoms have improved.



6. INSECT BITES AND STINGS

We are exposed to insect bites and stings at all times. These injuries are usually mild and sometimes go unnoticed. Insect bites are usually very itchy because they create an allergic reaction on the skin. There are people who are much more sensitive to some bites and stings; in these cases, you have to be very careful and watch out for any symptoms.

Treatment of a sting is simple and relies on the application of topical creams or lotions to improve symptoms. Calamine lotion usually provides significant relief from itching and gives a cool sensation to the skin. However, it is best to use a cream with corticosteroids that help reduce inflammation and improve redness.

Itching can become a very annoying symptom, so it is recommended to take antihistamines for three days (Zyrtec or Chlor-Trimeton). The vast majority of insect bite cases are resolved within a few days without major complications.

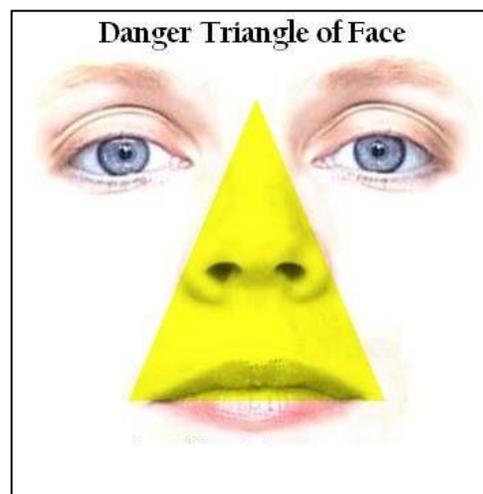
When Should I Worry?

When the bite is on the face, we must be aware of the changes that occur in the patient, especially if it is near the eyes or in the so-called “danger triangle”.

Patients who are allergic to food, dust, and other agents are often also susceptible to stings.

In these cases, it is important to notice if the person manifests any respiratory symptoms in the first hour after the sting.

If the sting was made by a scorpion: Most scorpions do not produce much damage, but some contain venom that is very toxic to humans. Therefore, it is important to closely monitor a person who has been stung by a scorpion.



Warning Signs

- Difficulty in breathing
- Sudden increase in heart rate
- Swollen lips and face
- Numbness of the skin
- Nausea.

How Can I Be Prepared?

It is absolutely necessary to have an epinephrine self-injector pen (Epi-Pen, Auvi-Q, Adrenaclick). This instrument can save lives in the event of an anaphylactic reaction. Whether you can get help or not, the seconds saved by an epinephrine injection are very valuable and can define the boundary between life and death.

The epinephrine auto-injector consists of a pencil that comes loaded with enough adrenaline for one patient. All you have to do is remove the safety catch and press the pencil on the middle of the thigh, and the injection will be triggered.

Once injected, the patient should improve within the next half hour. If the symptoms continue, a second injection can be given.

Ninety-five percent of cases that do not respond completely to the first dose will respond to the second. If you are able to seek specialized help by this time, explain the number of injections given and the symptoms the patient had. If not, continue strict monitoring of that person for at least 24 hours.



7. CELLULITIS AND ABSCESSSES

Cellulitis is a very common bacterial skin infection that produces signs of inflammation, progresses very rapidly if not treated immediately, and can lead to abscesses.

The skin retains a number of bacteria that make up the so-called bacterial flora. Under normal conditions, these microorganisms do not produce infections, but if the skin suffers a wound or cut, these bacteria can easily infect it.

This is why it is recommended to clean the skin immediately if you have a cut, a sting, or an injury. In addition to this, one must take into account the changes that occur in the skin in terms of temperature, color, and degree of inflammation.

The skin should be cleaned with soap and water, and if the wound is very large, honey, which is a powerful bacteriostatic, can be used. My experience with honey is excellent, even in diabetic patients, who are more prone to infection. I always recommend it.

Signs of inflammation occur about three hours after the injury. They include an indurated, red, hot, and painful area near the wound site.

As these bacteria normally live on the skin, they infect quickly, and this contamination progresses within a few hours. When left unattended, it can even form a collection of pus that we know as an abscess.



For this reason, it is important to start antibiotic treatment early when there is a wound on the skin.

Treatment

It is important to first disinfect the area with abundant soap and water. If the cut is large, a sterile gauze pad should be passed over it to remove any residue inside. As I mentioned earlier, honey is a good choice if you don't have any special creams or medications.

Sometimes we do not remember how we got an injury, but there are signs of inflammation (heat, pain, and redness). These symptoms combined are unmistakable signs of inflammation. Anti-inflammatory/analgesic and antibiotic treatment should be initiated early. The antibiotics used are broad-spectrum, with Cefadroxil (Duricef) being the drug of first choice.

A practical alternative is fish antibiotics, which are more easily found in extreme situations. Ciprofloxacin and Cefalexin are excellent as first-line antibiotics for skin infections.

As for analgesics, Ketoprofen has an excellent analgesic and anti-inflammatory action. So do Ibuprofen, Profenid, and Diclofenac potassium.

Remember to always be aware of the patient's allergies. If the patient is allergic to NSAIDs (non-steroidal anti-inflammatory drugs) the first choice of analgesics are Acetaminophen, Paracetamol, or Dipyron.

The dosage in the case of NSAIDs is one every eight hours for three days (even if there is no pain), and Paracetamol, Acetaminophen, and Dipyron are 500mg every six hours for three days. Both anti-inflammatories can be used up to five days, but it is important to know that NSAIDs can cause heartburn.

When the treatment begins, depending on how advanced the infection is, it may start to develop an **abscess**.

An abscess is a collection of pus inside the skin. It is characterized by a fluctuating, soft, whitish area with swollen skin around it. Abscesses can have any location. They are common in sites near open wounds, in people with a lot of body hair, breastfeeding women (known as mastitis and breast abscess), and near ingrown nails.

These should be drained to improve symptoms such as pressure and pain. The relief is immediate, although the procedure may be a little uncomfortable as it is an area that is very sensitive. To open it you, need a sharp object (scalpel or scissors) to enter that cavity.

Be sure to open the skin sufficiently as sometimes the content is very thick and cannot get out through a very small space.

Keep in mind that this area is swollen and very painful, so the skin is hypersensitive. Applying some local anesthesia, either in cream or injected,



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is a good idea, although it does not always achieve the goal of anesthetizing the skin with such an advanced inflammatory process. Once you get to the cavity, a lot of pus will come out.

As doctors, we are used to draining abscesses without being directly in front of them as the secretion can come out under pressure and contaminate your clothes or enter your eyes and mucous membranes.

Whenever you see a doctor draining an abscess or cleaning a wound standing in front of it, he or she has certainly not had any unpleasant experiences with these situations. I have had a good number of pus splashes, so I stay as far away as I can!

All the pus that comes out must be wiped away either with sterile gauze or clean cloth, and a cleaning has to be done by disinfecting the inside with saline, hydrogen peroxide solution, or boiled water.

It is important to cover it up for a few days as it may continue to discharge fluid, although serosal, not purulent. Cleaning has to be done every day with soap and water. Eventually the hole where it was drained heals without a problem. You can apply antibiotic cream over this orifice.

My personal experience with abscessed cellulite occurred when I was in my fourth year of medical school, after going to the beach. During the day, I noticed a small pimple on my leg and squeezed it.

When I got home, my skin hurt a little, but it was not a concern. Within two days, the area was very swollen, and I decided to self-medicate with the antibiotic I thought it was appropriate.

The antibiotic didn't work, and a circle about two centimeters in diameter formed on my leg, completely black, and began to drain pus. I went to the dermatology service, where they scolded me and prescribed Cefadroxil.

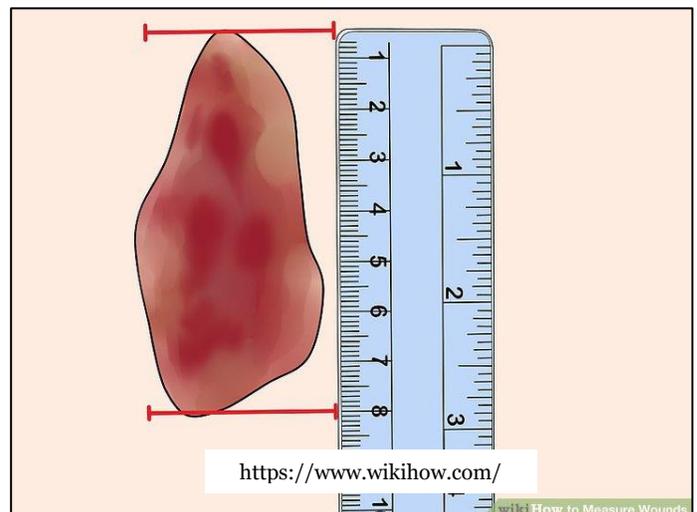
With the right antibiotic, my abscessed cellulitis improved completely. However, that small area remained totally insensitive. In the picture above, you can appreciate the souvenir that that beach experience left on my skin.



When Should I Worry?

If after five days of treatment the infection progresses, the inflammation has not improved, and the pain increases, it is necessary to seek professional help. The antibiotic may need to be rotated.

One method of objectively knowing whether or not the infection has progressed is to mark the outline of the red zone with a marker pen or measure it with a measuring tape and take note of this measurement. The area must be measured in length and width.



8. ULCERS

A skin ulcer is a wound that forms from different causes, from systemic, such as vascular problems, to traumatic, such as pressure ulcers or bedsores.

The main problem with ulcers is that they are easily contaminated because the normal bacterial flora of the skin tends to grow in that tissue. For this reason, it becomes very difficult to treat and cure them.

They have arbitrarily been divided into two types: acute and chronic. Acute ones appear suddenly, are usually traumatic, and improve easily. Chronic ulcers are those caused by systemic diseases or pressure and take much longer to improve.



Those with diseases such as diabetes or HIV and people who are in a post-chemotherapy state or still receiving it, among others, are at risk for complications from ulcers and take longer to heal. Smokers do not heal properly and have more problems than non-smokers.

Causes

Trauma can form ulcers. Whether it is a fall or getting stuck by an object, it leaves a wound that sometimes does not need to be stitched but is not completely covered with skin.

Depending on the type of trauma, these can get better quickly or take a longer time. However, a traumatic ulcer usually gets completely better in four to six weeks.

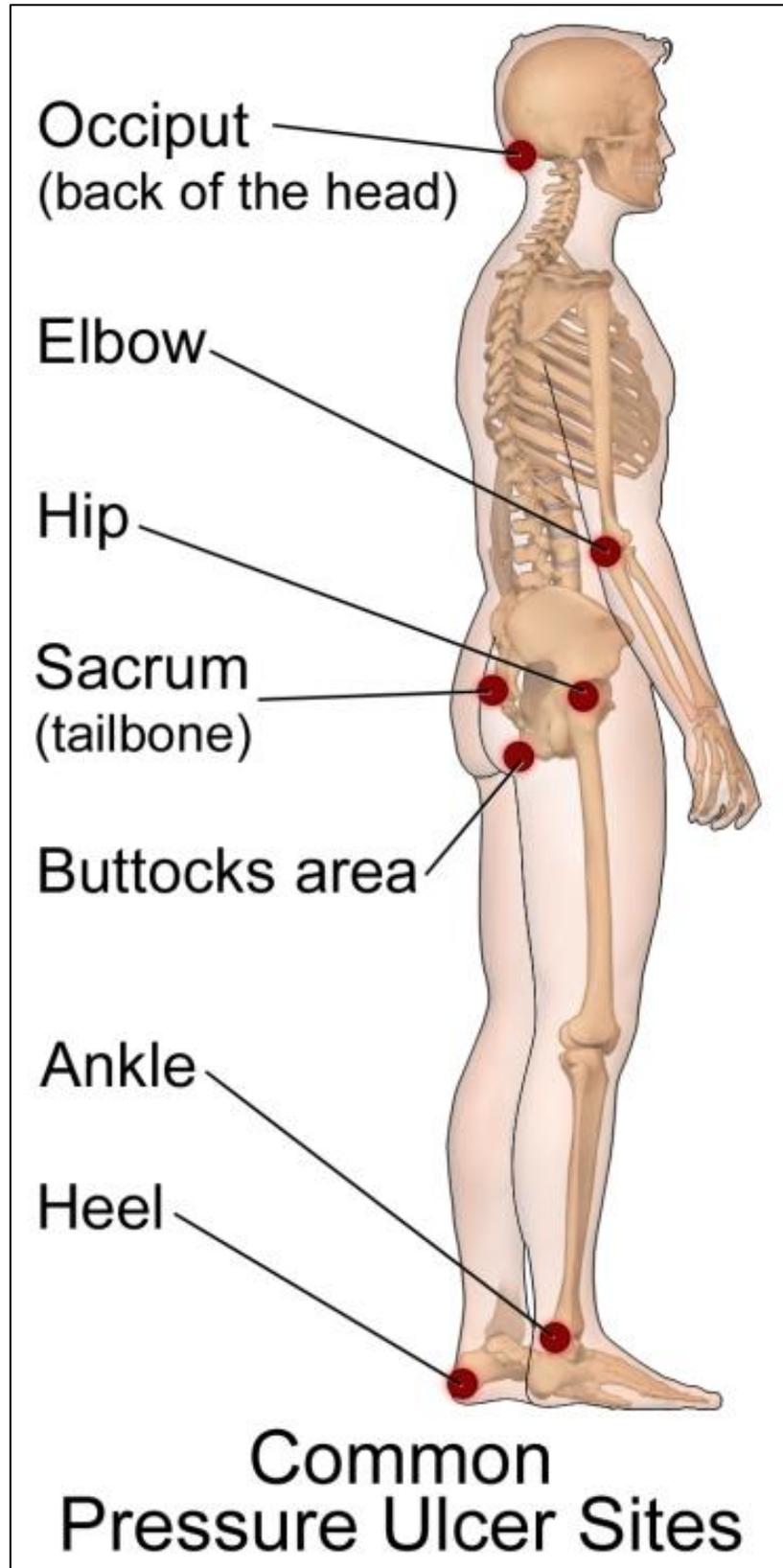
Advanced vascular diseases such as varicose veins, atherosclerotic disease, and poorly controlled high blood pressure are prone to ulcer formation.

Diabetic patients tend to lose sensitivity in their palms and soles, so they must be very careful because any wound that goes unnoticed can progress to an ulcer.

One of the most common causes, and the one I have seen and treated the most, is pressure ulcers in bedridden patients. Pressure ulcers, or bedsores, begin with mild to moderate skin changes, such as redness and blistering, but progress rapidly.

As these patients stay in one position for many hours, the surface they are lying on exerts pressure on the areas with greater exposure, such as the sacrum and the heels, and this is what leads to the lack of skin irrigation and eventually to necrosis and ulceration.

The care of bedridden patients is very complicated and requires training, if not professional at least some kind of practical education to avoid this type of situation as much as possible.



BruceBlaus, Own work, CC BY-SA 4.0

Treatment

When the ulcer is caused by a systemic disease, the disease must be treated along with the injury. If one doesn't get better, the other won't either, so the treatment is combined.

Depending on the degree of contamination of the ulcer, different therapeutic approaches can be used.

In a clean ulcer, you can see pink, healthy tissue without discharge of liquid and without particular odors. This type of lesion is important to keep clean and observe its evolution every four or five days, measuring it with a tape measure.



Antibiotic ointments, such as bacitracin, help keep the ulcer hydrated and uncontaminated, which helps it heal. Gels with hydrocolloid components, such as Duoderm, are excellent for accelerating the granulation process and new skin formation.

There is no special technique for applying these products; just keep the lesion clean and dry before placement, and make sure to fill the entire surface of the ulcer. The ulcer must be kept covered with gauze impregnated with the product you decide to use.

Contaminated ulcers are the ones that are more complicated to treat. The degree of infection and the patient's condition should be assessed.

Recognizing these wounds is easy as they usually have a yellow-green background; some secrete a lot of fluid or pus, and the material can be fetid.

These sores must be kept clean. Some must be cleaned even two and three times during the day. It all depends on how quickly the secretions build up there.

Sacral sores are some of the ones that get infected quickly once they form. This happens in bedridden patients who keep this area moist by wearing a diaper, where stool and urine accumulate. Even in the most careful and clean patients, it is quite difficult to keep this area completely dry.

For these cases, patches containing silver alginate are ideal because they absorb secretions and promote tissue formation. The dressing should fill the cavity completely. The necessary amount should be used, especially in those ulcers that are excavated.

A gauze dressing or wound pad should be placed over the patch to isolate the area being treated. Patches should not be changed daily unless they are heavily soaked in fluid.



Usually at the beginning of treatment, for the first two weeks, you will use one daily, switching to one every two or three days as the amount of discharge decreases.

Whatever the cause of the ulcer, it is very important to keep it dry and free of purulent discharge. If necessary, the patient will be given oral antibiotics to improve the infection.

If the ulcer has a very bad odor, it can be cleaned with vinegar or Listerine. Both are bacteriostatic products that prevent overpopulation of microorganisms in the tissue.

What Do I Do if I See Necrotic Tissue?

Sometimes a pressure ulcer can go unnoticed, especially the sacral ones that may be forming in the intergluteal fold and are not noticed until they are already advanced.

In these cases, there may be black tissue that causes much alarm, but it is actually skin, fat, and cellular tissue that has lost its irrigation due to excessive pressure. Generally, this tissue is dry and does not have any specific smell. It is dead skin and must be removed to promote wound healing.

The procedure to remove the area with necrosis is called **necrectomy**. This is a surgical technique that is easy to perform and dramatically improves the progression of the ulcer.

To proceed with the removal of the necrotic tissue, you should have scissors or a scalpel blade number 11, gauze, gloves, hydrogen peroxide or solution, and a bio-waste container or an exclusive garbage bag to dispose of these remains.



Step 1

Clean the area you are going to work on, and prepare all your material to have on hand. The tissue you are going to work on is dead skin and fat, therefore there is no sensitivity and no need to apply any type of anesthesia.

Step 2

Identify the area you need to remove. With gauze, secure the tissue between your fingers and start cutting with the scissors or scalpel underneath, without going too deep.

The limit is set by the depth of the necrotic scab.

Step 3

Check that there are no necrotic areas left. It is necessary to remove all or most of that tissue. Underneath the necrotic area, there is usually an elastic, rubbery, whitish-colored tissue called fibrin.

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Fibrin promotes healing, but in large quantities, it keeps the wound very moist, so some of this tissue should be removed as well.

Step 4

It is common for some areas to bleed after this procedure. This should not be a cause for concern. Bleeding means that you have reached the healthy, living tissue from which the new skin will form.

At the end, you can apply some hydrocolloid gel or dressing inside the ulcer and cover it with gauze or surgical pads.

Check for areas of necrosis in all of that patient's ulcers, and perform this procedure carefully on all of them and whenever necessary.

When Should I Worry?

Vascular ulcers, especially varicose ulcers, can present a very **alarming bleeding**. The limb can be bandaged by applying pressure for a few minutes to try to stop the bleeding.

If the same amount of blood continues to flow for more than 30 minutes, it is important and necessary to seek help.

Contaminated sores can cause a blood infection called **sepsis**. In these cases, the patient has a fever and discomfort. Initially this condition can be treated with Cefadroxil 500mg orally every 12 hours for one week.

A practical alternative is fish antibiotics like Ciprofloxacin and Cefalexin, which are excellent as first-line antibiotics for skin infections.

If the fever does not improve or if other symptoms, such as lethargy, develop, it is necessary to receive more powerful antibiotics intravenously.

When the ulcer progresses instead of getting better despite treatment, whatever the cause, it is imperative to ask for help. You do not necessarily have to go to a health care facility, but you do need to contact a professional to guide the process.

CARE OF THE BEDRIDDEN PATIENT FOR THE PREVENTION OF BEDSORES

The bed-bound patient should be mobilized every four hours. This avoids accumulating pressure on specific areas of the body. The most frequent sites of pressure ulcer formation are the sacral or occipital regions, both hips, heels, and buttocks (although rare).

Prevention is based on mobilization and weight distribution so that there is no more pressure on some sites than on others.

In bedridden patients who remain in that state or are expected to be in that condition for a long time, a special air mattress that comes with a pump that distributes the pressure is recommended. It is an excellent tool, especially at night, when mobilization is not as active as in the day.

In my country, this type of device is very expensive for most people, especially for those who go to the public hospital. Our way to prevent pressure on these declining areas of the body is to make small pillows filled with birdseed. Birdseed is a material that molds to the site and cushions the pressure.

We ask the patient to make 10 or 15 pillows, 4x4 inches, using the pantyhose and filling it with birdseed. Each of these small cushions are placed in the areas where the greatest pressure is observed (those mentioned above).

It may not be the most sophisticated solution, but it is very effective, practical, functional and, above all, affordable.

9. OPEN WOUNDS

Open wounds are injuries that frequently occur from accidents at home associated with sharp objects, falls, or handling of broken glass or bottles, among others. When they are minor cuts, the care is easy and very basic. However, these wounds may be deeper and require other treatments, such as stitches or antibiotics.

How to Examine the Depth of a Wound

The wounds are either superficial or deep depending on the layers of skin that have been cut. When we notice the wound, we must open its edges to expose the inside.

If the visible part is only red tissue that reaches less than 0.2 inches, the wound is superficial. If, when exposing the inside of the wound, we see yellow tissue such as fat or pink tissue of fibrous consistency and the depth is greater than 0,2 inches, the wound is considered deep and will need stitches, depending on its length and bleeding.

Stitches are used to bring the edges of the wound closer together to prevent infection, stop bleeding and promote a more aesthetic scar.

Primary Treatment of the Open Wound

Once we evaluate the depth of the wound and classify it as superficial or deep, we must clean it. This step is paramount and should not be skipped under any circumstances.

Inside the wound, there may be traces of dust, glass, dirt, and normal flora of the skin, among other microorganisms, which are easily washed away with a primary cleaning.



Alif Hilmi Bin Nazri, Own work, CC BY-SA 4.0

With clean water or sterile solution, we drop the liquid on the wound for a few seconds. After we do that, we proceed to clean the wound with a sterile gauze or clean cloth. Cotton is not recommended as it leaves a lot of residue that can become contaminated over time. Although solutions such as povidone are not always necessary, this will depend on how dirty the wound is. In my daily practice, I do not use povidone for wounds because it slows down the scarring process. I always prefer alcohol or hydrogen peroxide. If the wound is larger than two inches and looks open, that injury will require stitches.

Stitching a Wound When Asking for Help Is Not an Option

Step 1: Stop the Bleeding

In order to suture and evaluate the work being done, it is necessary to stop the bleeding from the wound. Once the injury is sutured, the bleeding will stop in 85% or more of the cases.

The first measure we should take is to put direct pressure on the wound for at least two minutes or apply ice. Be careful with ice as it can burn the skin. If these measures do not stop the bleeding completely and the wound is in the arms or legs, it is necessary to place a **tourniquet** to be able to work without problem.



The tourniquet is a device used to put external pressure on the blood vessels that are causing the bleeding until the cause is fixed. The Red Cross recommends placing it two inches above the injury. However, if it is placed higher, there will be no further damage to the patient.

Although there are special materials for and even professional tourniquets, the truth is that you can improvise with almost anything that can form a loop around the limb where you want to place it. If you have a latex glove, this can serve as a tourniquet. You must place it over the bleeding injury.

In the section on the cardiovascular system, we expand on the subject of bleeding. Here we only touch on the topic of tourniquets for moderate bleeding.

Step 2: Prepare What You Need for the Procedure

Ideally, you should have professional suture material: either nylon thread, which is what us doctors use to suture the skin, or surgical skin staplers that are very practical, fast, and easy to use. The surgical nylon thread comes with the needle attached. This needle can be straight or curved; the straight one is easier to handle and does not need any special surgical equipment.

The stapler comes preloaded and sometimes contains a kit that includes the device to remove the staples once the wound is healed. You can also buy this remover separately if your stapler doesn't include it.

If you do not have any of these materials available, you can use sewing thread and a needle. Be sure to sterilize the needle by placing it over a flame for 30 seconds. Floss is also a strong material and could be an option, although it is a bit thick for what we want to do. You will also need a pair of scissors and sterile gauze or a clean cloth, enough to support the site to be sutured and to clean the wound after the procedure is done.

Step 3: Anesthetize the Wound

Make sure the wound is well cleaned, with no traces of dirt or other debris. It does not hurt to reclean the area with soap and water or to use alcohol to disinfect it.

If you have anesthesia (1% or 2% lidocaine), you can inject 1cc into the edges of the wound without deepening it.

Anesthetics like lidocaine are available as gels, creams, liquids, and sprays. You can use any of these presentations if the idea of injecting the fluid into the wound does not sound appealing to you.

If this situation finds you unprepared, you can always proceed to numb the area with ice for one minute on the wound.

Step 4: Stitches Procedure

Whether you use a stapler or thread, the first thing you need to do is determine the direction of the wound so you can suture in that direction. To be well oriented, push the wound together with your fingers. The first stitch is placed in the middle of the injury. This way you ensure that it remains in a straight line and that it heals properly without lumps.

If you use thread, you shouldn't go too deep with the needle. Start the stitch about 0.2 inches outside the wound. Pass the needle through the two edges, secure it with a double knot, and cut the thread. The knots should not be too tight or too close together as this can cause necrosis and death of the skin. Remember that the wound caused some blood vessels to be sectioned, so this tissue does not have good vascularization.

You should place the second suture halfway between the end of the cut and the closest stitch. Repeat until the wound is sealed. A four-inch wound requires between two to six stitches, but this can vary.

Step 5: Wound Cleaning and Aftercare

As soon as you finish, disinfect the wound with alcohol and cover it with sterile gauze or clean cloth. If you have any antibiotic cream, you can use that too. I do not use or recommend using povidone iodine (betadine) on wounds as it slows down healing and can cause a burning sensation. I prefer alcohol, and it is what I use in my daily practice. Never use cotton wool or pads to clean the wound because these give off fibers that remain between the threads and can cause contamination.

The stitches must be cleaned daily with soap and water and should be left for seven to eight days. A week later, check that the wound looks like it is healing; sometimes it develops a small scab. One sign that the wound is healing is that it starts to itch. This should not worry you as it is part of the physiological process of skin healing.

The stitches should be removed with attention so that no trace remains inside the skin. However, if there is any residue left, the skin itself will take care of expelling it eventually. Surgical staplers have their own special device to remove the staples from the skin. It's easy to use and fast.

The total skin recovery process takes up to one year, so if you feel a little bump or see that the scar is a darker color than the rest of the skin, you just have to be patient. Eventually that skin will look almost the same as before.

10. NAIL TRAUMA

Trauma to the nail can occur by various mechanisms. The main one is a **blow** that, when strong enough, causes bleeding in the nail bed and the nail looks a little purple. When there is **repeated trauma**, as in the case of dancers, professional football players, and runners, the nails can be deformed.

Another mechanism of trauma, very common in children, is nail biting. This habit results in softening of the nail, loss of cuticle, and contamination that can be very serious and difficult to manage.

What Can I Do at Home?

It is rare that trauma to the nail is severe enough to require emergency assistance. Most nail problems can be handled easily at home. If there is a bruise under the nail on the nail bed and it causes pain or a lot of pressure, you can drain it. You don't have to use a scalpel to do this. With the help of a sterile needle, you can use the one in a syringe, you'll be fine.

The most important thing is to leave your finger soaking for 10 minutes in warm water. This step is essential to make the nail softer and the bruise more liquid. If the nail has come off completely or almost completely, try sticking it back on top of the bed with adhesive around it. This technique has two objectives: one is to serve as a guide for the new nail that will come out, and the other is not to lose the space of the nail, which, when empty, can form skin and scar.

Ingrown Toenails (Onychocryptosis)

Onychocryptosis is a very common pathology. Although I have never suffered from it, I have had several cases, including a colleague at the hospital and several military personnel in Amazonas. In this condition, the nail grows abnormally, cutting one side of the nail bed and getting into the skin.



ExistentialExplosion at English Wikipedia, CCo

This situation, besides being painful, usually causes the contamination of the affected finger, so the patient seeks to cut out only the part of the nail that is embedded in the skin for a temporary improvement.

Dealing Effectively with Ingrown Nails Without Leaving Home

In order to break the cycle of the ingrown nail, it is necessary to perform a procedure that, although a little painful, is very effective.

The first thing I like to do when I have to perform a surgical procedure on inflamed skin is to indicate antibiotic and anti-inflammatory for a few days, which assures me that the healing will be better and the surgical procedure will be well tolerated by the patient.

In the case of onychocryptosis, if the toe is inflamed and sensitive with discharge coming out of the sides, I indicate Ciprofloxacin 500mg every 12 hours for 10 days and Ibuprofen 200mg every 8 hours for 5 days. On the fifth day of the antibiotic, I check the condition of the foot, and usually it is time to perform this technique.

The idea of the procedure is to remove the ingrown piece of nail from the skin and cut it down to the base so that it does not grow back in that direction. It is a very effective technique that prevents the nail from growing back ingrown in many cases.

If it happens again, the nail must be completely removed so that a new one grows in. This should be supervised by the specialist who will work so that it does not deviate from its direction.

Step 1

The first thing you do is soak the affected foot in a solution of warm water and soap for 15 minutes.

Step 2

Remove the foot from the water, dry it well and clean the toe with alcohol.

Step 3

With a rubber band, make a firm tourniquet at the base of the affected toe to decrease sensation and prevent bleeding. At this point, you can apply anesthetic cream or spray. Remember that this procedure is painful, but the benefit is incredible and the relief immediate.

Step 4

Look for the upper edge of the ingrown nail and pull it out of the skin over its full vertical length. This can be done with a sharp instrument such as a thick needle. Even flossing works to effectively pull out that piece of nail.

Step 5

With scissors or a scalpel blade, cut that piece of nail lengthwise, including the base.

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Clean the bed well, which may have traces of pus in it. Remove the band from the base of the toe or finger.



The procedure is completed by suturing the skin to make the surface flatter. However, this can wait for a consultation with a specialist.



With the technique described, the pain improves 100% as well as the infection, partially curing the patient who, hopefully, will not have recurrences in the future. If it happens again, this procedure can be done again, and it is necessary to go to the specialist when possible to have it completed.

Antibiotic treatment should be continued for the remaining five days and the region operated on should be cleaned daily with alcohol. Also, for one week, wear comfortable or open shoes.

HEAD AND NECK

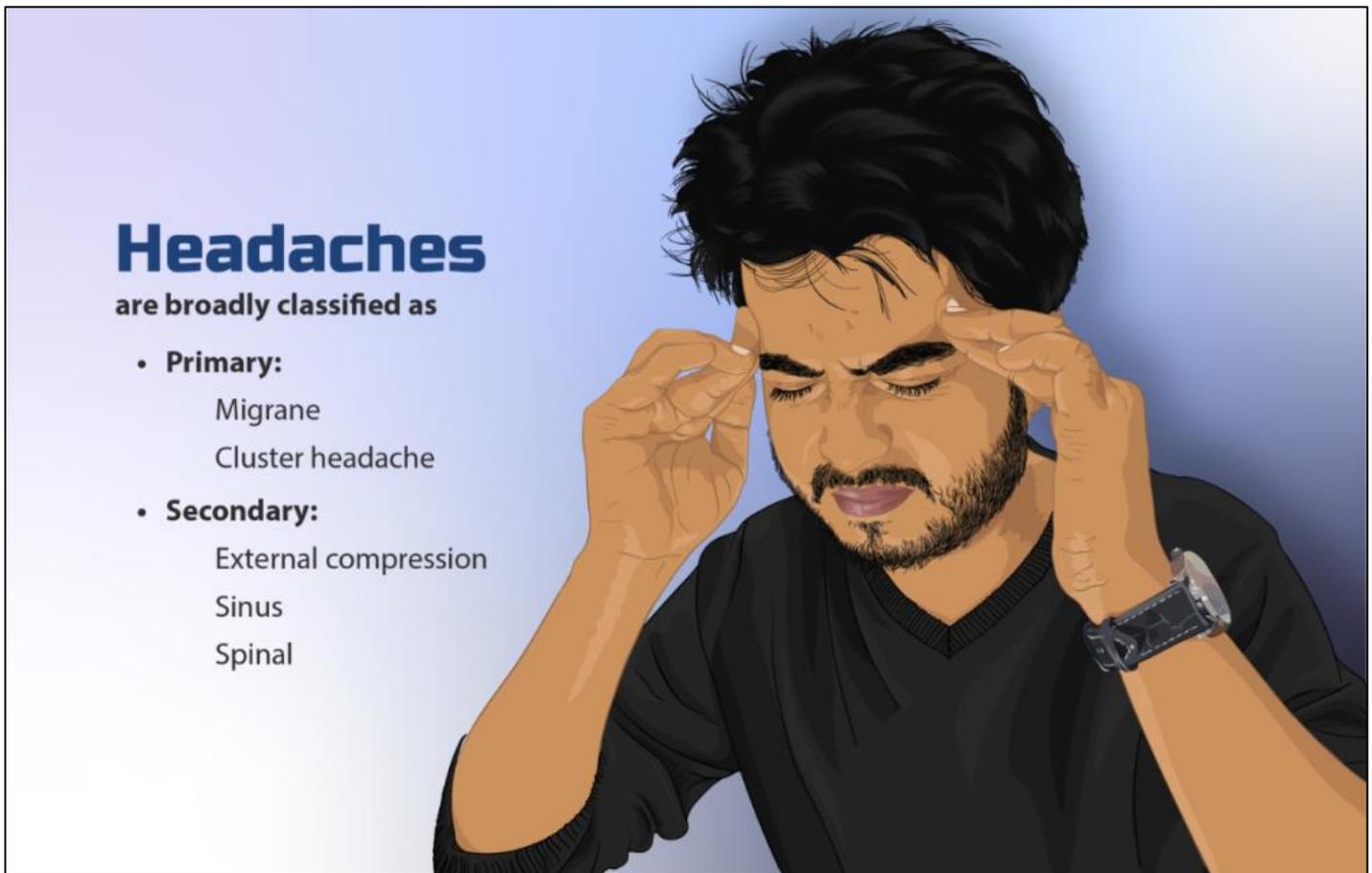
1. Headaches and Muscle Contractures

Headaches are a very common symptom that has affected most people, both children and adults, at some point. Its causes are diverse and range from pain from stress or tension to vascular conditions. Headaches can also be a symptom of a problem elsewhere, such as the sinuses, neck, or spine.

Types of Headaches

Headaches are classified as *primary* or *secondary* depending on whether they originate as an isolated disease or are an expression of another problem. Ninety percent of headaches are primary and benign.

In other words, even though the pain can be severe, as in the case of migraine, it is not caused by a life-threatening condition. On the other hand, the secondary headache manifests itself as a symptom of another disease. Most are problems that can improve without major complications, such as neck muscle contracture or sinus congestion.



<https://www.myupchar.com/en>, CC BY-SA 4.0

a) Primary Headaches

Migraine is the most common type of headache. Most of us have had a migraine attack at some point. This type of pain is characterized by being strong and having a series of symptoms that accompany it, making it a real, often disabling condition.

Migraine is subdivided into more than two hundred types, according to the characteristics of the pain. The most common are *migraine with aura* (complicated migraine), *migraine without aura* (common migraine), and *chronic migraine*.

When we talk about aura, we are referring to a series of sensory events that can precede the intense headache of migraine. Some people report a sound seeing a bright halo around things, or even a different smell before the headache.

Thus, a person who suffers migraine attacks with aura is able to recognize the arrival of one of these events by feeling the previous symptoms.

Migraine without aura is the most common. It is a severe headache that can last from a few hours to a couple of days. It is accompanied by photophobia, nausea, and vomiting.

Cluster headache is one of the most painful headaches that a person can experience. It presents as a brief, excruciating, unilateral headache around the eyes. They normally last around thirty minutes to three hours.

They generally come as clusters of time, affecting the same part of the head at the same time of the day (commonly during sleep). It is associated with runny nose, lacrimation, and red eyes.

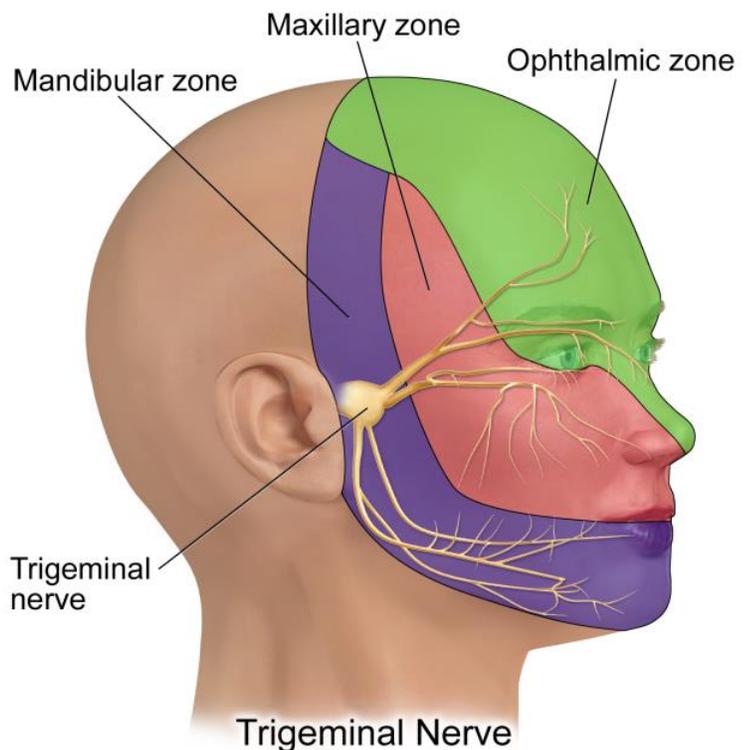
Tension-type headache is the most common type of headache diagnosed in adults. It presents with a tight, band-like pain around the head triggered frequently by fatigue or stress.

Anxiety, poor concentration, and difficulty sleeping may also be seen accompanying it. Relaxation, massages, hot baths, and avoidance of stressors are the first recommendations given to these patients.

Trigeminal neuralgia

The trigeminal is a cranial nerve that has three branches that are distributed between the skull and the face. Its inflammation produces an intense, very annoying pain.

Many refer to it as one of the strongest burning pains they have ever felt. It is not the most frequent condition, but it does occur, mainly in the elderly.



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b) Secondary Headaches

Cervicogenic Headache

This term refers to headaches caused by tension of the muscles of the neck and spine as well as those of the occipital region of the skull. The headache is intense and similar to a migraine; in fact, it is very difficult to differentiate them. Some of the factors that contribute to the appearance of this type of headache are stress, eyestrain, tiredness, and trauma.

It is important to differentiate it from migraine because the treatment is different. Although both improve with the administration of analgesics, in the case of contracture of the muscles, a muscle relaxant and other therapies, such as massage and meditation, should be added.

Sinus Headache

Sinus congestion, or sinusitis, is one of the conditions most often associated with headaches. It is easy to differentiate from a migraine because it occurs in patients who are allergic or who have a process that involves a lot of mucous secretion through the nose and mouth. The sensation is one of strong pressure on the face and the front of the head and may be associated with fever, sore throat, and earache.

1. **Frontal sinuses**
2. **Ethmoid sinuses**
3. **Sphenoid sinuses**
4. **Maxillary sinuses**

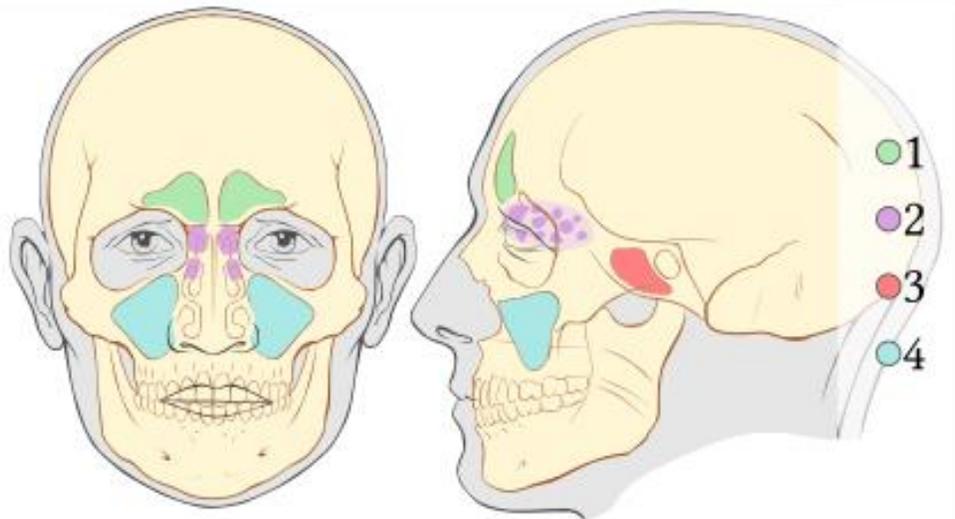


Illustration by Michał KomorniczakThis, <https://commons.wikimedia.org/w/index.php?curid=8158260>

Hypertension Headache

Increased blood pressure is a cause of headaches that can lead to serious complications. Many patients are hypertensive and do not know it, so they do not receive treatment.

Although headaches are not a specific symptom of hypertension, when a headache occurs in a patient suffering from high blood pressure, it should be treated immediately as it is a complication.

Hypertension is often called a “silent killer” because it can remain silent for years as the body adapts to these high blood pressure values. This is why we can find patients with exaggeratedly high blood pressure levels who did not know they were suffering from hypertension.

I recommend having a blood pressure monitor as there is no other way to know this number.

Treatment Options

Headaches usually get better with common painkillers. NSAIDs work very well in those who are not allergic and do not have a chronic condition.

The combination of acetaminophen, aspirin, and caffeine (Excedrin Migraine) has a very good tolerance and lessens pain because this medicine adds the effect of caffeine, which contracts the blood vessels, to the analgesic effect of the aspirin and acetaminophen.

Lifestyle changes should be taken into account to prevent headaches. Avoiding situations of stress and tension sometimes is necessary as these can be triggers for the pain.

On the migraine subject, I have a lot of experience since I have been suffering from migraines for many years. Although they have improved over time, I occasionally encounter this unpleasant pain again.

My triggers were sleeplessness, long hours without food, and red wine. It was important for me to identify these triggers so that I could avoid them and space out the crises.

In my case, the pain lasts 48 hours after it starts. The onset is slow and progresses until it becomes very annoying. As the hours pass, other symptoms are associated with it, such as hypersensitivity to light (with even TV or cell phone light bothering me) and nausea.

Some of the tricks that work for me are resting in a dark and quiet place with a comfortable temperature and drinking a strong black coffee with one or two aspirins. I usually repeat this treatment every 8 hours, sometimes without the coffee depending on how intense the pain is.

After 48 hours, I may be left with some hypersensitivity in the scalp; however, it is a self-limiting feeling that improves quickly.

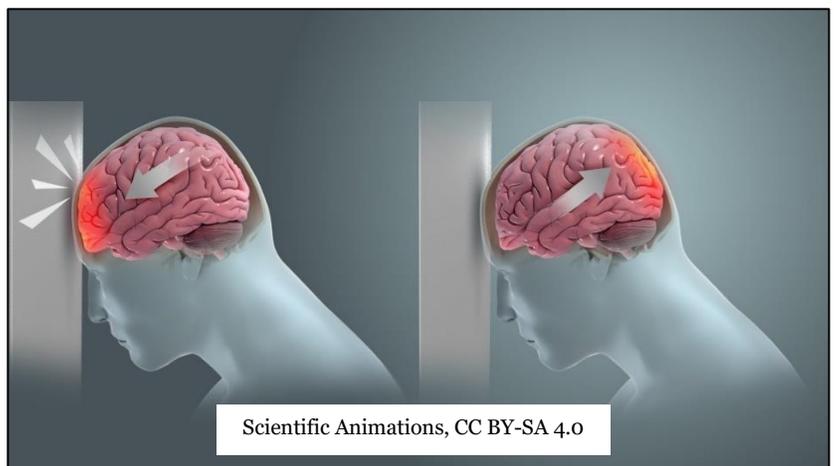
2. Cranioencephalic Trauma

Almost any head trauma generates a reaction in the brain, even if it's minimal.

Therefore, it is important to keep the patient under surveillance for at least four hours and observe his progress.

The most common injuries in the home are caused by falls. When wearing slippery shoes, from my own experience, great care must be taken when descending stairs or walking on very smooth surfaces and also when working with ladders or if the surface is wet or damp.

I have the habit of not running or walking fast on a wet floor or when it is raining. Many people have an immediate reaction to run so they don't get wet, but it increases the chance of falling, and in addition to getting wet, you may get an injury.



The mechanism of brain trauma occurs when inertia causes the brain to hit the skull from the blunt impact. The brain damage will depend on the force of the impact and whether or not the skull has suffered a fracture.

Types of Cranioencephalic Trauma

Head injuries are divided into three degrees according to their seriousness: *mild* or *concussion*, *moderate*, and *severe*.

To find out what type of injury a person with a head injury has, a scale of neurological response is used. It is called the Glasgow Scale as it was described by two neurosurgeons at the University of Glasgow in 1974. The scale measures the neurological response in its visual, oral, and motor parts.

It is a very important tool that everyone should know since through it, the degree and evolution of a cranioencephalic trauma is diagnosed in addition to giving you an objective view of the severity.

GLASGOW COMA SCALE:

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---------------|--------------------|---|--|---|------------------------------|----------------|
| EYE | Does not open eyes | Opens eyes in response to pain | Opens eyes in response to voice | Opens eyes spontaneously | N/A | N/A |
| VERBAL | Makes no sounds | Makes sounds | Words | Confused, disoriented | Oriented, converses normally | N/A |
| MOTOR | Makes no movements | Extension to painful stimuli (decerebrate response) | Abnormal flexion to painful stimuli (decorticate response) | Flexion / withdrawal to painful stimuli | Localizes to painful stimuli | Obeys commands |

a) Scoring

Eye Response (E)

1. No opening of the eyes: severe damage
2. Eyes opening in response to pain stimulus. A pain stimulus, such as squeezing the fingernail, is enough to see if there is a response. The stimuli could be on any limb.
3. Eyes opening to speech. Not to be confused with the awakening of a sleeping person, such people receive a score of 4, not 3.
4. Eyes opening spontaneously

Maximum score: 4 points

Verbal Response (V)

1. No verbal response: severe damage

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2. Incomprehensible sounds, like moaning
3. Inappropriate words. Random speech but no conversational exchange. Can't articulate a sentence
4. Confused. The person responds to questions coherently, but there is disorientation and confusion.
5. Oriented. The person responds coherently and appropriately to questions such as the person's name and age, where they are and why, the year, month, etc.

Maximum score: 5

Motor Response (M)

1. No motor response: indicative of severe damage
2. Decerebrate posturing accentuated by pain. Instead of "escaping" the painful stimulus, he seems to be looking for it. For example, when stimulating the sole of the foot, the normal reflex is to shrink it to protect.
The patient who is decerebrate has the opposite response by opening the sole, as if waiting for another stimulus.
3. Decorticate posturing accentuated by pain, called a flexor response because the flexor muscles are active. For example, flexion of forearm and wrist with clenched fist
4. Withdrawal from pain, absence of abnormal posturing, unable to lift hand and locate the painful stimuli
5. Localizes to pain with the hand
6. Obeys commands

Maximum score: 6

b) Interpretation

Knowing the total Glasgow score of a patient with head injury helps us determine the severity of the brain damage and the next steps to take. On the Glasgow scale, the maximum score a patient can obtain is 15 which means that the individual is perfectly fine and has no apparent injury to the brain. On the other hand, the minimum score is 3, this is a case of a severe brain injury and indicates a likely fatal brain damage. Based on the Glasgow score, brain injuries are classified as follows:

- Mild: 13-15
- Moderate: 9–12
- Severe: 8 or less

In mild traumatic brain injury with a Glasgow score of 13 to 15 without any symptoms like vomiting, seizures, confusion, headaches etc., the patient can be observed for 24 hours at home. Call a doctor once the patient begins to present the above symptoms.

In the event of a moderate trauma, the patient should seek medical help as they can quickly deteriorate to a severe brain injury.

Severe head injury requires the patient to be hospitalized. Intensive care and intubation will be needed. Call an ambulance or head straight to the hospital, every minute counts.

Besides the Results of the Glasgow Scale, When Should I Worry?

Seizures and vomiting are always a red flag because they mean a brain edema is developing. There is a very specific type of vomiting called “projectile vomiting” that indicates brain edema and should be treated immediately.

It is unavoidable vomiting with great force and without nausea or gagging. Faced with this sign, you should not hesitate to seek help immediately.

Traumatic mydriasis, or enlarged pupil size, on physical examination is a reason to be concerned because it means that there is not a good connection from the optic nerve to the eye.



Bin im Garten, Self-photographed, CC BY-SA 3.0

Some of the causes of traumatic mydriasis are cerebral edema, decreased blood flow in that area, and fracture of the skull and face.

The patient with this sign should be treated with specialized care that can diagnose and treat the problem.

When the patient is unconscious and does not regain consciousness after a severe head trauma, he or she may have suffered a serious condition of neural disconnection called diffuse axonal injury, which is the leading cause of coma in brain trauma patients.

The diagnosis of an injury of this magnitude is symptomatic since no neurological damage can be observed in any imaging study. Depending on the type of impact and subsequent symptoms, the diagnostic approach is made.

In a patient who has been unconscious for more than 10 minutes, it is imperative to call the emergency department with this diagnosis in mind.

Finally, if the patient is awake, always remember to ask them about any symptoms other than the obvious ones, like ears or nose bleeding, loss of muscle strength, tingling, or difficulty mobilizing a limb.

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In my country, before starting a postgraduate training program, we have to work for a couple of years as a general practitioner. One year is done in a rural community and another one wherever you want.

My second year, I worked with a team in a private clinic where many drunks arrived with injuries from fights or falls. One I will never forget is when a man who was one of those we saw almost every day arrived. He had a head injury that required stitches.

The patient looked well despite his condition; he was oriented, responded well, and had no other apparent problems. After suturing and observing him for six hours, I decide to discharge him, and when giving the final indications, I realized that he was moving his head every time I talked. When I asked him about it, he said, “Dr. Nieves, since I fell, I don’t hear anything in that ear.”

The patient had a trauma with brain injury that manifested itself in this way, even though his Glasgow Scale score was normal. Obviously, I was unable to discharge him, and he was subsequently evaluated by a neurologist and a neurosurgeon.

Fortunately, this case was addressed in time and had no major complications. But it taught me not to neglect those kinds of details.

How Do I Recognize a Skull Fracture?

The easiest and quickest way to recognize a fracture is by taking an x-ray and a computed tomography of the skull. However, we are talking about exceptional situations in which it is not possible to obtain one easily, so we must know some signs that a skull fracture may present.

When a fall with a blow to the skull occurs, you have to feel the entire area with both hands to look for any depression or decreased hardness of the skull.

Many skull fractures do not require hospitalization or special treatment beyond common painkillers and rest. However, there are some signs that are important to keep in mind as they make us think of a more serious type of fracture.

When the fracture is at the base of the skull, the characteristic sign is “raccoon eyes”. After the trauma, the patient has black circles under the eyes, which is actually a bruise that is forming inside the skull and is manifesting itself in this way.



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In the case of a fracture of the temporal bone, which is the lateral part of the skull, the bruise forms behind the ear on the affected side.



Other signs, such as fluid leaking out through the nose or ears, are important when thinking about a skull fracture. This discharge may be spinal fluid, and in such cases, specialized help should be sought.

Treatment

Treatment of skull fractures is expectant. The patient should be continually monitored for at least four hours, even if he or she looks good. Common painkillers, such as Ibuprofen and Paracetamol, are used to improve pain and inflammation. It also helps to place a cold gel or ice pack over the wound site to promote decreased inflammation.

When the patient has fluid coming out of the nose or ears, the patient is usually kept under observation until the fluid stops.

Although it is not an absolute emergency, it is prudent to contact an emergency service to be aware of the case and, if possible, monitor the patient in a health care facility.

When Should I Call 911?

In the event that the person is unconscious and does not respond within five minutes, it is important to seek help.

Remember that the patient must be monitored at all times to observe if he or she has convulsions, vomiting, or incoherent speech. This also depends on the result of the Glasgow Coma Scale. (A result of less than 12 points already indicates moderate trauma).

3. Neck Pain

The most common cause of neck pain is the contracture of the spinal muscles. When this contracture involves the muscles on both sides of the neck, making mobilization difficult, it is called torticollis.

Poor posture can change the natural position of the vertebrae, causing discomfort, dizziness, and sometimes pain in the arms.

Neck pain rarely has anything to do with serious pathology. Most commonly, these are conditions that can be easily resolved.

Treatment

Painkillers, especially Naproxen, are a good choice for neck pain. Ibuprofen in doses between 600 and 800 mg also acts as a powerful anti-inflammatory that improves even torticollis. This is what I take when I have severe neck contractures:

- **Naproxen tablets 220 mg**- Dosage: 2 tablets every 6 hours for 5 days
- **Ibuprofen tablets 200mg** - Dosage for neck pain: 600 mg every 8 hours for 5 days



Ασκήσεις Αυχένος - Neck Exercises. Photo: Harry Gouvas "Neuroanatomy and Orthopaedic Neurology", 1988

Harrygouvas, Own work., CC BY-SA 3.0

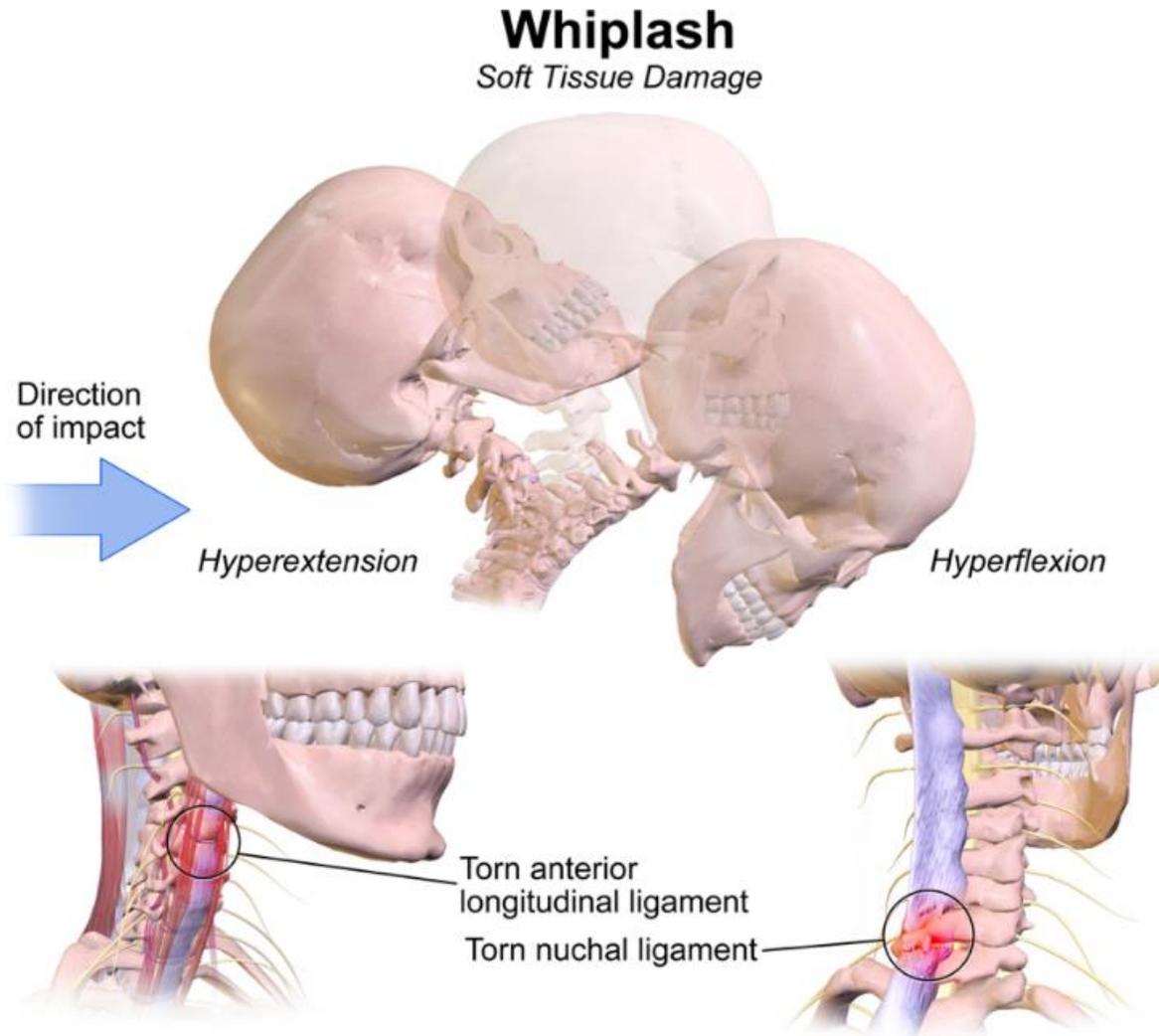
Neck relaxation exercises, especially when working long hours in front of a computer screen, are important to avoid contracture. Every hour, you should move your neck to each side and make half-circles for two minutes. Every two hours, you should get out of your chair and walk around.

Working as an article writer, I often find myself in this situation. When talking to a friend who is an occupational physician, I was able gather some recommendations that I currently apply. My work chair is aligned with the computer screen, and I connected a keyboard to place it lower so that my arms are in a more ergonomic position.

When I finish work, I lie down by placing a pillow or towel roll right behind my neck. This relieves the tension on the muscles and helps them relax.

When Should I Worry?

If the neck pain is caused by a car accident or a hard impact on the head, it may be something more serious than a contracture since the neck suffers an injury known as **neck strain** or *whiplash*.



Bruce Blaus, Own work, CC BY-SA 4.0

Whiplash is a severe contraction of the muscles of the neck due to an abrupt deceleration that causes the head to rebound rapidly, stretching and contracting the muscles and ligaments of the neck very quickly.

With this condition, it is important to seek help since it is necessary to perform a neck x-ray and a magnetic resonance imaging (MRI) to observe the degree of modification of the spine and the indemnity of the vertebrae and ligaments.

It is important to seek help since it is necessary to perform a neck x-ray and a magnetic resonance imaging (MRI) to observe the degree of modification of the spine and the indemnity of the vertebrae and ligaments.

When the injury is not severe, treatment is based on analgesic therapy and physical rehabilitation, with specific exercises for each muscle group planned by a physiotherapist.

For more serious injuries, treatment will depend on the damage. Sometimes the treatment is medical, with placement of a hard cervical collar and observation, and other times the treatment is surgical.

Although some specialists still indicate the use of the cervical collar, that depends on the degree of injury, the patient's range of motion, and, ultimately, the treating physician.

In the hospital where I work, the protocol in cases of neck strain and sprain is early initiation of physical therapy, to preserve muscle strength. When the neck rests on the cervical collar, the muscles often become weakened and physical therapy takes longer than usual.

4. Eyes and Appendages of the Eye

Ophthalmology is the field of medicine that deals with diseases of the eyes and their appendages. Although I never interacted much with that service, in my hospital, we did transplants and organ procurement, so in those surgeries, we coincided.

I worked in the abdominal organs, and they did the corneal surgery. I have always found this an interesting and important area, especially because of the importance of the eyes in our relationship with the environment.

In this section, I explain the most common eye problems that we see at the emergency room and ways to solve them at home, when possible.

Red Eye



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a) Causes

Dry eyes, digital eye strain, and contact lenses are common causes of red eye. Skin **allergies** are strongly associated with tearing and red eye. If you are a person suffering from rhinitis, dermatitis, and other allergies, it is very likely that contact with some substance or particle will irritate your eyes.

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Environmental **pollution** in many cities also causes irritation of the ocular mucosa. In the summer, when there are extreme temperatures, forest fires fill the environment with **smoke**. This smoke can also cause eye discomfort.

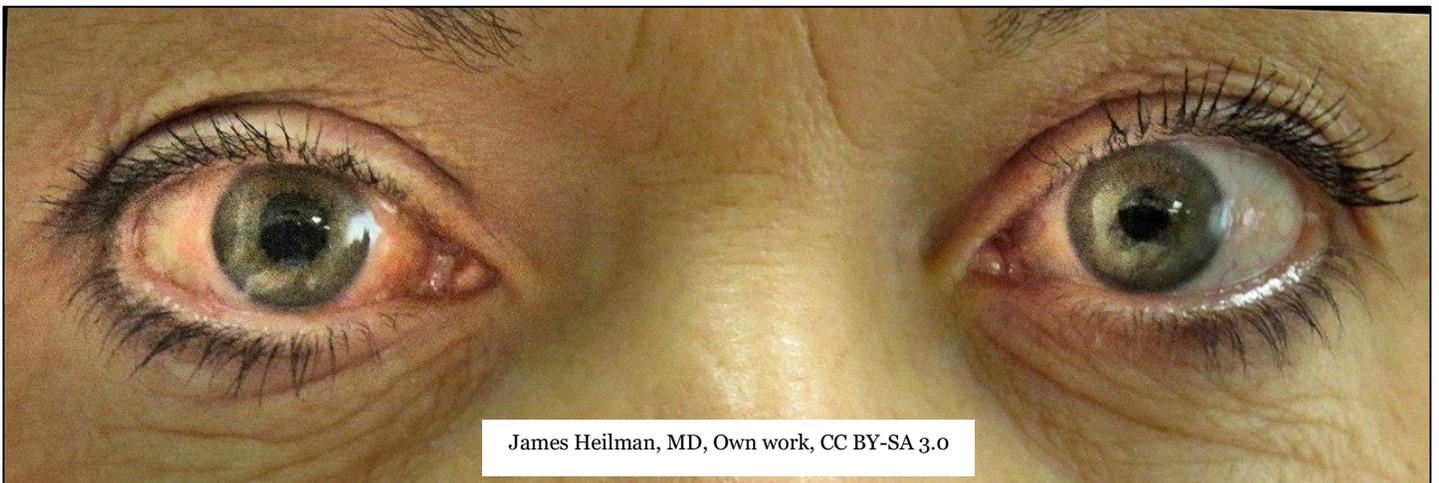
Eye infections or **conjunctivitis** (pink eye) are a frequent cause of eye irritation associated with discharge, which can be transparent if is caused by a virus or purulent if caused by a bacteria. Conjunctivitis has other symptoms, such as itching and a gritty feeling inside the eye. One or both eyes could be affected.



Gzzz, Own work, CC BY-SA 4.0

More serious conditions, such as increased intraocular pressure (**glaucoma**) or **corneal ulcer**, occur with red eye and are associated with pain.

Of these latter options, glaucoma is much more common, especially in the elderly.



James Heilman, MD, Own work, CC BY-SA 3.0

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In addition to red eye, glaucoma can present with eye pain and progressive loss of field vision. The easiest way to measure eye pressure is with a special device used by ophthalmologists and optometrists called a tonometer.

If you are diagnosed with glaucoma, it may be a good idea to keep a tonometer at home since increased intraocular pressure must be medicated because it can lead to permanent blindness.

It is not a cheap device because it is very specialized; however, in an exceptional state in which asking for help is not an option, it is the only way to know the intraocular pressure.

b) Treatment

In order to establish an appropriate treatment for red eye, we must know what is causing it. Irritation from allergies and exposure to smoke and other pollutants is self-limiting. Eye drops containing moisturizers relieve this symptom for these conditions.

The drops that we find over the counter are Hypo Tears, Soothe Long Lasting, and Eye Relief, among others. You can use two drops in each eye every six hours.

As for red eye due to dryness, it is better to use eye ointments or gels, especially at night, as they are more durable. Then you can do a combined treatment and use drops during the day and gel to sleep.

Some gels that are found over the counter are GenTeal Severe Dry Eye and Refresh Celluvisc.

Antibiotic eye drops are rarely used. In fact, these are reserved for patients with weakened immune systems. The vast majority of conjunctivitis, both viral and bacterial, is self-limiting. Therefore, within 72 hours, the condition should be almost completely resolved.

Remember that any substance applied to the eye can cause serious damage. The sclera and cornea are very delicate tissues, so unless they are products made by a laboratory. *I DO NOT ADVISE NATURAL TREATMENT IN THESE CASES.*

The use of chamomile and other infusions can harm rather than help. Despite being a good anti-inflammatory, chamomile is very astringent, meaning that it dries out the area where it is applied. It can therefore make the situation of the diseased eye worse.

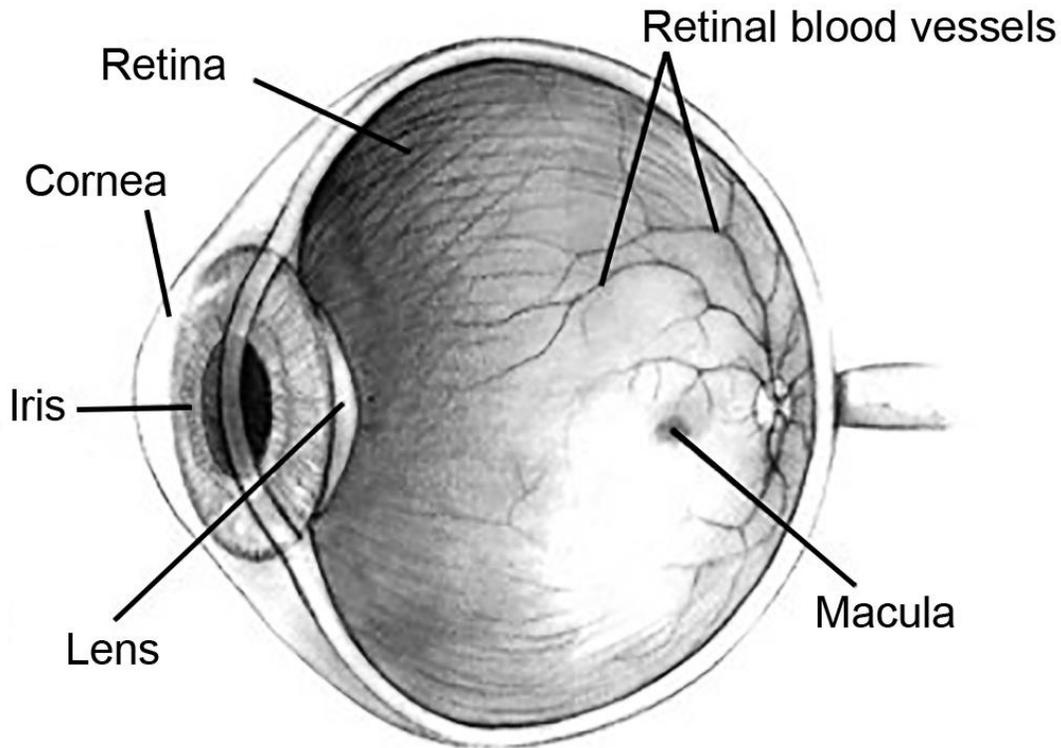
To clean eye secretions, you can use a cotton wool with sterile saline solution or dip it in your eye drops. In the case of infection, try not to wash inside the eye with running water.

c) When Should I Worry?

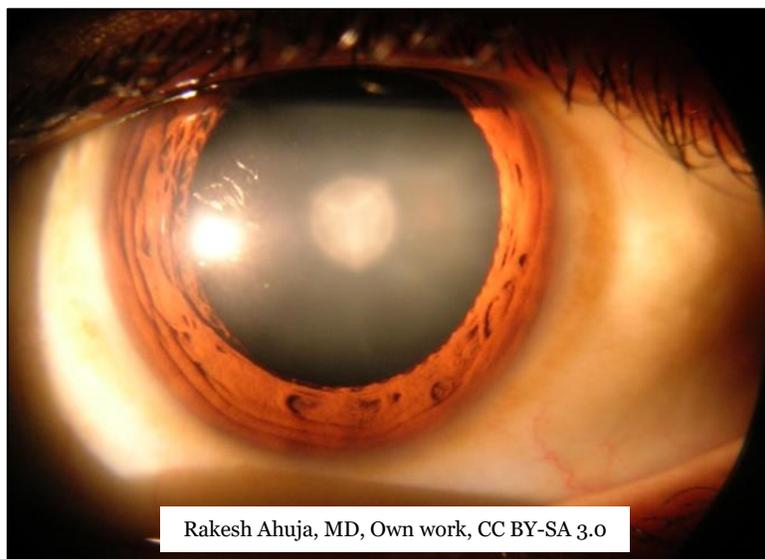
- When **eye pain** or **partial vision loss** are associated
- If the **infection does not improve** after five days and the amount of discharge increases
- When there is continuous **blurred vision** and mild eye pain, there may be an ulcer on the cornea. To see it, you only have to light up the eye laterally and look at the membrane above the pupil. That membrane should be clear and smooth. Any abnormality can be an ulcer that requires specialized treatment.

Cataracts

The opacification of the lens of the eye is called a cataract. This condition usually develops slowly and is related to aging, although there are other causes.



The main problem with this opacity is that it diminishes the quality of vision, causing blurred or double vision. It also intensifies the brightness that enters the eye, temporarily blinding the person and making it difficult to perform activities such as driving at night.

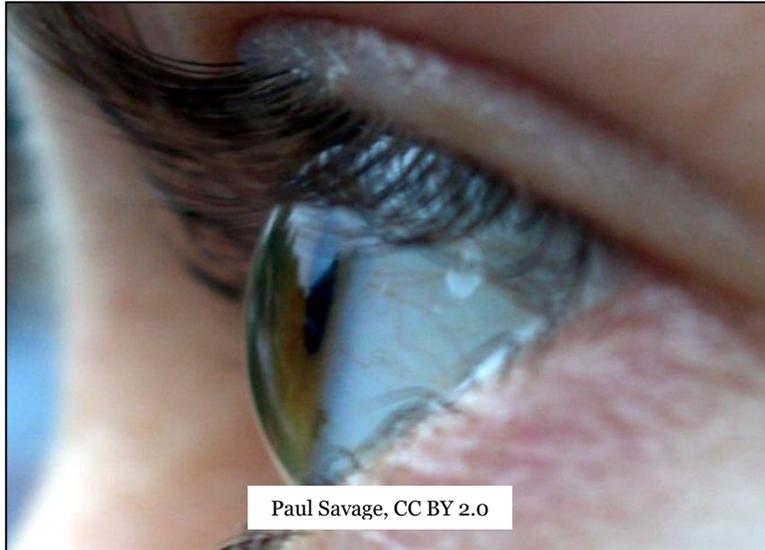


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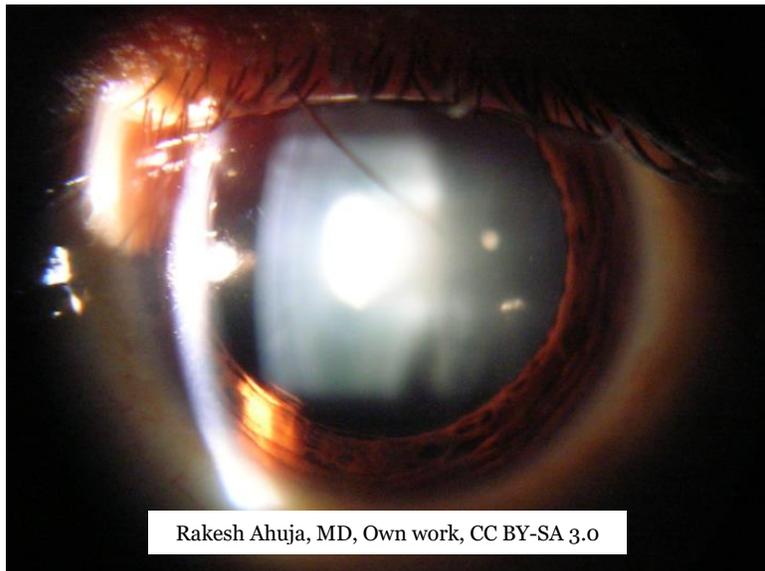
Some habits, such as smoking and drinking alcohol, have been linked to the development of cataracts. So have chronic diseases such as diabetes or the use of corticosteroid treatments.

The diagnosis is made on the basis of the physical examination by shining a light on the front of the eye so that light enters through the cornea.

In an eye without a cataract, the light should pass to the bottom of the globe.



In an eye with a cataract, the light stops when it finds the opacity of the lens, which then becomes visible.



Cataract gold standard treatment is surgery; however, this is not the first treatment option in all cases. When the patient hasn't undergone surgery, he should have periodic appointments with his ophthalmologist and evaluate his visual capacity to see that it has not diminished.

It is always necessary to assess how advanced the condition is and the state of the patient before subjecting him or her to surgery, no matter how simple it may be. The cataract can lead to a state of temporary blindness that is reversed when the opaque lenses are removed.

a) Is There Any Way to Prevent the Development of Cataracts?

There is evidence that following some good habits can prevent and delay the onset of cataracts. Cigarettes and alcohol are directly related to their development, and their discontinuation decreases the possibility of this condition.

Although there is no strong evidence, a diet rich in green vegetables with natural antioxidants has been shown to be beneficial for eye health in general and specifically for slowing down cataract formation.

The use of sunglasses with adequate protection against ultraviolet rays makes it possible to reduce the exposure of the ocular components to solar radiation and to serve as a preventive tool.

Finally, it is important not to use eye drops indiscriminately, as some are composed of corticosteroids that cause chronic and sustained cell damage, leading to lens damage.

b) Do I Have Any Other Treatment Options?

Since 2017 there has been evidence that antioxidant N-acetyl carnosine (NAC) drops can stop and even reverse the development of cataracts. Currently the scientific evidence is not solid, but there are testimonials from patients who have seen improvement with the application of this product.

I do recommend it since some of my patients have seen improve of cataracts symptoms while using it.

Uveitis

Uveitis is the inflammation of the uvea, which is the structure formed by the iris, the ciliary bodies, the vitreous, and the choroid.

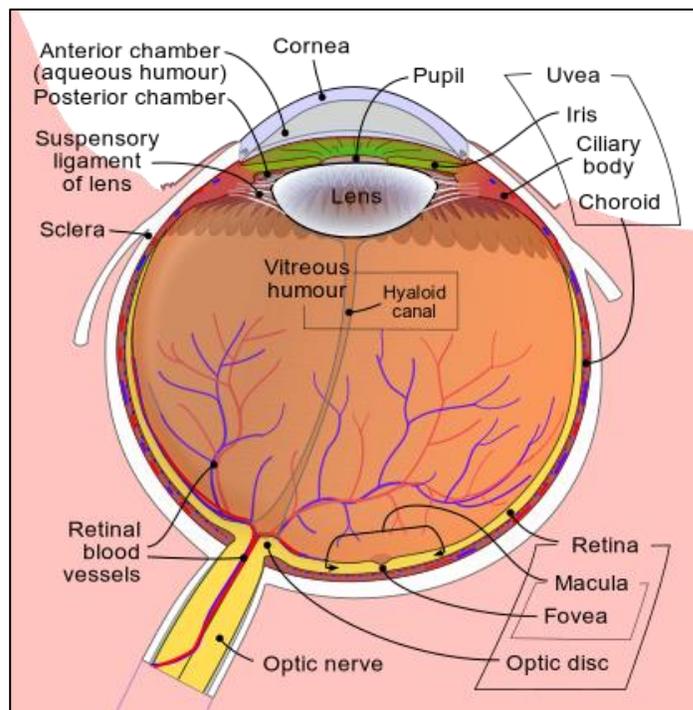
These are chromatic formations between the deep layer formed by the retina and the superficial layer, which is the sclera.

Uveitis is an emergency that must be treated when diagnosed since such inflammation can cause irreparable eye damage. As an inflammatory process, uveitis does not stop.

Even though its evolution is slow in some cases, it continues to damage the tissues, causing serious visual impairment.

a) What Causes Uveitis?

It can occur as a symptom in patients with autoimmune diseases, even if their disease has no relation to the eyes.



Rhcastilhos and Jmarchn, CC BY-SA 3.0

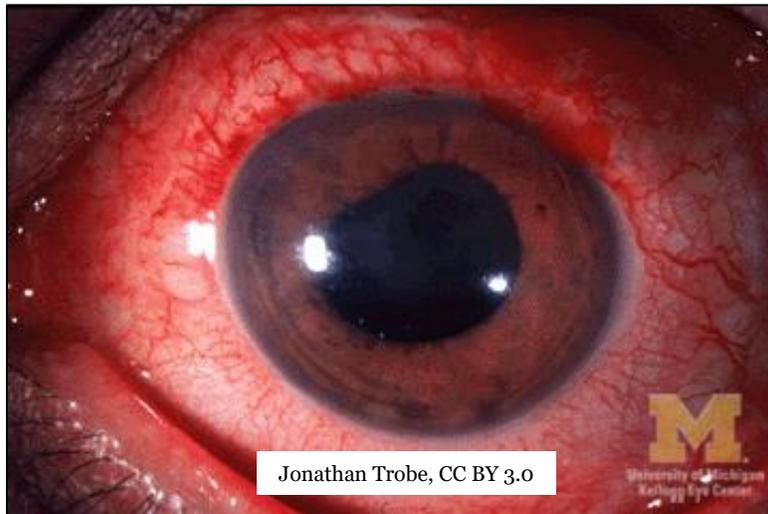
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For example, patients with ulcerative colitis are at risk of developing uveitis as an extra intestinal complication as well as those with rheumatoid arthritis. Also, serious infections of other organs, like tuberculosis and tumors, can be the trigger for this kind of inflammation.

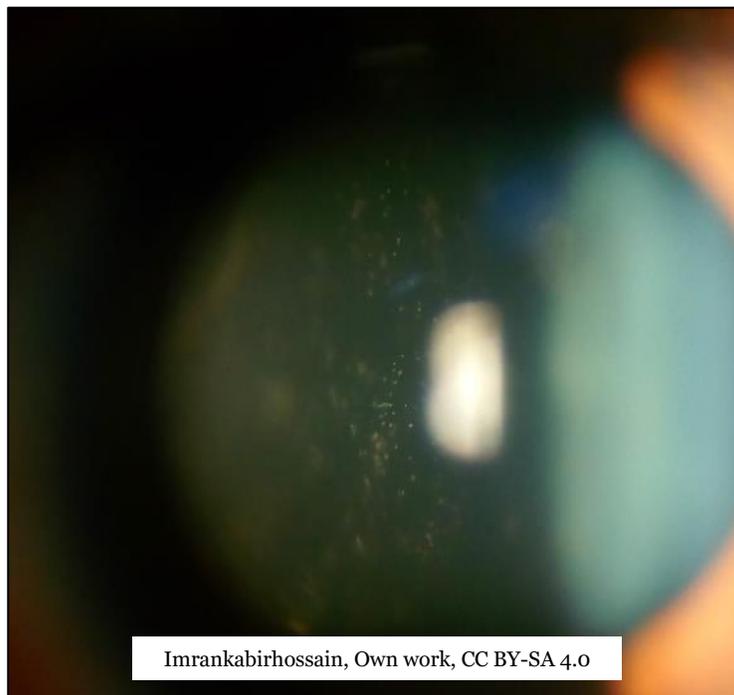
b) Symptoms

Symptoms depend on which part of the uvea is affected.

Thus, **anterior uveitis**, where there is inflammation of the iris, is characterized by red eye, a burning sensation, blurred vision, alteration of the shape of the pupil, and photophobia. In advanced cases, a membrane covering the iris and an opaque band running through it can be seen.



In **Intermediate Uveitis**, which involves mainly the vitreous, the patient reports observing black spots, called floaters, and blurred vision.



Photophobia is not common in this type. In the image to the left, we can see the vitreous cells that float inside the balloon because of the inflammation, which are responsible for the black spots seen in this condition.

Posterior Uveitis is the inflammation of the choroid (choroiditis), and it also presents with floaters and blurred vision without pain.

c) Treatment

Uveitis is not a condition that should be treated at home unless you follow the precise instructions of an ophthalmologist. I am particularly cautious, perhaps too cautious, about eye disease therapies.

The tissues that make up the eye are delicate and highly specialized, so poor treatment can cause irreparable damage. If you suspect that you have uveitis, I recommend you call the emergency line to be evaluated by qualified personnel.

This first evaluation may confirm the diagnosis and rule out other damage, such as a corneal or scleral ulcer.

Treatment of uveitis depends on the cause. However, it is necessary to stop the inflammatory process that destroys eye tissue and impairs vision. Local treatment is done with topical corticosteroids in the form of gel or drops.

It is important to remember that the use of this type of medication must be absolutely supervised because if it is used indiscriminately, it can lead to tissue damage, cataract formation, and permanent blindness.

The administration of steroids by mouth and eye injections will be decided by the specialist when evaluating the severity of the problem.

Eye Pain

Eye pain is a fairly common and not usually an alarming symptom. However, there are some serious conditions in which pain is the main symptom.

The causes of this pain are varied, and some of these commonly occur and do not represent major complications, such as the presence of foreign bodies, infections, contact lens irritation, blepharitis or inflammation of the eyelids, and sties.

In all of these conditions, pain appears as one more symptom, which improves completely when the infection is treated or the foreign body is removed.

One eye pain I'm very familiar with is dengue fever. About ten years ago, there was an epidemic of that disease in my country. The topic of conversation when you met anyone was whether they had dengue fever and, if so, what type (hemorrhagic or classic) and what symptoms they had.

Pain behind the eyes is a constant symptom that is part of the development of dengue fever. It's such intense pain that it bothers you to even move them a little bit sideways.

Although it lasts only a few days, it overwhelms you. I ended up being infected in the two epidemics in Venezuela. What luck!

When Should I Worry?

Eye pain that has no apparent cause should always be a cause for concern. Glaucoma, which is the increase in eye pressure, causes this type of pain. When associated with vision loss, you can make this diagnostic approach that represents an absolute emergency in which it is necessary to seek help since the patient may lose their vision permanently.

Migraine and sinusitis are diseases that are not typical of the eyes but are closely related and cause this symptom. I suffered from continuous migraines for a long time, and I can say that when eye pain is associated with headache, it is hopeless. It's very difficult to find relief.

My way of fighting it is by drinking black coffee and lying down in a very dark room with the right temperature. If the pain continues after 48 hours or after the migraine episode has passed, it is important to tell a specialist. It may not be an emergency that requires you to attend a care center, but it is good to have the advice of a professional.

Eye Trauma

Eye trauma is one of the main reasons for consulting ophthalmologists. It is not necessary for the blow to be directly to the eye to suffer an eye injury. A trauma to the skull has enough force to create a shock wave that mobilizes the eye structures.

In any case, it is important to contact an ophthalmologist because eye trauma can lead to permanent blindness of the affected eye. Do not manipulate your eye by yourself.

In the case of a penetrating trauma (i.e., an object entering the globe), it is recommended to wash with sufficient physiological solution and cover the eye with a patch to avoid infection until seen by the specialist.

Do not try to remove the object by yourself. Ophthalmologists use magnifiers to observe all the elements and not cause further damage to your vision while taking out the object.

They are also prepared in case a blood vessel bleeds or some other complication occurs.

Hard blows to the head can cause temporary vision loss due to blunt eye injury. This type of trauma may be associated with periorbital bruising, or black eye, which results from bleeding of the capillaries in the skin of the eyelids and face from the impact.

Vision loss should be considered a major symptom. If you recover, you should know how long you did not have vision and how long it took you to recover it completely.

This temporary state of blindness may be due to a traumatic detachment of the retina or a bruise in that area.

In either case, it requires emergency care because it threatens normal vision.



How Long Could I Wait, if I Could Wait?

Ideally, the specialist should be located in the shortest possible time since eye injuries are often painful and annoying. However, some conditions are more urgent than others.

Below you can see the waiting times for some of the most common eye injuries.

| TYPE OF INJURY | WAITING TIME |
|--|--|
| <ul style="list-style-type: none">• Burns, especially with chemical agents | It should be treated as soon as possible. You can only wait half an hour after the injury. |
| <ul style="list-style-type: none">• Penetrating globe injury• Foreign bodies• Eyelid lacerations | It should be treated the same day as the injury. You can wait few hours. |
| <ul style="list-style-type: none">• Orbital fractures• Conjunctival hemorrhages | These can wait up to 48 hours. |

In the case of an eye lesion, the best home treatment is to keep the eye covered with a patch, which can be done with gauze, and to go to the specialist in due course, depending on the type of injury.

Stye

A stye, or hordeolum, is a pimple along the line of the eyelashes. It is usually filled with pus, becomes very swollen, and can cause pain. It can be found on the outside of the eye or inside the eyelid.

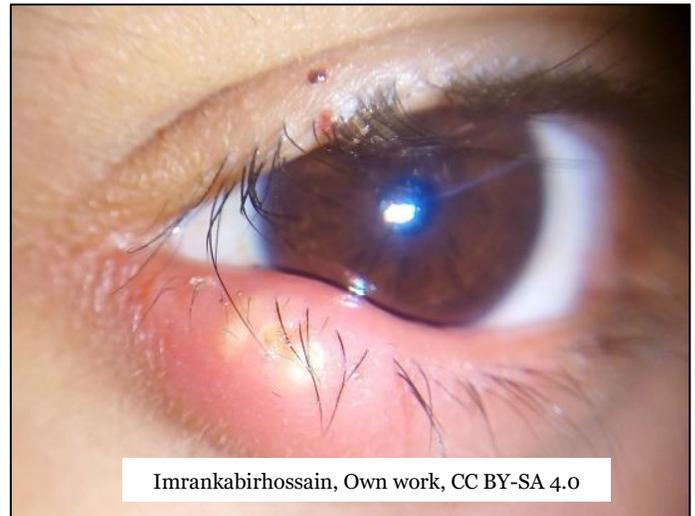
Its location does not determine its aggressiveness. In fact, these types of injuries are quite benign.

Treatment

Sties are self-limiting. They rarely get complicated and need to be drained. There are still some things we can do, however, to relieve the inflammation and speed up the healing process.

Taking an anti-inflammatory or pain reliever may help with the pain. Placing compresses with water or warm solution also improves inflammation.

In my country, it is said that heating a spoon and pressing it on the stye is the ultimate cure for this disease. Strangely enough, it works. The combination of pressure and heat on the injury improves the symptoms quite a lot.



However, I would exchange the spoon for a towel or cloth with hot water, even though the ladies from the rural parts of Venezuela will be disappointed with this replacement.

Blepharitis

Blepharitis is a fairly common condition involving infection and inflammation of the eyelids. This occurs because bacteria that normally inhabit the skin can invade any area that presents a small wound.

Vigorous scratching, skin irritation, or insect bites become gateways for these microorganisms to contaminate and start the process.

This infection is easily diagnosed through inspection of the eyelid. The classic signs of inflammation are red, hardened, and swollen skin. In addition, this skin has the peculiarity of flaking off like dandruff.



Blepharitis can be anterior (external) or posterior, just at the edge of the eyelash line and even inside, and is often associated with the processes of seborrheic dermatitis and dandruff.

Treatment

The treatment of blepharitis, at least in its early stages, does not include special medications. Proper eyelid hygiene with a moist towel is recommended.

An ophthalmologist friend of mine always recommends using baby shampoo that does not irritate the eye mucosa to perform this cleaning, along with warm water, at least twice a day.

If flakes are observed, they should be removed; this can be done with a swab, softly and without pressing hard. In this type of infection, the eyelid becomes very sensitive because some glands may be clogged.



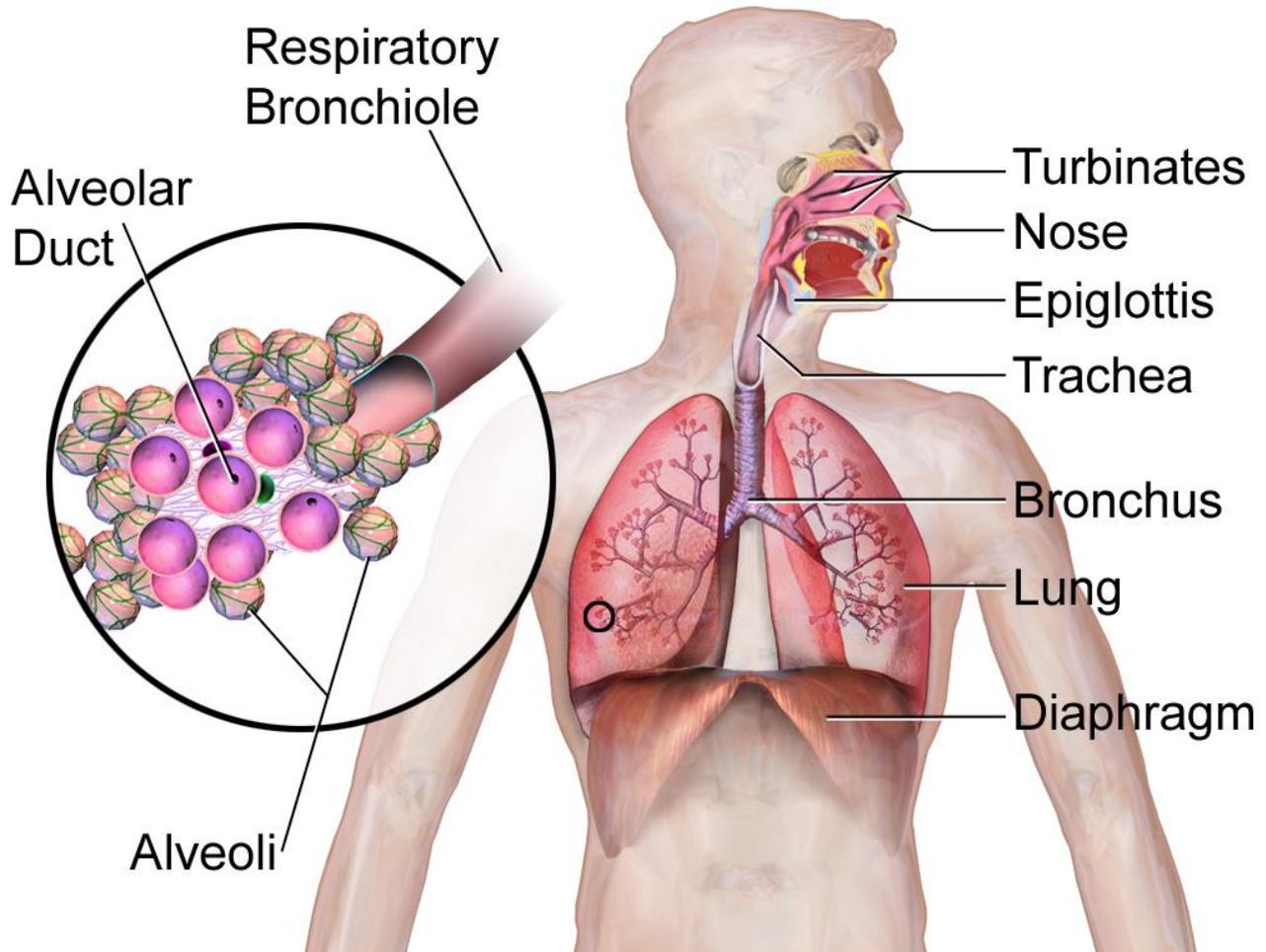
To help them discharge their contents, gently massage the entire eyelid for five minutes before cleaning. Blepharitis resolves in a few days if proper hygiene measures are taken.

Although in many places you will find information about the usefulness of chamomile in the eyes, either for making eye washes or as eye drops, this liquid is not recommended.

Chamomile is a natural astringent, meaning that it absorbs moisture. It is excellent for some skin therapies, but that effect on the eye makes it lose its lubrication and dry out, causing other problems.

RESPIRATORY SYSTEM

The respiratory system is an anatomical apparatus that consists of the airways and the lungs, and it allows the exchange of gases in the body, which is the exit of carbon dioxide and the entry of oxygen into the blood, allowing for the vitality of tissues and organs.



BruceBlaus, Own work, CC BY-SA 4.0

The breathing rate is the number of times a person breathes in a given amount of time. Normal is about twelve to twenty breaths in a minute. This is called **eupnea**. A person who breathes normally, at a rate of twelve breaths per minute and without any effort, is *eupneic*. From that number, we can classify the breath in:

- **Tachypnea:** more than 20 breaths in 1 minute
- **Bradipnea:** less than 12 breaths in a minute
- **Dyspnea:** breathing with effort or shortness of breath

Each of these respiratory types has specific causes that will be explained throughout this chapter.

1. Cough

Coughing is one of the main medical complaints and is included in 40% of the visits to pulmonologists. It is a reflex that is part of the body's defense system. It helps expel foreign materials, whether bacteria, dust, or another foreign body, from the airways.

Coughing is a very vague symptom that is associated with many causes. It is difficult to arrive at a specific diagnosis based on this data alone since no objective classifications have been defined to guide the different cases.

Coughs can be arbitrarily classified into acute and chronic. It is acute if it lasts less than three weeks, and chronic if it lasts longer than that. It can also be classified as dry or wet (productive), depending on whether it produces secretions or not.

Most Common Causes

Acute cough:

- Common cold virus
- Flu
- Allergies
- Bronchitis
- Dust or smoke inhalation

Chronic cough:

- Pneumonia
- Tuberculosis
- Chronic obstructive pulmonary disease (COPD)
- Lung cancer (not a constant symptom)
- Postnasal drip
- Gastroesophageal reflux disease (GERD)
- Side effect of some antihypertensive drugs

It is important to recognize non-respiratory causes since the cough will not go away until what is causing it is removed. Coughing caused by GERD usually occurs at night or after a large meal. It may be accompanied by vomiting and is associated with gastric symptoms.

For antihypertensive drugs, it's a matter of locating the start of the cough in the timeline and seeing if it coincides with the start of the medication.

My recommendation is that if you change your medications, always keep track of treatment initiation to monitor side effects and other symptoms.

Treatment

a) Alternative Medicine and Natural Treatments

Natural treatments to relieve coughs are based on improving the irritation of the airways. This is achieved through hydration, which allows the fluidization of secretions and the improvement of the inflammation of the larynx.

Honey is a powerful anti-inflammatory as well as helping to heal the irritated mucous membrane of the larynx by eliminating the unpleasant sensation of a scratchy throat. Mixing two teaspoons of honey with warm water or tea is helpful before going to sleep.

When coughing is associated with a sore throat, the mixture of honey and milk is fantastic; it is a therapy that has been used in my family for a long time. Honey can be consumed together with other medications since it does not cause any unfavorable effects, and its benefits are huge.

Ginger is also a natural anti-inflammatory that helps clear the airways. Its properties have been used since the beginning of Asian medicine for different diseases.

It can be consumed as tea, chewed directly, or prepared as candy with some sweetener, sugar, or honey.

Steam baths are excellent decongestants. They help moisten the airways and mobilize viscous secretions. This can be done once a day by heating water to a boil and breathing in the steam. To do this, lean over the container and place a towel over your head.

All my childhood, I was very allergic. Dust and cold caused me to have severe coughing spells that made it difficult to breathe normally. I remember my mother would boil water with a few drops of eucalyptus oil in a pot, and I would breathe in that steam until there was no more left. It was comforting and helped me rest.

Remember that steam can burn the skin. It is important not to stand too close to it, and if there is discomfort on the skin, step away and wait 30 seconds to one minute before continuing.

Saltwater gargle is a good choice for very productive coughs as it helps to expel secretions and decrease the amount of mucus. This combination is especially good for post-nasal drip. To prepare the gargle, mix a 1/2 teaspoon of salt with half a cup of warm water. It can be repeated during the day as many times as necessary.

b) OTC Cough Medicine

There are two types of cough treatments: **antitussives** and **expectorants**. Antitussives serve to stop the cough reflex, while expectorants thin out secretions to make them easier to cough up.

The best-known cough suppressant is *Dextromethorphan*. It is found in many types of syrups, along with other compounds. Some brands are Triaminic Cold and Cough, Robitussin Cough, and Vicks 44 Cough and Cold.

As for expectorants, those that are obtained over the counter are the ones that contain *Guaiifenesin* (Mucinex, Robitussin Chest Congestion).

There are syrups and tablets that combine two ingredients, such as Robitussin DM. Otherwise these

active ingredients can be found individually in various types of treatments, combined with antihistamines and anti-inflammatories, such as in cold medicines.

If the only symptom you have is a cough, you should look for specific medications for this. Treatments that combine antihistamines can be counterproductive because that type of medicine dries out the lining of the throat and dries out the mucus, which can further irritate the airways and trigger your cough reflex.

When Should I Worry?

- If you have difficulty breathing and swallowing that doesn't get better in eight hours.
- If the cough persists for more than three weeks.
- When weight loss and night sweats are associated as these may be due to tuberculosis, which is a very contagious infection.
- If you notice blood mixed with phlegm.

It is important to know that when you make a lot of effort to cough, some blood may come out of the mucosa, and it has nothing to do with an infection or other serious pathology. Blood mixed with phlegm and bright red blood after coughing are warning signs.

What Does Expectorations Mean?

Sputum, or phlegm, is only a defense response of the body to a pathogen or allergen. By observing the mucus, we can guide the diagnosis. A fluid and transparent phlegm is from an allergic process where there is irritation of the airway and mucus is formed to protect it.

Green or grayish mucus, sometimes with a strange smell, guides us to the presence of bacteria, such as in pneumonia. Sometimes it looks more purulent than others, but it is always oriented to the same diagnosis. Often this type of purulent sputum must be microbiologically cultured to find out which bacteria it is and which antibiotics it is susceptible to. When phlegm is accompanied by blood, it can be very shocking and cause concern. In these cases, we should try to evaluate the whole scene before thinking about a possible diagnosis.

If the patient has been coughing for many hours or days or has had coughing fits in which he or she has exerted himself or herself, the blood may be due to irritation or rupture of small vessels or the mucous membrane of the airway. However, if the blood is bright red or contains clots, it is a sign of damage to the bronchial tubes or to the lungs. These damages can be a tumor that is inside the bronchus and is bleeding, active tuberculosis that is excavating the lung, or lung cancer.

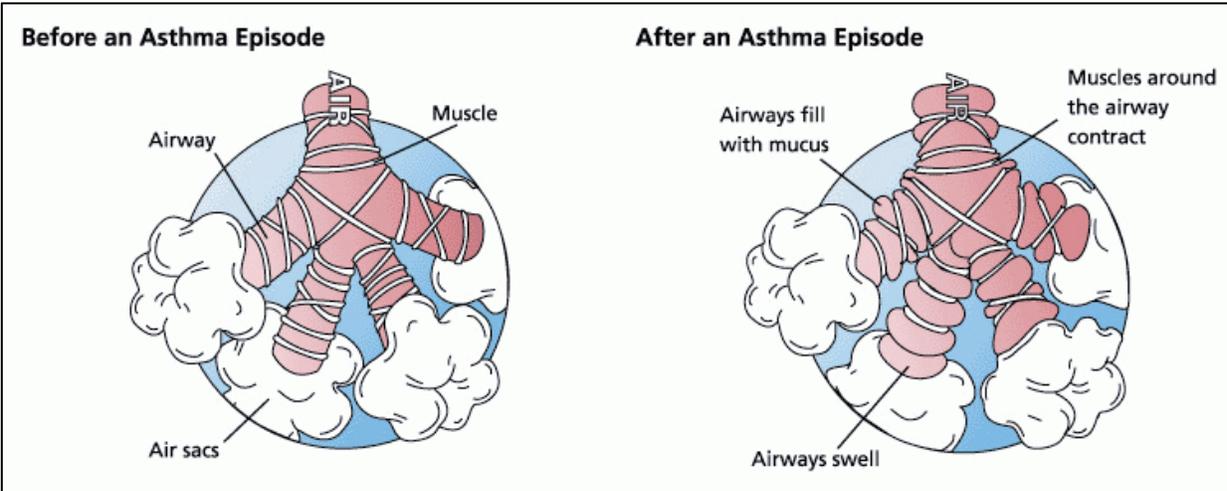
2. Asthma

Asthma is one of the most common respiratory diseases among children. We often find adults who were asthmatic as children, but their attacks disappeared once they reached adulthood (as in my case). Asthma is an exaggerated sensitivity of the airways to an environmental element that irritates them. Normally this would trigger a process of self-limiting inflammation, but in the case of the asthmatic patient, this inflammation continues to become more severe and blocks the airway almost completely.

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Although the genetic role has not been fully studied, there is evidence of families with many members with asthma or who are predisposed to allergies and asthma attacks.

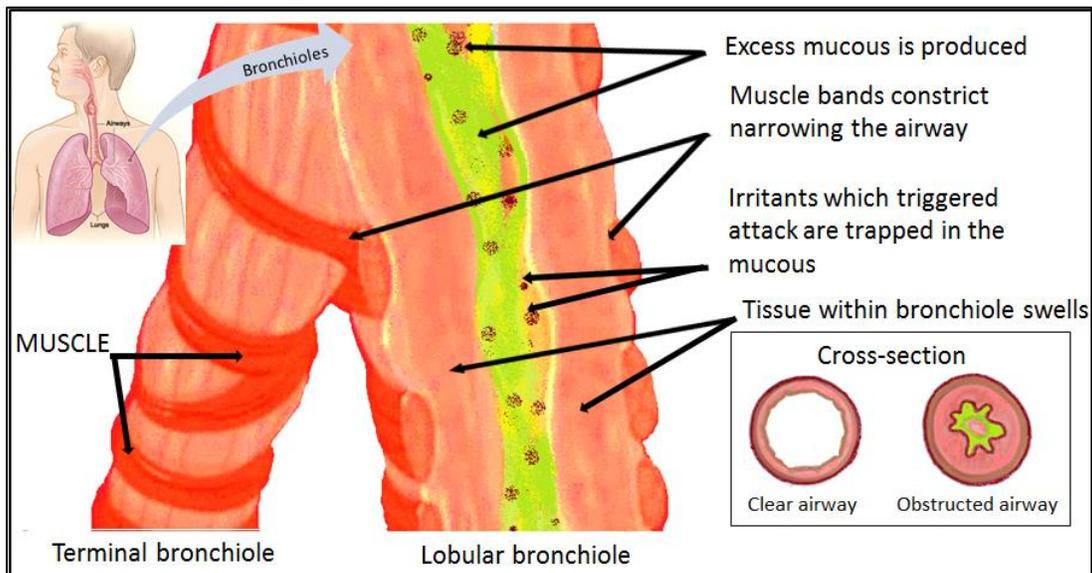
Environmental changes are the main triggers of asthma attacks at all ages. Abrupt climate changes, strong odors, changes in weather, pollen, and closeness to grass or other vegetation are some of the factors that can trigger these reactions in a very sensitive person.



Symptoms

The symptoms of asthma are very visible. Difficulty in breathing, shortness of breath, coughing, wheezing, and a feeling of pressure on the chest are the most common symptoms. In addition, many people report mucus, difficulty in sleeping because of breathing problems, and fatigue or weakness.

When asthma symptoms appear suddenly and start to get worse, the person is said to be having an *asthma attack*.



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An *asthma attack*, in addition to general respiratory symptoms, represents a more pronounced blockage of the airway by the excessive amount of mucus that begins to form.

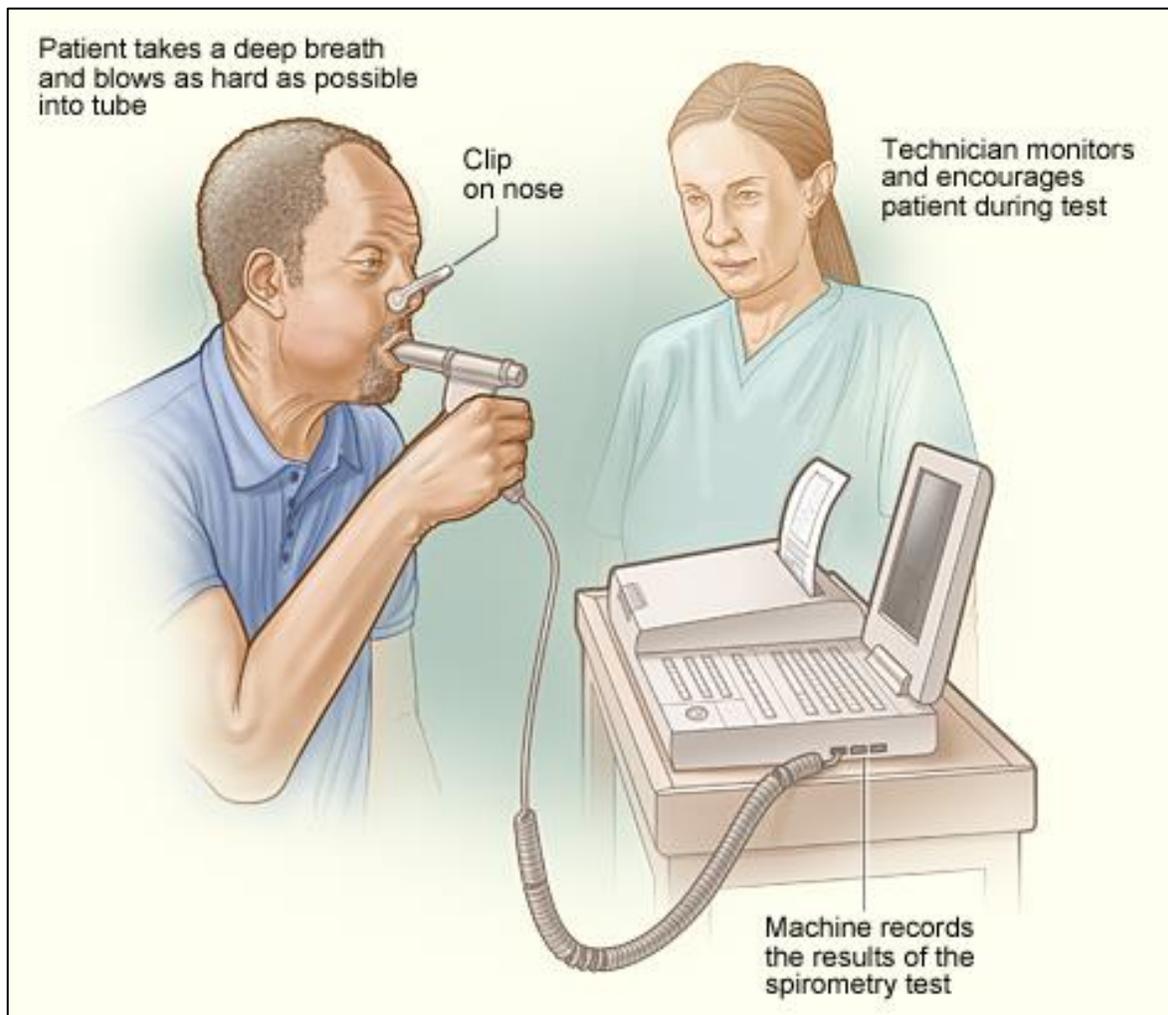
Diagnosis

Asthmatic patients usually know they have the disease and know the symptoms. In the event that they do not know, or the person has never had difficulty breathing, the diagnosis begins with the physical evaluation.

Breathing rate and use of accessory breathing muscles are an indication of an asthma attack. When the asthmatic patient breathes, he makes a sound that is characteristic of this disease. It is a kind of wheezing sound because the air passes very strongly through the obstructed airways.

To accurately diagnose asthma, we need to have the patient's lung capacity values: how much air is coming in and how much is effective for breathing. This is done with a special device that is called *spirometer* and is for institutional use.

This device reflects all the data of the respiratory function and prints it in a graph in which the degree of obstruction and the remaining capacity of the lungs can be observed.



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The best way to diagnose and follow the evolution of an asthma attack at home is with a device that helps us measure the patient's lung capacity. In other words, we need to know what percentage of the lungs is working. This can be measured with a peak flow spirometer.

The small spirometer measures one of the parameters included in the general test, specifically the airflow through the bronchi and thus the degree of obstruction in the airways.

Currently these types of home devices have a special technology that measures value through special applications that help make the value more accurate.

Thanks to this, you can know not only if the person is having an asthma attack, but also their response to treatment and its progression over time.

Obviously, it's ideal to have a complete pulmonary evaluation with a more accurate pneumological evaluation. But in some cases, that is not possible, and this device can save lives. Remember, an asthma attack cannot wait.



Treatment

For the treatment of asthma, there are two types of inhaled medications, slow-acting and fast-acting.

Slow-acting ones are those used in patients diagnosed with asthma who are keeping their inflammatory hypersensitivity under control. It is used as recommended by the treating physician, either daily or every two or three days. It will always depend on the number of attacks the patient has had and the symptoms he or she presents in his or her daily life.

On the other hand, **fast-acting** treatments are the ones used in acute asthma attacks. These are medicines that are in charge of relaxing the bronchial muscles and decreasing the inflammatory response, eliminating the blockage and improving breathing immediately.

The principal ingredients in fast-acting medication are albuterol (ProAir HFA, Proventil HFA, Ventolin HFA) and levalbuterol (Xopenex HFA), which you can use every 12 hours for a maximum of two days. Give yourself two puffs with the inhaler, keeping the medication in for ten seconds before exhaling it. These kinds of inhalers are prescribed medicines.

OTC options are limited but effective. Although they should not be used as an ongoing treatment, they are very useful in the case of asthma attacks, especially when they occur sporadically and the person does not have a fast-acting medication on hand.

Ephedrine or *epinephrine* are the active ingredients in these medications, and they come in vials for inhalation or in tablet or syrup form.

Another medicine widely used in asthma attacks is an expectorant called *guaifenesin*. It helps to fluidize the phlegm that forms inside the airways. This makes it possible to expel this mucus when coughing, leaving the bronchi free to breathe.

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Until I was 12 years old, I had asthma attacks, although none required hospitalization. I really wouldn't know though because my mother, despite being a doctor, is reluctant to go to the emergency room, so most of the time we treat these attacks at home.

My experience with epinephrine is very good; it is an excellent treatment for asthma attacks that has some unpleasant side effects such as increased heart rate, hand tremor, insomnia and anxiety.

It is not a medicine that you will use all the time, only in cases of emergency. Symptoms are quickly relieved. Within 20 minutes to half an hour, you can feel that you are breathing well and without difficulty. Guaifenesin is a product I have never liked.

Expectorants make me cough a lot, and yes, a lot of phlegm is expelled, a lot more than you think you have. It helps because all that mucus is accumulated inside the bronchial tubes and is helping the obstruction, but I must say that it is not my favorite product.

When my asthma attacks improved, my mother continued with natural treatments, such as the steam baths I explained earlier, sometimes using some essential oil; the one we liked best was eucalyptus.

I also drank black Chinese tea, which is supposed to help dilate the bronchial tubes. My mother never let me get cold drafts, much less the cold of the night which, according to popular Venezuelan belief, is very dangerous to the point of making anyone who receives it seriously ill.

They call it "sereno" and although nobody knows well what it is, it refers to a very dangerous entity that is around late during midnight; it has to do with the cold or the dew, and it can even kill.

Doing some research, I found that in the days of Venezuela's colonization there was a person who was in charge of watching the streets and the lighting at night, and also announcing the weather reports.



These watchmen were called "serenos" and being state workers, they were in charge of guaranteeing public order until sunrise. Therefore, whoever went out during the hours they were out could not return home, given the unorthodox methods they used at the time to keep the antisocials out.

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Eventually the labor of "serenos" was eliminated, but the ghost of the dangerous entity that may not leave you alive continued until these days. So, I'm happy to share some Venezuelan folk wisdom: watch out for the "sereno".

To What Extent Can I Do it on My Own?

Asthma attacks are usually treatable at home. At some point, it is important to visit the pulmonologist or family doctor, but very often they resolve satisfactorily.

However, there are times when we must call 911 to avoid a severe airway blockage.

You should be aware of these signs:

- Excessive use of the neck and chest muscles to breathe
- Blue mouth or fingernails
- If you have an oximeter, oximetry less than 85%
- Not improved with ephedrine or epinephrine treatment in 30 minutes to 1 hour
- No medication at home for asthma attacks

The oximeter is a device that reads the degree of oxygenation in the blood, so it indirectly tells us how effective the patient's breathing is.

This device is placed on the patient's fingertip with the reader on the nail. The reader is where the red light is. In devices that have a screen, the screen is the side of the oximeter that goes over the nail.

The oximeter measures the amount of oxygen through the nail bed, so if you have nail polish, you must remove it in order to take a proper reading.



3. Tuberculosis

This lung disease is an infection caused by a microorganism called mycobacterium tuberculosis. Mycobacterium is an organism whose structure is between a bacterium and a fungus and has characteristics of both. It usually takes advantage of a person's moments of vulnerability, that is, malnutrition, a weak immune system, and HIV, among others.

Unfortunately, I know this disease very well because in 2005, while I was still working in the Amazon, I was infected with TB. It was one of the toughest diseases I have experienced, with a long and intense treatment that requires a lot of responsibility and perseverance to cure it completely.

TB is spread by contact with an infected person through microscopic droplets of saliva when that person coughs or breathes close enough to the other person.

Is There Tuberculosis in the U.S.?

Yes, despite the fact that over the last 20 years data on new infections gave hopeful signs of the elimination of the disease, the statistics revealed by the CDC in 2015 and 2018 show a rebound.

Although the number of cases remains low, there is concern that they have increased in percentage each year, especially in the states of California, Florida, New York, and Texas.

TB is a deadly disease if left untreated. In fact, before the antibiotic treatments used today, TB patients were sent to die in isolation islands or to stay in hospitals specifically for TB patients, called sanatoriums, where they did not receive any special care.

Symptoms

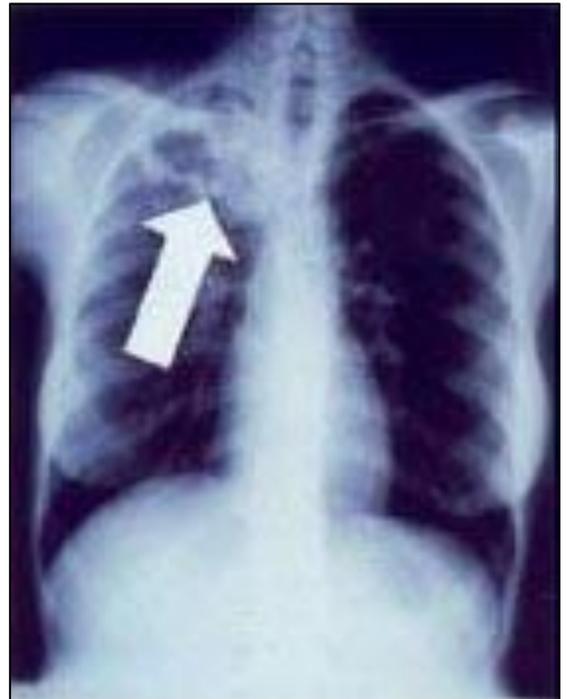
The symptoms of TB at first may be very general, so it is difficult to identify. However, as it is a chronic disease, when the patient has one or two weeks of worsening, this infection should be suspected.

Coughing with or without phlegm is always present and constant. Difficulty breathing and tiredness with little physical activity, such as climbing one floor of stairs, can cause great fatigue with much shortness of breath.

The weight loss is marked and obvious; I lost 23 pounds. Before the infection, I weighed 123, and I ended up at 100.

Night sweats are another typical symptom of the disease. Even though the fever is usually low, you can wake up in the middle of the night with a bed so soaked with sweat that you have to change all the sheets and take a shower to be able to sleep again.

In addition to these, there may be extrapulmonary symptoms, such as joint pain, skin rash, and gastrointestinal discomfort.



Diagnosis

The diagnosis is made in several stages. First, according to the symptoms, the disease is presumed, and then a chest X-ray is done, which shows some typical signs of tuberculosis, such as pneumonia located mainly toward the upper pole of the lungs, which is where the mycoplasma is installed.

My mother is a radiologist, so when she saw my breathing difficulty and weight loss, she took a chest X-ray and diagnosed the disease.

The definitive diagnosis is made through a sputum sample that detects the presence of the so-called Koch bacilli. This is done by a microbiologist with a special stain for these microorganisms.

I Have TB. What Should I Do?

If you or your family member was diagnosed with the disease, that's the first step to improvement. Before that, you're as good as airborne, not knowing what disease you have and having no treatment.

For the first few days, even with treatment, TB is very contagious. In fact, it is recommended that everyone living with the infected person be tested for sputum.

The patient should be isolated, and if someone is going to interact with them, they should wear a mask. Food utensils, such as plates and cutlery, should be marked for use by the patient only and should be washed with a different sponge. Sheets and bedding should be changed every two days.

Ventilation and general hygiene are a very important part of the treatment.

How Is TB Treated?

Active tuberculosis is treated with antibiotics, and there is no natural equivalent to replace these.

Treatment is:

- 4 drug regimen (isoniazid, pyrazinamide, ethambutol and rifampicin) for 2 months
- Previous regimen is followed by isoniazid and rifampicin for 4 months.

This is a mandatory notification disease, which means that when a person is diagnosed, the doctor must report the competent authorities who fill out an epidemiological form with his data for health monitoring in the area for preventing the spread.

Medication is handled directly by the health district and must be taken in front of the health inspector because it is a monitored treatment. You are not given the treatment to take at home. At least during the first month, you must go to this place daily to take your treatment in front of the inspector.

The therapy is long, lasting at least six months, but it is very effective. A week after starting, I was feeling much better; even my appetite returned, although my weight decreased a little more.

Extrapulmonary Tuberculosis

This type of infection is rarer. It occurs in people with immune system problems, such as HIV-positive patients or those taking medications such as high-dose steroids.

In these cases, the mycobacteria may have a low activity at the lung level but, from there, migrate to other organs and contaminate.

Some common sites of extrapulmonary infection are the lymph nodes, especially the inguinal and axillary ones; the joints, causing a type of arthritis; and the digestive system.

These are rare cases that occur in specific patients. Treatment is also accomplished with antibiotics, but much depends on the type of infection, the site, and the extent.

Can I Prevent TB?

The best way to prevent TB is to eat healthy food and keep good blood values to avoid the vulnerability of the immune system. In the elderly or cancer or HIV patients, I would recommend always keeping your distance when talking or relating to anyone. Remember that you are susceptible to infection and more aggressive behavior by the underlying disease.



4. Pneumonia

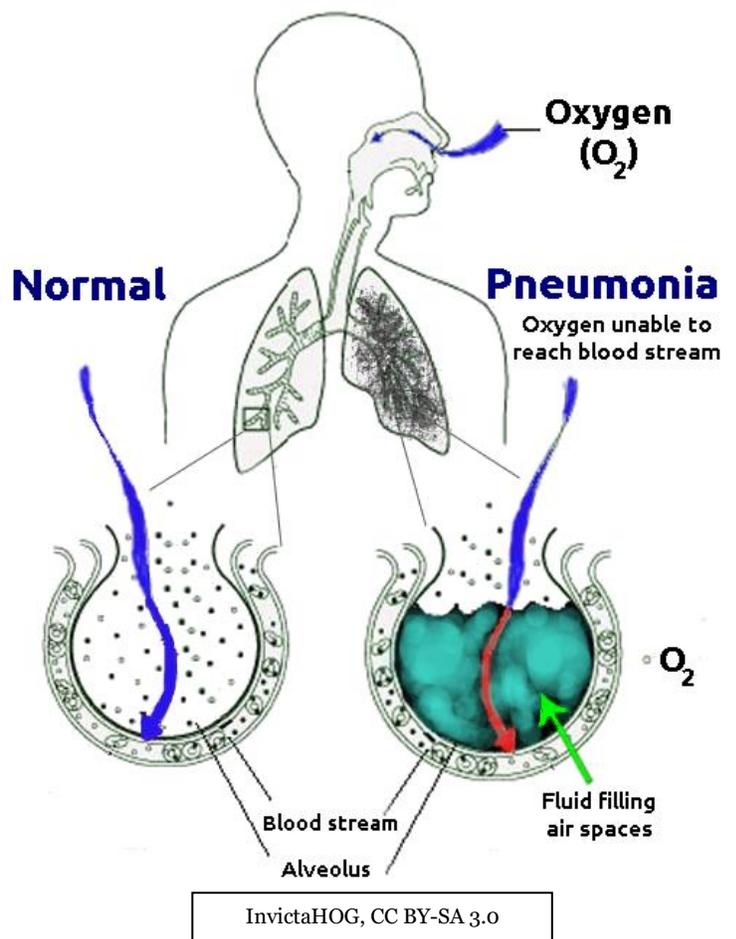
Pneumonia is an infectious lung disease caused mainly by bacteria but also by viruses and fungi. It is quite common at all ages, and the bacterial etiology, which is the most common, is very contagious.

A cough with expectoration is a constant symptom in all types of pneumonia, as is high fever with chills. There is also chest pain, difficulty breathing, shortness of breath, fatigue, and general discomfort.

The secretions that accumulate in the airways are usually thick, so they are not completely expelled with the cough and do not allow good oxygenation with the breathing process.

Antibiotic therapy for the home is usually sufficient for the improvement and cure of the disease.

However, some cases require hospitalization for intravenous treatment, and others even require intubation because of the severity of the symptoms.



It will always depend on the type of infectious microorganism, the patient's previous health, and the time it takes to begin treatment.

Aspiration pneumonia develops in patients with swallowing difficulties in whom the contents of the mouth, whether food, drink, or saliva, end up in the airway, settling in the lung and causing this condition. It occurs in elderly patients with dementia due to degenerative diseases, among other causes. This type of persons should always have an assistant who is aware of these situations, which can go unnoticed and become seriously complicated.

Diagnosis

The symptoms of pneumonia are quite general, like those of any infection. However, coughing and high fever can give us clues. Blood tests are necessary to establish the diagnosis. White blood cells, which are the ones that indicate infection, will be elevated.

The X-ray may show some changes suggestive of pneumonia, but these are mostly used to evaluate the response to treatment since in the early stages, the radiological changes are almost unnoticeable.

My mother, who is a radiologist, tells me that there are doctors who give the patient antibiotics until the X-ray is normal.

This is a mistake; the radiological changes take longer to be seen, even though the patient is already cured. In my mother's words, "Some doctors must understand that the therapy is for the patient, not the X-ray."

The oximeter can help you assess the patient's ventilation. This way you can know whether the breaths they are taking are effective or not.

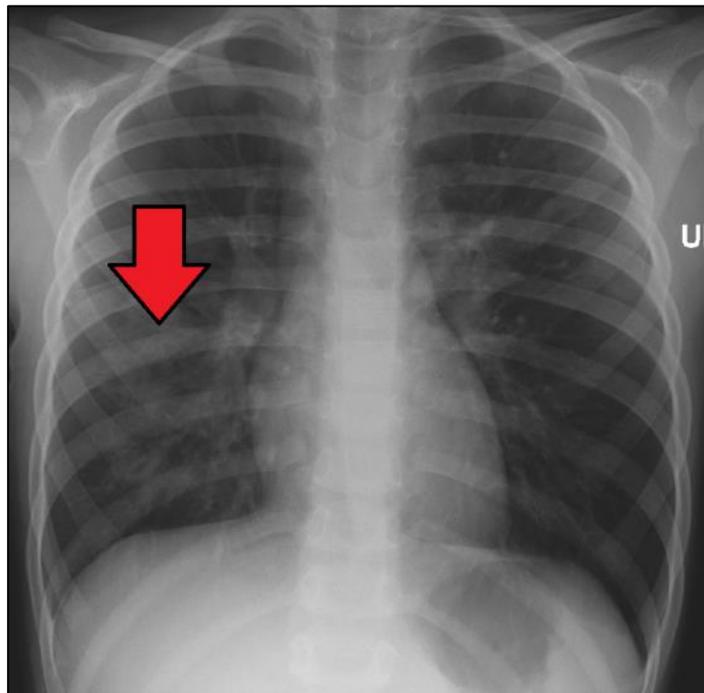
Treatment

Oral antibiotic therapy is very effective for pneumonia in patients without underlying diseases or treatments that weaken the immune status.

Guidelines recommend using a combination of antibiotics that attack the different pathogens that can be found most frequently in the pneumonic process. Azithromycin and Cephalexin are complementary antibiotics that you can find more easily than others. The therapy is as follows:

Azithromycin 250mg: 2 tablets (500 mg) orally as a single dose on day 1, followed by 250 mg once a day for 4 more days (5 days of treatment) + Cephalexin 250 mg 1 tablet every 12 hours for 10 days.

In addition, expectorants such as Guaifenesin help free the airway of thick secretions that block the passage of air.



James Heilman, MD, Own work, CC BY-SA 4.0

When Should I Worry?

Three days after starting antibiotic treatment, symptoms should improve, especially shortness of breath and chest pain.

If you notice that your symptoms remain the same or have progressed, it is important to contact the emergency department.

Covid-19 Pneumonia

One of the complications of the recent COVID-19 respiratory illness, caused by the virus SARS-COV-2 virus, is viral pneumonia, which produces a severe inflammatory state in both lungs.

If you feel that a flu-like process has progressed to shortness of breath, coughing, tiredness from any exertion, and rapid breathing, you may be experiencing this type of viral pneumonia, and it is very important to go to a medical center or call a health service to rule out a COVID-19 infection.

About 3% of those affected with this respiratory complication require ventilatory assistance to be able to breathe. This means they will need to be intubated and hooked up to a machine that does the breathing process while the inflammation of the lungs caused by the virus improves.

The majority of those infected with Covid-19 will be asymptomatic or have mild cold symptoms, such as low fever, malaise, fatigue, and muscles ache. Loss of taste is a common but not constant symptom. For 11-15%, there may be respiratory symptoms that range from mild to serious. These symptoms begin with a cough, shortness of breath, sore throat, and tiredness at mild exertion.

In the hospital where I work, any health worker with flu-like symptoms is considered COVID-19 positive and sent home to be quarantined.

For the general population, there are questionnaires available by telephone or online on official health department websites to help them make a diagnosis. The best way to avoid infection is to apply the recommended safety measures, especially keeping distance between people and doing a proper and frequent cleaning of the hands.

The use of masks is still controversial. There are expert opinions in favor and against them. I particularly think that it is necessary to use it in closed spaces, but as long as the distance between people can be maintained while outdoors, I do not see the necessity.

Outpatient treatment of COVID-19 is that of any viral process and is according to the symptoms that you have. Take Acetaminophen or Paracetamol for pain and fever, maintain good hydration, rest, and stay isolated from the rest of the household.

It is important not to self-medicate if you feel respiratory discomfort, especially if it has progressed since the illness began.

Hydroxychloroquine treatments, although they have worked in some patients, have not been sufficiently tested. This medication has many side effects, so its use as a preventive therapy is not justified. Corticosteroids for this specific disease are dosed by specialized personnel depending on the case.

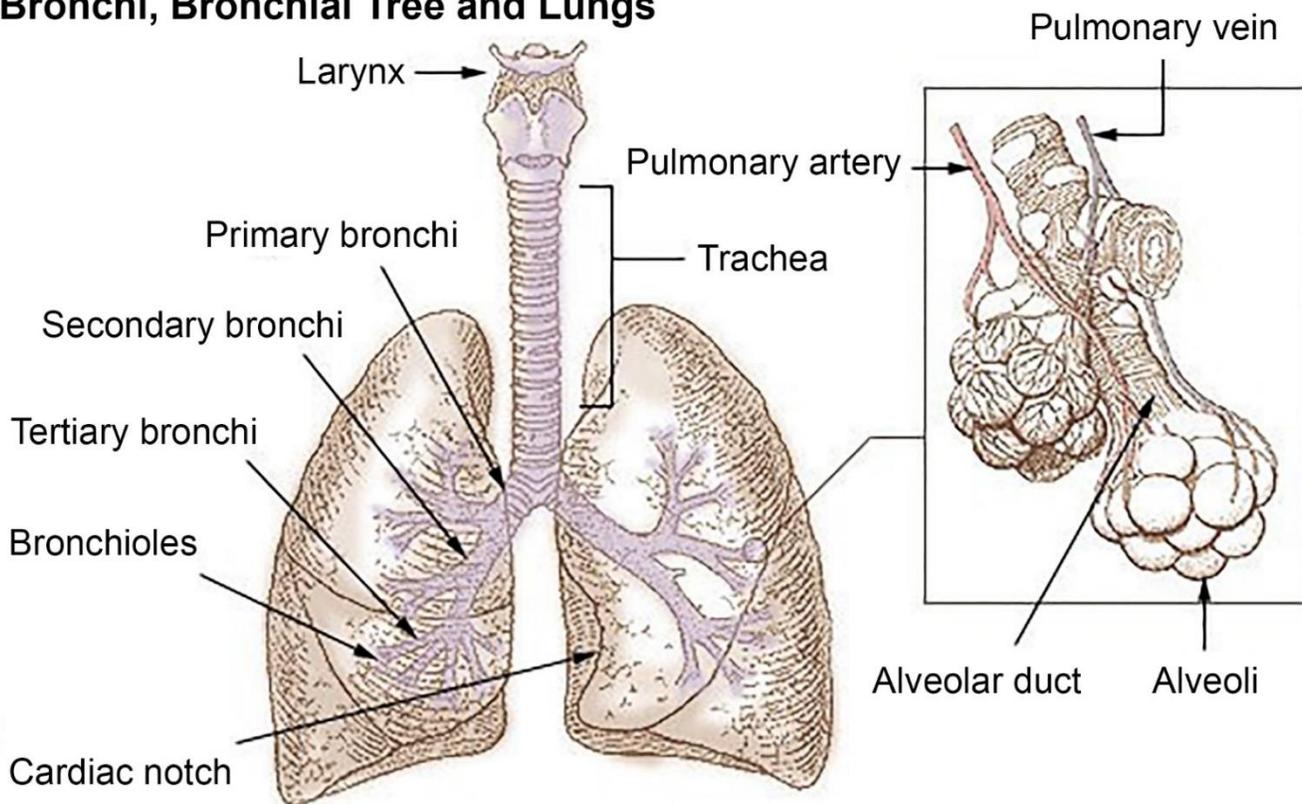
Remember that these are medicines of delicate use since they can have repercussions in the kidneys.

5. Chronic Obstructive Pulmonary Disease (COPD)

To begin to dig deeper into this disease, it is important to know a little bit about the anatomy of the lungs in order to understand the damage that occurs in a patient suffering from this condition.

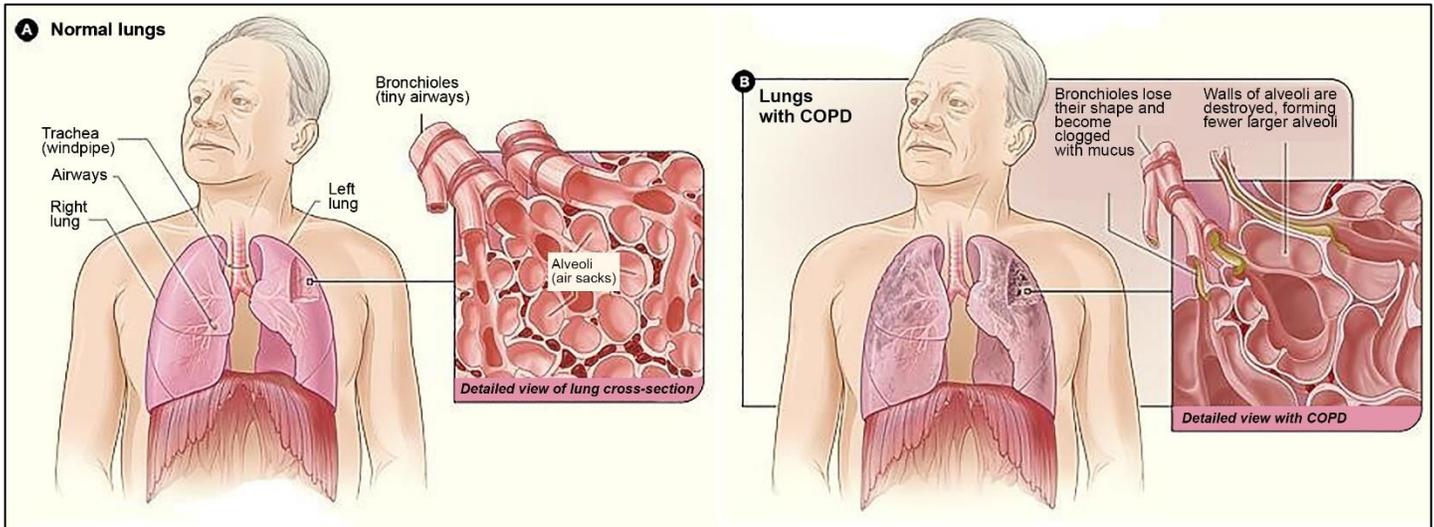
The lungs are the main respiratory organs, and through them, the blood gains oxygen and can irrigate the organs to work properly. This occurs through the process of breathing or ventilation, which begins at the top of the respiratory tract with inhalation.

Bronchi, Bronchial Tree and Lungs



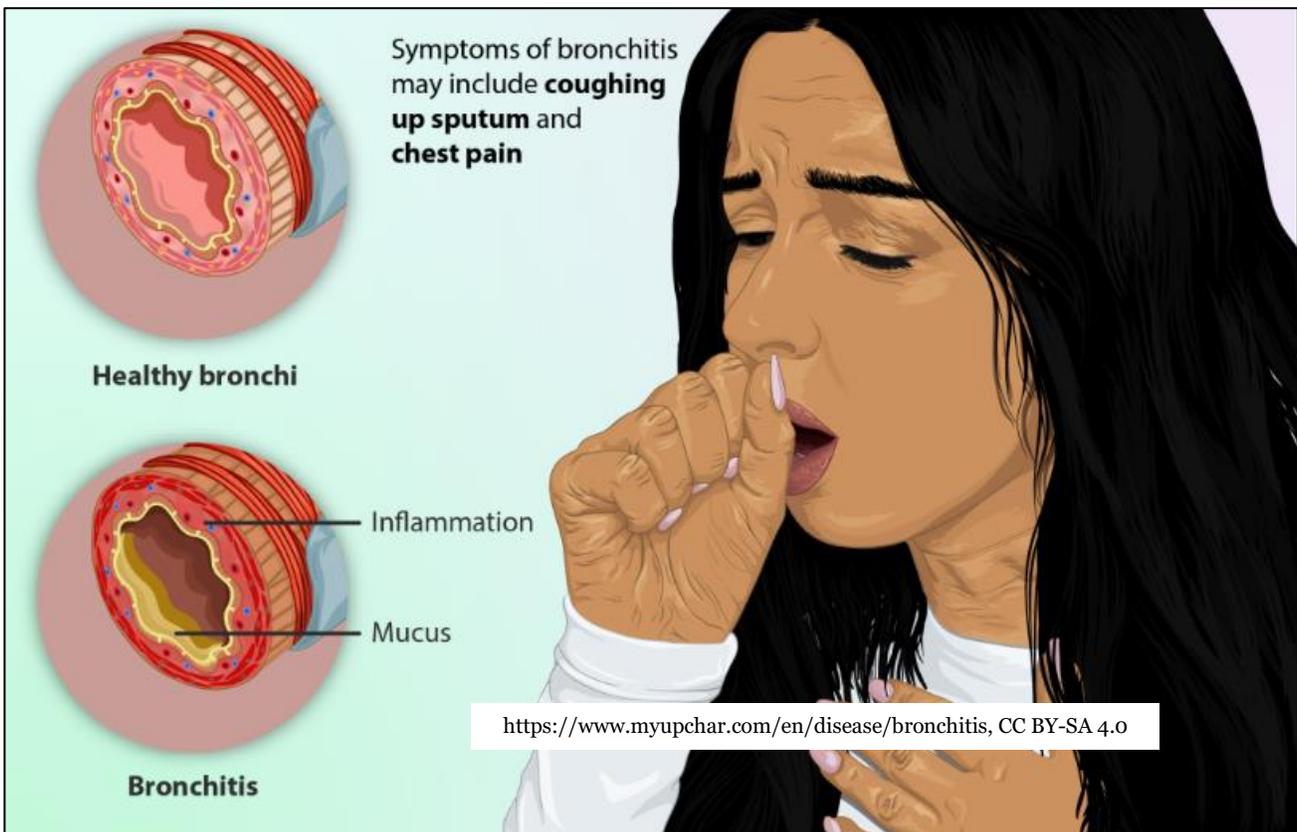
This air passes through airways that begin as tubes about 0.7 inches in diameter and end in circumferences of minimal size. The end of these small tubes is the alveoli, where the exchange of gases occurs. This means that the oxygen-depleted blood passes through a process of oxygenation and returns to circulation through the vascular system of the lung, which brings it directly to the heart. With the expiration, the lungs remove the deoxygenated air with carbon dioxide to complete the respiratory cycle.

Chronic obstructive pulmonary disease (COPD) is a progressive inflammatory process that obstructs the flow of air from the lungs by decreasing their capacity to ventilate. It is caused by prolonged exposure to irritants, the main one being **cigarette smoke**. There is no cure for this disease. Once installed, it causes permanent lung damage, leaving whole areas without any function.

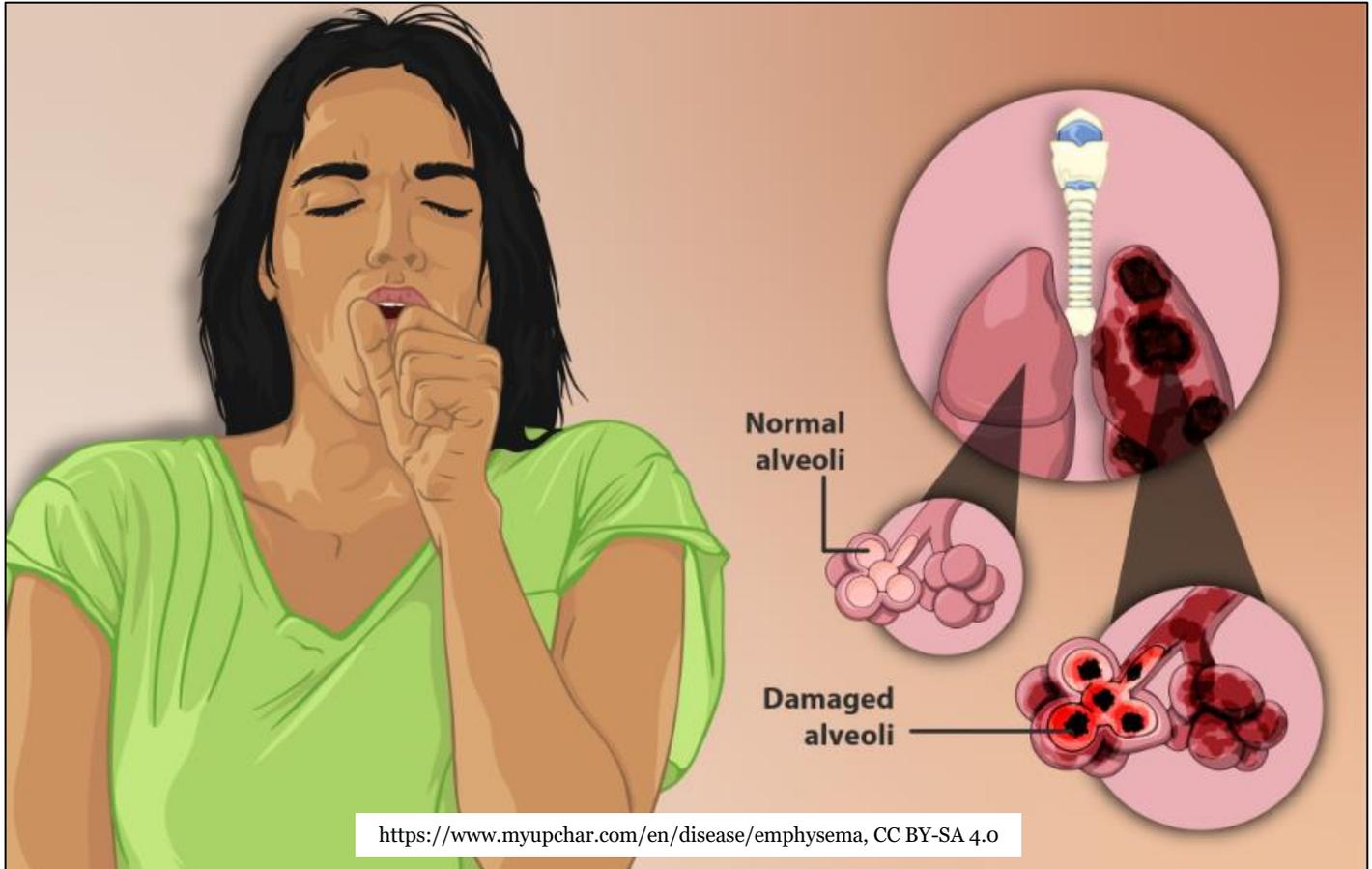


The lung inflammation that occurs in the patient with COPD manifests itself in two pathological forms: chronic bronchitis and emphysema. Both conditions exist in those affected to a lesser or greater degree.

Chronic bronchitis inflames the airway at the level of the bronchi, which are small tubes inside the lung parenchyma forming the so-called bronchial tree, whose function is to let air pass from the outside into the lung. This inflammatory process decreases the diameter of these tubes, making it more difficult for air to pass through, and contributes to the formation of phlegm.



Emphysema is the destruction of the lung at the level of the bronchioles, which are the smaller diameter bronchi that chelate air to the alveoli, which are small units within the lung where oxygen exchange occurs. These areas are irreversibly destroyed throughout the lung, leaving large regions completely dysfunctional.



Symptoms

The symptoms of COPD have to do with these inflammatory changes that occur. A productive cough with yellowish phlegm, difficulty breathing, chest tightness, fatigue with minor exertion, and frequent respiratory infections are the most common.

It is important for you to know that by the time a person starts showing symptoms, the disease is already advanced. Early COPD is difficult to diagnose. All of these symptoms are progressing and getting worse over time. While steps can be taken to slow the disease down a bit, it never stops completely.

When the symptoms of COPD become evident and constant, patients have episodes of exacerbations that can last from weeks to months, in which the symptoms worsen, leading to hospitalizations for serious health conditions.

I always tell my smoking patients that the worst complication of exposure to cigarette smoke is not lung cancer, even though it is the most feared. COPD is much worse, and passive smokers can also suffer from it. I always bring this point up because it is important that they know that this disease is progressive and difficult to manage. Its symptoms are very intrusive and can greatly reduce the quality of life of those who are affected.

When Should I Worry?

A patient with COPD knows his or her symptoms and knows when they are out of the ordinary. It is important to find the percent of oxygen saturation (SpO₂) of the blood with the use of an oximeter.

That way you can objectively know whether the breaths and treatment received are being effective for ventilation. An oxygenation saturation below 85% means that the blood oxygenation is poor, and the patient must be attended to immediately. Fever is part of respiratory infections, which are frequent in this disease and must be treated with antibiotics.

Respiratory infections in COPD are often caused by agents that are resistant to common antibiotics. Therefore, if there are any symptoms of infection, such as a change in color or increased secretion, fever, and chest pain, it is best to go to the emergency room.

COPD Oxygen Therapy

Oxygen recovery in patients with COPD is **not recommended** unless it is supervised by a specialist. This disease causes the lungs to not handle gas properly. The inflammatory process and the amount of secretion within the pathways allow for the accumulation of oxygen that is not efficient in reaching the blood.

For that reason, air balloons called “bullae” form inside the lungs with a very thin wall of lung tissue.

When high oxygen pressure is administered, these bullae can burst, causing a serious, life-threatening emergency.

If you are not guided by a specialist, do not use oxygen as a therapy for COPD patients.



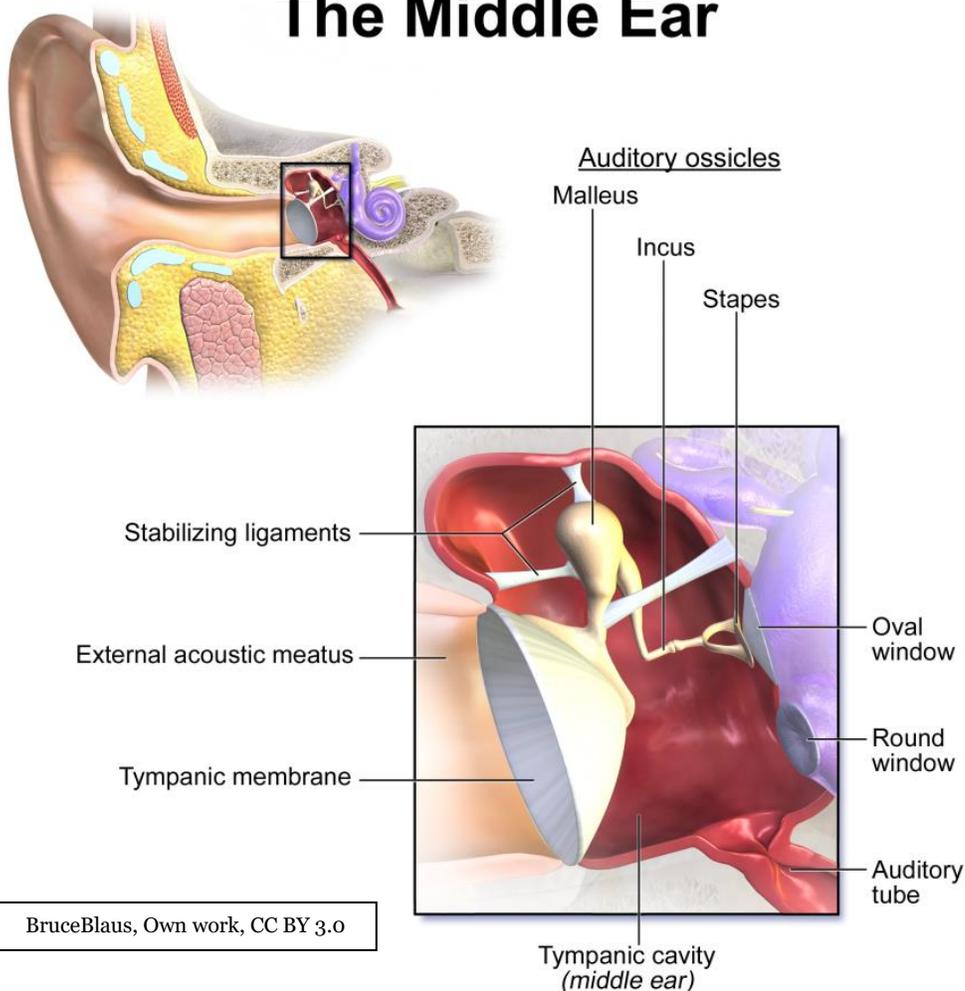
6. Ear, Nose, and Throat

Otolaryngology is the branch of medicine that studies the ears, nose and throat. Diseases of these three organs are very common. We have all had a sore throat or earache, and many of us have had nosebleeds, so it is a fairly familiar topic in which I seek only to clarify some points and supplement with tips that may be useful for solving problems when it is not possible to ask for specialized help.

Ear

The ear is the organ of hearing. It has an external and an internal component. The external is formed by the auricle or pinna and the external ear opening. The internal ear canal is a tunnel that connects the pinna with a set of small bones that vibrate so that we can identify sounds.

The Middle Ear



The skin of this tunnel is delicate, and about one inch away is a membrane that separates the ear canal into the outer and middle, where the bones are located. Damage to the membrane can cause serious damage, such as contamination of the middle ear canal and hearing loss.

a) Cleaning the Ear Canal: Removing Foreign Bodies and Earwax Plugs

Earwax is a fatty, semi-solid product secreted by ear cells that serves as protection against damage and microorganisms that can enter the ear canal. There is always the question of how to clean the ear canal safely, especially if there is an impaction of wax that causes pain and discharge.

Q-tips are not recommended for cleaning the ear, basically because many people do not use them properly. To clean with the Q-tips, you should make circular movements and push outward, not toward the eardrum. Accidents occur when you try to push the swab in too far or when you clean the wax excessively. Remember that wax is a protection against infection and micro-particles. Trying to remove it completely leaves the ear susceptible to pathogens.

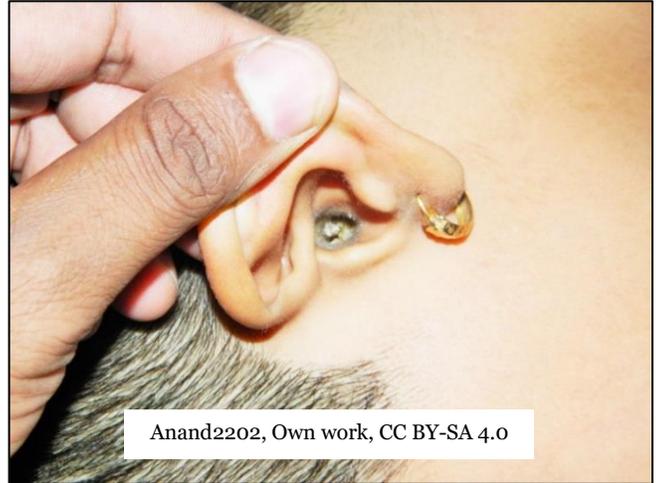
When I worked in Brazil, I had many patients with wax impacts or foreign bodies inside the ear canal. The most common were insects and paper, but in children and very old patients, you can find any kind of object, even beans and rice.

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Some people use paper to prevent insects from getting into their ears, and the debris builds up inside, mixing with earwax and forming a very thick blockage that is difficult to remove. Sometimes the person is not sure they have an object in their ear.

When the patient comes in with ear discomfort, difficulty hearing in one ear and a feeling of blockage or slight pressure, simply shine a flashlight into the ear canal to see if there is a foreign body inside.

Once I identified the object, I used to perform a very effective and secure technique that never fails to remove any foreign body inside the ear.



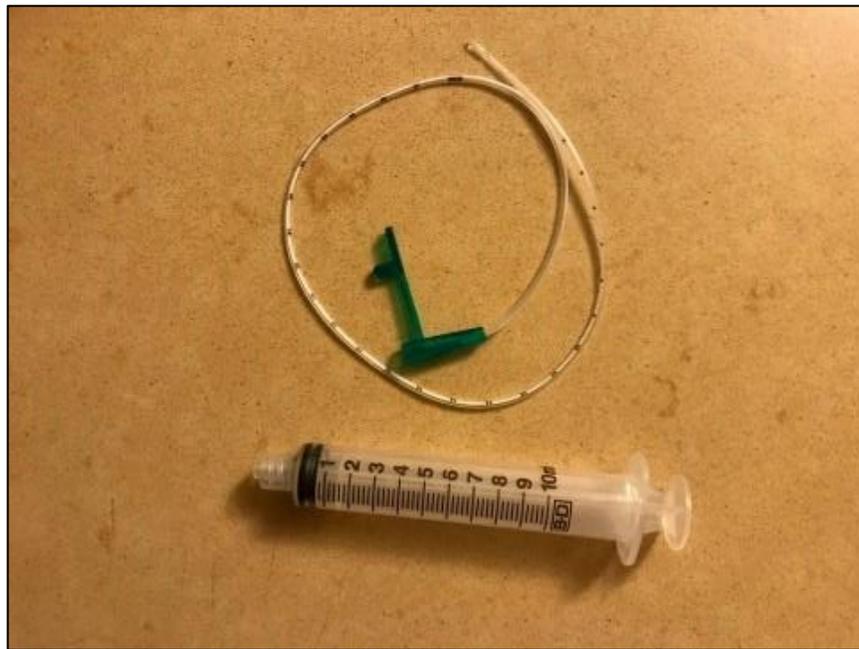
To do this procedure, you need the following:

- 1 feeding tube or 1 butterfly syringe
- 1 syringe of 20cc or larger
- Saline solution
- Optional: earwax removal drops

The patient should be lying or sitting down but not standing up, as ear canal irrigation may cause dizziness. To lessen this effect, you can heat the salt solution a little.

Procedure:

1. Connect the scalp or feeding catheter to the 20cc syringe. If you have a scalp, you must cut the needle so as to leave only the plastic tube.



2. Fill the syringe up to 20 or 30cc, depending on the capacity of the one you have.

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3. Insert the tube into your ear canal about 0.5 inches and start irrigating firmly but not too quickly.



Under the patient's ear, you can place a bedding center or a container to prevent them from getting wet. You can repeat the procedure, but I don't think you'll have to. All of the contents that were blocking the ear will come out without you having to do anything else.

If you find that the impacted earwax is too thick or large, you can apply a few drops of earwax remover first, which will help soften it.

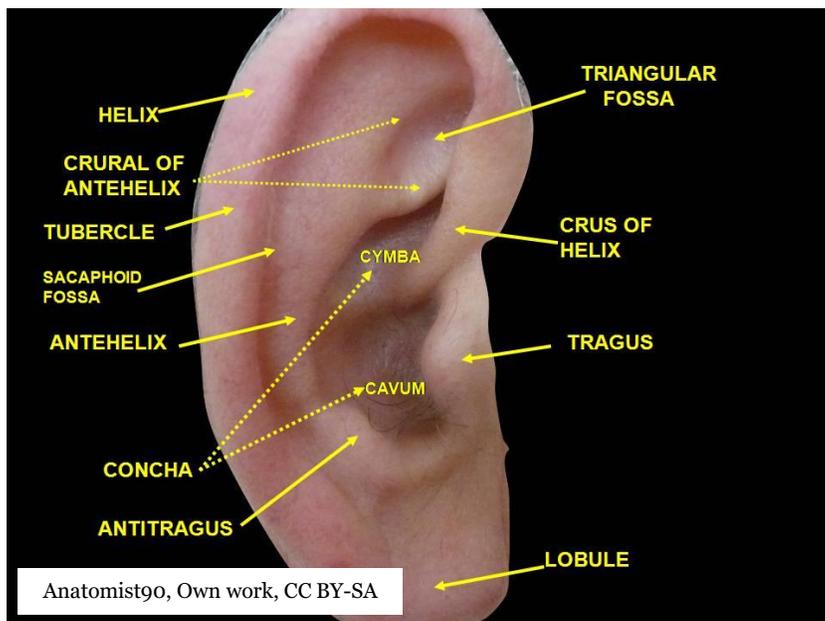
b) Earache

Ear pain is a fairly common symptom that can occur for reasons that have nothing to do with the ear. Colds, sore throats, sinus infections, dental issues like cavities, and temporomandibular joint problems are some of the causes of earache.

Even some sounds, such as rubbing or whistling, can be due to dental problems, as happened to a friend who stopped hearing a noise in her ear after her orthodontic treatment.

Ear infection, or **otitis**, is the main cause of pain and can occur for various reasons, such as earwax plug; a virus; stagnant water in a pool, at the beach, or in a bathtub; and bacterial infections.

A simple way to diagnose it without using expensive instruments is to evaluate the auricular pavilion for redness in the external auditory canal.



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Pull the earlobe down for a few seconds and see if it causes discomfort. Pressing the tragus firmly also increases the pressure on the eardrum, causing pain. Usually, the agents that cause otitis are viral and the process is self-limiting.

The treatment is symptomatic, and analgesics such as NSAIDs are indicated for three days to improve the pain.

For pain after swimming, the so-called **swimmer's ear**, the application of drops is indicated to help dry out the remaining water and humidity in the ear canal, as well as analgesics. The difference in **pressure** can cause severe pain in one or both ears. You may have felt this on a plane trip, in an elevator, or on any trip to a place where the pressure changes dramatically.

The problem in these cases is that the eardrum, which is the membrane that separates the external part of the ear from the internal part, does not balance the internal pressure with the external pressure fast enough, generating a lot of pain.

One of the techniques recommended by a flight attendant was chewing gum. Trying to blow with a blocked nose can also achieve the necessary pressure, but this technique can generate so much pressure that it can perforate the eardrum, so I avoid it. Gum always produces excellent results.

It is rare for an adult otitis process to become complicated to the point of requiring antibiotics. However, if after four days with anti-inflammatory treatment the symptoms continue or worsen, or discharge is added through the ear, antibiotic treatment should be started, and you should notify the specialist so that he or she can take your case into account.

The antibiotic of choice is Amoxicillin 250 mg every 8 hours for 7 days. If you are allergic to penicillin, you can take Ciprofloxacin 500 mg every 12 hours for 10 days.

c) Tinnitus

If you've ever been to a concert or a nightclub with loud music for a long time, I'm sure you know what tinnitus is. The term tinnitus refers to the sensation of hearing a buzzing or whistling in the ear that can be continuous or intermittent, steady or pulsating. It is a fairly common cause of consultation.

It is triggered by a number of causes, including exposure to loud sounds either from work (construction, carpentry) or fun, blockage of the ear canal by a foreign body, use of some drugs like aspirin and some antidepressants, an early symptom of hearing loss, or cervical, dental, and temporomandibular joint problems.

Tinnitus can be a symptom of a disease such as high blood pressure or hyperthyroidism. In this case, the sound is pulsating because what is heard is the sound of blood passing through the arteries.

In the clinical evaluation, the doctor can hear the noise with the stethoscope; that is why it is known as objective tinnitus.

Once therapy is given for the underlying disease, the sound decreases or stops. In many cases, tinnitus is related to a neurological hearing problem; however, it has no major health impact. It has no specific treatment beyond relaxation techniques.

When the trigger is the use of a drug or exposure to loud sounds, the tinnitus should stop when the cause is removed. Special hearing aids are recommended for people who work in noisy environments.

d) Hearing Loss

Hearing loss is the inability to hear sounds that everyone normally hears. Although hearing impairment and hearing loss are used interchangeably, the truth is that the former refers to the difficulty of hearing but not to the impossibility.

Age is the most common cause of progressive hearing loss. From the age of 65 onward, about half of all people have some degree of hearing impairment, and this number increases with age.

The main consequences of hearing loss and hearing impairment are to social and work relationships, which can lead to anxiety and depression. In addition, there is a relationship between hearing loss and accidental falls.

Although hearing difficulty occurs in the elderly, steps can be taken to avoid it or slow it down. There are professions that expose people to developing hearing loss, including construction, carpentry, nightclub clerks, and MRI technicians.

The relationship between aircrew members and hearing loss has also been studied both because of the noise and because of the continuous pressure changes to which they are exposed.

Prevention

- Avoid continuous exposure to loud noise.
- If working in a noisy environment, try to use safety headphones.
- See a hearing specialist if you have symptoms of difficulty hearing so that the level of hearing can be determined and a device can be recommended to improve it.

Nose

a) Nosebleeds

Nosebleeds have many causes. It is common to see this in very dry climates, whether they are hot or cold, because the nasal mucosa gets dry and is very sensitive to changes in humidity. It can also be due to a traumatic event or changes in blood pressure.

In the ER, I have seen patients come in with heavy nosebleeds. Many people recommend putting your head back; in fact, you see it a lot on TV and movies. But this is not a good recommendation.

The blood that comes out of the nose comes from the front of the mucosa; by putting the head back, we swallow it, which can cause stomach upset.

It is ideal to lean forward and squeeze your nostrils for about ten seconds while you breathe through your mouth. The fingers are placed a little higher than the nostrils, without hurting the septum.



TenarAiuola, Own work, CC BY-SA 3.0

Putting ice on the top of your nose, between the eyes, is also good advice. I never recommend inserting paper or cotton into the nostrils. If something is introduced, I would choose to use gauze since it does not leave any remains inside the orifices.

b) Foreign Body in the Nose

The nose and ears are places where foreign bodies can commonly get stuck. In children and patients with dementia, this is more likely to occur; however, we must be vigilant as it is a situation that can occur at any time to anyone. If a foreign body is left in one of these holes and time passes, an infection could develop that may bring other complications.

Objects stuck in the nose are sometimes visible and can even be picked out with fingers or tweezers. The procedure to remove it must be done with outward movements, otherwise the object will be introduced further and may get stuck in the back of the nose, where it is not possible to remove it without specialized assistance.

If the object is visible inside the nose, you can try to remove it by covering the opposite side and asking the person to blow hard until it comes out. This procedure should be repeated until the foreign body comes out.

This option is very useful and one I recommend the most since it does not damage the mucosa and it is impossible for the object to get stuck in the back of the nose.

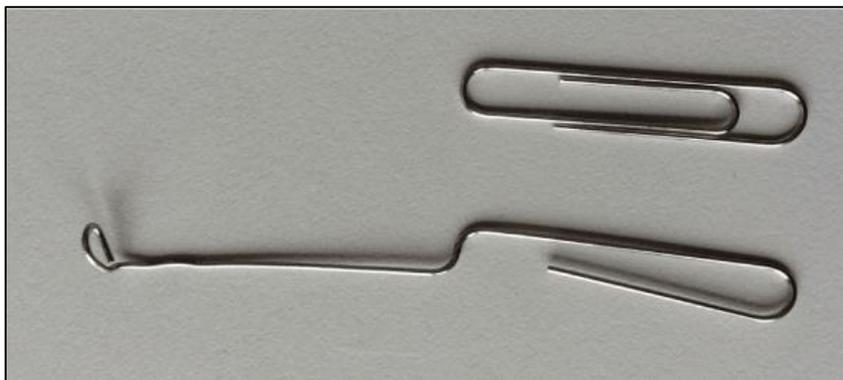
In the event that the object is badly stuck and does not come out by the above methods, a homemade device for extraction can be tried.

The original instrument used by ENT doctors is a surgical hook that you can build with a paper clip or with a wire that is not very rigid. In the picture to the right, you can see what the hook remover looks like.

You're going to make a paper clip that has the same effect as the original instrument.

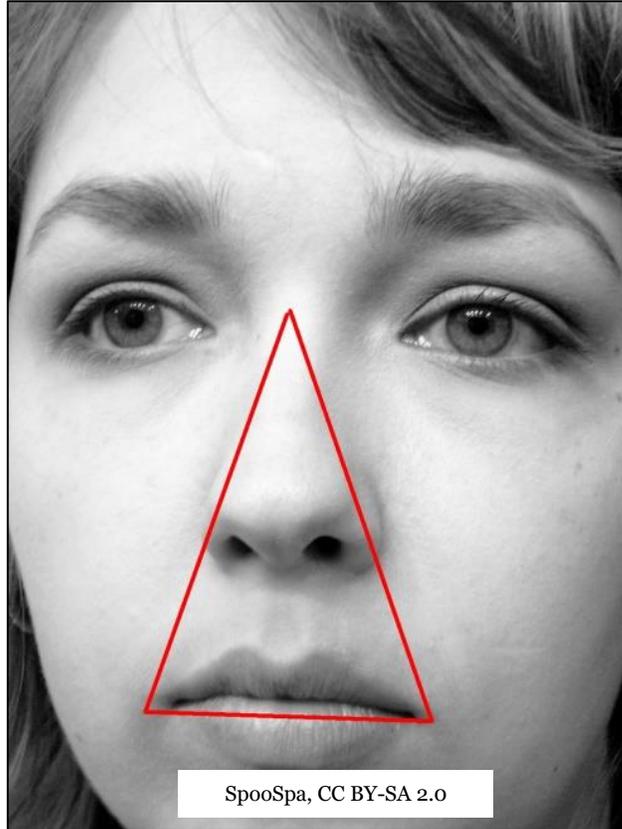
This instrument is gently inserted through the nostril where the foreign body is located and is then attached to the paper clip. All the movements must be very smooth and always trying to pull out. Remember that this mucosa is fragile and can bleed, but a little bit of blood is not something to worry about.

Once the foreign body is out, it should be checked for completeness. A spray such as Afrin, which contains a substance that constricts blood vessels and prevents bleeding, can be applied to the nostril.



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The danger triangle of the face is an anatomical area described as the triangle formed between the outer edges of the mouth and the nasal septum. It includes the upper maxilla and the nose.



It is called this because of the danger that an infection in this area can develop a serious consequence in the brain, such as a brain abscess or meningitis. This is possible because the circulation in this area is connected directly to the brain. Although it is not the most common, it is important to know that it can occur and that any type of infection involving the triangle should be treated promptly.

Throat

Sore Throat

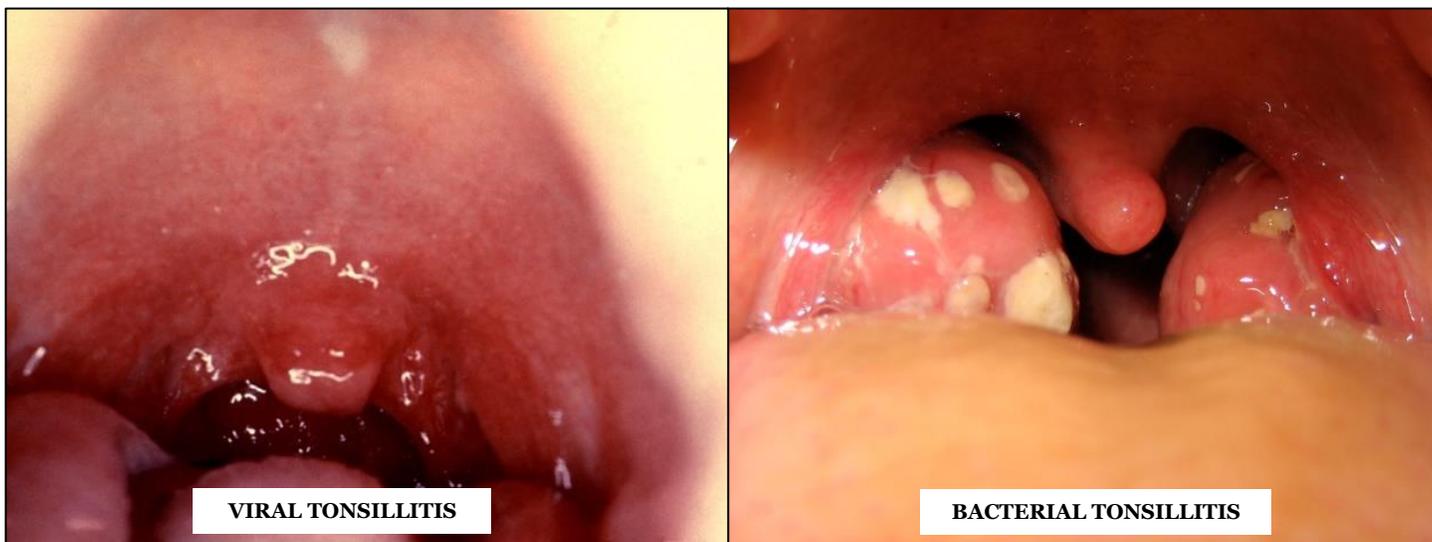
A sore throat is a very common complaint. It is the inflammation of the upper airway, and it can be divided into three types depending on its location: tonsillitis, pharyngitis, and laryngitis.

It can be caused by viral and bacterial infections and has general symptoms, such as dryness, burning, itching, pain, irritation, and tenderness when swallowing.

Tonsillitis and pharyngitis do not present symptoms of voice loss, but the larynx is one of the structures involved in the process of creating sound, so its inflammation does show these symptoms.

Viral and bacterial infections of the tonsils cause different signs and symptoms. In viral infections, there is redness of the pharynx and swelling of the tonsils, with general malaise and headache.

In the case of the bacterial infections, the disease is more obvious, presenting with high fever, pain, redness of the tonsils, and white spots on its surface that are plaques of pus.



Treatment

There are many natural remedies for sore throats. My favorite is to drink warm milk with one tablespoon of honey. Honey is a powerful anti-inflammatory, and milk has relaxing properties. Milk can also be replaced by an infusion. Saltwater gargle and water with hydrogen peroxide gargle also work very well, but the latter can have an impact on tooth enamel.

Ginger is an excellent anti-inflammatory and antiseptic that has always been used for various ailments. Nowadays it is fashionable to take ginger shots. Ginger tea and candy can be made at home and are very helpful and widely used. Ginger chews can be bought anywhere for sore throats or gastrointestinal discomfort.

Chewable Crystallized Ginger

Ingredients:

- 1 pound of fresh ginger
- 1 ½ cups of honey
- 1 ½ cups of filtered water.

Preparation:

Peel and slice the ginger root. Put water and honey in a pot until it boils, and place the ginger over low heat until it is tender, about 30 minutes. Turn off the heat and let it cool. Pour through a strainer until all extra syrup falls off the ginger pieces. Set leftover pieces on wax paper to dry and crystallize for about 12 hours. During episodes of burning and scratching, I prefer to stay away from cold places or exposure to air conditioning.

When white plaques are seen on irritated tonsils, the infection is generated by bacteria, and you should receive antibiotics. One of the best options is Cephalexin 500 mg every 12 hours for 10 days.

Symptoms improve rapidly around the fourth day of treatment, but you should complete the ten-day course of antibiotics.

7. Airway Obstruction

Airway obstruction is very common, even if we don't realize it. Some obstructions are partial and don't lead to any complications. However, others completely block the airway, compromising the patient's ventilation. An airway blockage can occur at any time, so be aware of the maneuvers used to help yourself or the person who is choking. When a person is choking, they should get the attention of others by holding their neck in both hands. This is the universal choking sign.

Usually, the object that is blocking the airway is expelled with coughing. If it doesn't come out, you can perform the **Heimlich maneuver**.



The first step of this technique is to help the person to lean forward and give him or her five firm blows between the shoulder blades. If the person is not able to cough up the obstruction, you will proceed with compressions in the abdomen at the level of the diaphragm (See Diagram on the right).

To start with abdominal thrusts, you should stand behind the person and put your arms around their waist. Five compressions are done in the space between the chest and the navel. These should be strong, firm compressions that help generate enough pressure to push the object out. While you are performing this maneuver, have someone call 911 to ensure that help is coming to evaluate the patient. Most of the time this technique is enough to unblock the airway. If the person still cannot expel the contents of the pharynx, you must wait for specialized help. Do not put your fingers inside the person's mouth to try to get the blockage out. You can push it in farther or get bitten.

What Can I Do if I Am Alone?

If you're alone and feel like you're choking on something, you can execute a self-administered maneuver. You need to stand in front of a table edge, chair, or railing and lean over.

Quickly thrust your upper abdomen against the edge. It is important to contact 911 so that they can check the airway because it may have been traumatized or fissured by the blockage.

The Heimlich maneuver can be performed on children and infants as well. In the case of children, the technique is identical to that of adults.

Babies, on the other hand, must be placed on your legs face down and hit firmly on the back. You can also do chest compressions with the baby on his back.

Anti-choking devices work by creating a vacuum inside the mouth and pharynx to attract the object that is causing the blockage. They are easy to use and do not require any special training.



Back Blows



Chest Thrusts



BruceBlaus, Own work, CC BY-SA 4.0

Tracheotomy: A Life-Saving Procedure When Help Is Not Available

If despite the maneuvers performed the person is unable to breathe, continue to communicate with the emergency line who can guide you through the process of performing a tracheostomy. A tracheostomy seeks to connect the trachea, which is the main airway, to the outside through a tube that comes out of the neck. This way the patient can ventilate if the obstruction is above this point. This procedure can be lifesaving in case of severe, life-threatening allergic processes due to inflammation of the throat structures.

a) Materials Needed:

- Isopropyl alcohol
- Gloves, preferably sterile
- Wide straw/plastic tube of about 4 inches
- 1 scalpel
- Gauze or towels.

b) Technique:

Step 1

Lay the patient down and place a rolled-up towel between his shoulder blades or under the back of his neck to extend his neck.

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Step 2

Locate the soft area half an inch above the center of the sternum. At that point, clean with alcohol and make a half-inch incision. Do not extend to the sides because there are two large veins that can bleed a lot and dirty your field of vision.

Step 3

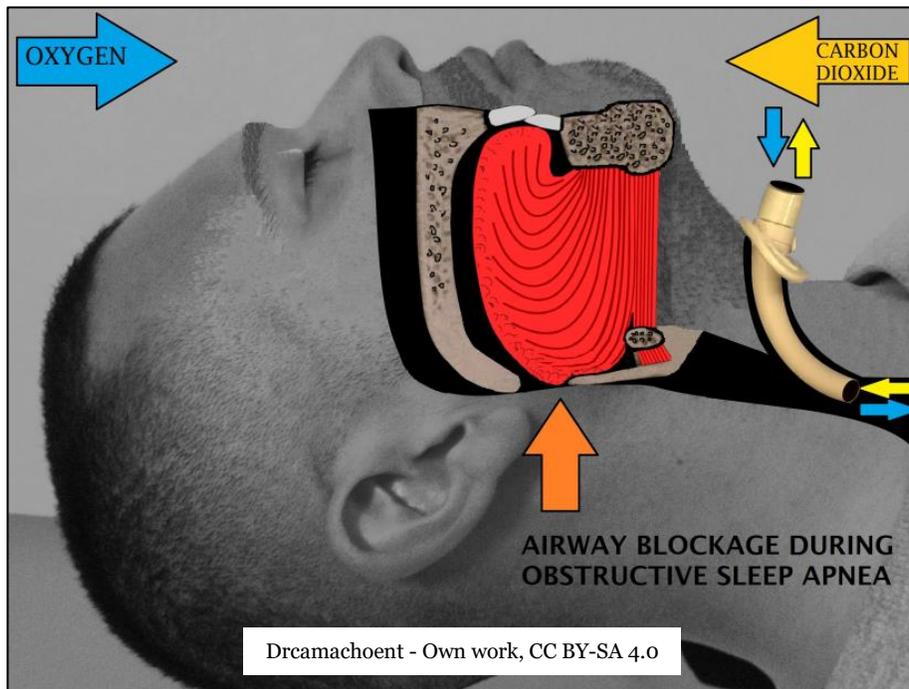
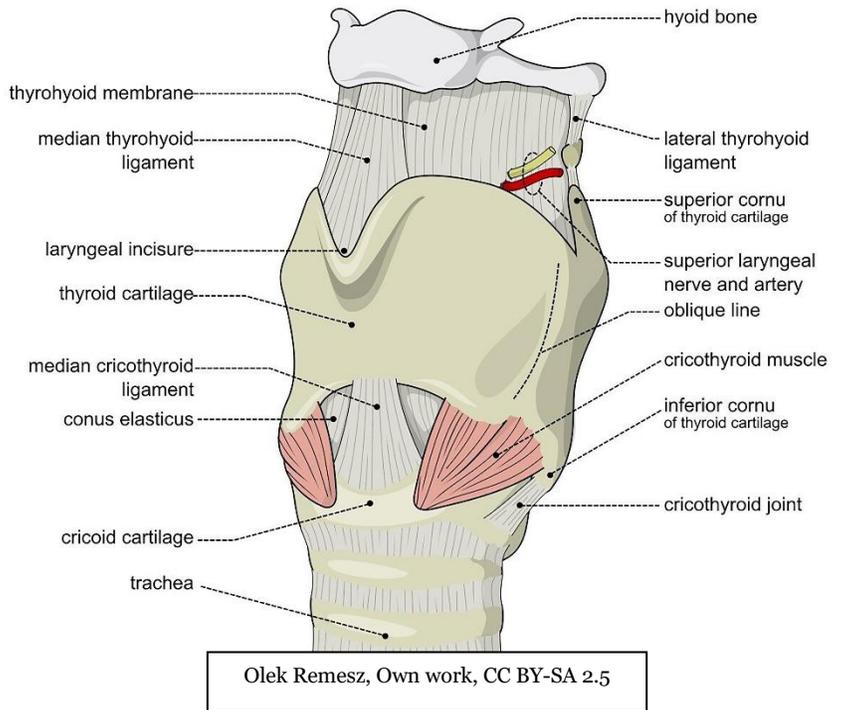
Underneath the skin, you will see the yellow tissue, which is the fat, and going a little bit lower, you will see a whitish, shiny membrane, which is the cricothyroid membrane.

This membrane is the way to the trachea; when you open it, you will be able to ventilate.

You have to have the tube you're going to use at hand and ready to use. It can be a thick straw or the frame of a pen that is open on both sides, without the ink inside.

Step 4

Open the membrane horizontally by half an inch and immediately insert the tube to be used. About two inches deep is sufficient.



Step 5

You will know the procedure is working because the patient will be able to breathe through the tube. If there is no breathing movement, you can blow through the tube to start ventilating, as in mouth-to-mouth, but this time you will ventilate through the tube that goes directly into the trachea.

Inform the emergency line of the whole procedure and also of any eventualities so that you are prepared.

THIS PROCEDURE IS RESERVED EXCLUSIVELY FOR CASES OF LIFE OR DEATH. BEFORE A TRACHEOTOMY, MAKE SURE YOU HAVE USED ALL POSSIBLE MANEUVERS TO UNBLOCK THE AIRWAY.

8. Thorax

Breast Health

As a breast surgeon, I wanted to include a section in this manual on breast health and the warning signs of malignant breast disease in women and men. Breast cancer is one of the most common malignant diseases worldwide. Although there is no prevention, early detection is the key to a complete cure.

a) Male Breast Disease

The message of breast disease has been focused on women, and that is why many do not know that these pathologies can also affect men, although not to the same extent. Due to hormonal influence, women's mammary glands are more developed than men's, but that does not mean that there is no male mammary tissue. Alcohol, the use of some illicit drugs, and some antidepressants cause the male breast tissue to develop, forming a condition called gynecomastia. This is a benign disorder that is not reversible; it can only be improved with surgery.

Otherwise, the man may present other benign conditions, such as extranumerary nipples, which are additional nipples that are outside the pectoral region, and granulomatous mastitis, which is the contamination of the breast tissue by infectious agents such as extra-pulmonary TB, which forms a very hard scar tissue within the tissue.

Breast Cancer in Men



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Malignant disease of the breast in men is rare, occurring in 1% of cases. In my practice, every year I operate on one or two male patients diagnosed with breast cancer. In the images below, you can see one of the patients I operated on with my team in 2019. The patient continues to come to my office for annual check-ups.

It is important that the man be aware of any changes in the pectoral area, not only the appearance of masses but also change in color, areas of itching, new moles, bleeding, or discharge through the nipple and skin retractions, which is as if the skin were pulled back against the muscle.

In the case of men, treatment cannot wait, since due to the scarce breast tissue, the disease invades the deep tissues quickly and metastasizes in a short time.



When you notice any of these symptoms, it is important to be seen by a mastology specialist, who will decide if the finding should be studied in depth or not.

b) Female Breast Disease

The most common reasons for women to consult a breast pathology practice are breast pain and palpable masses. Breast pain is usually a symptom of some hormonal variation. Whether in post-menopausal women or those with irregular menses, the problem is the same. The gland does not receive an even supply of hormones.

For this type of disorder, a natural product named Gotu kola is very effective, and I always recommend it. It is my choice of treatment for breast pain and cysts. The dose is 1 daily for 3 months; then stop 1 month, and if symptoms continue, take for 3 more months.

Breast Cancer in Women

Female breast cancer is the second leading cause of cancer death in American women. In Latin America, it has become the leading cause of cancer death, surpassing cervical cancer since 2017.

There is no prevention for this disease, but through early diagnosis, it can be evidenced when there are still a number of therapies, both medical and surgical, that can be implemented to completely cure the disease. The more advanced the stage we diagnose the cancer in, the fewer therapies that are available.

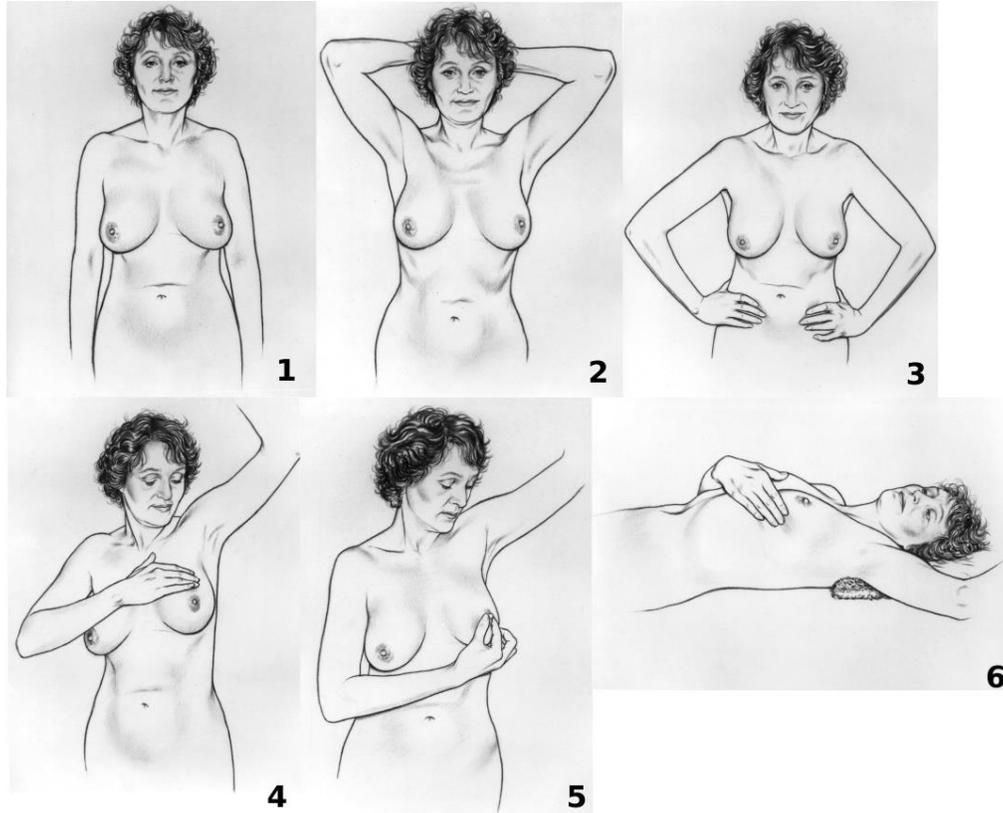
Mammography and breast sonogram are the studies we have to diagnose breast cancer early. In the United States, it is indicated once a year from the age of 40, along with specialized evaluation. In my country, because it is the leading cause of cancer deaths in women, screening begins at age 35. Another tool, free of charge, is breast self-examination. I indicate it once a month to all my patients. The important thing about this exam is that you know what is normal for you since each breast gland is different. Once you get used to feeling it and knowing what is normally present in your breasts, you will

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quickly recognize any abnormalities.

In the image below, you can see the steps to make an efficient breast evaluation.

Breast self-exam



In front of the mirror:

1. With your arms at your sides, watch your breasts for color changes, sagging, and swelling.
2. With your arms behind your head, look for areas of protrusion of masses, where you observe elevated areas or deformities.
3. With your arms at the waist and pressing a little toward the center, look for skin retractions, which is as if the skin were pulled back.
- 4.

Standing up:

(I recommend doing this part in the shower because the soap makes the hands more slippery and increases the sensitivity of the finger pads.)

1. Feel the entire surface of the breast with your whole hand, using circular movements to look for masses. The breast gland does not feel completely smooth; it is normal to feel an irregular surface. It is not normal to feel masses with sharp edges or areas that are too hard.
2. Squeeze the nipples by pressing firmly for discharge across the nipple.

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Lying down:

3. On a flat surface, finish the exam by touching the gland to the chest to feel it better at depth. This step is especially important for large breasts.

By doing this exam once a month, you will be able to tell if there are any changes in your breasts. If there are any abnormalities, check with your doctor.

In 2010 I had just graduated as a general surgeon. I was working with a team of five surgeons. On one of the very few days I had nothing to do, I was in the operating room watching some procedures. There was a doctor who came from Italy and didn't have an assistant for his surgery, and I told him I could help. After that first surgery, we operated several cases together, and I started to be his regular assistant until a few months later, when he told me that there was an opening for a full scholarship in a mastology program in Milan. I had previously thought of doing a specialization but in the United States; in fact, I had already spoken with a center in Texas. However, everything was going very slowly, and it had become complicated.

One month after sending my CV to Milan with all the requirements, I was admitted to the European Institute of Oncology, the most prestigious center in the world for the treatment of breast cancer.

The director was Professor Umberto Veronesi (in the picture), who was a pioneer in the development of breast cancer preserving surgery. It was a year of personal and professional growth for me; I met people from all over the world working in a first-class hospital. At the end of that year, Professor Alberto Luini offered to renew my position for another year, so I stayed through 2012, returning to my country in January 2013.

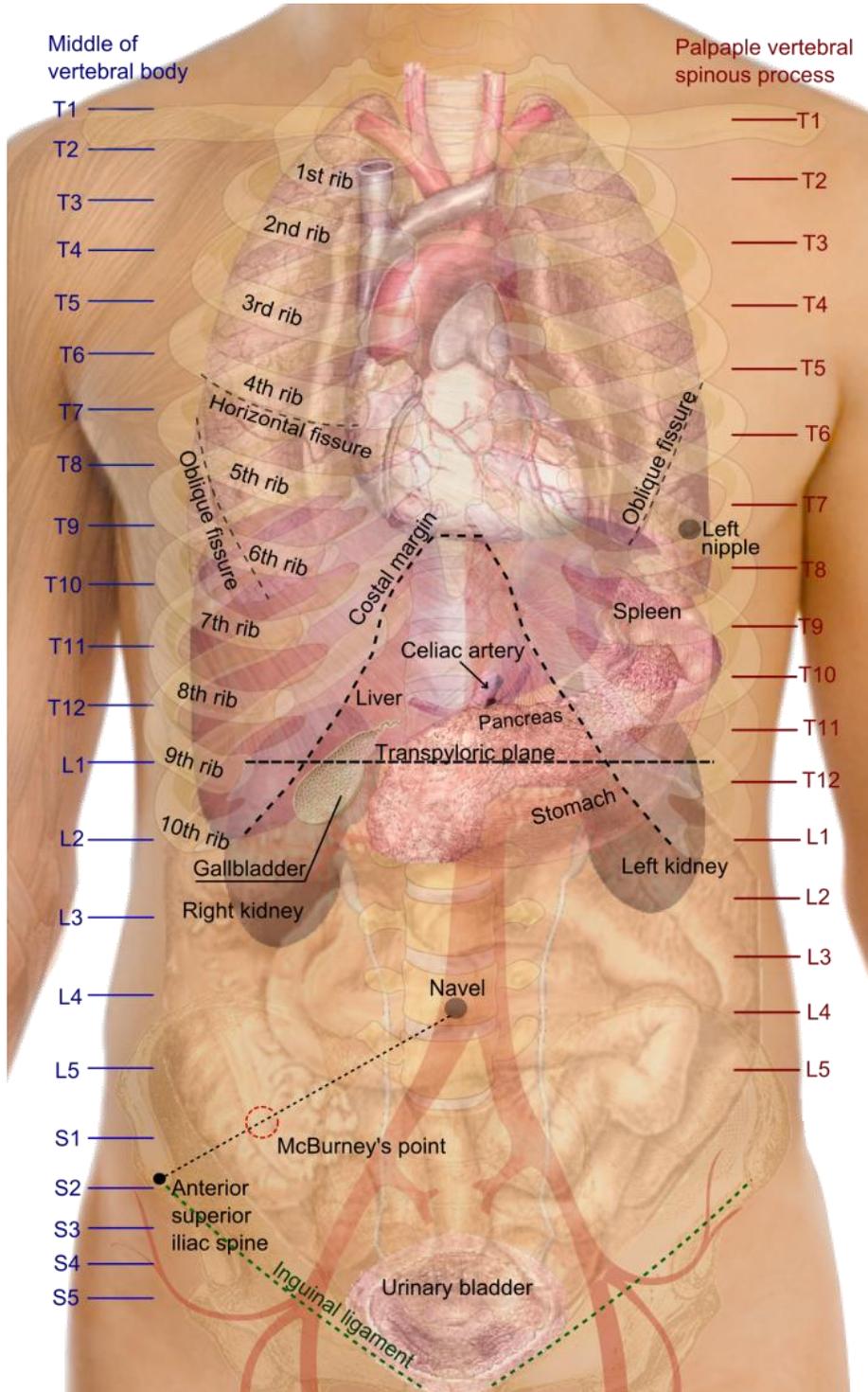


Since I've returned, I have dedicated myself to working in the private sector and also in the public sector and also as a postgraduate instructor. In addition to these tasks, I give talks on awareness and information about breast health and breast cancer. I enjoy these activities and my work with the community and hope to continue doing so for a long time.



Chest Trauma

The chest is surrounded by a cell or bone box that protects some of the most important vital organs: the heart and lungs along with the great vessels (aorta and vena cava) and the airway. It accounts for approximately 25% of all injuries and can have serious complications, leading to up to 40% of deaths.



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There are two mechanisms for injury to the chest, blunt and penetrating, the first being the most common. In my personal experience, I have often seen both blunt and penetrating chest trauma, and the concern is always to quickly diagnose any damage in these patients because when the injury is mild, it can take hours to develop the symptoms.

As with any other type of trauma, the time it takes to diagnose and treat is crucial to the patient's prognosis.

Although the mechanisms of trauma are different for the blunt and for the penetrating as well as the treatments, in which the penetrating enters surgery with more frequency, the mortality rate is basically the same.

a) What to Do When Facing a Chest Trauma

The SAFE approach is a practical way of being methodical and efficient in the face of such an emergency:

- **Shout for help (call)**
- **Assess the scene**
- **Free from danger?**
- **Evaluate the casualty**

REMEMBER:

- Find out the mechanism of the trauma.
- The airway has to be clear. Sometimes polytrauma patients have contents in their mouth that have to be cleared with gauze.
- The patient with many wounds may be bleeding from many places. It is important to focus on the life-threatening damage, mainly vascular and pulmonary.
- Vascular damage is the first thing you need to control **BEFORE** the airway. If you see any massive bleeding, **STOP THE BLEEDING FIRST**.
- The neck must be stabilized because there may have been damage to the trachea. To stabilize the neck before the emergency help arrives, take the patient's head with both your hands and keep it in a straight position. If you have a cervical collar, you can use it. If you are alone and must continue to assess the patient, place two pillows or rolled towels on each side of the injured person's head.
- Make sure you ask as many details as you can about the accident. All that information helps the paramedics think of diagnostic possibilities.

b) Physical Exam

- Take vital signs, pulse, and respiration rate for one minute.
- Use a blood pressure monitor to measure their blood pressure from time to time. Take note as a decrease is a sign of alarm.
- Observe that the breathing movements of the chest are rhythmic and symmetrical. When there is no synchronization between the movements and the breathing of the patient, there is a flail chest. Flail chest is when a segment of the rib cage breaks due to trauma and becomes detached

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from the rest of the chest wall. It occurs when multiple adjacent ribs are broken in multiple places, separating a segment so a part of the chest wall moves independently.

- When the patient breathes, see if one side of the chest is more inflated than the other. It may be a sign of a **pneumothorax**, which is the penetration of air out of the lung. It can be caused by trauma that punctures the lining of the lung, such as a broken rib or a knife.
- Check for penetrating wounds in the chest, and take note of the number and location.

c) Help May Take Time to Come, but You Have to Act

Chest wounds are not worth suturing if the paramedic hasn't examined them, but you should cover them up with gauze while you wait. It's a different technique than usual. It is practical, easy, and very useful. It is based on the principle that all the wounds we see in the chest are penetrating until it is proved otherwise; therefore the air may be coming in through those wounds, aggravating the patient's condition.

Cover all the wounds in the chest with gauze, but leave a free edge without adhesive. That way the air can get out, but when it tries to get in, the gauze will collapse and prevent it. This is a temporary solution until help arrives. It is not a treatment.

Take vital signs every ten minutes: pulse, respirations per minute, and blood pressure. If you see that the patient is decompensating, heart rate is increasing, breathing is shallow, and blood pressure is dropping but don't see any bleeding or any reason for that to be happening, the patient may be having a tension pneumothorax. This is an absolute emergency that you must deal with as that person can die within minutes.

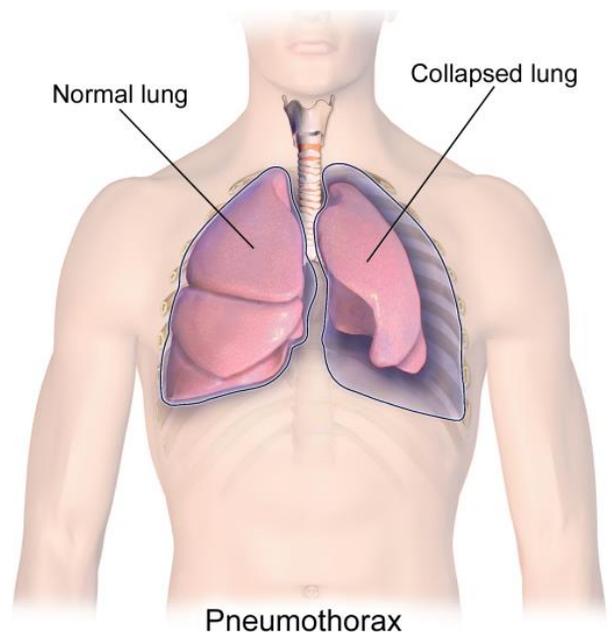
d) Needle Thoracostomy for Tension Pneumothorax: Emergency Procedure that Can Save a Life

A pneumothorax is the entry of air into the pleural space; this is outside the lung. Normally that space has a specific pressure that allows the lung to expand and contract with breathing.

When air enters this space, either from a penetrating injury that passes through it or from an internal injury, such as a broken rib that passes through the lung, the air is trapped in that area, and the lung collapses and does not perform its function of ventilating.

When the pressure inside the chest increases so much that it begins to compress the heart, there are physical manifestations, such as a drop in blood pressure and an increase in the heartbeat and number of breaths.

This phenomenon is called tension pneumothorax and is life threatening.



BruceBlaus, Own work, CC BY 3.0

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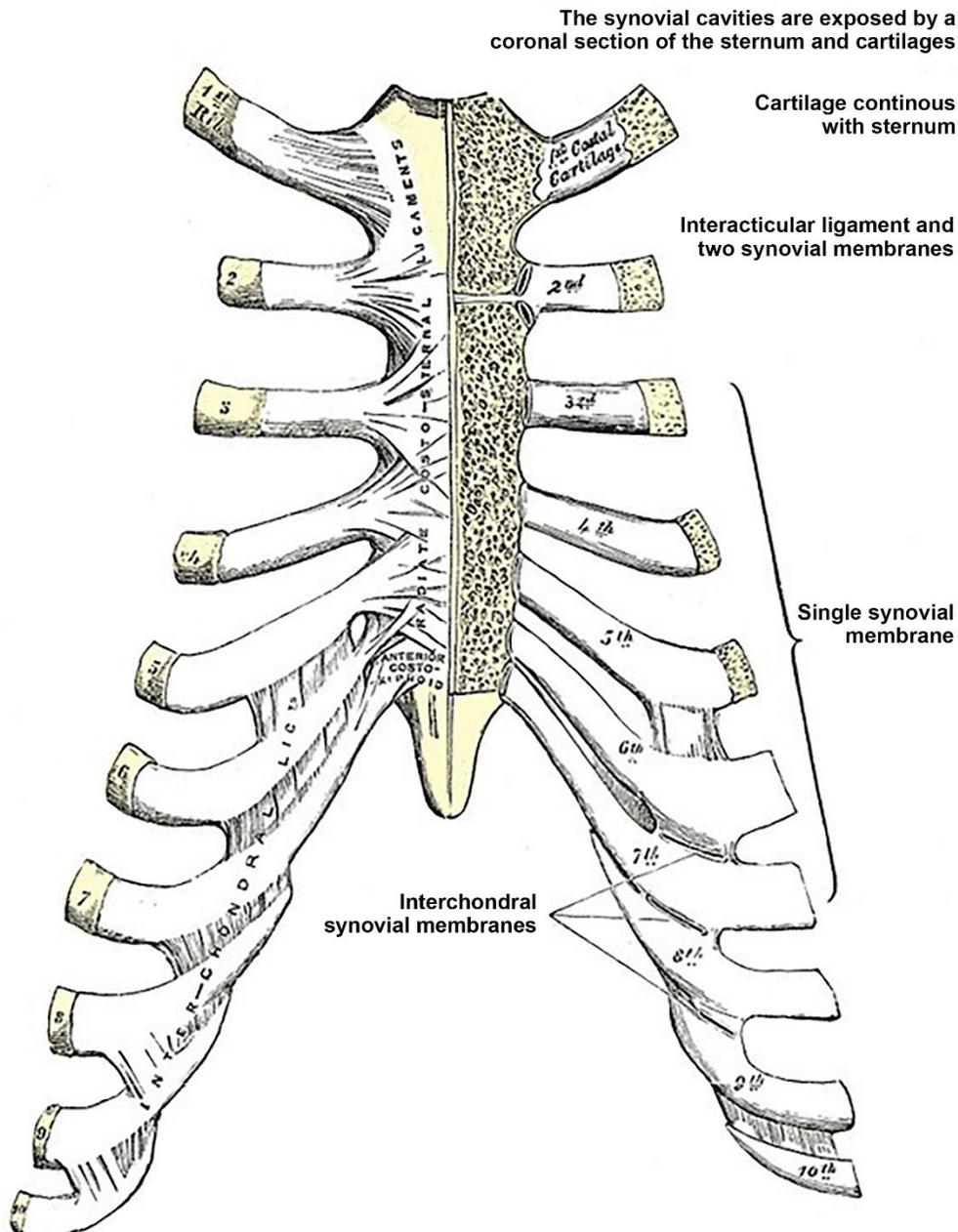
You can give the patient temporary relief by letting the air out of the lung with a procedure called **needle thoracostomy**. This can be done with a relatively simple surgical procedure that will help get the air out and the lung and heart back into place.

Materials:

- A 14-gauge needle
- Gloves and mask
- Isopropilic alcohol

Technique:

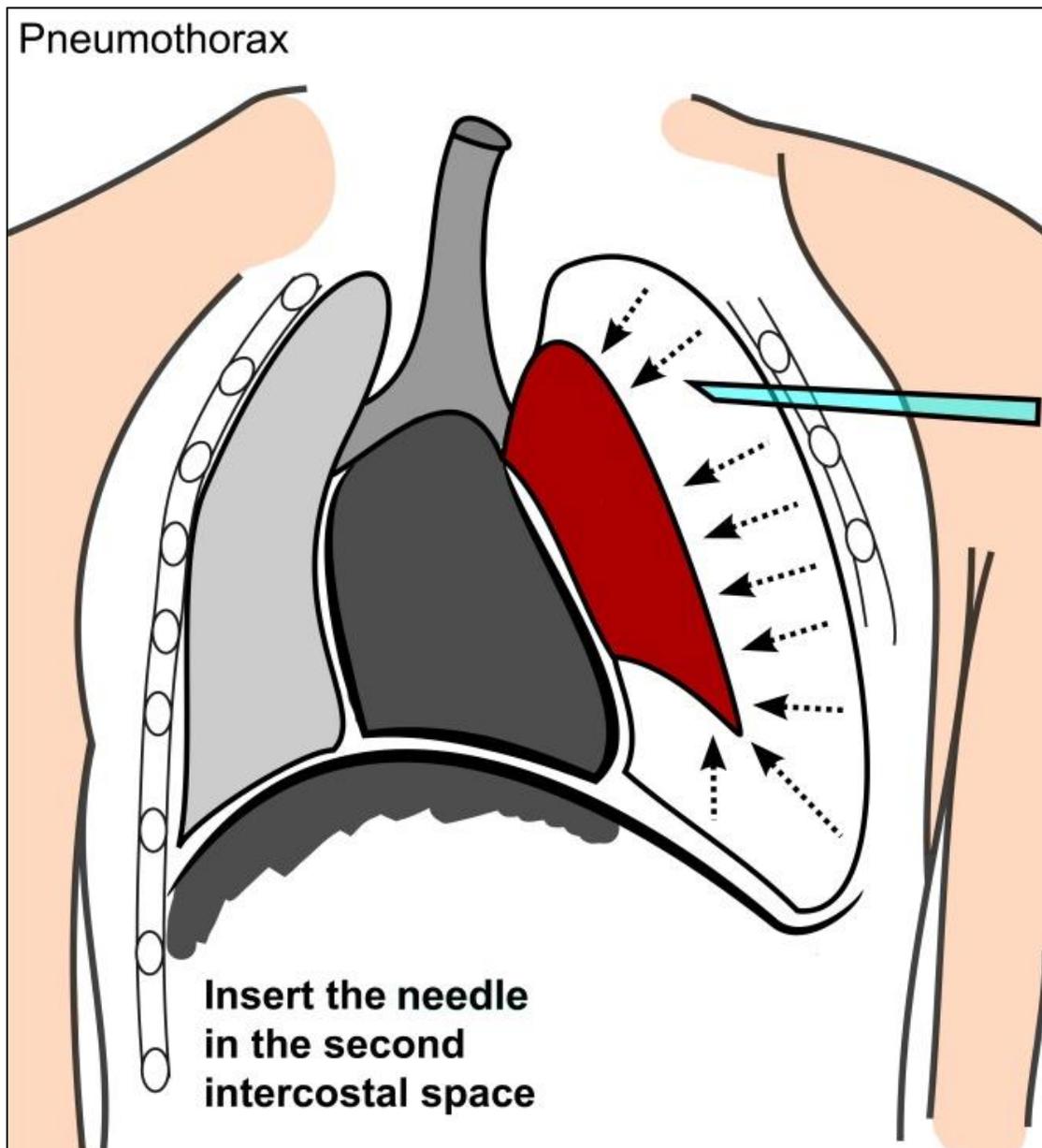
1. Locate the second intercostal space in the mid-clavicular line on the affected side.



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2. Pass the needle you're going to use through the finger of a glove. This acts as a valve that lets air out but doesn't let it in.
3. Clean the area at and around the insertion site using 70% isopropyl alcohol.
4. Insert the needle into the indicated place, piercing the skin over the rib and below the target interspace. Keep going with the needle until the pleura is punctured (usually indicated by a pop and/or sudden decrease in resistance).

This procedure is temporary. It relieves the patient's symptoms and removes the threat until help arrives and a chest tube can be inserted.



Petr Menzel, CC BY-SA 3.0

GASTROINTESTINAL SYSTEM

1. Mouth Problems

The mouth is the first portion of the digestive system and is also a very important anatomical area for communication. Both the oral mucosa and the outer skin can present common conditions that are easily resolved. Dental emergencies are more complicated and sometimes require specialized dentist care.

Cold Sores

Also called “fever blisters,” they are small lesions around the mouth caused by a virus. They are very contagious. Colds and fevers can be triggers, but the patient must have had a Herpes simplex infection to develop them.

Treatment

The treatment of cold sores is to improve pain and inflammation as they are self-limited lesions. For the inflammation, it is recommended to use ice or cold compresses on the fever blister. Aloe vera balms will help moisturize the skin on the lips. Some OTC medicines, such as Ibuprofen, also help improve symptoms. Antiviral creams, such as those containing Docosanol (Abreva) or Lysine (Lysine+, L-Lysine), may speed up the healing process.



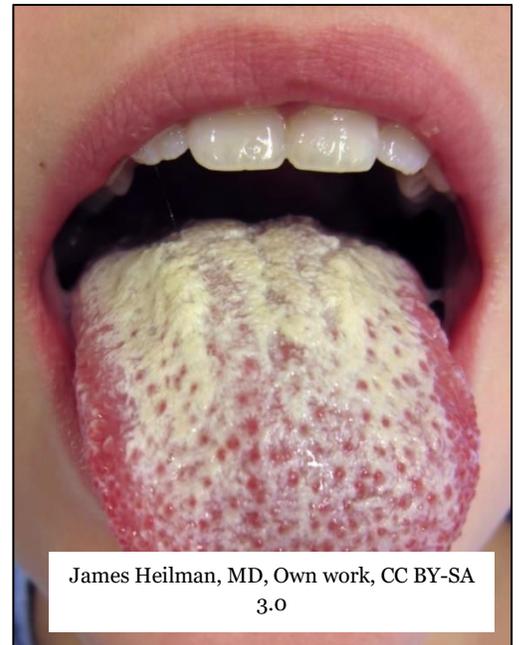
Thrush

Oropharyngeal candidiasis, or thrush, is an infection caused by the growth of the fungus *Candida albicans* on the inside of the mouth. It can commonly be seen on the tongue as white patches that, when cleaned, leave a red, swollen surface. But it can appear anywhere on the oral mucosa.

Some of the causes that trigger the infection are the prolonged use of antibiotics, poorly fitting dentures, the use of inhaled corticosteroids, and diabetes.

Treatment

When the infection is not widespread, some home remedies can be used to control the fungal contamination. If you are susceptible to oral thrush, **natural sugar-free yogurt** can help control the growth of *Candida* in your mouth. Probiotic supplements can also do that if you don't like yogurt. If the infection is already in the mucosa, **baking soda** works because of its antiseptic properties and the change in salivary pH.



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It is used as a mouthwash solution by dissolving 1/2 tablespoon of baking soda in 1 cup of warm water. You should rinse your mouth with this preparation at least three times a day.

Many babies suffer from this pathology. Babies' mouths usually maintain an environment that benefits fungal growth, especially when it is not customary to clean their tongues after feeding. It's hard for a child who eats only milk not to have this type of infection. A cotton ball soaked in water with baking soda can be used to clean their tongues, and in about three days, the fungus will be gone.

If dentures are used, washing them with bicarbonate will also control the growth of the fungus. Dentures can be washed with **natural apple cider vinegar**, which controls the growth of yeast. A mouthwash can be made by mixing one tablespoon of apple cider vinegar with one cup of water. However, it can produce a burning sensation in some people.

It is important to remember that maintaining a strong immune system helps prevent overgrowth of fungi and bacteria. Therefore, vitamin supplements and a diet that includes foods that meet the daily requirements are essential.

Canker Sores

Canker sores are painful and annoying ulcers that make it difficult to eat, speak, or do any activity using the mouth. Treatments such as corticosteroids and chemotherapy increase the likelihood of these sores. However, we can all suffer from them.

I've always suffered from this kind of mouth injury. Although there is no scientific data, I believe that there are people who are more susceptible to developing them than others. My grandfather also presented them quite frequently.

Treatment

Although there is no specific treatment because canker sores are self-limiting, there are many things we can do at home to improve pain and speed healing.

Baking soda has antiseptic properties and alkalizes acid that may be present in saliva. This mechanism decreases the number of bacteria that keep the canker sore open.

Just like baking soda, **milk of magnesia** and **liquid antacids** can be used as a mouthwash because they also have an alkalizing effect. You can also apply these products directly on the canker sore with a cotton swab. Remember that milk of magnesia is a laxative, so don't ingest it. Just keep it as a mouthwash.

Tea bags help deflate the area around the canker sore, improving the pain. A wet tea bag is applied directly to the lesion for approximately 15 seconds four times a day.

These methods are very effective and are not exclusive. For example, baking soda can be used with the tea bag without harming or worsening the extent of the canker sore.



Maksim, CC BY-SA 4.0

Papillitis (Lie Bumps)

Lie bumps are the inflammation of the lingual papillae, and although the legend says these appear when we tell lies, the truth is that it can come at any time and be very annoying.

Papillitis does not need a specific treatment; however, mouthwash and painkillers can improve the pain. In a few days, those lie bumps will no longer be on your tongue.



FoPen, Own work, CC BY 3.0

2. Teeth Problems

Teeth are bones connected to the jaw. They can present emergencies either from injuries due to trauma to the face, such as falls or blows with objects, or from diseases of the mouth and gums. The mouth is a completely contaminated environment; in fact, a human bite is much more dangerous in terms of infection than any animal bite.

Therefore, it is important to maintain adequate oral hygiene so that the teeth do not suffer from an increase in the number of microorganisms that end up colonizing the spaces between the teeth and near the gums, resulting in cavities.

Dental hygiene consists of flossing between each tooth space once a day, brushing your teeth after eating, and using antiseptic mouthwash once or twice a day.

However, there are situations that we cannot avoid, even if we follow all the normal hygiene rules. Trauma or bacteria that begin to grow between a crown and the root of the tooth are unexpected and should be evaluated by a dentist.

Toothache and Gingivitis

These conditions are non-specific symptoms that can be caused even by diseases of the face that are not exclusive to the mouth. Both can be very painful and annoying. The important thing in these cases is to recognize the cause so that it can be treated.

Dental hypersensitivity to cold, heat, or acids is a common cause of toothache as well as food debris stuck in your teeth and gums and dental cavities and abscesses. All these may be accompanied by gingivitis. These are diseases that go hand in hand.

In order to improve them, you must first carry out a proper cleaning of the teeth: flossing between all the spaces, brushing, and using a mouthwash. If the pain persists, one recommended technique is rinsing with warm salt water. This treatment was indicated to me by a dentist, and it worked very well.

At that time, I had a lot of hypersensitivity in two lower teeth and didn't know what it could be. To my surprise, after the dentist examined me, he told me my teeth were very clean but the problem was that I was brushing too vigorously and with a very stiff toothbrush. This poor brushing technique caused the roots of those two teeth to be exposed.

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The root of the tooth is where the nerves and all the sensitive parts are, so it is protected by the gums. When exposed, it becomes very sensitive to temperature changes. The saltwater rinses helped me with that unpleasant pain that comes with hypersensitivity. On top of that, I started using special toothpaste for sensitive teeth, which I still use when I have this problem.

To prepare the rinse, you will mix half a teaspoon of salt with half a cup of warm water. This liquid should be prepared each time the rinsing is done, up to three times a day. Never keep the rinse after it has been used because as soon as it has any contact with the mouth, it becomes contaminated.

This solution is very practical and economical and really improves the problem, but if the pain persists for more than a week, you should consult a dentist.

Dental Trauma

Blunt force trauma can crack, chip, break, or knock out a tooth. When a tooth breaks but does not come out completely, the situation can wait. It is advisable to notify the dentist and follow his or her instructions, but it is not an absolute emergency.

The tooth that has suffered the impact may become loose or change color. None of these symptoms are normal, and you should consult your dentist.

However, when the tooth is knocked out, time is precious if the professional is going to save it and reinsert it. Look for the tooth, and try not to touch its root.

Always remember that this is the “living” part of the tooth, so it should be kept as sterile as possible. Clean the tooth with warm water only. The best way to keep it safe is to put it back into the cavity, so if possible, reinsert it. If you cannot reinsert it, place it in a cup of milk and visit the dentist as soon as possible so that the tooth can be saved. If you can't do anything, either because you can't find the tooth or because it's impossible to visit the dentist, keep the gum clean and try not to injure it with food or your tongue. Remember that the remaining orifice is connected to the jaw. Therefore, it is important that it heals without becoming infected to avoid complications. There will always be a possibility of placing an implant later on.



Dental Abscess

A tooth abscess is a very serious problem that occurs without warning and can have serious complications if it is not treated in time.

One of the things that worried me most about the quarantine was a dental emergency. Just going out in the street was dangerous, and removing your face mask in front of the dentist at a health center seemed like a scene from a nightmare. Just the second week after the strict quarantine was declared in

Caracas, my city, my partner started experiencing pain in a tooth. The pain progressed until it became unbearable. I contacted a dentist, and **this is what we did:**

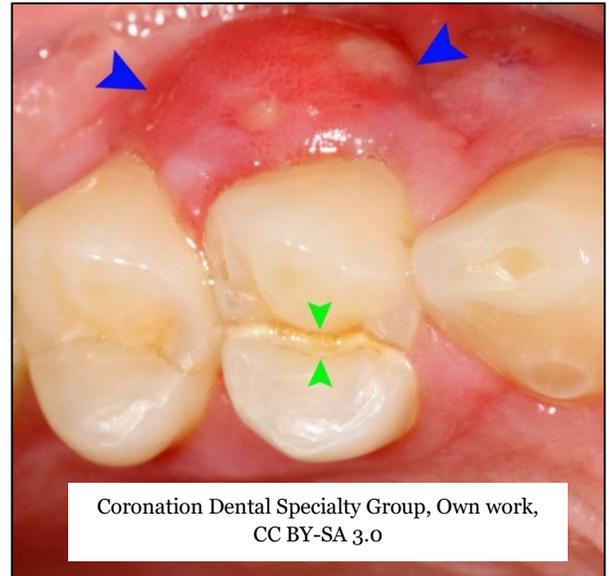
From the pain, we arrived at the presumptive diagnosis of a dental abscess. It was a pain of moderate intensity located in a specific tooth, which improved with normal anti-inflammatory drugs, although not completely.

After three days, the pain increased, and the anti-inflammatories were no longer effective. It improved only for a few hours and returned with the same intensity.

In addition to the pain was added a lot of sensitivity in the tooth, to the point of not being able to bite anything with it. Any contact, even when brushing, caused him a lot of pain.

In order to verify that it was indeed this pathology, I carried out a physical examination (even though I have never liked dentistry, but I had no choice).

With a flashlight, you must observe the entire gum to see the color and if there is a red area that looks different near the tooth that hurts. Then you should run your finger across the gum surface, looking for a lump or swelling, specifically at the site of the pain. You can do the whole procedure yourself, but it's more comfortable if someone else helps you. Once the abscess has been diagnosed, they begin antibiotic treatment and make the dreaded appointment with the dentist.



a) Treatment

Treatment of the tooth abscess must be timely so that the infection does not progress and the pain subsides. Although home therapies can help, there is no substitute for antibiotics. Even antibiotics, however, may not be sufficient without drainage of the abscess.

Remember that when there is an abscess, the infection is already formed. There is no prevention once the microorganism has already infected the tooth.

The antibiotic of choice is Amoxicillin 500mg taken every 8 hours for 7 days. The antibiotic will help stop the process until you can go to your dentist. Always remember that most antibiotics are metabolized through the kidneys, so it is important not to keep up with prolonged treatments, unless indicated, as this can cause irreversible damage.

b) Draining a Tooth Abscess When Visiting the Dentist is Not an Option

Draining a tooth abscess is a delicate procedure and should be done as a last resort, only if it is completely impossible to go to a specialist.

The purpose of the procedure is to eliminate pain caused by pressure and decrease infection. However, once it is drained, it is still not cured. This is only a temporary solution. The dentist has the final say in this case.

Step 1

Prepare everything you need. In this case you need gauze, a number 11 blade scalpel, iodopovidone mixed with equal parts of water or hydrogen peroxide, and lidocaine spray or cream.

Step 2

With good lighting, locate the area of the abscess where it has increased in volume and the consistency is softer. Some whitish content may be seen. At that point only, apply some Lidocaine spray.

The patient may not be fully anesthetized; remember that the area is very swollen and the anesthesia will not work properly.

Step 3

After one minute of anesthesia, rinse the mouth with hydrogen peroxide or the iodopovidone-water mixture and then make the incision with the scalpel.

Blade 11 is sharp, so you should not make a large incision; just tap the tip to the surface of the gum. **THIS PROCEDURE IS PAINFUL.**

Step 4

When the contents, whether pus or liquid, begin to come out, wipe with a gauze pad and press a little to drain completely. Tooth pain relief is immediate.

Step 5

Rinse the mouth with regular mouthwash and hydrogen peroxide twice a day for two days. Visit the dentist as soon as possible.

Remember that this procedure is explained as general information because it is useful, but it is an extreme treatment to an unconventional situation.

It is not a technique that should be performed at home, unless the situation you are in is of such a magnitude that it makes a visit to the dentist impossible.

The ideal is always to start the antibiotic and have the specialist evaluate that tooth as soon as possible, even if you perform this drainage.

3. Vomiting and Diarrhea (Stomach Flu)

The combination of diarrhea, vomiting, abdominal cramps, and fever is known as viral gastroenteritis, or stomach flu. It is important to know that when we talk about diarrhea, we refer to three or more loose or watery stools a day.

Since the etiology is viral, you don't need to take any antibiotics, but rehydration is the most important aspect of the management of any patient with stomach flu.

Prevention of infectious diarrhea includes proper handwashing to prevent the spread of infection and boiling or disinfecting drinking water with purification tablets. When water is stored for a long time, even if it is potable water, it's important to make sure it's clean if it's going to be used for drinking or cooking.

Symptoms

The most common symptoms are watery diarrhea, nausea, abdominal cramps and low-grade fever. Bloody diarrhea is not common in this type of infection and usually indicates another type of gastrointestinal disorder. Also, when diarrhea becomes chronic (more than two weeks), you should think about other causes besides a viral infection.

Watery diarrhea and vomiting eventually lead to dehydration. When you have gone for a while without tolerating any food and you continue to experience vomiting and diarrhea, you may feel tired, lethargic, sleepy, and cramping in your hands and feet.

These are all symptoms of dehydration, and it is important that you begin to replace the fluid and electrolytes you have lost.

Treatment

Home remedies to improve diarrhea are varied. My mother, who is also a doctor, always makes use of this street wisdom. Her favorite anti-diarrheal therapy is to drink roasted rice water, which is a very effective treatment for improving the consistency of the feces.

Heats the rice in the bottom of the pot until it turns brown and then add water. Let it cook for five to eight minutes, and this water for the treatment. You can take this when needed. The diarrhea won't stop completely, but it will get better. However, many people, unlike my mother, prefer not to stop the diarrhea as it is seen as a mechanism of the body to expel some harmful agent. If you prefer not to take anything to stop it, you should stay hydrated.

Oral Rehydration Therapy

Rehydration therapy is the replacement of fluids and electrolytes that have been lost through diarrhea and vomiting. There are rehydration salts and also solutions that are prepared with even pleasant flavors. However, these practical solutions are not always available, and we should be aware of the recipe for homemade rehydration salts, as it is easy and useful.

In Venezuela, in order to practice as a medical professional, we have to complete a year of work in a rural area. I chose the Amazon. Vomiting and diarrhea were fairly common reasons for consultation, and we would prepare the salts of hydration ourselves by mixing six teaspoons of sugar and one-half teaspoon of salt in a liter of water.

How to Drink the Oral Rehydration Salts

Once the ingredients are mixed, you should take a sip every five minutes until the urine is light in color. Fruits such as oranges and bananas can provide potassium and may be added to the mixture when the patient tolerates the oral route. The amount would be one cup of orange juice or half a mashed banana.

The rehydration salts must be used within 24 hours. If any remains, it should be discarded. For this reason, it is advisable to prepare only one liter at a time.

If, for some reason, clean or boiled water cannot be used, it is still recommended to prepare and drink the mixture as its benefits far outweigh the risk of drinking dirty water. The recommendation in this case is to prepare it with the cleanest water possible.

When Should I Worry?

Any symptoms other than watery diarrhea and nausea are worrisome and indicate infection by bacteria or parasites, such as mucous and bloody diarrhea, severe cramping, or vomiting that does not improve. If these symptoms persist for more than 48 hours in an adult and 12 hours in a child, you should go to the emergency room, but do not stop taking the rehydration salts.

4. Gastritis, Gastro-esophageal Reflux Disease (GERD), and Peptic Ulcerative Disease

Gastritis is the inflammation of the lining of the stomach. It is usually a mild disease that tends to have uncomfortable symptoms for a couple of days and resolves without major complications. Gastritis can be a transient event (**acute gastritis**) or prolonged in time (**chronic gastritis**).

Chronic gastritis can weaken the sphincter of the stomach and cause gastro-esophageal reflux disease (GERD), which is when the acid content of the stomach travels up the esophagus and sometimes into the mouth. Chronic disease must be treated with medications that improve the acidic stomach environment because it leads to serious alterations of the esophageal mucosa that increase the risk of developing cancer.

Stomach irritation occurs because some food or drink causes a reaction that leads to the exaggerated secretion of gastric acid. Therefore, treatment should be focused both on reducing inflammation of the stomach lining and on stopping the acid discharge in order to improve the symptoms.

Signs and Symptoms

There is no specific symptom but rather an association of symptoms that lead to this diagnosis. Pain and burning in the central part of the abdomen in the pit of the stomach are often referred to by the patient with gastritis.

The feeling of fullness, bloating, and nausea are also discomforts related to gastritis. Bloating can have several causes, so it must be associated with heartburn to be identified as gastritis.

When there has never been such discomfort before, we refer to it as an acute episode of gastritis. If, on the other hand, it is a frequent complaint of months or years, the condition is considered chronic.

Causes

The most common cause of gastritis is infection with a bacterium called *Helicobacter pylori*. This organism can be found in the stomach and can be inactive for a long time, but when some food irritates the gastric mucosa, it activates itself to start multiplying in those cells, increasing the secretion of gastric juices.

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Helicobacter pylori is found in 80% of people, and the mechanism by which it is activated and causes harm in some people and not in others is unclear.

Continuous and prolonged use of non-steroidal anti-inflammatory drugs (such as Aspirin, Ibuprofen, or Profenid) irritates the gastric mucosa and is a major cause of chronic gastritis and even gastric and duodenal ulcers.

Tobacco has also been associated with increased gastric secretion as well as excessive alcohol use.

The stress to which we are subjected daily, some more than others, alters many hormones that maintain the balance of the body. Among several negative effects is the increase of acid in the stomach, which triggers gastritis.

Treatment

I like to divide gastritis therapy into two segments that are closely linked: natural therapy and conventional drugs. I've seen the best results by combining the acid secretion enhancing drugs with some lifestyle and dietary changes that have the same function.

In the event that gastritis occurs as a single episode (acute gastritis), natural therapy can be highly effective. However, if the symptoms persist for more than ten days, I recommend adding conventional medication.

a) Natural Therapy

Dietary changes are among the most important therapies for improving gastric irritation. In fact, administering medications alone without adding these variations will not produce optimal results. There are several plants and roots that have been used throughout history for anti-inflammatory and tissue repair purposes.

Ginger is one of the most widely used roots because it offers antibacterial, antiemetic, and anti-inflammatory benefits. In the last two decades, scientists have better researched this plant, providing accurate data that gives us the evidence needed to use this product safely.

Its antibacterial action results in a decrease in the population of helicobacter in patients with gastritis derived from this bacterium. Its anti-inflammatory action is so powerful that it is used to treat joint and muscle pain, as we will see in other sections of this text.

It is consumed as an infusion with milk or water or simply by chewing small pieces throughout the day. Adding honey is a common practice since this product is also a bacteriostatic, and it has been found to increase the pH of the stomach.

Fresh cabbage juice (cabbage and water or pressed juice) has been used for years to improve gastric symptoms. In 1949 the first study was published that validated it as a method for the treatment of chronic gastritis and even gastric ulcers ("Rapid healing of peptic ulcers in patients receiving fresh cabbage juice," *The Western Journal of Medicine*).

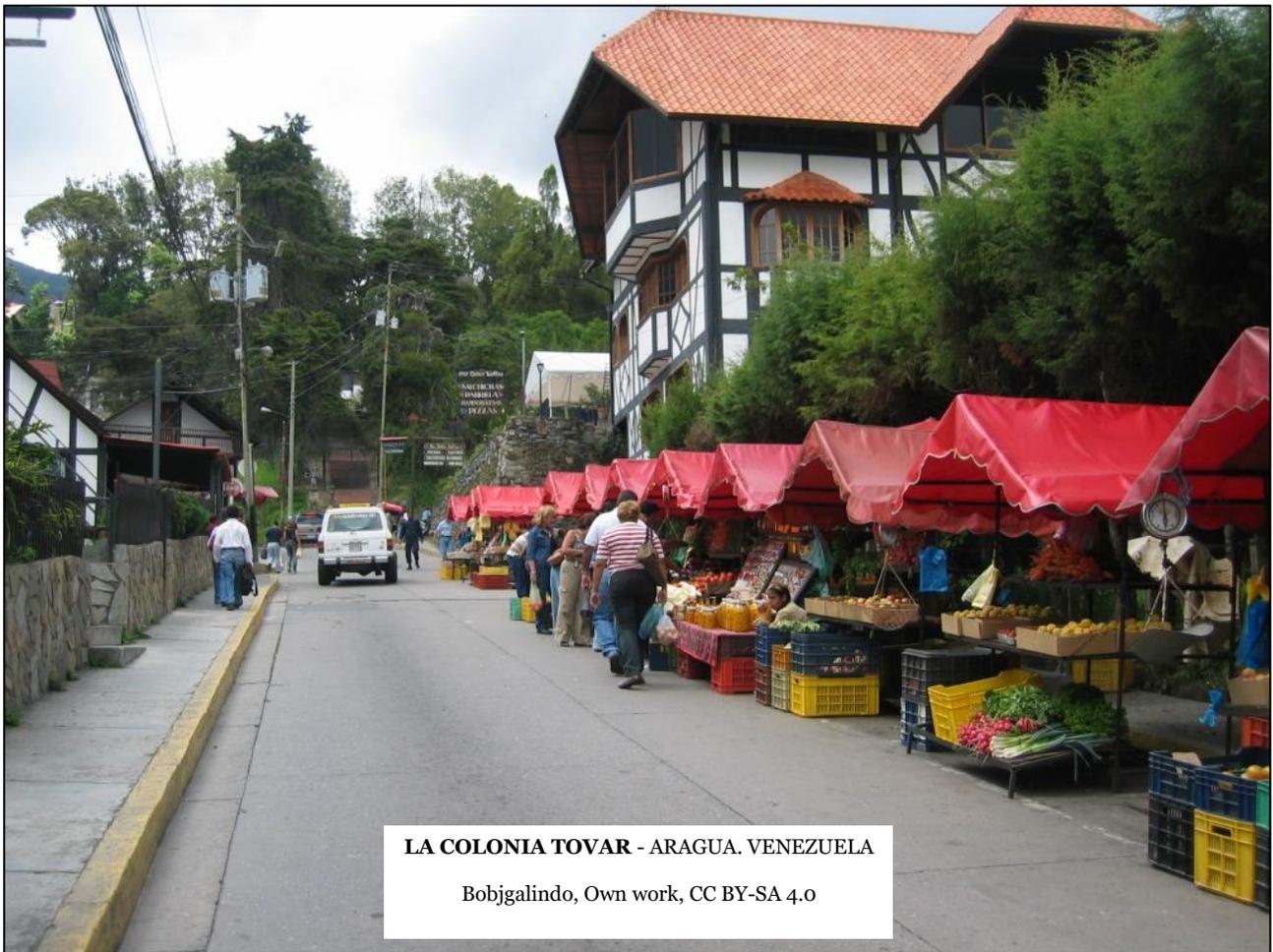
Based on patient weight and the nutrient measurements of cabbage, it was estimated that at least one liter of this preparation should be drunk, divided into 200 ml five times a day for six days. The ulcers healed in six to nine days by drinking the juice daily, and gastritis symptoms improved by 100%.

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Supplements such as **probiotics**, contained in some foods, are recommended to enhance the normal bacterial flora of the gastrointestinal tract and thus decrease the population of *H. pylori*. One of my favorite foods with probiotics is yogurt.

I often mix it with honey, which is rich in prebiotics, and I get a boost of bacteria that is beneficial to my digestive system. Kefir is a drink that has become fashionable in recent years as one of the foods with the greatest probiotic benefits. In addition, due to its manufacturing process, it contains little lactose.

Sauerkraut is a fermented food widely used in Caracas, my city, because in a nearby town, there is a German community that settled in Venezuela in the 19th century. They named that area “La Colonia Tovar” (Tovar colony) and made this and other traditional German dishes famous. It is now known that the fermentation process of its preparation makes the beneficial bacteria grow.



LA COLONIA TOVAR - ARAGUA, VENEZUELA

Bobjgalindo, Own work, CC BY-SA 4.0

Finally, but not less important, lifestyle changes such as exercise; quitting smoking; reducing alcohol, coffee, and chocolate intake; and stress and anger management are all positive for avoiding excessive gastric acid secretion and mucosal erosion.

It is important to mention that milk can be counterproductive. At first it causes improvement, but after a few hours, the stomach discharges more acid to counteract the effect of the milk. I do not recommend it, for this reason.

b) Medication

Therapy for gastritis consists of several stages. The symptoms must be treated but also the causes.

To relieve the symptoms of acute gastritis (heartburn and stomach pain), **antacids** can be used to coat the stomach lining to prevent damage from gastric juices. The most popular antacids are chewable tablets such as Tums, which contains calcium carbonate.

Drugs that block acid formation are used for long-term treatment. One of the drugs that I use most in my patients, as it is one of the most economical and effective, is Omeprazole. I indicate it twice a day, in the morning and at night, half an hour before meals.

Therapy for *H. pylori* is based on a combination of antibiotics and drugs that decrease acid secretion from the stomach. Since this bacterium is difficult to eliminate, the treatment is long and must be constant in order to observe improvement in the long term.

When gastritis is associated with the use of medications, such as non-steroidal anti-inflammatory drugs (NSAIDs), it is necessary to discontinue them in order to begin disease-specific treatment.

What Do I Do at Home?

As long as the symptoms can be managed with natural therapy, you should wait before initiating a drug treatment. Gastritis is an annoying but not life-threatening disease. It can be controlled for years without the need for drug treatment.

Antacids will always be a useful tool for cases of stomach discomfort. I prefer Tums because it's the one my father bought and always had at home, but the components of all of them are basically the same; their purpose is to form a protective layer over the stomach's lining.

Omeprazole and **Lansoprazole** are drugs that act specifically by blocking the secretion of acid from the cell. They are very effective drugs for treatment in the medium term. Having them at home will always be an excellent choice. I prefer Omeprazole because it's cheaper.

Remember, if the heartburn began with the beginning of any treatment or is made worse by a food, its use should be discontinued unless strictly necessary. If medication does not seem to improve the symptoms over time, consult a gastrointestinal specialist to rule out any other more serious or malignant causes.

5. Esophageal Spasm

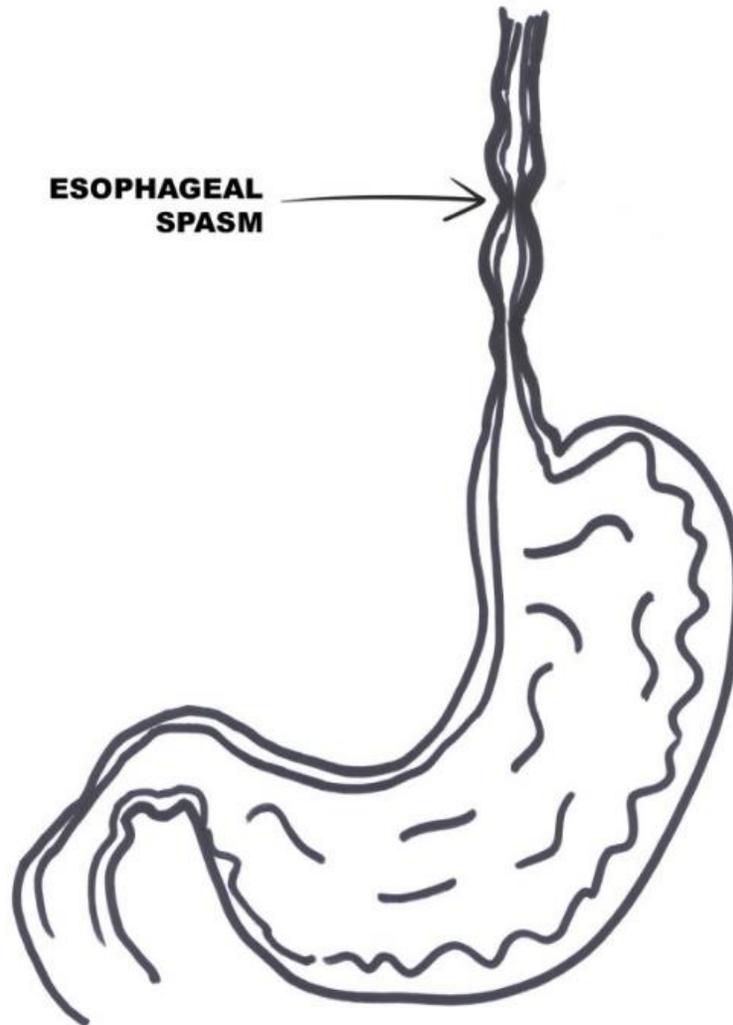
Esophageal spasm is a condition in which there is a strong contraction of the esophagus that causes pain and difficulty swallowing. It can occur as a complication of gastritis or food allergies. It is important to know about this disease because its symptoms are similar to those of a heart attack.

The main difference lies in the symptoms before and after the pain. That person's medical history should also be taken into account in order to make a differential diagnosis.

Not all severe chest pain is a heart attack.

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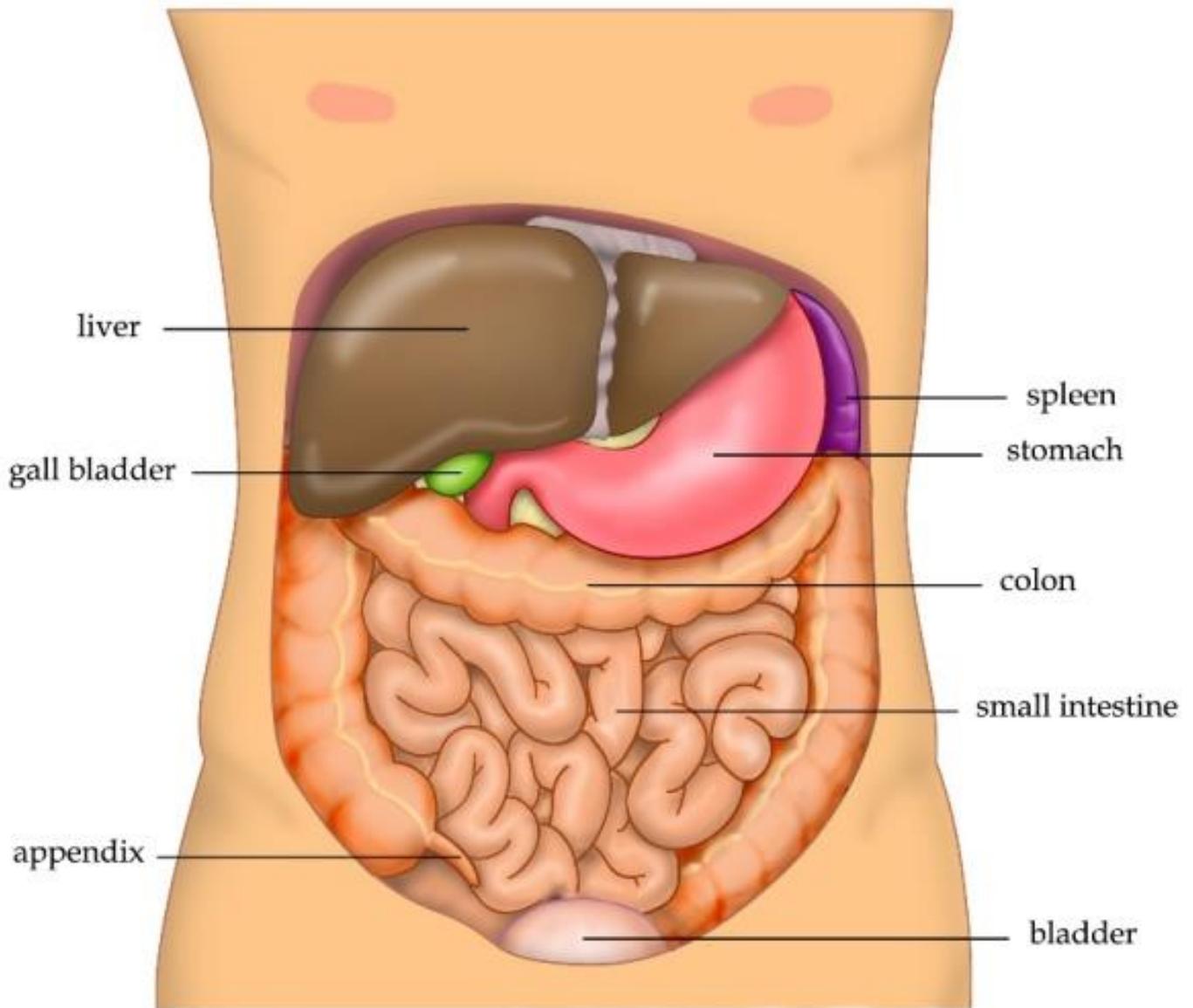
The treatment is the same as for gastritis—gastric protectors and antacids. In some people, the spasms can occur very often, even daily or several times a day. My recommendation would be to apply relaxation and breathing techniques since anxiety often contributes to esophageal spasms.



6. Abdomen Problems

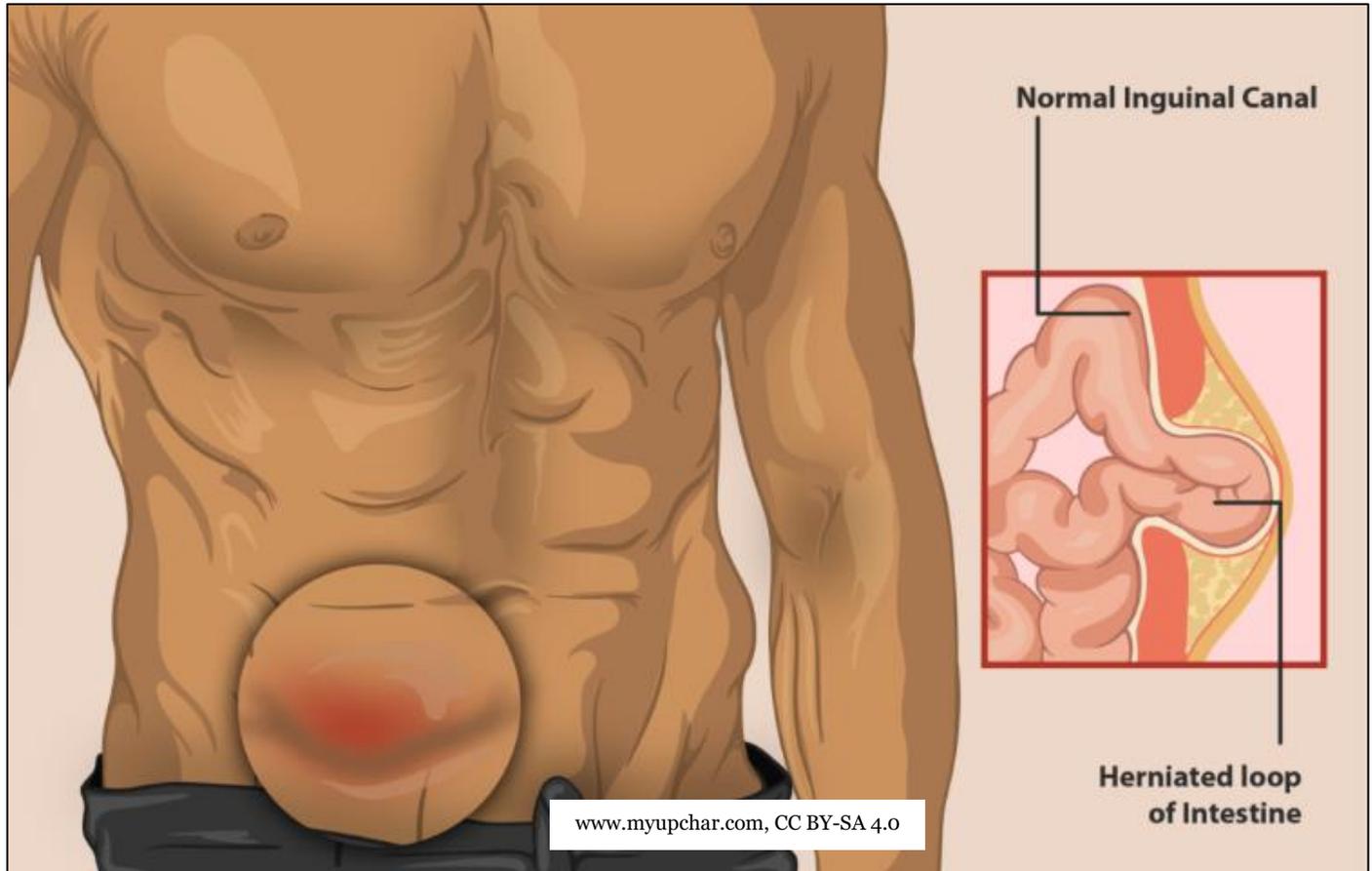
The abdomen is an anatomical area that contains important organs whose damage or disease can threaten a patient's life. The figure shows the most superficial organs of the abdomen and their position.

The liver and spleen are solid organs, while the stomach, intestines, and bladder are hollow. All are at risk of injury from trauma or gunshot wounds, but their complications are different.



Hernias

Hernias are conditions that often cause abdominal and groin pain and can develop serious complications. The treatment is always surgical. Therefore, I will explain the ways to diagnose and control them until the patient can be evaluated and treated surgically.



A hernia is the protrusion of contents of the abdomen through a defect or weakness in the abdominal wall. It is caused by several factors, but the main ones have to do with the increase of intra-abdominal pressure from heavy loads, coughing a lot, and obesity, among others.

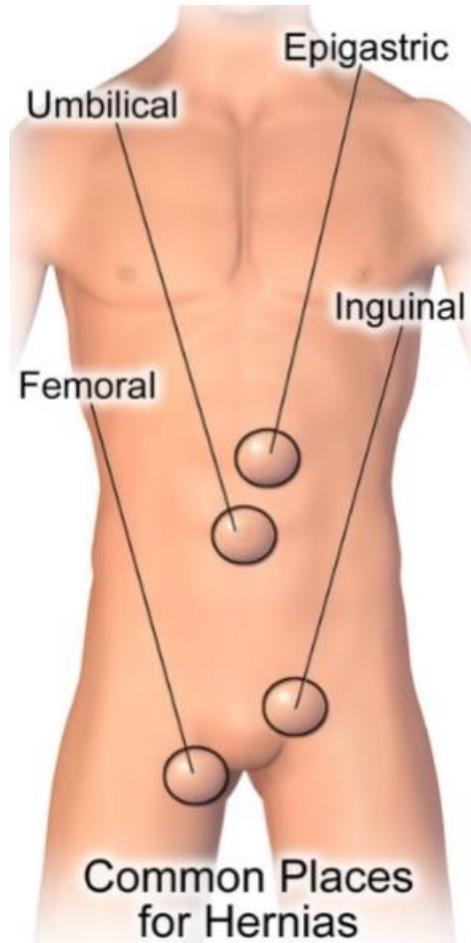
a) How Do I Know if I Have a Hernia?

The first symptom of hernias is pain near an area of physiological or surgical weakness. This pain increases with efforts such as heavy lifting, coughing, or sneezing, and it gets better with rest.

The abdominal weakness areas are the navel, the groin, the area above the navel, and any associated abdominal surgical scars.

b) Types of Hernia

The figure shows the most common locations of abdominal hernia. Any inflammation that is on or near a surgical scar is also susceptible to an incisional hernia.



Bruce Blaus, Own work, CC BY-SA 4.0

1. EPIGASTRIC HERNIA

The increase in volume or inflammation is observed above the navel. In thin people, the defect in the muscles can easily be seen. To improve the symptoms, an abdominal hernia support should be used.



PacoPeramo, Own work, CC BY-SA 3.0

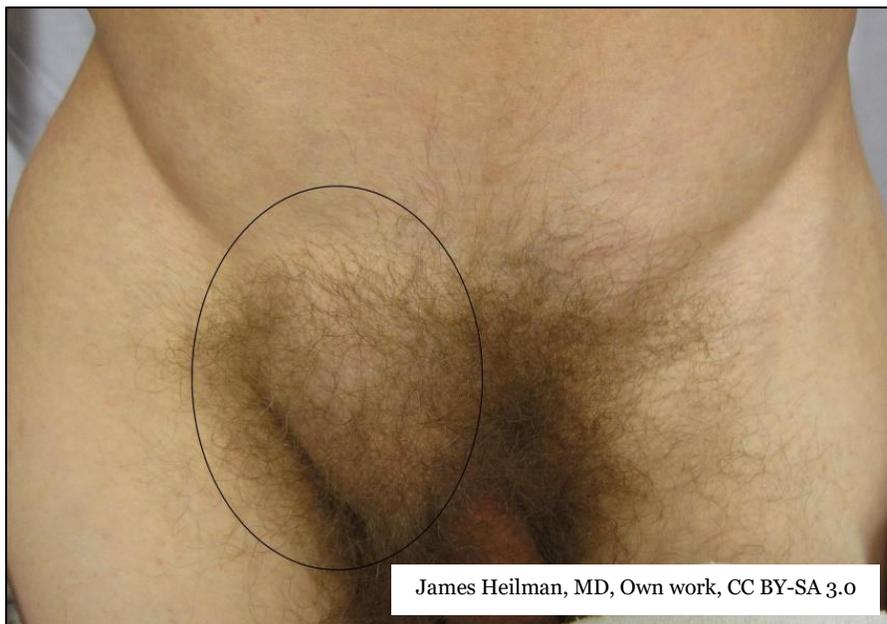
2. UMBILICAL HERNIA

This is the most common type of abdominal hernia. It's located exactly on the navel. It can become very painful and uncomfortable, especially when straining from bowel movements and coughing fits. When it is large (as in the figure), an umbilical hernia belt or abdominal hernia support can help with the pain.



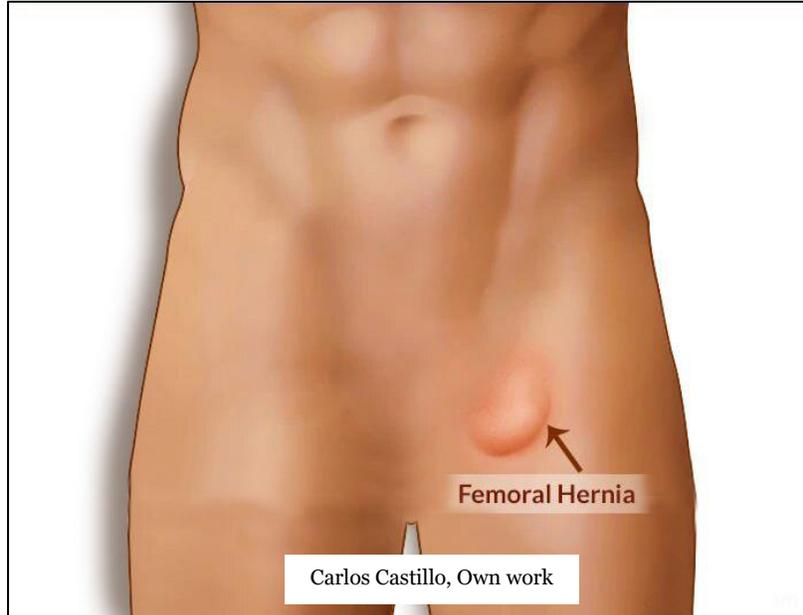
3. INGUINAL HERNIA

This is located in the groin and is often seen in the elderly and in construction workers. It is the second most common type of hernia. It is painful and can extend as far as the scrotum. The way to improve symptoms is to use an inguinal hernia belt that supports the muscles and prevents the hernia from descending.



4. FEMORAL HERNIA

This type of hernia is mostly seen in women in an area just below the groin, toward the thigh. It can be very painful and can extend to the labia major. It is not as common as the previous ones, but it is the main cause of pain in that area. The symptoms can improve by remaining at rest and avoiding heavy loads.



5. INCISIONAL HERNIA

Swelling can be seen over any operative scar in the abdomen. Its growth is progressive, and it can reach a large size. It is more common to see this type of hernia on surgical wounds that were difficult to heal or became infected or when there were several surgeries at the same incision. It is important to use an abdominal girdle if you notice an increase in volume over the scar and to avoid lifting heavy items.

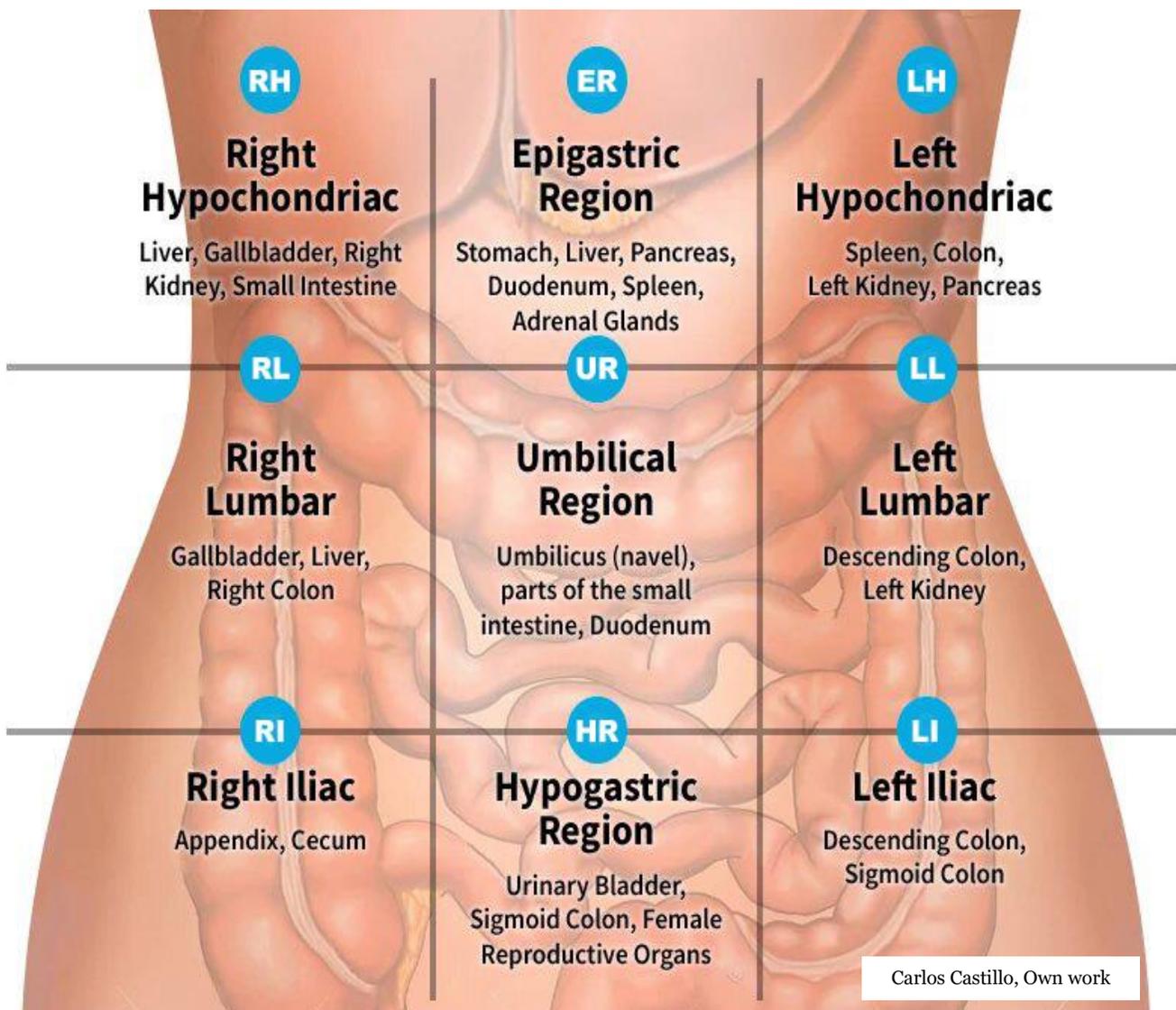


Abdominal Evaluation

Abdominal pain can take many forms. Cramping pain, which comes and goes, is most often due to gallstones, while continuous and progressive pain can have both surgical and non-surgical causes. The abdominal evaluation is a very important tool that we should all know since a good exam can lead to many diagnoses and differentiate whether a person needs surgery or not.

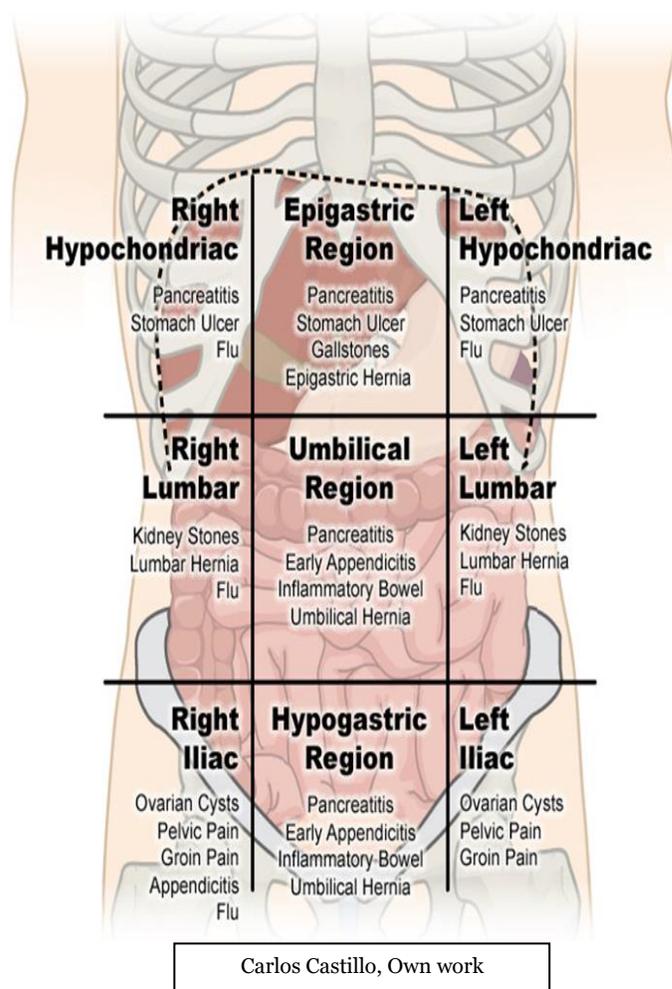
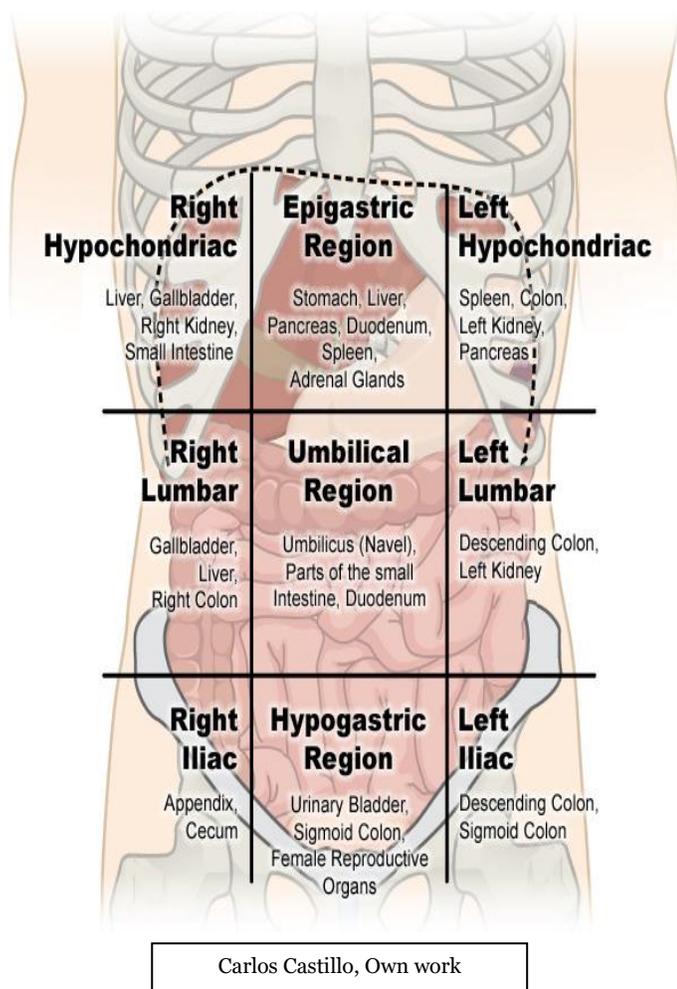
The patient should be lying down, as relaxed as possible, so that the abdomen can be felt without any resistance. I always ask the patient if he is in pain and to point out where it is so I can examine that area at the end. The idea is not to cause any discomfort that would complicate the evaluation. Palpation should be systematic and without exerting much pressure while looking for areas of pain and at the same time checking for bruising or changes in skin color.

In the figure below, you can see the location of the organs according to the quadrant you are feeling. This way you can orient your diagnosis according to the area where the pain is.



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However, sometimes the pain is not exactly where the organ is located. That's why I prepared a comparison to show some presumptive diagnoses according to the area where the patient refers to the pain.

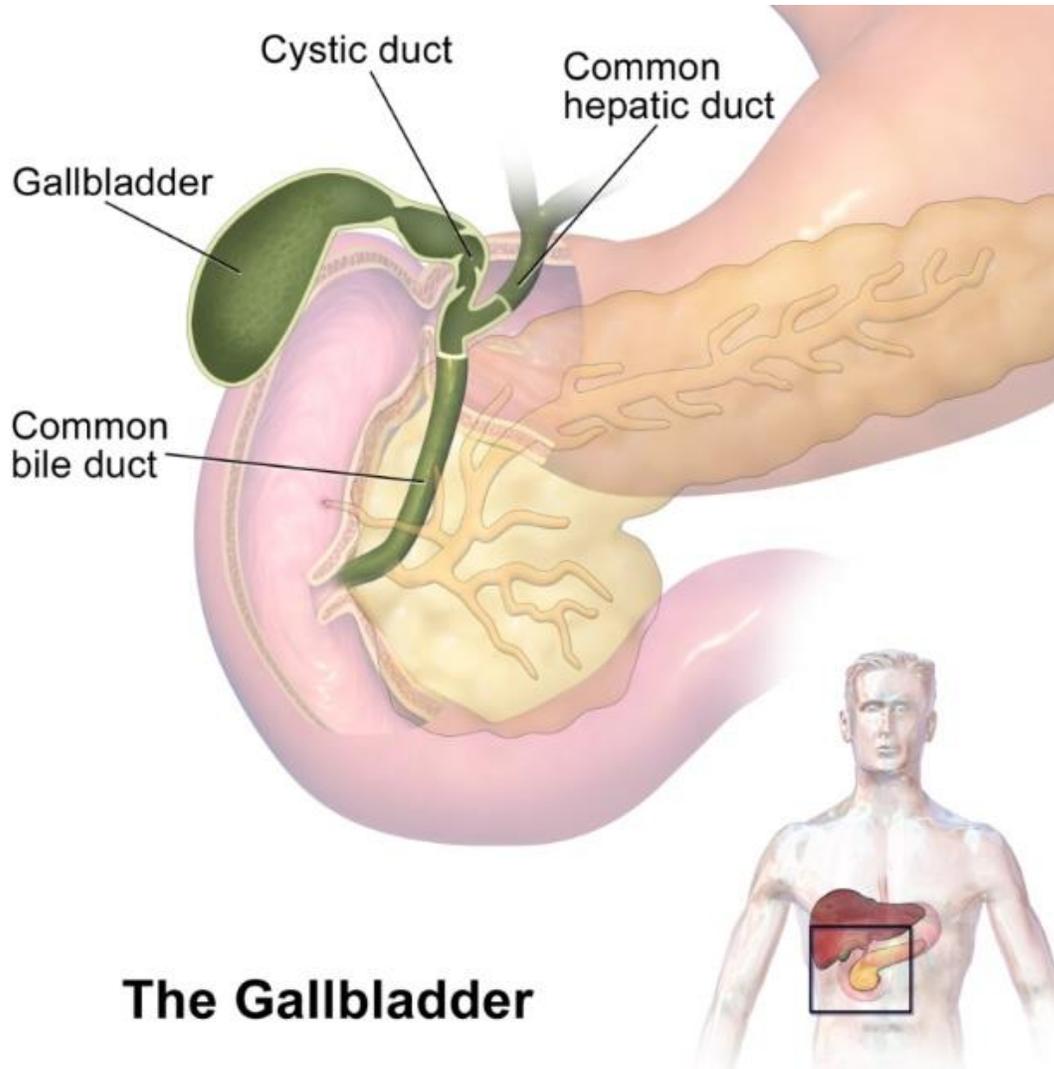


Gallstones

Gallstones are solid deposits of minerals that form in the gallbladder. Their presence causes pain and difficulty in digestion. The gallbladder is an organ located below the liver that serves as a reservoir for bile salts, the substance responsible for aiding in the digestion of fats.

When a fatty food must be digested, the gallbladder receives a signal and squeezes itself to discharge bile salts into the duodenum then begins the process of emulsifying them so that digestion is smooth.

When there are stones in the gallbladder, this process is not carried out normally because when the gallbladder makes the movement to expel the bile salts, the stones do not allow it to empty completely.



The Gallbladder

Bruce Blaus, Own work, CC BY-SA 4.0

a) Symptoms

Gallstones usually occur in women between the ages of 20 and 50. Sometimes the disease is asymptomatic and is diagnosed by chance in a routine evaluation. When it does present with symptoms, the main one is pain in the right hypochondrium, at the level of the gallbladder. The pain is characteristic of this disease and is called biliary colic.

Colic is a type of pain that starts suddenly and increases in intensity until it reaches a maximum point from which it decreases until it is completely eliminated. This symptom is typical of hollow organs, such as the intestines or ureters.

In the case of the gallbladder, the pain becomes very intense and lasts between 15 minutes and half an hour. In addition to the pain, the patient with gallstones has abdominal bloating when eating high-fat or high-carbohydrate foods and a feeling of fullness after eating any amount of food.

It is important to mention that those people who undergo bariatric surgery greatly increase the risk of suffering from gallstones. Some bariatric surgery teams have a protocol of removing the gallbladder during the surgery itself.

If you are planning to have bariatric surgery, you should ask your surgeon about this since you would have a very high chance of having to have surgery again in a couple of years to remove the gallbladder.

b) Treatment

Treatment of gallstones is surgical and consists of removing the gallbladder. Currently this procedure is performed by laparoscopic surgery with minimal complications. It is one of my favorite procedures.

There are some natural preventive treatments that help maintain and improve gallbladder health. In scientific research over the years, however, there is no clear evidence that treatments serve to dissolve or eliminate gallstones once they have formed.

Ursodeoxycholic acid is the only treatment that has been shown to dissolve specific types of cholesterol stones.

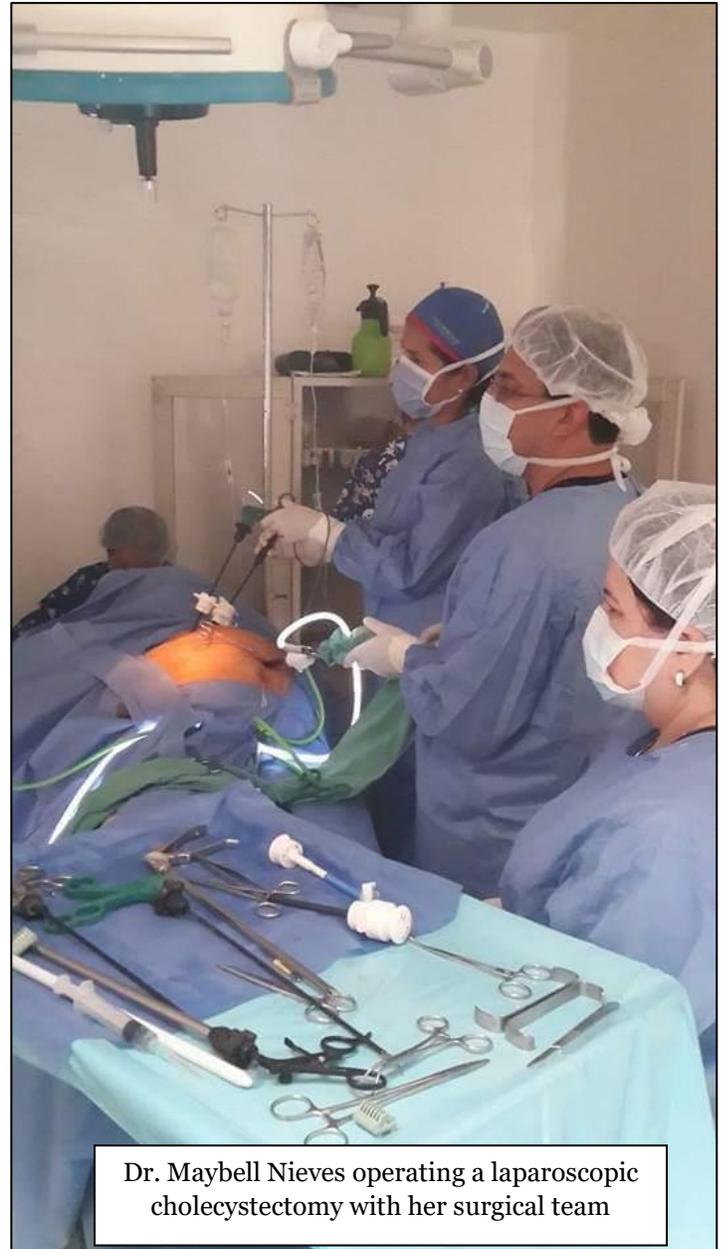
The acid dissolves the cholesterol from the stones already formed and decreases the amount of cholesterol in the bile so that no new ones are formed. The treatment is long, between eight months and one year.

Ursodeoxycholic acid 250mg, Dosage: 7mg/lb. (Example: If your body weight is 150 pounds, you have to take 1 gram of Ursodeoxycholic acid, or 4 tablets) for at least 6 months.

The patients I have seen with this type of treatment return to having gallstones sometime after ending the treatment. However, it can be a good tool if there is no possibility of operating in the immediate future.

The pain is treated with common painkillers such as Paracetamol or Ibuprofen.

Honey and turmeric are natural anti-inflammatories that can help improve the pain of biliary colic.



Dr. Maybell Nieves operating a laparoscopic cholecystectomy with her surgical team

c) How Can I Prevent Gallstones?

Eating foods that naturally stimulate gallbladder activity is beneficial in keeping the bile ducts working properly. Olive oil, artichokes, and foods with fiber, such as brown rice and quinoa, are some of the best options.

One of the recommendations that I personally use and that works very well both for the digestive system and to reduce inflammation and fluid retention is apple cider vinegar mixed with half a cup of water. I mix the water with two spoonfuls of organic apple cider vinegar on an empty stomach, and it has helped me eliminate heartburn and improve digestion.

Eating regularly, without too much fat or carbohydrates, helps the body keep its cholesterol levels under control, thus decreasing the chance of cholesterol stones forming.

Gold coin grass is a plant widely used in Eastern medicine. It is said to have anti-inflammatory properties and to soften gallstones.

It is important to remember that these types of herbs should be boiled enough to concentrate into an infusion. Between one and two hours is enough to prepare the infusion; it can be taken hot or cold. You should use two liters of water for every 30 grams of the product.

Many people have websites with recipes for biliary cleansing. I particularly find that it is not necessary and that all these preparations have a lot of olive oil, which can be harmful to many. I do not recommend them.

d) When Should I Worry?

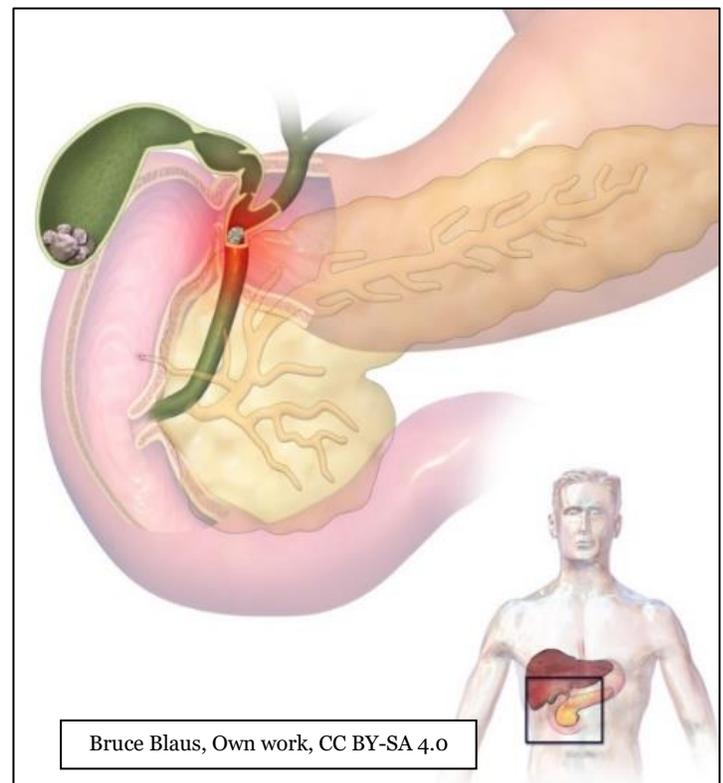
When, in addition to the pain, there is a fever, an infectious process may have begun that requires evaluation by a specialist.

Jaundice, the yellow color of the skin and mucous membranes, is a warning sign since it means that one of the gallstones is obstructing the exit of the bile.

To examine for jaundice, it is important to look at the sclera of the eyes. Sometimes in a dark-skinned or very light-skinned patient, it is difficult to distinguish it.

If jaundice is really present, the eyes will look yellow as well as the mucous membrane of the lower eyelid.

This is a medical emergency; the patient must be evaluated by a gastroenterologist and a surgeon.



Peritoneal Irritation

This term is used to define a surgical state of the abdomen. Irritation occurs because some substance is causing inflammation of the innermost layer of the abdominal cavity, the peritoneum. If you or the person you are examining shows signs of irritation, you should go to a health center immediately because surgery is needed.

There are many techniques to discover peritoneal irritation, but they all have the same principle of bouncing the peritoneum into the cavity. The one that surgeons use most is the so-called Blumberg's sign. The technique is to exert a little pressure on the abdomen and release quickly. The pain should come when it's released.

When a patient consults me on the phone for something that looks like appendicitis or another cause of irritation, I tell him or her to perform the heel technique. He or she is instructed to stand on their tiptoes and drop heavily on their heels. The pain occurs with the drop. This pain is obvious; you don't have to ask the patient if it hurts because you can tell just by looking at it. It is a strong pain that takes away their breath.

One of the techniques that I always use when I examine an abdomen is to talk to the patient about anything while I am palpating. If the pain is real, this distraction is not enough to hide it.

*If, after performing these techniques, you find that there is peritoneal irritation, you should go **immediately** to a health center since it is likely that person will require surgery.* Almost all pains that are not peritoneal irritation can wait. However, my recommendation in an exceptional situation is always to consult a surgeon (not a family or general practitioner).

Diverticular Disease

Diverticula are small sacs of mucosal tissue that appear in the digestive tract, especially in the colon. They are more common in people over 50 years old and can become inflamed, causing a condition called **diverticulitis** with a lot of abdominal pain and sometimes infections that require hospitalization for treatment.

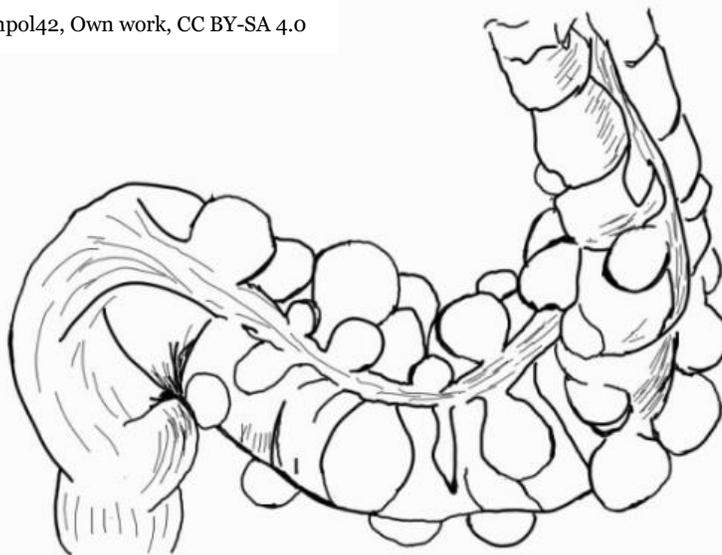
Diverticulum is formed by a sustained increase in pressure inside the intestine, which is why it is more common in those patients who suffer from constipation.

One of the reasons why a high-fiber diet is recommended, especially for those over 50, is to promote bowel movements and effortless evacuation.

a) Symptoms

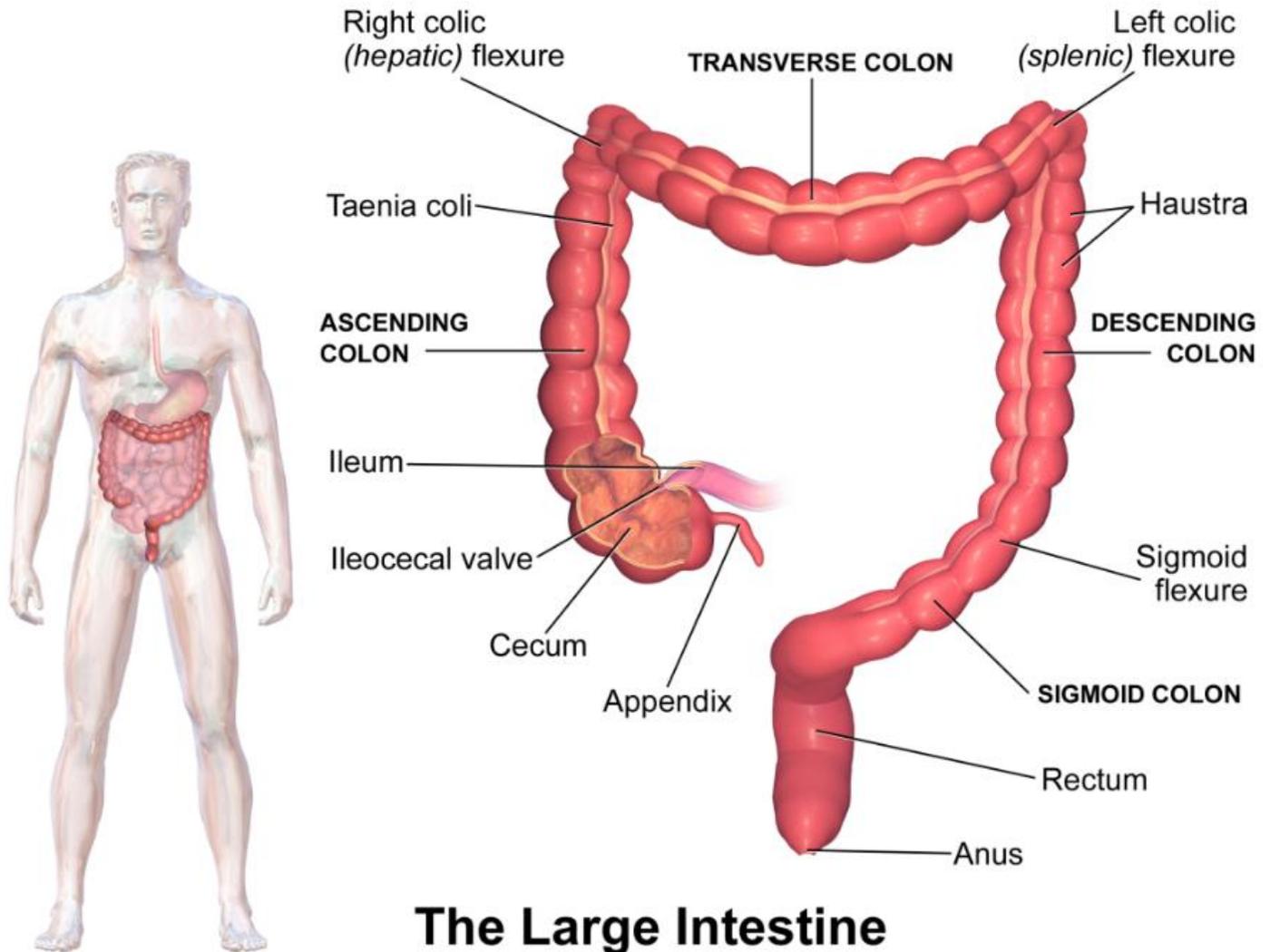
Although diverticular disease can occur anywhere in the gastrointestinal tract, it most often develops in the end

Anpol42, Own work, CC BY-SA 4.0



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portion of the large intestine (colon), specifically in the last part, which is located on the left side of the abdomen. Diverticular disease does not cause noticeable symptoms most of the time. When a person with this problem begins to have symptoms, it is because he or she is developing a complication. The most common is diverticulitis.



BruceBlaus, Own work, CC BY 3.0

Due to the location of the diverticula on the left side of the colon, the symptoms of diverticulitis occur mainly in the lower left side of the abdomen.

Continuous pain is the main feature, along with constipation. The person with diverticulitis may also have a moderate fever.

This condition is so common that when a patient over the age of 50 arrives at the emergency with pain on the left side of the abdomen, it is the first diagnosis we seek to rule out.

b) Diagnosis

The diagnosis of diverticular disease is often accidental, for example, a person who has a colonoscopy or a CT scan for another reason and diverticula are evidenced.

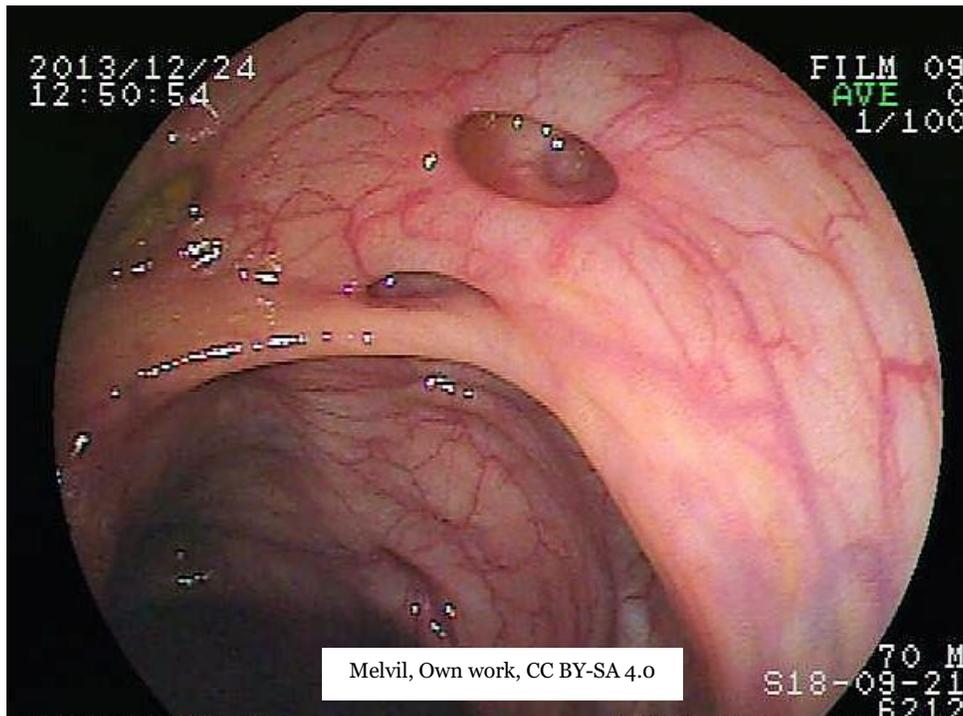
In a situation where there is no possibility of going to a center for a general evaluation, I think it is best to maintain the prevention diet by assuming that everyone over the age of 50 is potentially a carrier of diverticula in the large intestine.

Diverticulitis, on the other hand, does have symptoms that are common to other diseases, so it is important that we try to be guided by the medical interview and physical examination. Usually, the patient with diverticulitis has had pain with the same characteristics in the past.

In addition, he or she is usually a patient who suffers from constipation. On palpation, the patient may have pain in the left hypochondrium and hypersensitivity in the skin without signs of peritoneal irritation. The pain is annoying but tolerable.

c) Treatment

The main problem with diverticula is that because they are small, blind pouches, they fill with fecal matter and bacteria grow there. The patient's management should be directed at trying to empty these bags and prevent complications.



Changes in diet are important to improve bowel movements. The inclusion of vegetables and other foods rich in fiber is important. Changing from products with regular flour to products with wholegrain flour is a great step in this direction. Apples, bananas, pears, broccoli, and oatmeal are some of the products you can consume to improve your fiber consumption.

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By accessing the following link, you will find the amount of fiber per 100g of food calculated by the Department of Health and Human Services (DHHS) and the U.S. Department of Agriculture (USDA) in their updated dietary guidelines:

<https://health.gov/our-work/food-nutrition/2015-2020-dietary-guidelines/guidelines/appendix-13/>

If your presumptive diagnosis is diverticulitis, you should know that over 75% of diverticulitis cases are self-limiting and do not require treatment with antibiotics. The treatment of pain is symptomatic, with the use of NSAIDs or Paracetamol in the case of allergies.

At first, a liquid or semi-solid diet is very helpful during acute pain crises. Previously, a low-fiber diet was recommended during painful attacks, but there is now scientific evidence that this type of diet is not especially useful.

When working with patients with diverticular disease or diverticulitis, I suggest that they consume all the food groups according to their preference. Always increase your fiber intake to improve the quality of the fecal bolus and prevent constipation.

However, even after applying these measures, there are still patients who continue to have constipation because their bowel habits have been poor from childhood. In these cases, I like to indicate a type of laxative powder that acts by hydrating the feces, called osmotic laxatives. I indicate mixing two doses of laxative powder with water, juice, or yogurt.

If the patient continues to have constipation, I indicate another dose in 12 hours. If, on the other hand, the patient has diarrhea, I indicate reducing the dose by half. What I like about those kinds of laxatives is that they act naturally by blocking the water absorption mechanism in the large intestine so the stool stays hydrated. They ensure that the person taking them does not have cramps or unpleasant symptoms.

The use of antibiotics in patients who do not have an immune-compromised condition is not recommended. Thus, antibiotic therapy is reserved for immunocompromised patients, such as HIV-positive patients or those taking high-dose corticosteroid treatments.

There are several lines of treatment that can be used, one of which I recommend because antibiotics are readily available: the combination of Ciprofloxacin 500mg with Metronidazole 500mg.

Dosage: Ciprofloxacin 500mg every 12 hours for 10 days + Metronidazole 500mg every 6 hours for 10 days

d) When Should I Worry?

The patient with diverticulitis may have a moderate fever up to 100°F. A higher fever may indicate a more serious complication, like an intra-abdominal abscess that needs to be drained.

Be sure to evaluate the abdomen daily, if possible, twice a day, and perform peritoneal irritation maneuvers. If at any time one of these maneuvers is indicative that the person has peritoneal irritation, it is important to take them to a health care facility because they may need surgery.

Rectal Bleeding

Blood discharge through the anus generally alarms the patient greatly. It is caused by many pathological conditions, both benign and malignant, so it is important to know how to recognize the bleeding and associate it with the rest of the symptoms presented at the time of evaluation.

First of all, I will clarify some concepts; it is not necessary to learn the names but the differences between them, since the presumptive diagnosis will depend on this:

- **Hematochezia:** Red bleeding, fluid, no clots, mixed with stool
- **Melena:** Black stools with a very bad smell and no visible blood. It is indicative of bleeding from the upper digestive tract because the blood has passed the digestion process.
- **Rectorrhagia:** Bright red blood, with or without clots
- **Fecal occult blood:** Refers to a type of bleeding that is not visible but causes symptoms of anemia. It can only be diagnosed by a stool test.

| TYPE OF BLEEDING | CHARACTERISTICS | PROBABLE CAUSES |
|---------------------------|---|--|
| Hematochezia | <ul style="list-style-type: none">• Stools mixed with blood• It may be abundant or just traces, but it is always mixed with feces. | <ul style="list-style-type: none">• Chron's Disease• Ulcerative Colitis• Gastroenteritis• Amoebiasis• Diverticulosis |
| Melena | <ul style="list-style-type: none">• Black stools with a very bad smell | <ul style="list-style-type: none">• Bleeding Peptic Ulcer• Gastric Cancer |
| Rectorrhagia | <ul style="list-style-type: none">• Bright red blood that may contain clots.• It can be very abundant or only leave traces when wiped off. | <ul style="list-style-type: none">• Hemorrhoids• Anal Fissure• Anal Cancer• Colon Cancer |
| Fecal Occult Blood | <ul style="list-style-type: none">• There is no blood evidence, only symptoms of weakness, and the blood test shows decreased hemoglobin. | <ul style="list-style-type: none">• Colon Cancer (85% of cases) |

As you can see from the table, each of these types of bleeding offers a range of diagnoses that we should keep in mind when evaluating a patient with rectal bleeding.

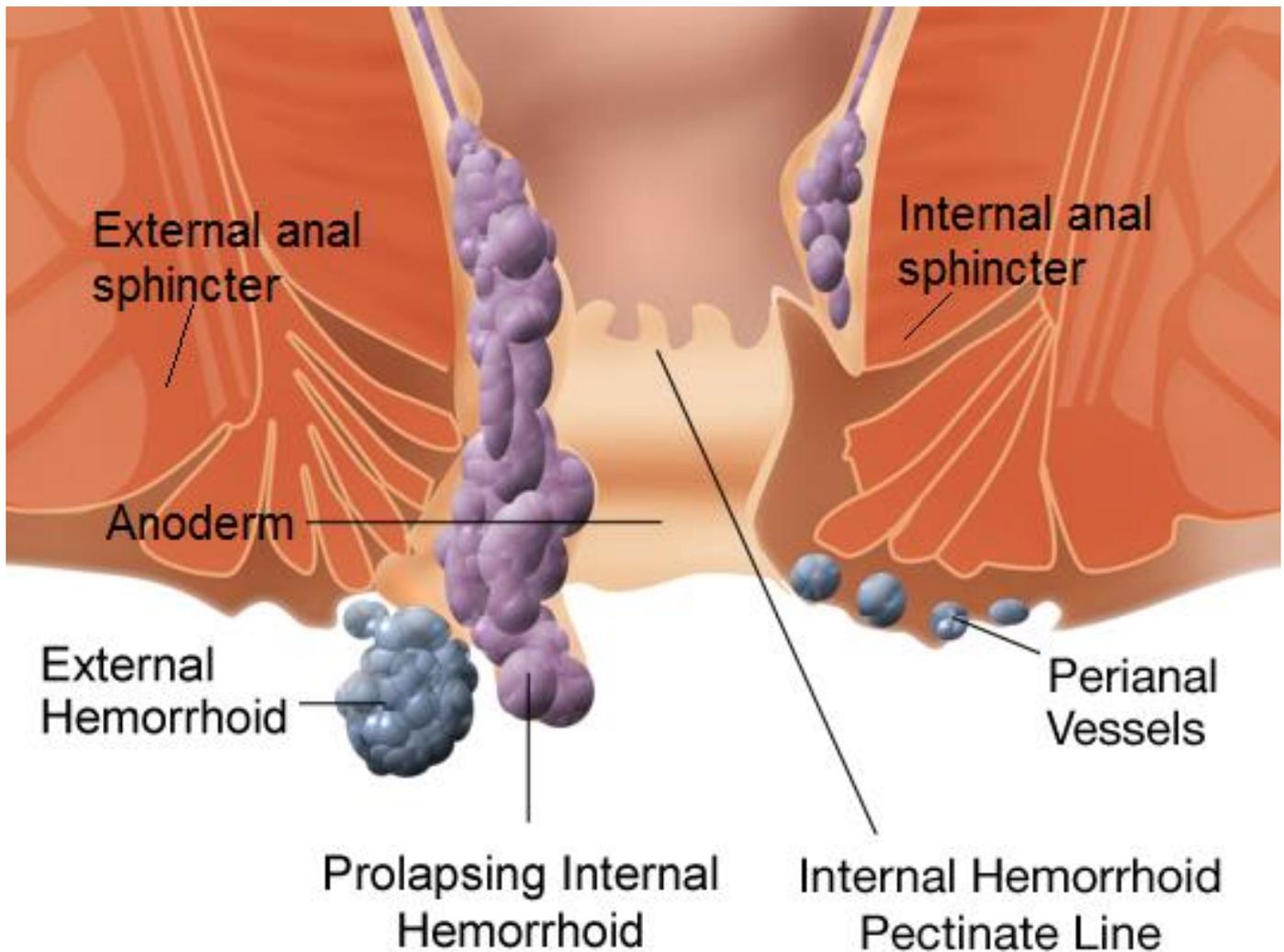
We will discuss below the most common cause of rectal bleeding.

a) Hemorrhoids

Hemorrhoidal bundles are veins found in the rectum. These veins are actually a normal anatomical feature that can become pathological.

When blood does not flow properly through those veins, they become inflamed, and the disease begins.

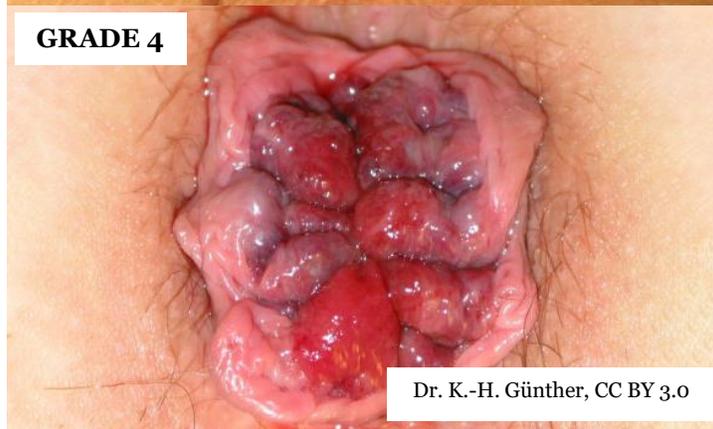
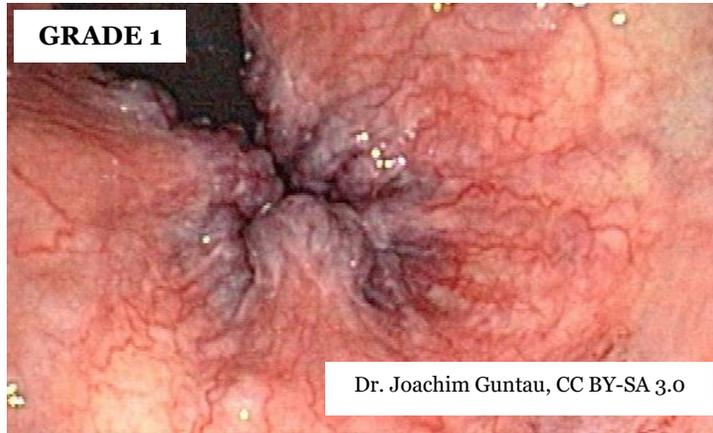
There are veins inside the rectum that cause internal hemorrhoids and others near the anus that form external hemorrhoids.



WikipedianProlific and Mikael Häggström, CC BY-SA 3.0

Hemorrhoids are not associated with cancer. It's a completely benign condition. Internal hemorrhoids are not a big problem unless they come out through the anus, which is called hemorrhoidal prolapse. In these cases, it can become very annoying and bleed frequently.

Hemorrhoidal prolapse begins inside the rectum and eventually progresses to become visible through the anus. In the next images, you can see the stages of hemorrhoidal prolapse.



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On the other hand, external hemorrhoids do cause a lot of pain and discomfort. The pain becomes intolerable for the patient, with a lot of hypersensitivity in the area where the hemorrhoid is located.



The treatment for each type of hemorrhoids is very different. While external ones can be solved with a simple outpatient procedure, internal ones eventually become surgical and must be taken care of in the operating room.

External Hemorrhoid Drainage

The problem with external hemorrhoids is that a clot is trapped inside the vein in the anal region, causing very strong pressure with pain and hypersensitivity.

For this reason, the clot must be drained for the patient to be relieved. The improvement is immediate.

Materials for the procedure:

- Clean water/alcohol/ hydrogen peroxide
- Disposable gloves
- Lidocaine gel/spray
- Scalpel blade #11
- Curved locking clamp (not absolutely necessary)
- Gauze

Technique

Step 1

Prepare all the materials and an area where you will perform the procedure. Place an absorbent bedding pad or towel under the patient.

The patient should lie in the fetal position (i.e., on his side with his knees toward his chest). Ideally, the hemorrhoid should be within comfortable reach.

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Step 2

Apply lidocaine gel or spray over the hemorrhoid and surrounding skin. This type of analgesia may not be as effective as the injected kind. However, if you are not experienced in injecting, I do not recommend that this be your first practice. This is a quick technique, and the patient will feel relief shortly after the procedure.

Step 3

Take a good look at the area where the hemorrhoid looks most swollen, as if it were about to break. This is where you're going to make the incision with the scalpel.

For example, in the figure below, the incision would be in the area where a small black patch is visible. I would cut a little deeper until the entire tip of the blade is inserted, about 2 inches, and advance by about 1 centimeter.



The size of the incision will depend on the size of the hemorrhoid; it should be a single precise cut that covers it almost completely. Warn the person to take a deep breath. This step can be very painful.

Step 4

As soon as you open the hemorrhoid, a dark purple to black material will start coming out, which is the clot inside. If you have forceps, finish pulling it out with that instrument. If not, you can finish draining it between your fingers with the gauze. Make sure all the dark content comes out. When red blood starts flowing, the clot is out.

Step 5

Clean well with water, alcohol, or hydrogen peroxide, and leave gauze between the patient's buttocks. After the procedure, the patient may bleed for a few days; this is completely normal. In my practice, I recommend using sanitary pads to avoid soiling the underwear. In addition to this, I recommend taking sitz baths with warm water and a squirt of iodopovidone at least twice a day for three days.

b) Anal Fissures

Anal fissures are small cuts found in the anal region. These are usually very painful, especially when evacuating. They are not easy to observe with the naked eye unless you look for them specifically. Usually, the patient squeezes the anus because it is painful, so the buttocks must be separated well in order to evaluate it. About 90% of them are in the middle of the anus (hour 12 or 6).



The main cause is constipation. The patient passes very hard or large stools so that the anal sphincter becomes too wide and the skin tears. In addition to the pain, it also causes bleeding that can only be noticed on the toilet paper when wiping.

Treatment

Although many surgeons operate on anal fissures, I worked for a year with a proctologist who taught me an excellent treatment, and I have left the anal fissure surgeries for exceptional cases. This treatment consists of preparing a cream with petroleum jelly, lidocaine cream, and two crushed tablets of Tadalafil (Cialis).

Preparation

In a specimen cup, add Vaseline to fill one third of the cup and then lidocaine until reaching half of the container. Crush two tablets of 20mg Cialis with a mortar and add them to the cream, stirring everything together.

How it Is Applied

With your index finger, take some of the cream and insert it into the anus until the first phalanx or until the nail is inside the anus. Try to apply the cream with special attention to the fissure for better analgesia. If you can't do it, it works anyway.

The cream is applied three times a day and before bowel movements for 10 days. The improvement is felt from the first day, and the fissure begins to heal between the fifth and sixth day.

How Does it Work?

Cialis is a product widely known for its use in erectile dysfunction; however, it works in many other treatments as well, especially cardiovascular issues, because it helps improve circulation. In the anus, it increases blood flow, which promotes sphincter relaxation. That makes the scar more relaxed in the mucosa, and it heals properly.

c) Colorectal Cancer

Colorectal malignancy is quite common in people over 50. When a person suffers from colonic conditions such as Chron’s disease or ulcerative colitis, the risk of colorectal cancer increases. A genetic component has also been seen in families that have more than two members with diagnosed colon cancer.

Depending on the location of the tumor, the symptoms are different, although they all lead to weight loss and cause changes in bowel habit, alternating between periods of diarrhea and constipation.

| | RIGHT SIDE | LEFT SIDE |
|--------------------------|---|--|
| Symptoms | <ul style="list-style-type: none"> • Pain in the right hemiabdomen • abdominal discomfort • bulging • distention | <ul style="list-style-type: none"> • Flattened stools • rectal bleeding that may be heavy with clots • periods of constipation • feeling of not being able to fully evacuate |
| Physical Findings | <ul style="list-style-type: none"> • A mass may be found on deep palpation in a normal rectal examination. | <ul style="list-style-type: none"> • The mass can be felt by the rectal exam if the tumor is low enough, and traces of blood can be found on the glove. |
| Diagnosis | <ul style="list-style-type: none"> • Stool test that reveals occult blood • Colonoscopy • CT scan | <ul style="list-style-type: none"> • Rectoscopy • Colonoscopy • CT scan |
| Treatment | <ul style="list-style-type: none"> • Surgical: Radical right hemicolectomy | <ul style="list-style-type: none"> • Surgical: Depending on the location of the tumor, it can be left radical hemicolectomy or resection of the sigmoid or lower rectum. |
| Prevention | <ul style="list-style-type: none"> • There is now strong scientific evidence that changes in lifestyle reduce the risk of colon cancer. • Be physically active at least 4 times a week for 30 minutes, kick the tobacco and alcohol habits, and reach a healthy weight according to your body mass index. | |

Previously, it was thought that a high-fiber diet improved the condition of the colon and decreased the risk of suffering from this type of cancer. However, data from large multi-hospital studies have not shown a relationship between diet and risk of this condition.

d) Inflammatory Bowel Disease (IBD)

Inflammatory bowel disease is a term used to cover two autoimmune diseases that cause inflammation in the intestine: ulcerative colitis and Chron's disease. Despite being distinct entities, they have common symptoms, such as severe diarrhea, fever, weight loss, bloating and distension, abdominal pain, and fatigue.

IBD patients adapt to living with this condition as it can only be treated but not cured. Although they do not have to follow a strict diet, during crises, it is recommended to eat liquid or semi-solid food and to avoid vegetables that cause bloating.

1. Ulcerative Colitis

Ulcerative colitis is a disease that is manifested by the appearance of ulcers and bleeding patches over the entire mucosal lining of the colon and rectum.

Patients with ulcerative colitis may have frequent rectal bleeding and require specialized treatment. Most patients with this type of disease know how to manage their painful crises and maintain strict treatment.

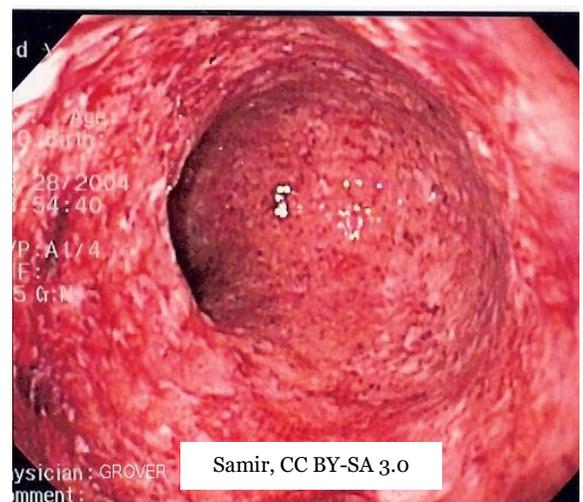
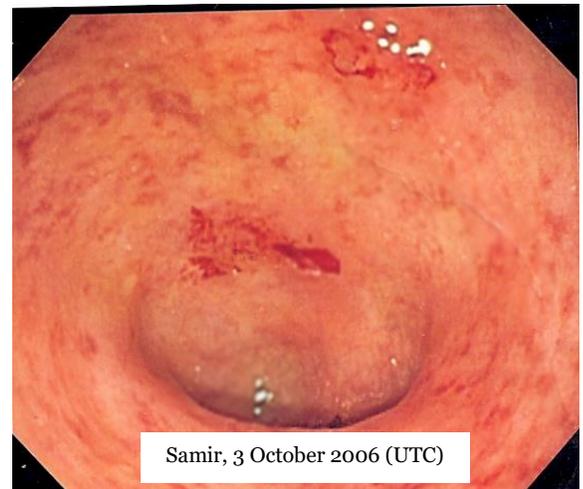
If you or someone close to you is suffering from this disease and has a crisis, I recommend that you contact your doctor so that they can devise a plan of action.

2. Chron's Disease

Chron's disease is an inflammatory condition that can spread throughout the entire digestive tract, from the mouth to the anus. It is also capable of causing disease in other organs outside the intestine such as skin ulcers and arthritis among others.

The most important thing when evaluating a patient with Chron's disease who is experiencing pain is to rule out peritoneal irritation.

If any signs of peritoneal irritation are present, it is very likely that the colon or intestine has fissured in some segment and the patient will need surgery.



Abdominal Trauma

Abdominal trauma is injury to the internal organs of the abdomen, either by direct impact or by the action of shock waves. Trauma is divided into open and closed.

Open is when an object penetrates the abdominal cavity, like a bullet, and closed is when the trauma occurs from an impact against a person's body from a collision or from a seat belt, among others.

In my country, there is a very high crime rate that has been increasing in the last 20 years. Any street robbery can result in a gunshot or stab wound, because thieves are extremely aggressive.

While doing my residency in general surgery, we used to receive gunshot wounds especially on weekends, when the emergency room could be overwhelmed by such patients.

I like emergency surgery very much and it is one of the specialties I considered, however in Venezuela the training program was not fully developed until 2012.

a) Open Abdominal Trauma: Penetrating Wounds

Penetrating wounds are those that cause direct damage to the intra-abdominal organs. A gunshot or stab wound can cause a lot of damage to the abdomen, and you'll know the exact damage in the operating room.

Gunshot

I have more experience with shooting than with any other type of weapon since in my city, many robbers are armed. The type of patients that I have treated are usually from criminal gangs that come directly to my hospital because, being a university hospital, it has a policy of not letting police forces in. The weekends are the busiest days, with five or more wounded in one day.

What Should You Do?

The wounds are unpredictable. It all depends on the type of weapon, type of projectile, distance from the attacker, and many other aspects. Each injured patient must be evaluated as a surgical patient until proven otherwise.

First of all, remember that the most important thing is to stop the bleeding, if there is any. Wherever you see an area of bleeding, compress it tightly with a towel to try to plug the area. At that point, you need to call for help. If you are the injured person, concentrate on calling 911 and stopping the bleeding.

If it is someone else you are treating, find a helper who can continue to pack the wound while you proceed with the physical examination for signs of neurological deficits, such as slurred speech, disorientation, loss of consciousness, and other injuries to the rest of the body.



Bobjgalindo, Own work, CC BY-SA 4.0

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First, completely undress the injured person. This way you will have visual access to the entire surface of the skin, and it will be easier to locate other entry or exit holes.

Not all bullets go out, and contrary to what we are told on TV and in the movies, that is neither good nor bad. The only benefit we get from watching the bullet exit is that we can calculate the direction it went and from there presume which organs may have been injured.

This is an absolute life-threatening emergency. Until the ambulance arrives, monitor the injured person's heart and breathing rate, and talk to him or her to assess the level of consciousness and orientation.

With pads or small towels, you can estimate the amount of blood he has lost. A fully soaked pad contains about 100 ml of blood and a surgical compress just over 200 ml. You can make an empirical calculation from this data, but if you want to be more accurate, do the calculation now with the smallest pads you have at home. The calculation is done with one measuring glass or with a syringe.

Deposit water until the cloth is soaked and begins to drip. That's the maximum absorption capacity, and it's an objective amount that's very important information for the health care team.

Always remember to examine the patient from behind. Both the front and side areas and the back are necessary for the examination to be complete.

Stabbing

The vast majority of times stab wounds are linear, not like the gunshot wound, where the bullet may have made some movements inside the abdomen, but they usually bleed a lot.

First of all, it's important to stop the bleeding. If you have an assistant, one can call 911 while the other continues to compress the bleeding area. As with bullet wounds, be sure to examine the patient thoroughly for other wounds. Don't forget to check the back and sides.

If the knife is still stuck, **DO NOT** try to pull it out. It is safer to have this procedure done by people who can care for the patient in case of severe bleeding or other complications. Sometimes the knife will cover the internal wound, so it prevents the patient from bleeding more.

Always remember that an injured patient is in a life-threatening situation. Don't feel confident just because he looks good or is talking and walking. That patient should be taken to the emergency room and examined and evaluated by a surgeon. Stab wounds are less frequent, but they do occur.

I will never forget the patient who arrived at the emergency room because in the rush hour of the subway with so many people around, she felt that something had punctured her abdomen. When I examined her, she had signs of peritoneal irritation and needed surgery.

b) Closed Abdominal Trauma: Not Penetrating

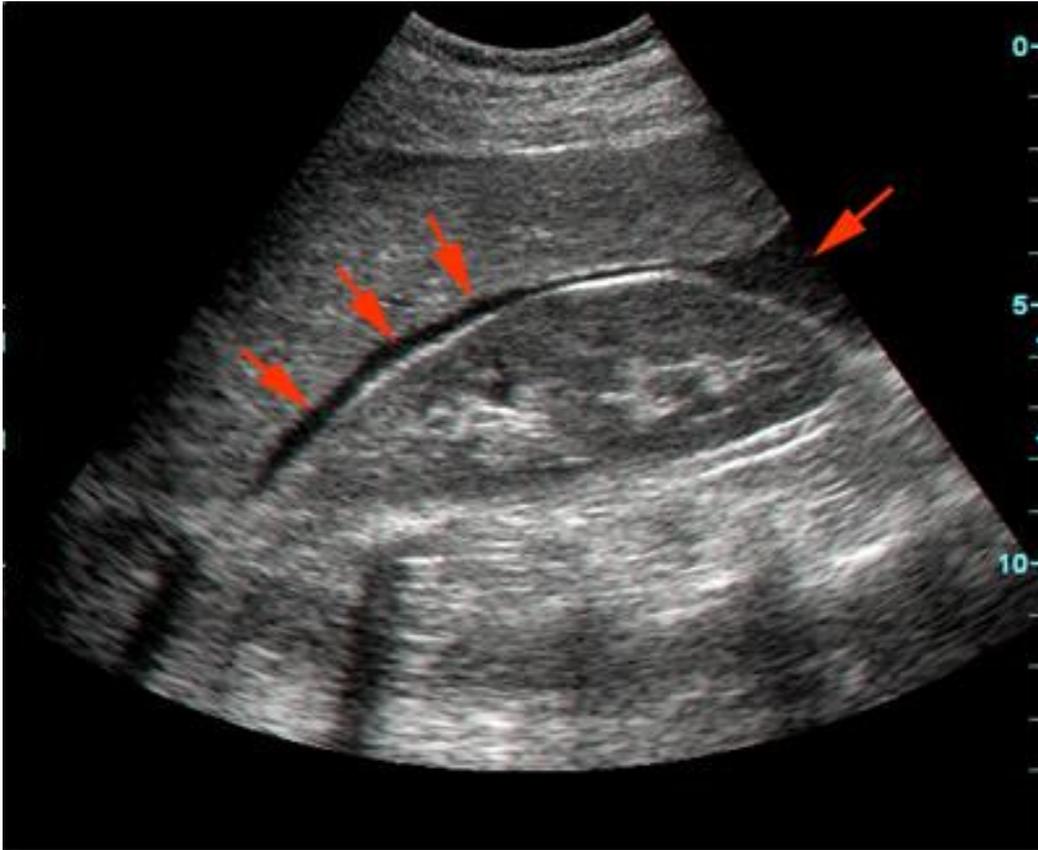
Blunt traumas usually occur in patients in car accidents. These patients should be kept under observation as internal bleeding may persist so slightly that it takes some time to manifest itself.

Any patient who has been in a crash or collision should be evaluated by specialized personnel.

Closed abdominal trauma patients undergo a scan called ecoFAST (Focused Abdominal Sonography for Trauma), which is nothing more than an ultrasound scan directed at specific areas of the abdomen

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where intra-abdominal fluid normally accumulates. In the figure, you can see that the black stripe, marked with arrows, indicates the presence of liquid in that area.



Sometimes paramedics have one of these machines and the exam can be done as soon as they arrive so they have more information about the condition of the patient's internal organs.

WHAT ELSE CAN I DO?

In the patient's body, you should be attending to two specific areas: the periumbilical region and the sides.

When, after an accident, bruising begins to appear in these areas, it is indicative of significant internal bleeding. That patient requires surgery.

If at any time the patient begins to lose consciousness, try to raise his legs above his head to encourage blood flow to the brain.

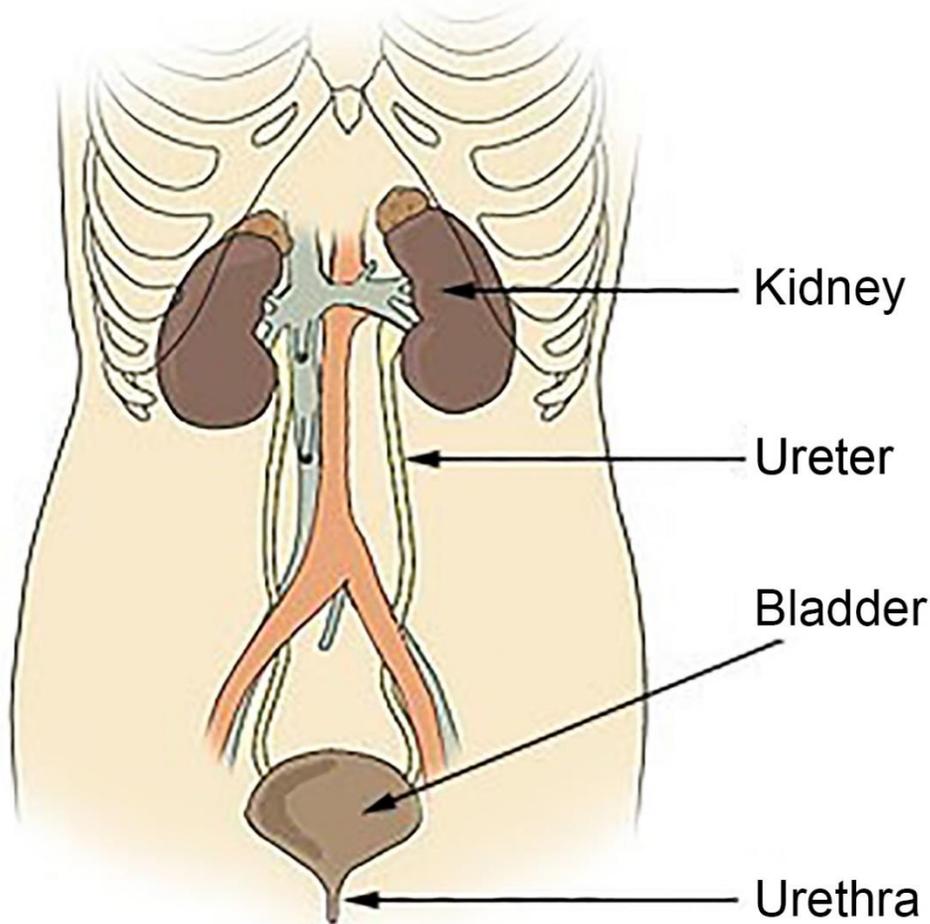
UROGENITAL SYSTEM

The genitourinary apparatus is comprised of the urinary and reproductive systems. These two systems are studied as one because of their proximity and because their embryological origin is the same.

The organs that comprise the urinary system are extremely important for the maintenance of the body's water balance and blood pressure, among other functions.

On the other hand, the reproductive system maintains the body's hormonal balance that is the basis for the proper functioning of cells.

Components of the urinary system



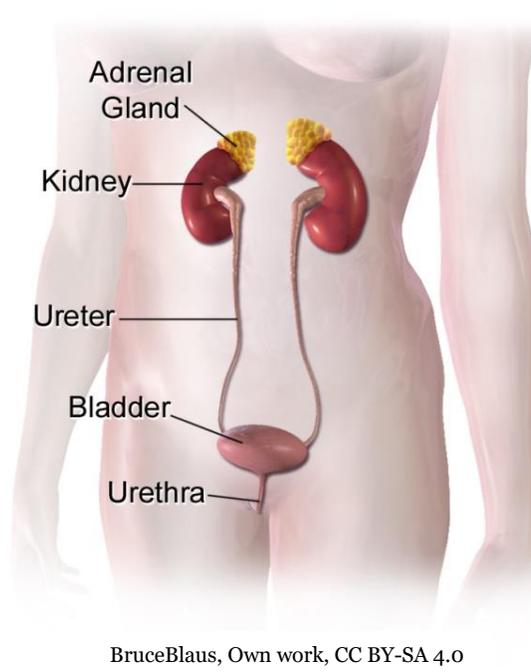
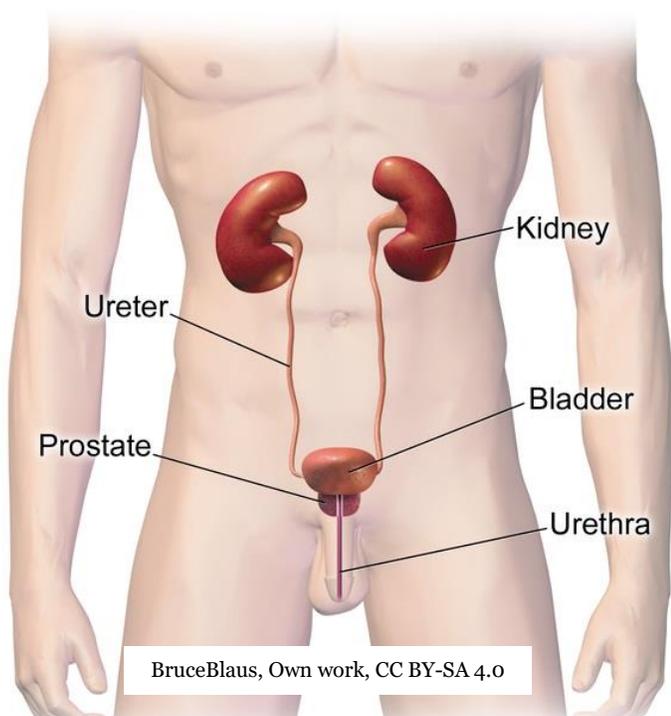
The urinary tract is divided into upper and lower. The upper tract is formed by the kidneys and ureters, and the lower by the bladder and urethra.

Female and male urethras have important anatomical differences, and these distinct characteristics affect the way microorganisms infect these regions in men and women.

1. Urinary Tract Infection (UTI)

UTI refers to the contamination by microorganisms, mainly bacteria, of the organs that are part of the urinary system. It usually involves only the lower urinary tract, the urethra and the bladder. It is more common in women than in men due to the female urethra's length.

The male urethra is farther from the bladder, so the bacteria that can infect it usually do not ascend very far and are swept away when the person urinates. In women, the urethra is short, so bacteria can easily access the bladder.



Urinary tract infections are painful, and their **symptoms** progress in a short time. In less than 12 hours, you can go from feeling mild discomfort when urinating to having bloody urine.

The first sign is discomfort during urination that does not hurt. A few hours later, the pain begins before urination and a burning sensation after. This symptom is called **dysuria**, and it's typical of urinary tract infections.

Bloody urine is a common sign. It is important to differentiate between blood that is diluted in the urine and blood with clots. With the first, we think of an infectious problem; with the second, there are other, more complex diagnostic possibilities, like bladder cancer for example.

Finally, urinary urgency and vesical tenesmus are also frequent symptoms. Urinary urgency is the sensation of having an uncontrollable urge to urinate, and vesical tenesmus is the sensation of not being able to completely empty the bladder.

Few of the men who read this will be familiar with these symptoms; however, most women have had urinary tract infections and know how to recognize them fairly easily.

The **diagnosis** is made on the basis of the discomfort the patient is experiencing. In addition, the urine may look cloudy and have a stronger odor than normal. The definitive diagnosis is made with a urine test. Ideally, the test should be checked by an expert in a laboratory.

However, for special situations, there are test strips available for home use. Although these are not the most accurate, they are very helpful when common natural treatments are not working well and antibiotics should be used.

Treatment

About 40% of urinary tract infections do not require treatment with antibiotics. Natural treatments are widely known, inexpensive, and easy to carry out. Between the year I spent in the Amazon, my mother's homemade recipes, and the tips one learns from patients, the natural treatment of urinary infections is one I have learned to handle very well.

The first recommendation is to stay well hydrated. Drinking enough fluids, especially water, helps with good urinary flow. This helps bacteria to be carried out by the urine rather than starting to move into the bladder. This recommendation goes hand in hand with not holding back the urge to urinate. Going for a long time without urinating gives bacteria room to stick in the urethra and climb up.

Drinking cranberry juice is very beneficial. Although the mechanism by which it works is still not totally clear, there are many testimonies, including my own, that this fruit helps improve the health of the urinary tract. It can be consumed as a juice or as a supplement as the juice is very acidic for some people.

Cranberry dietary supplement: 1 capsule daily

My mother's favorite is to eat papaya seeds. Papaya seeds are widely used in my country, probably because this is one of the most abundant fruits in all of Venezuela. They are said to have many antiseptic and purifying benefits. In the case of urine and other kidney problems, it is advisable to eat seven papaya seeds three times a day for seven days.

Some people crush them in a mortar and consume them as part of a salad dressing or juice. It has great purifying and antioxidant benefits.

Garlic is another powerful antiseptic that can treat infections of any kind. In the case of UTIs, it is recommended to prepare an infusion with three crushed garlic cloves in one cup of water for five minutes. This liquid is strained and drunk three times a day for five days.

Other foods, such as watermelon and asparagus, also have anti-inflammatory and diuretic properties, which are beneficial for both the prevention and treatment of UTIs.

What if Natural Treatment Is Not Enough?

Natural therapies are generally very effective; however, if you don't see improvement in your symptoms after three days or if a fever starts, you should probably move on to treatment with medication.



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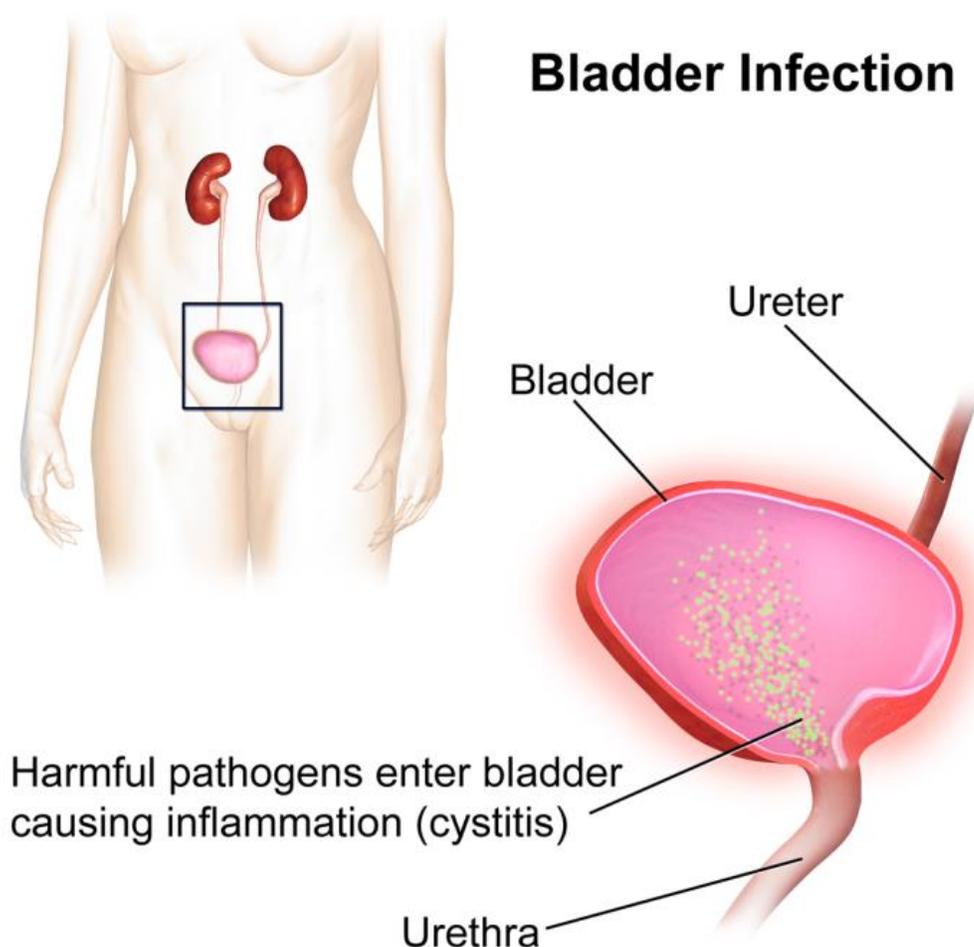
Home tests are available to corroborate the diagnosis of a urinary tract infection. If it is not possible to visit the specialist, it is a good tool to be sure that you do have an infection so you won't start a treatment with antibiotics when it's not necessary. Although they are a bit expensive, I think it is a good idea to keep some at home and use them only in emergencies.

Once we know it is an infection, antibiotic treatment should be started. Amoxicillin or Cephalexin are preferred. I particularly use the second one in the case of women since there is not as much bacterial resistance to this as there is to Amoxicillin. If, after taking antibiotics, the symptoms continue, you should contact an emergency service as the infection may have ascended to the kidneys.

Cephalexin: 500mg every 12 hours for 7 days

How Can I Prevent a Urinary Tract Infection?

Prevention is the main weapon against urinary tract infections. As I said before, women are the ones who are most vulnerable to this. Prevention begins with good hygiene of the genital area to minimize the population of microorganisms.



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I always tell my patients to avoid using douches since the vagina and vulva have a lot of bacteria that normally live there and prevent the accumulation of other types.

Douching washes the bacteria out of the normal flora, leaving room for the invasion of other types of microorganisms and making you prone to infection.

Urinating after sexual intercourse helps expel any bacteria that has attached to the urethra. You may have heard of “honeymoon cystitis,” which is nothing more than a UTI that occurs from bacterial colonization in the urethra after sex.

It is not a sexually transmitted disease; the infection originates from the same cause as others. Bacteria of the vulva take advantage of some conditions, such as humidity and heat, to ascend to the bladder.

Always keep yourself well hydrated by drinking enough water and not resisting the urge to urinate. Other than that, the natural therapies explained above are totally healthy and can be taken as preventive measures.

Myths and Realities About UTIs

- **I can get a urinary tract infection from peeing in a public toilet.**

FALSE: Ninety percent of urinary infections occur due to the migration of bacteria from the normal bacterial flora of our skin.

- **Wearing tight clothing causes UTIs.**

TRUE: Very tight pants and nylon underwear keep more moisture in the vulva, which creates a suitable environment for bacterial growth.

- **Using pantliners causes UTIs.**

TRUE AND FALSE: The use of the pantliner alone does not increase the amount of bacteria or cause the development of a urinary tract infection. However, this type of product irritates the vulva by increasing the humidity in the area near the ureter. Therefore, the bacteria find a suitable environment to multiply and ascend to the bladder.

- **Circumcision decreases UTIs.**

TRUE: The foreskin stores bacteria that can proliferate and end up inside the male urethra. Males who are circumcised have significantly fewer urinary tract infections than those who are not.

When Should I Worry?

In the event that both natural and conventional treatments have been tried and the patient continues to have a fever and chills, you should seek emergency help.

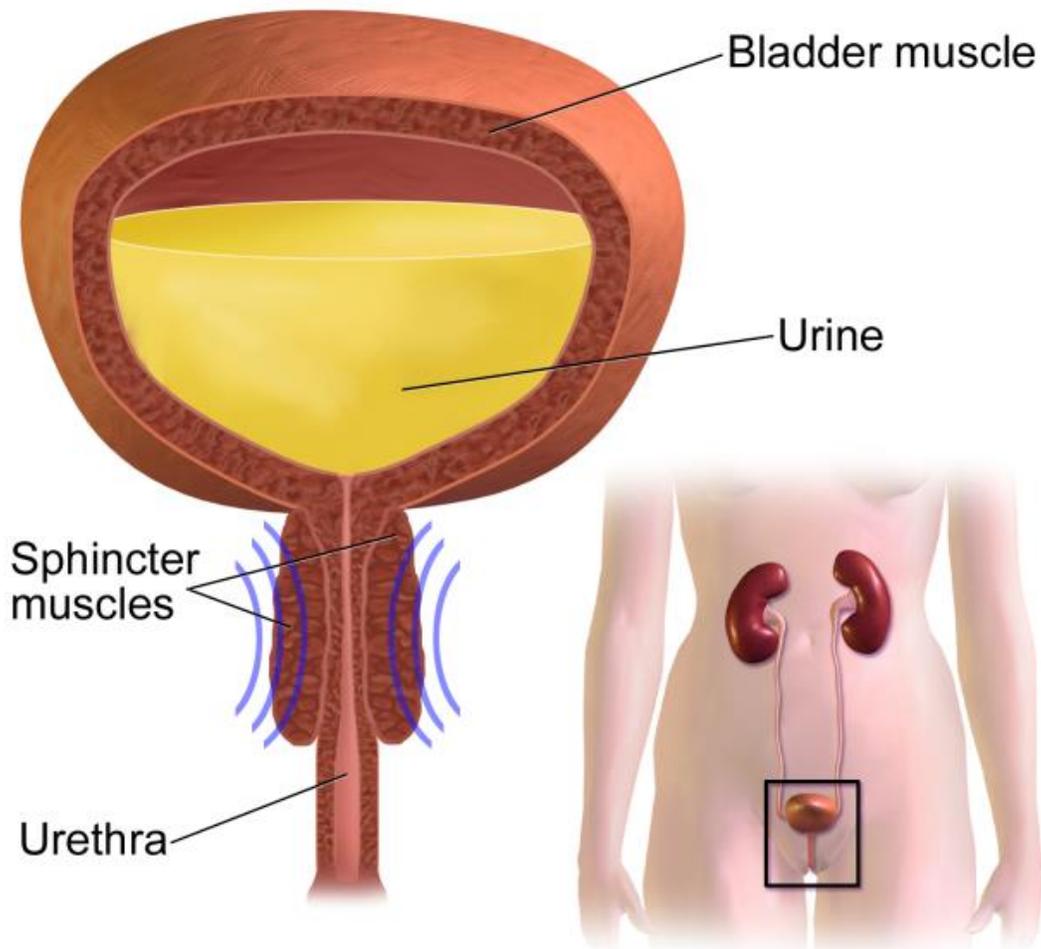
Patients who have diseases such as diabetes or immunosuppressive conditions, those who have had transplants, or those who receive immunosuppressive drugs should be aware of the first symptoms of a urinary tract infection as it progresses very quickly and can have serious consequences. If, in addition to the infection, the patient begins to notice pain in the lower back, it is likely that the infection has ascended to the kidneys.

2. Urinary Urgency and Urge Incontinence

Sometimes the terms “urgency” and “urge incontinence” are used as synonyms when they are not. Although both refer to involuntary urine loss, the person with urgency may hold urine until they reach the bathroom, while the person with incontinence has no control over the bladder.

If a person has either of these symptoms, we should do a medical interview and investigate the problem that is causing them.

The bladder is a muscular reservoir where urine that forms in the kidneys is stored. From the bladder, the urine passes through the urethra to be expelled from the body. This mechanism is regulated by an internal sphincter, close to the bladder, that has involuntary action and an external voluntary sphincter that is part of the urethra. We urinate and hold urine at will by keeping the external sphincter contracted.

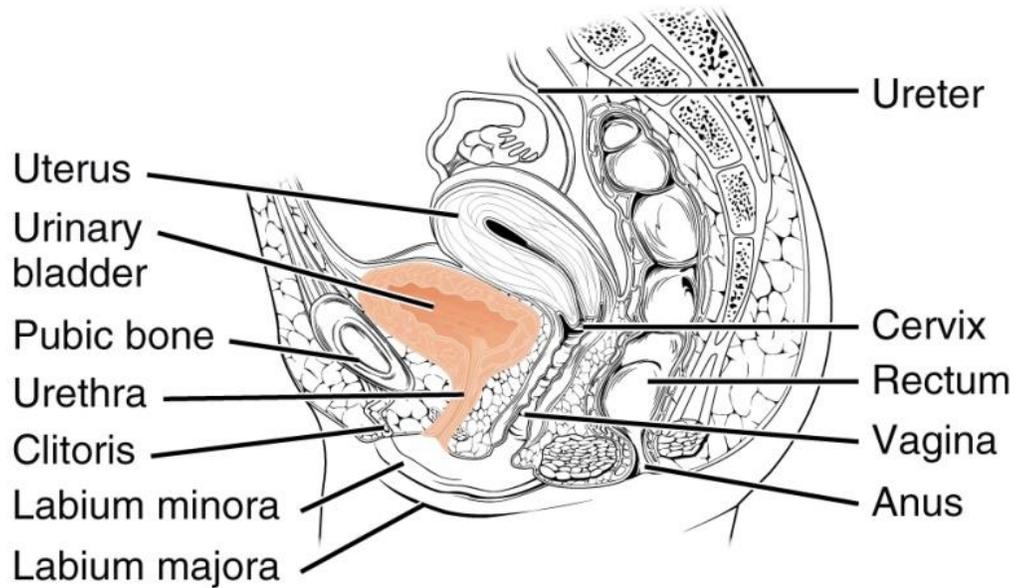


Urinary Sphincter

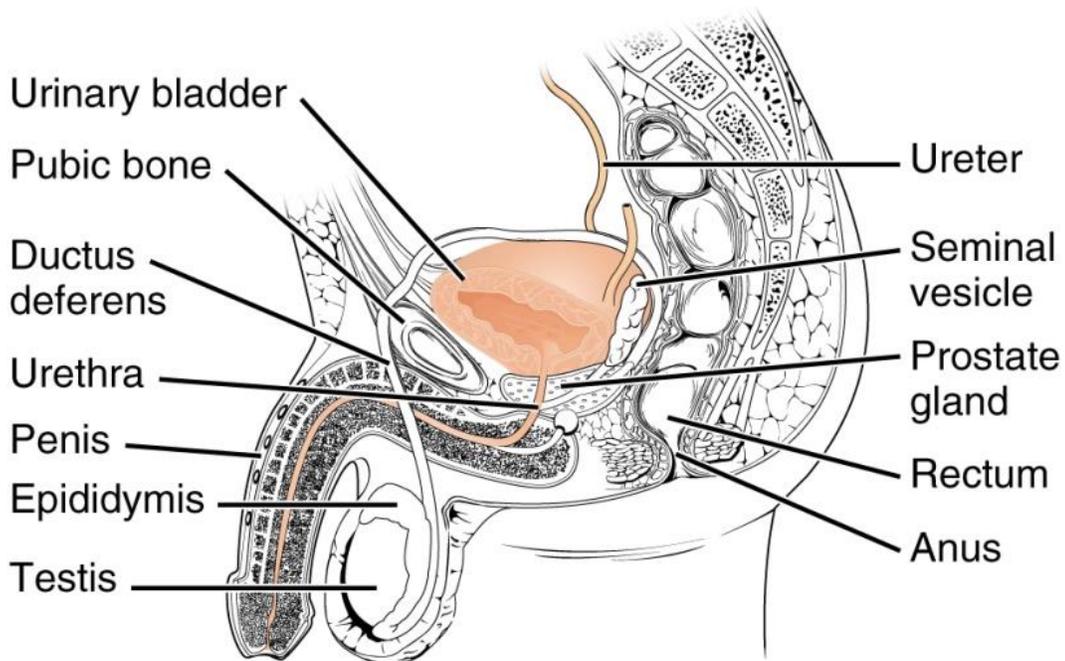
By BruceBlaus, Own work, CC BY-SA 4.0

Common Causes of Urinary Urgency and Urge Incontinence

Men and women's urinary systems are different, so while there are causes that may be common to both sexes, there are others that are gender specific.



(a)



(b)

There are causes specific to the urinary system and extrinsic causes that lead to these types of symptoms. Among the extrinsic causes are urinary infections that can cause leaks because the sphincter cannot be kept closed during an uncontrollable urge to urinate; in these cases, the urgency improves with treatment.

Systemic diseases such as Parkinson's disease, dementia, spina bifida, and late-stage multiple sclerosis, as well as age, are associated with both urgency and urge incontinence. Intra-abdominal tumors that compress the bladder, pregnancy, and some drugs are other common causes.

Intrinsic causes common to both sexes are the inability of the bladder to store its full urine capacity, bladder hypermobility, and overactive bladder, although the latter condition is more associated with urinary urgency without progressing to urge incontinence.

a) Causes of Urinary Urgency and Urge Incontinence (Women)

Urge incontinence is much more common in women than in men. There are two types: stress incontinence and urgency incontinence.

Stress incontinence is associated with urine loss on physical exertion that increases intra-abdominal pressure. Stress may be moderate, such as lifting a load, or mild, such as coughing or sneezing.

Urgency incontinence is the involuntary loss of urine following an unavoidable urge to void. It represents a problem for the woman who suffers it since it diminishes her quality of life, taking into account social, romantic, and work relationships, among others.

Most urgent cases of incontinence are due to an **overactive bladder**. This condition is associated with urine loss and also with nocturia, which is an unavoidable desire to urinate at night, sometimes interrupting sleep several times a night.

In the overactive bladder, the main problem is that the pressure exerted by the urine overcomes the force of the sphincter, so the urine comes out.

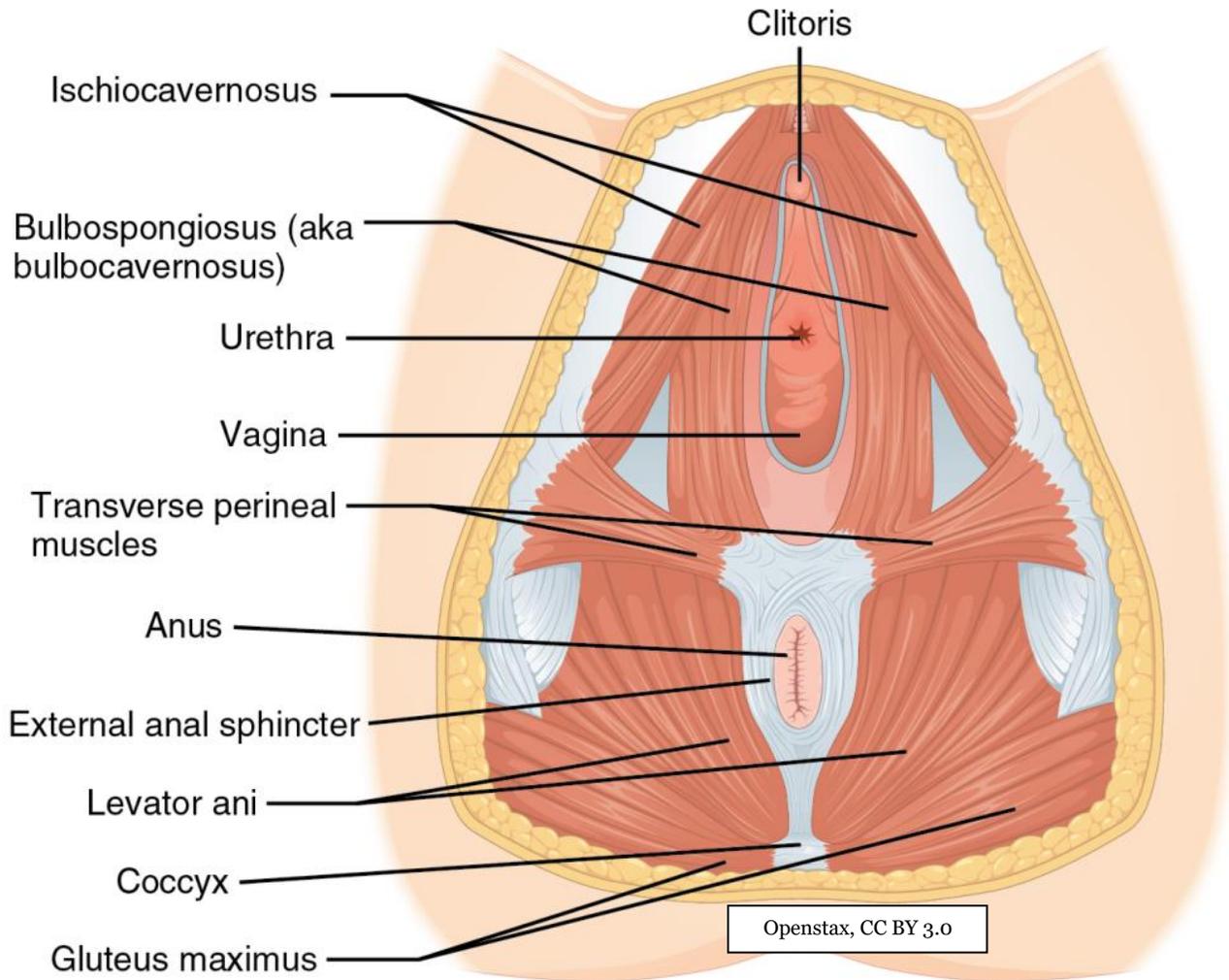
There are also other pathologies that cause incontinence. One of the most common I have seen is **pelvic organ prolapse**. The bladder, rectum, uterus or small intestine protrude through the vaginal mucosa.

This happens because of the weakness of the muscles of the pelvic floor that hold them in place. Increases in intra-abdominal pressure due to pregnancy, obesity, and chronic cough, among others, cause this weakness.



Pelvic organ prolapse

Mikael Häggström, Own work, CCo



In these cases, the presence of the organ through the vagina changes the direction and angulation of the urethra, resulting in urine loss. Pessaries may reduce prolapse and are helpful for women who don't want to undergo surgery.

The curative treatment of this condition is surgical. Surgery for these cases is a short and relatively simple procedure that is very well tolerated by the patients. As I said before, urinary incontinence is one of the most common reasons for consultation in women, and organ prolapse is one of the most frequent causes.

Management

Non-surgical treatments include lifestyle changes that may be associated with the symptoms, such as drinking less water before bed or drinking less caffeine during the day. In addition to this, we must answer the patient's questions, giving them the confidence to leave behind the stigma that urinary incontinence can represent. I particularly recommend pads because they are a resource that benefits the quality of the patient's relationships.

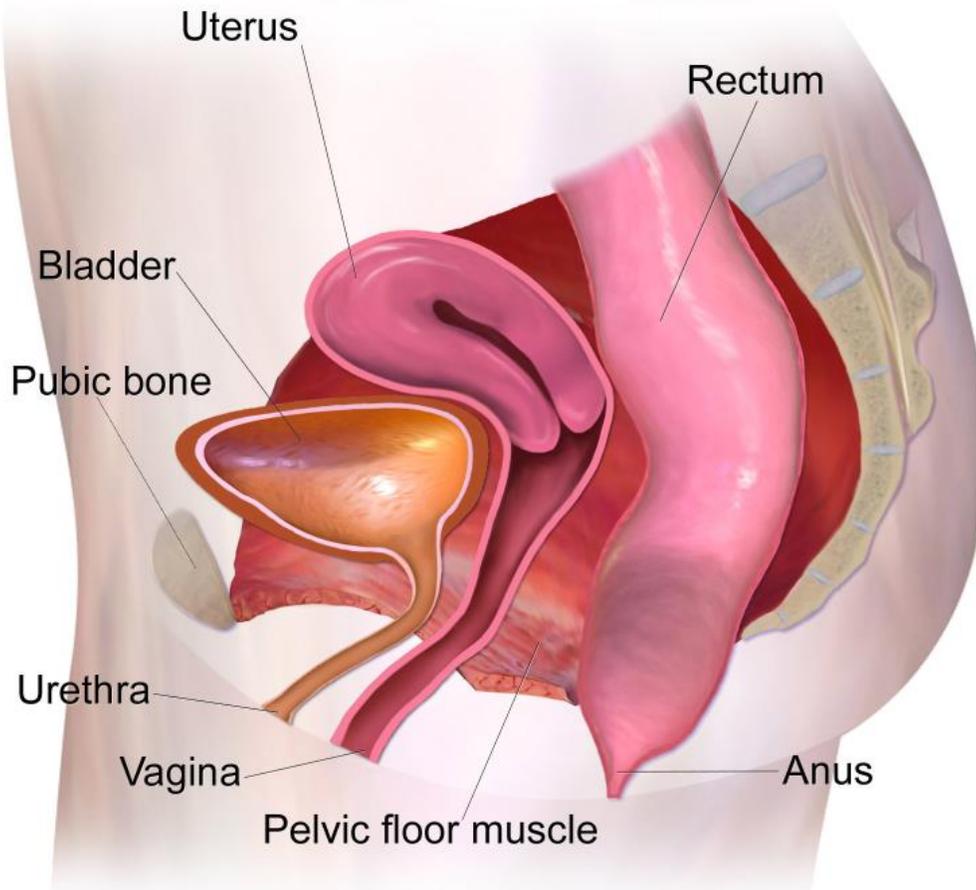
In post-menopausal women, the application of estradiol cream helps increase blood flow in the pelvic muscles and urethral sphincter, improving incontinence.

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I always recommend combining this therapy with pelvic muscle strengthening exercises. Pelvic floor strengthening exercises, or Kegel exercises, are a very beneficial treatment that helps improve the tone of the pelvic muscles and the sphincter's ability to contract and ensure resistance to pressure from the urine. Pelvic floor strengthening exercises can be performed by both women and men. In addition to helping improve incontinence symptoms, increased muscle tone improves sexual satisfaction and performance.

How do Kegel exercises work?

Kegel exercises seek to recover the strength of the pelvic floor muscles, which form the sphincters of the urethra and anus.



Female Pelvic Muscles

By BruceBlaus, Own work, CC BY-SA 4.0

We usually do not realize how hard we are trying to contract the sphincter to not let the urine escape. With these exercises, we try to perform this process in a conscious way so that we can control the muscles if we feel pressure or an unavoidable urge to urinate.

Although in some cases the exercises do not cure the problem completely, at least they help to control it to the point of being able to reach a bathroom without leaking.

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Basic exercises you can practice at home

There are weighted objects designed specifically for doing these exercises. However, there is no scientific evidence that weight adds any additional benefit over non-weight-bearing exercise. There is no single way to perform pelvic floor strengthening exercises. The idea is to train from the inner thigh muscles to the anal sphincter, vaginal muscle, and bladder sphincter. It is important to do the exercises in different positions so that you can contract the muscles whenever necessary without a change of position.

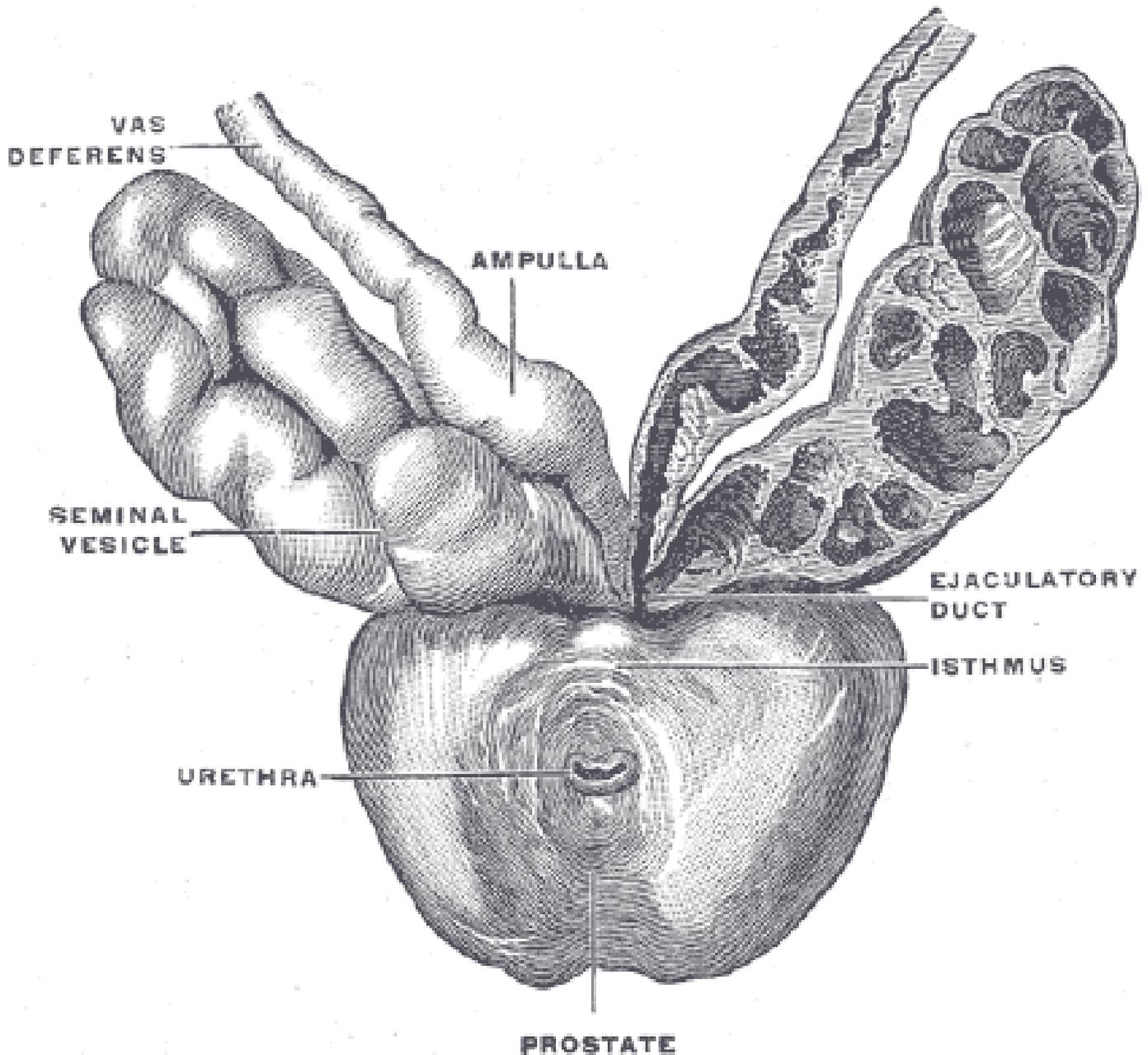
In the figure below, you can see three positions with which you can start training. The first one is lying down with your knees bent and your feet on the floor. You should start by slowly squeezing the inner thighs and pelvic muscles (squeezing as if not to let out gas) and slowly release by counting to ten to squeeze to the maximum point of tension and to ten to release. The second position, on hands and knees, consists of a quick squeeze and release. The last position is standing and contracting the pelvic muscles by counting to five and releasing quickly. You should try to do ten repetitions of each as many times as you'd like throughout the day.



Other positions used are sitting and lying down completely, always contracting until the maximum point of tension is reached and holding that contraction for five seconds before releasing.

b) Causes of Urinary Urgency and Urge Incontinence (Men)

The main cause of incontinence in men is the enlargement of the prostate gland. The prostate is a gland that is part of the male internal genital system and is in intimate contact with the urethra, which passes through it.



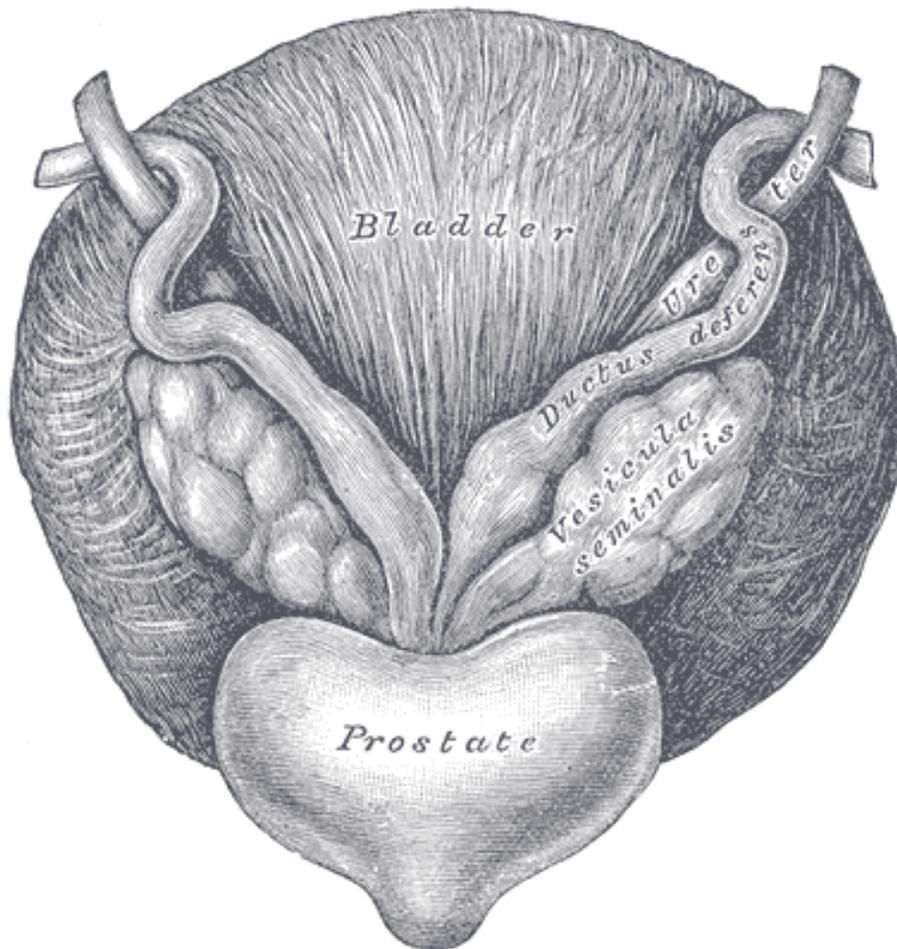
In these cases, so-called **overflow incontinence** occurs when the growth of the prostate blocks the passage of urine through the urethra until eventually the pressure exerted by the urine overcomes the sphincter and comes out involuntarily.

Other causes of incontinence and urgency in men are **stress incontinence** following some pelvic surgeries that damage a nerve that innervates the bladder and **urge incontinence** in which, as in women, there is weakness of the pelvic floor muscles. Therefore, the pressure of urine from the bladder easily overcomes the strength of the sphincter, allowing urine to leak.

An enlarged prostate is a fairly common condition in men over the age of 40. Its symptoms are mainly urinary, starting with decreased urine flow, post-void dribbling, and eventually difficulty in urinating with leakage of urine due to overflow.

Enlarged Prostate: What Do I Need to Know?

If you have had urinary symptoms like those described, it is very likely that your prostate is enlarged. The prostate is oval in shape with a central notch that divides it into two attached lobes. Its consistency is semi-solid.



The way to evaluate it is through a rectal examination, which is a somewhat uncomfortable procedure but also easy and quick; more importantly, it provides a clear presumptive diagnosis.

During med school, one of my favorite professors taught me the technique to rectal examination and to compare the consistencies by touching my chin, nose, and forehead.

The tip of the nose is equal to the normal consistency of the prostate, the consistence of the chin is softer than normal, and the forehead is a hard consistency, which leads us to think about cancer.

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Rectal Examination:

Rectal examination consists of inserting the index finger of your dominant hand through the patient's anus to evaluate the rectal walls, anal sphincter competence, and, in men, the prostate gland.

The prostate is relatively small, about the size of a golf ball. Its consistency should be that of the tip of the nose, and its surface is smooth. You should also feel the groove that runs through it and separates it into two lobes.

You'll need disposable gloves and lubricant.

Step 1

The patient should pull down the bottom of his or her clothing, including their underwear. You can position the patient in one of two ways: standing and leaning with the trunk resting on a surface with his elbows on the table or lying in the fetal position (sideways with the knees up to the chest).

I particularly prefer the latter position as it allows the patient to relax and not strain the anal sphincter.

Step 2

With the gloves on, first spread the buttocks and observe the perianal area for any abnormalities, such as hemorrhoids or prolapse.

Step 3

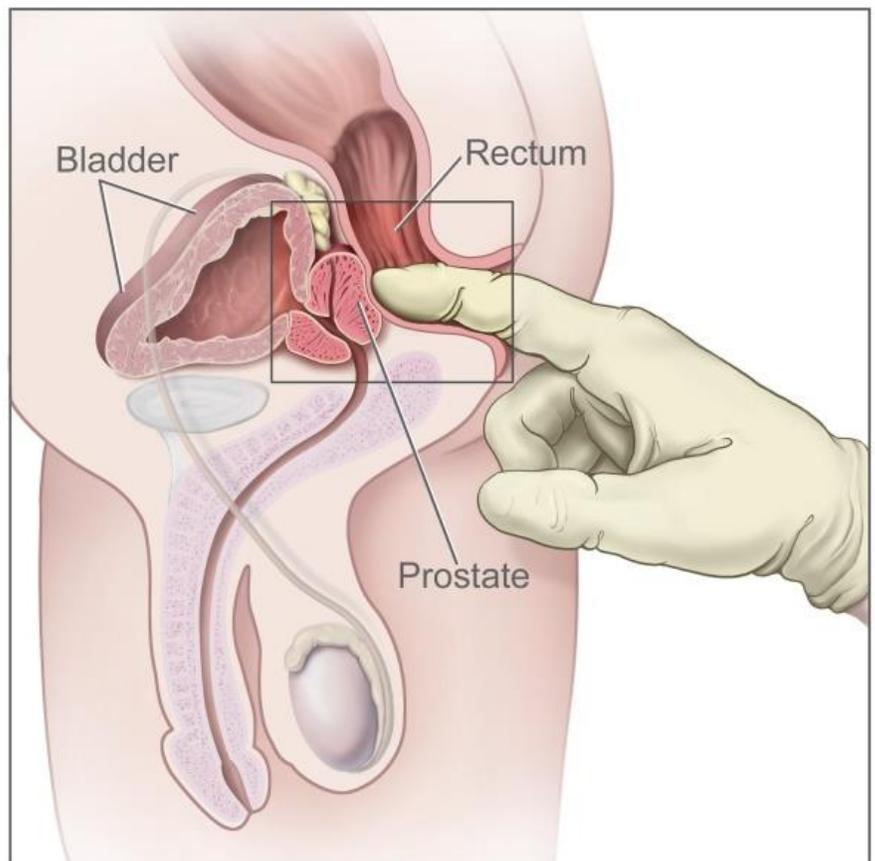
Take some lubricating gel and place it in the patient's anus and on your index finger.

To lessen discomfort and make the entry of the finger more comfortable, instruct the patient to cough or bear down as in a bowel movement and then slide your finger into the anus.

The first thing you evaluate is the strength of the anal sphincter, which should be equal around the whole finger.

Then you insert your finger until you find the prostate in the anterior face of the rectum.

Run your finger over the entire surface so that you feel the groove, the lobes, and the consistency. Check for other masses in the rectum, and remove your finger.



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Treatment:

If the prostate is enlarged and the person is losing urine due to overflow, it is important to notify a specialist. Although there are medical treatments for prostate shrinkage, this problem usually requires surgery.

It would not be responsible on my side to recommend a medication since each case must be evaluated individually as these are drugs that have other effects. You have to be very careful with their use. However, there are natural remedies that you can use both to reduce the size of the gland and to prevent its growth:

1. Beta-sitosterol supplements

This component is extracted from plants and seeds to be mixed in a single supplement. Both scientific evidence and patient testimonials agree that it works to improve urinary symptoms. The dose is one capsule twice a day.

2. Saw palmetto, zinc, pygeum africanum, multivitamin blend supplements

All these natural extracts, as well as zinc and vitamins, have shown beneficial results in patients with urinary symptoms due to prostate enlargement. The recommended dose is one tablet twice a day.

3. Changes in lifestyle

Reducing caffeine and alcohol intake and setting aside time for stress reduction practices such as meditation help control urinary symptoms and improve prostate inflammation.

Straining to Urinate

Urination difficulties can have causes ranging from neurological, involving the brain's communication pathways, to local, such as bladder lithiasis. Systemic causes are usually due to diseases of other organs. Thus, there may be difficulty in urinating in the patient with a stroke.

At this point, I want to focus mainly on local causes that can cause acute urinary retention, which is an emergency that requires procedures that can be performed at home without major complications.

Acute Urinary Retention

This is a fairly common condition that, as a surgeon in my residency program, I used to see very often since one of the effects that general anesthesia has on some people is the retention of urine. Procedures such as internal hemorrhoid surgery, hysterectomy, or pelvic and rectal surgery can cause this symptom for the patient due to the manipulation of the nerves in that area.

In the case of men, specifically those over 50 years of age and those who have previously had urinary symptoms such as post-void dribbling and incomplete urination, we should think that the problem is likely that the size of the prostate is blocking the passage of urine.

In patients with acute urinary retention, a mass can be seen below the navel, which is the completely full and distended bladder.

The bladder must be emptied promptly as the urine can become contaminated and infect the patient. In addition, it can cause damage to the bladder wall and to the ureters and kidneys.



Bladder Catheterization

The placement of a bladder catheter is a procedure that everyone should be aware of since it can easily solve a complex situation such as this one.

Urinary catheterization can be done to another person, and it can also be done to oneself. The important thing is to follow the directions and learn to identify the anatomical points.

Materials needed:

- Disposable gloves
- Intermittent urinary catheter #12 or #14 Fr OR 2-way Foley catheter for indwelling catheterization #12 or #14 Fr
- Lubricating jelly
- Urine bottle/bedpan/container for urine OR Urinary bag
- Povidone-iodine
- Gauze
- Mirror (for female self-catheterization)
- 10cc syringe (for indwelling catheter)

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INTERMITTENT CATHETERIZATION PROCEDURE:

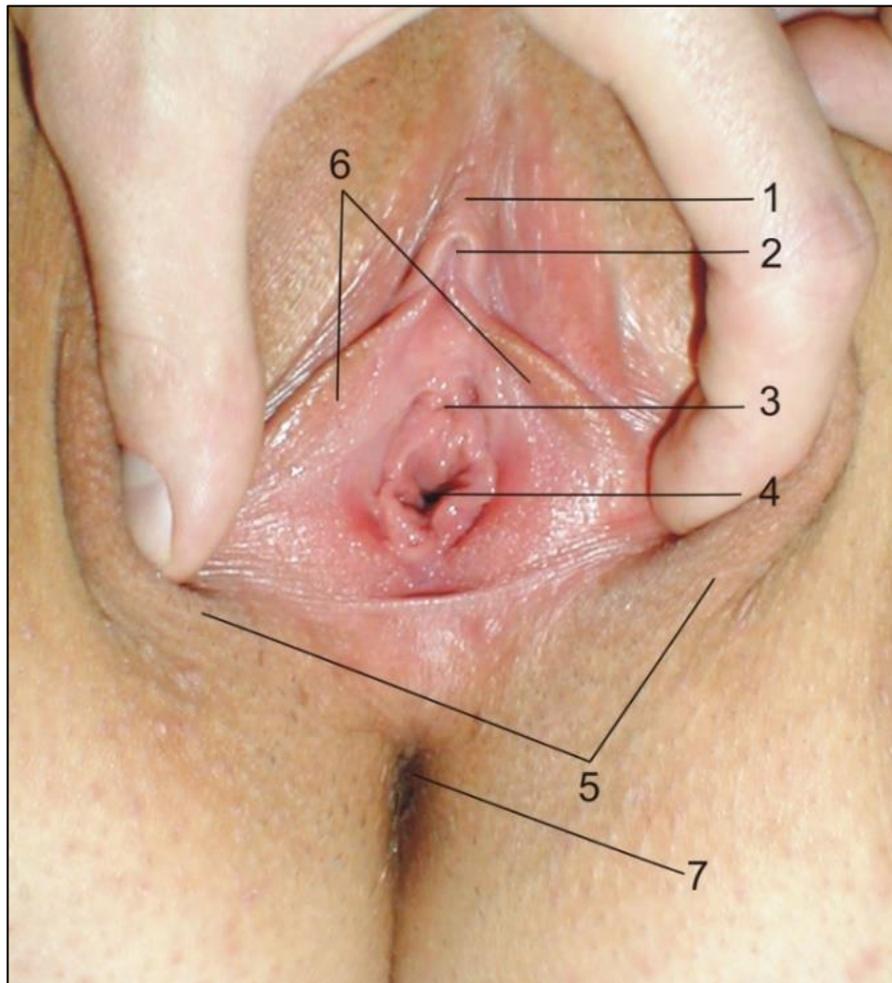
Step 1

Prepare all the materials so they are close at hand. If you are self-catheterizing, open three gauze pads, place a stream of iodopovidone in a container, and leave the tube half open, leaving the tip inside the package. Don't forget to put some lubricant on a gauze pad as well.

Step 2

Clean the area near the urethra (glans in men; inside the labia minora in women) with the povidone-iodine gauze, and locate the opening of the urethra. Obviously, locating the urethral opening in the penis is much easier than in the vulva.

When I didn't have much experience with this procedure, one of the things I did was to insert one gauze pad in the vagina. You do not have to put it in completely; just covering that opening is enough to find the urethral opening and not confuse it with the vaginal opening. I know this may sound silly, but it is a fairly common confusion, and you end up catheterizing the vagina instead of the bladder.



1. PREPUCE
2. CLITORIS
3. URETHRA OPENING

4. VAGINAL OPENING
5. LABIA MAJORA
6. LABIA MINORA

7. ANUS

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Step 3

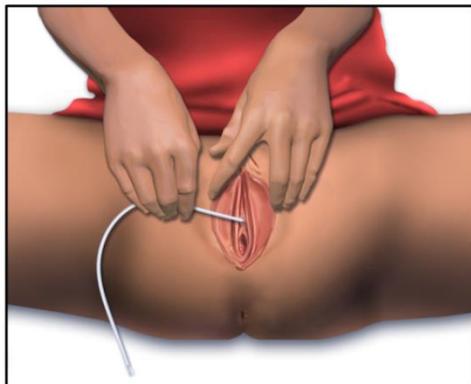
Take some lubricant and apply it to the tip of the catheter, up to about an inch.

For catheterization just to empty the bladder, a catheter called a Nelaton catheter is used. It is made of a semi-rigid material that slides easily through the urethra.



Have the container you are using to collect the urine handy, and slowly insert the catheter into the urethra. You may feel some resistance when you are about to reach the bladder, in the internal sphincter. This is normal. Just push firmly without excessive force until it gives way.

In women, it is not necessary to insert the whole length of the catheter because the urethra is shorter than in men. To avoid spilling urine from the container, bend the catheter or clamp it with your fingers until you see urine coming out and can properly position the container.



Female Self-Catheterization



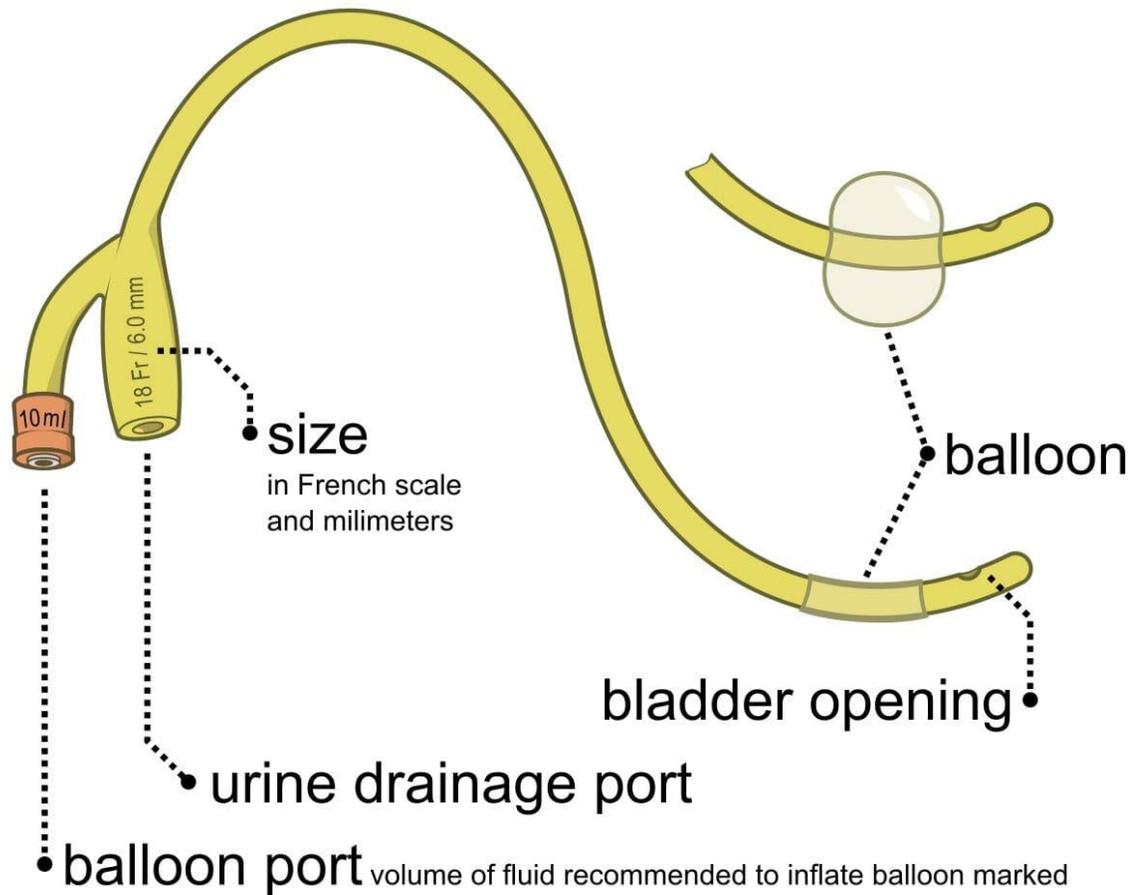
Male Self-Catheterization

BruceBlaus, Own work, CC BY-SA 4.0

INDWELLING CATHETERIZATION:

Another type of catheter is used for prolonged catheterization. The Foley catheter is the one I prefer because it is easy to use.

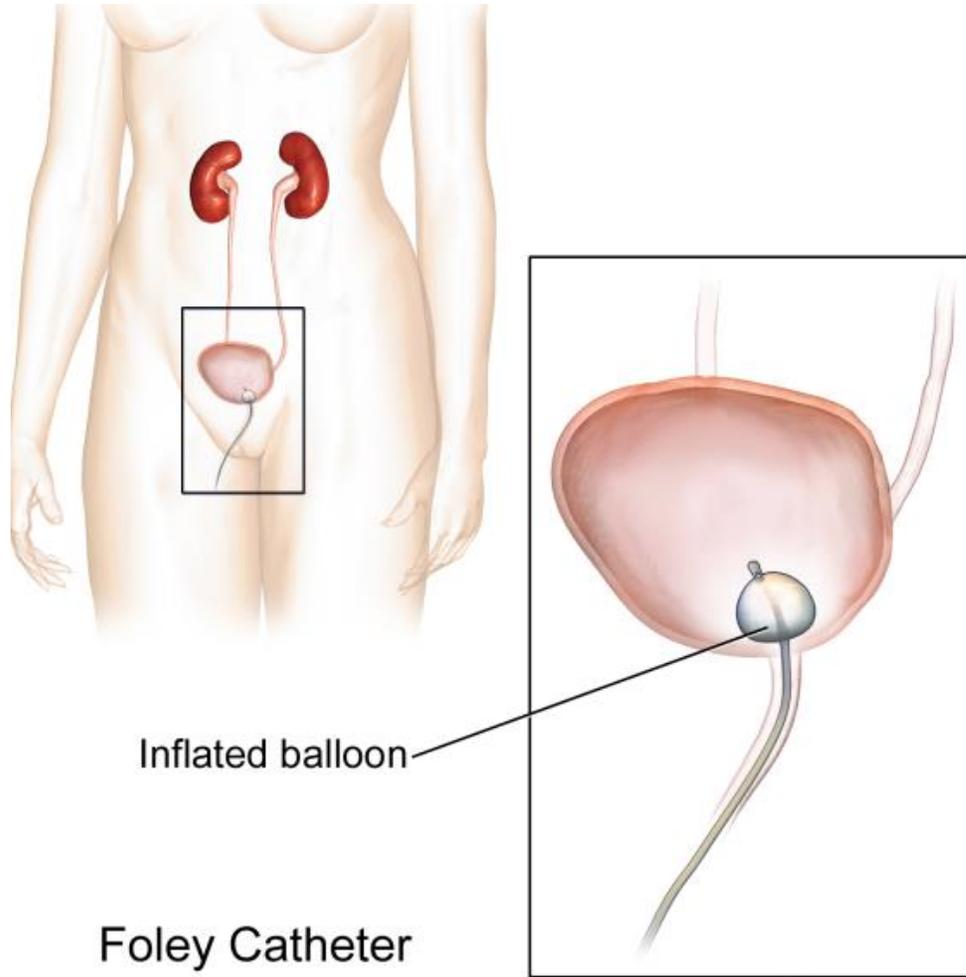
This type of catheter has two openings at the end that is external. One is the drainage opening, and the other one is to fill the balloon. In the end that goes inside the bladder, there is an inflatable balloon for anchoring the catheter.



Olek Remesz, Own work, CC BY-SA 3.0

First of all, you must check that the balloon works well. Through the lumen, you introduce 5cc of sterile water or air (I prefer sterile water) to check the permeability of the catheter and the proper functioning of the balloon. Once you've checked that everything is working, you must deflate the balloon to start the catheterization.

Connect the catheter to the collection bag so that any urine that comes out falls directly into the bag. Once this is done, the catheter is inserted. As in the previous technique, in women, it is not necessary to insert the entire length. When urine starts to come out, it means that you have reached the bladder. You can then inflate the balloon.



Bruce Blaus, Own work, CC BY-SA 4.0

Step 4

In the case of acute retention, try to quantify the amount of urine you emptied. This information may be important for your visit to the specialist later on. Dispose of all used materials and remember that in the case of using a Foley catheter, the collection bag should not be tightened or the drainage line bent.

WHEN SHOULD YOU PERFORM THIS PROCEDURE?

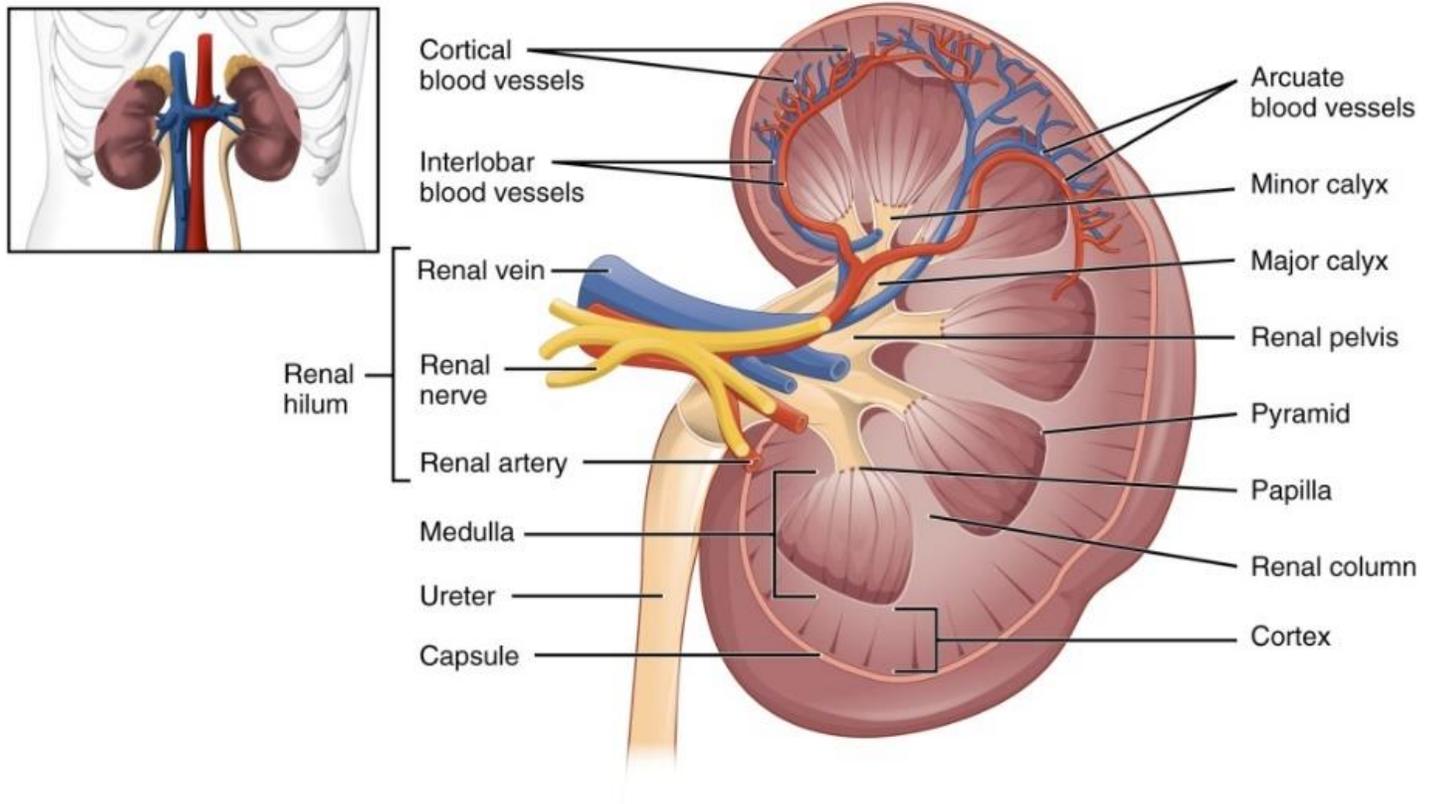
In the case of a person who feels like they need to urinate yet is unable to do so within four hours, you should drain the urine. However, always check the abdomen for a pelvic mass due to a very full bladder. If it has not been four hours but you find this sign, urinary catheterization is indicated. Try to maintain your hygiene measures to avoid urinary infections.

Pelvic surgeries can often cause acute urinary retention. I have a lot of experience with this because for a long time I worked with a team of proctologists, and this symptom was very common among our patients. Once the bladder has been emptied, the person can relax and rest. This sphincter contraction effect then disappears, and the person can urinate normally.

3. Kidneys

The kidneys are two bean-shaped organs that are located in a space behind the abdominal cavity, near the lower back.

They form the upper part of the urinary system and are connected to the bladder through two cylindrical structures called ureters.



OpenStax College, CC BY 3.0

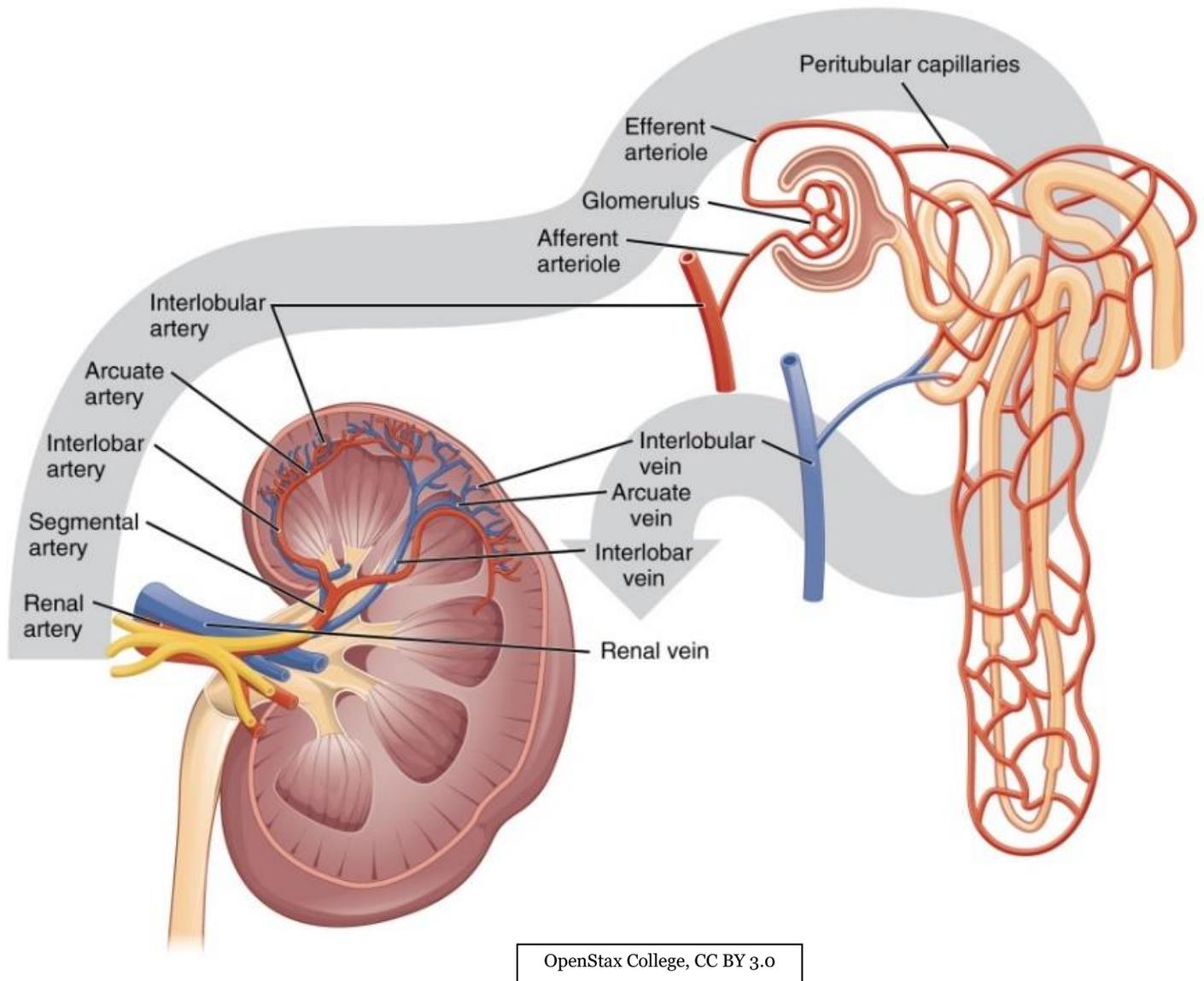
These five-inch organs are vital as they function as filters for the blood that circulates through their very complicated system of tubules.

In addition, they secrete hormones that activate the formation of some blood cells and regulate blood pressure. The kidneys absorb the metabolites needed by the body and dispose of the rest as urine.

I have always thought that the greatest act of love a person can show another person is to donate a kidney to them since these organs are in charge of all those functions.

Also, they are very delicate organs that can be affected by tiny changes, such as salt consumption or indiscriminate intake of NSAIDs.

Donating a kidney is an act that still produces a lot of amazement and respect every time I see it.



Before I discuss any renal pathology, it is important that you are clear about how to take care of your kidneys so you can prevent some conditions and stop some processes that may be starting without your knowledge.

Kidneys are vengeful enemies when they feel mistreated. When you don't stay well hydrated, they can form stones that block the ureters and hurt; if you consume too much sodium, the kidneys can't do their job of replacing electrolytes well, and blood pressure begins to rise. When the kidney is damaged, no matter how small, the consequences can be serious in the long run.

Here are some tips for healthy kidneys:

- **Stay hydrated:** Always remember that all cells throughout the body require water to function properly. There is a campaign in favor of hydration, which uses the empirical calculation of drinking eight 8-ounce glasses of water during the day, and that's fine. However, the hydration of each person should be met according to his or her level of physical activity, associated

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pathological conditions, and the climate in which the person lives, among other factors. If you don't want complicated calculations, eight to ten glasses of eight ounces is enough to keep you healthy. And if you practice any sport, even if you don't sweat, you must replace those losses.

- **Watch your blood pressure:** After the age of 40, you should keep an eye on your blood pressure levels. When the elevation of pressure is slow and chronic, the body adapts to this pathology without you having any noticeable symptoms. However, these adaptations cause serious damage to many important organs, such as the brain, heart, and kidneys. Measuring blood pressure once or twice a month to know what value the body is managing is of utmost importance. If high blood pressure is just beginning, you can start treatment in time.
- **Watch your blood sugar:** Like blood pressure, sugar levels can rise slowly but steadily over time without any serious symptoms until there is already irreparable damage to some organs. The kidneys and eyes are most severely affected by rising blood sugar. That is why it is important to check it from time to time.
- **Limits your salt intake:** Almost all of the sodium we need to consume is in our food without adding more salt. The daily limit of salt, according to experts, is less than one tablespoon. However, some of the excess we consume is diluted with the water we drink. The excess sodium does not allow the kidneys to perform their sodium and potassium replacement functions properly, which has negative consequences on blood pressure and hormone secretion.

The symptoms of kidney diseases are quite general, so the diagnosis is made by comparing the medical interview, the patient's symptoms, and the physical examination. Swelling of the feet and ankles, the sensation of fluid retention, swollen eyelids, and decreased urine flow are some of the symptoms presented by patients with kidney problems. The appearance of the urine is also important. Foamy urine is almost always related to damage of the kidney cells.

Nocturia and polyuria are two kidney symptoms that must also be taken into account. The first is the increase in urinary frequency during sleep, and the second is the increase in the volume of urine and not the frequency.

The diagnosis of kidney disease can be inferred from the person's interview, symptoms, and signs. However, it is a little more difficult than a lower urinary tract condition. Blood tests and a renal sonogram are usually necessary. If the urine looks spongy, urine test strips are very helpful. These strips are able to identify various types of cells in the urine in addition to proteins, so this is an important tool to have at home.

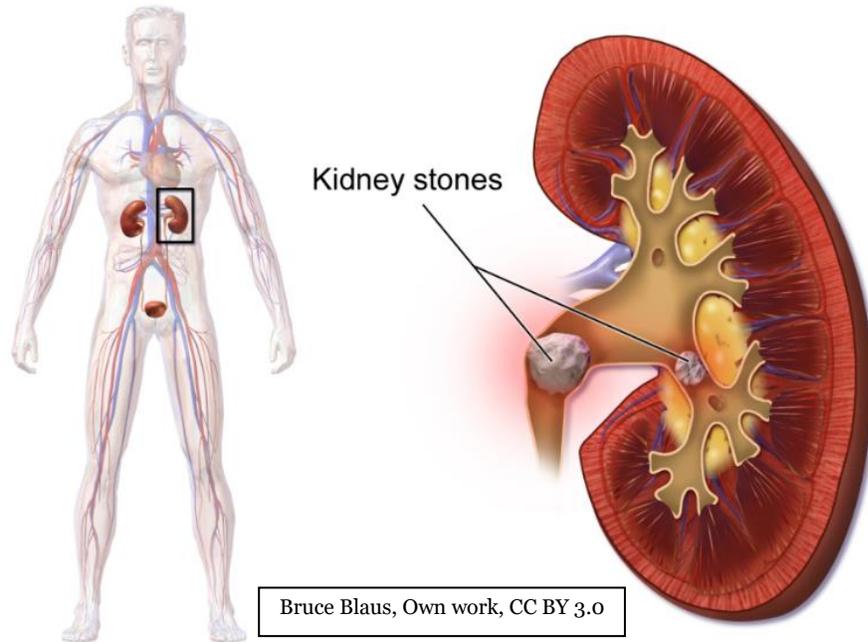
Proteinuria is the presence of protein in the urine. These proteins are usually absorbed by the kidneys, so it is not normal for them to be excreted in the urine and is the manifestation of a kidney problem that can be serious.

A colleague at the hospital had a kidney problem whose only manifestation was spongy urine. After about a month with that symptom, he decided to take a urine test, which showed alarming results of protein in the urine. He had to receive a strong treatment for about six months. His proteinuria was due to an autoimmune problem that was causing kidney failure.

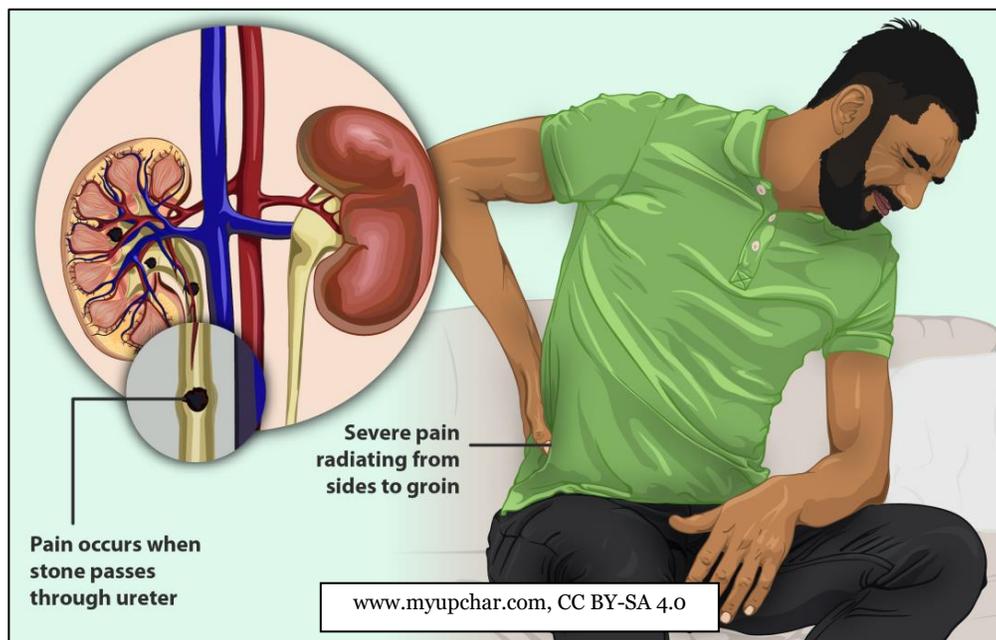
Common renal problems are: acute renal colic, pyelonephritis, and kidney failure.

Acute Renal Colic

Renal colic is a very intense type of pain that is located in the lower back. It occurs when there is a blockage of the ureter. Kidney stones are the cause of this type of pain. When the stone tries to make its way to the bladder, the diameter of the ureter makes it difficult for it to pass through, so the pain begins.



It is one of the strongest pains that exist, being valued as a 10 in the pain scale from 0 to 10. Typically, the pain begins in the lateral abdomen and lower back region with radiation to the groin. The patient with renal colic appears to be in pain and is difficult to examine as his or her abdominal muscles may be severely contracted by the body's defense response. These patients may also have nausea and vomiting.



Treatment

The management of renal colic is with anti-inflammatory, antispasmodic medications that relax the smooth muscle, in this case the ureter, and antiemetics to improve nausea.

One line of treatment could be Ibuprofen 400mg + Buscopan 1 tablet + Antiemetic 1 tablet every 8 hours until evaluated by a specialist (maximum of one week).

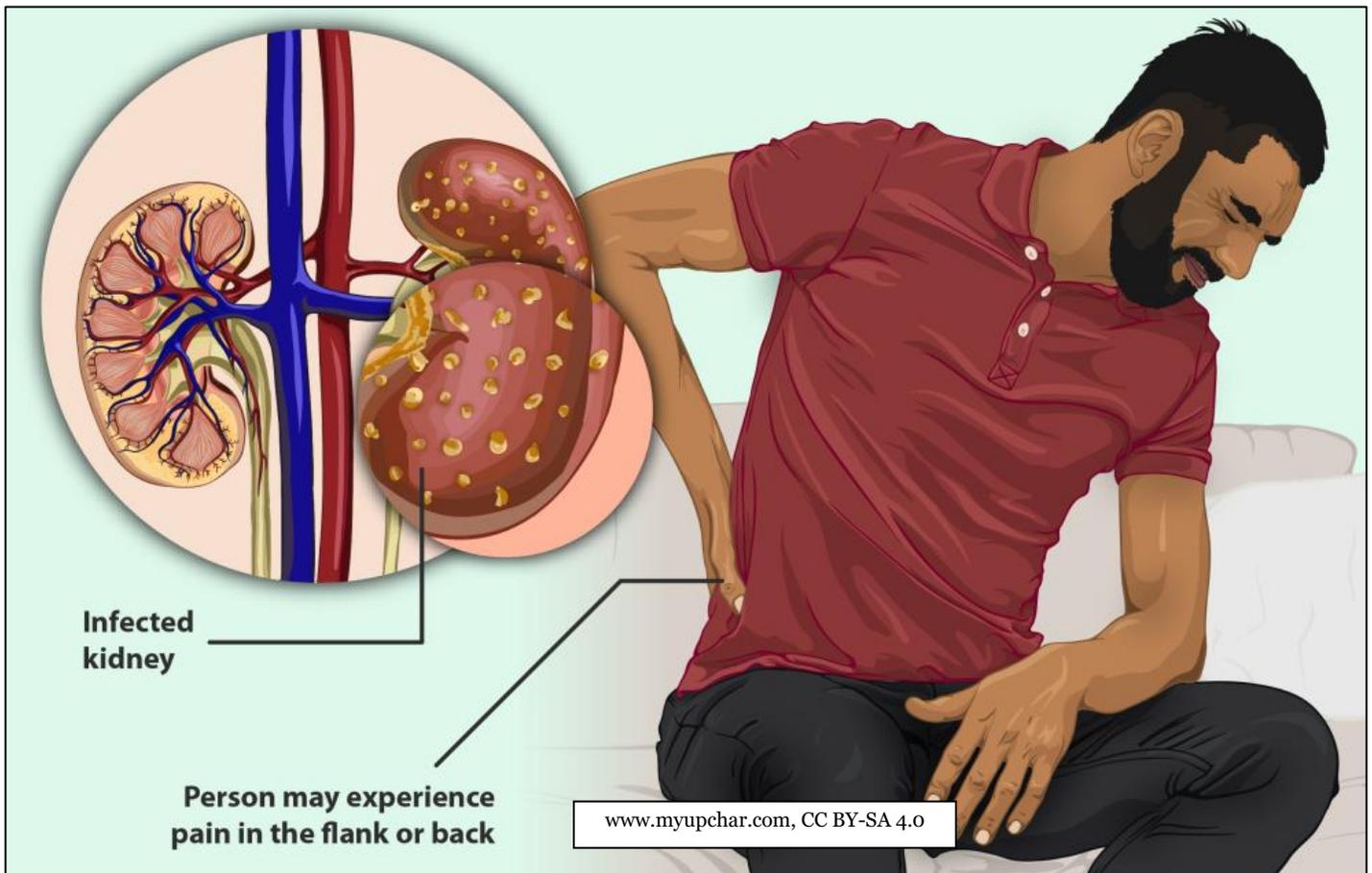
Pyelonephritis

This term refers to an inflammation of the kidney caused mainly by bacteria. It occurs when a urinary tract infection progresses from the bladder to the ureters and the kidney or when there is a blockage in the urine outlet that causes the urine to collect in the ureter and even back up into the kidney.

This block may be due to kidney stones or prostate diseases such as hyperplasia, prostatitis, or cancer, among others. Pyelonephritis can progress within a few days to form an intra-abdominal collection of pus and even sepsis. However, this is not common.

a) Symptoms

Pyelonephritis is characterized by lower back pain due to inflammation of the kidneys.



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The patient with this type of infection looks sick. His or her face reflects pain and may look fatigued. They also have a decreased appetite. This illness often causes fever and vomiting in addition to general discomfort.

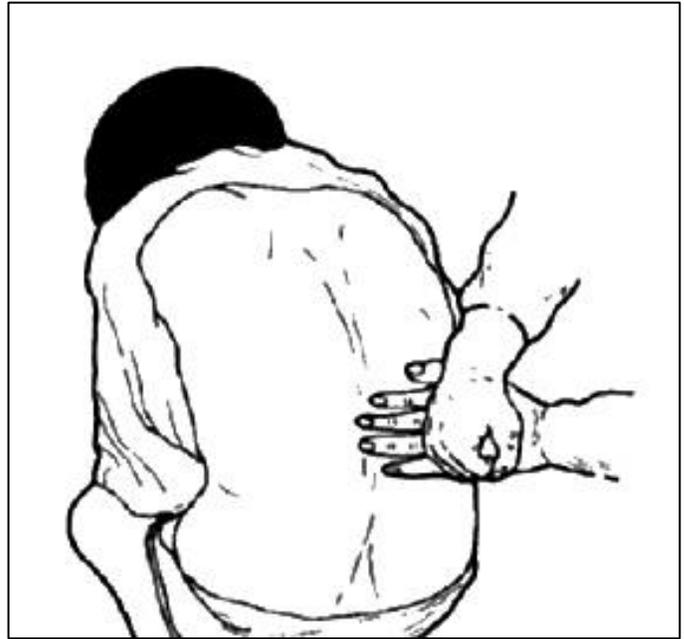
To find out if the pain is renal, a maneuver called a **kidney percussion test** is performed. Although scientific data are not sufficient to give evidence of its usefulness, in my experience, it is an excellent way to know whether or not the patient has a specific kidney problem or if that back pain is from another cause.

To do this, the vertebral cost angle is located, which is the angle formed by the costal ridge with the spine. From that site to the lumbar region, firm blows are given with a closed fist. A hand can be placed between the fist and the person to cushion the blow.

When the patient has kidney pain, the response is very obvious. The patient either catches their breath or has a defense mechanism. If the person does not have that reaction, the problem is almost certainly not renal.

Whenever I examine a patient to evaluate pain, I like to distract them a little bit by asking questions that have nothing to do with the medical interview.

I can ask about their children or family, and while they answer me, I take the opportunity to do the maneuver.



If the person continues to talk without realizing what I am doing, the pain is not intense. Pain like the one produced by a positive kidney percussion test does not fade with such a simple distraction.

b) Diagnosis

The diagnosis is made through the clinical examination and the medical interview in addition to the urine test, which is the one that reflects the presence of bacteria in the urine. As I have repeated in this section, home urinalysis strips are an excellent resource if it is not possible to seek help.

Although cloudy and strong-smelling urine brings us closer to the diagnosis, the presence of blood and/or pus in the urine (hematuria and/or pyuria) confirms it. Hematuria is the presence of red blood cells in the urine, and pyuria is the presence of leukocytes. These home test strips measure those cells, and you can guide the diagnosis with them.

c) Treatment

Kidney infection is a complication of a lower urinary tract infection or urinary outlet block, either from kidney stones, an enlarged prostate, or bladder stones.

For kidney infections, I do not recommend natural treatments as a first option but as a support to antibiotics. Remember that this type of infection represents a complication of a previous process, so

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you must be careful. I am more aggressive with kidney infections because the complications can lead to kidney failure, abdominal abscess, and sepsis, and these processes are fatal. For home management, you can start with Ciprofloxacin 500mg every 12 hours for 10 days.

In addition to this, take symptomatic treatment if there is pain or fever (Paracetamol 500mg every 6 hours for 5 days), and if there is vomiting, take an antiemetic every 8 hours for 3 days.

Nausea and vomiting will improve as soon as the infection begins to subside. I always suggest natural therapies, especially if they are part of popular wisdom. In the case of a potentially serious infection, such as a kidney infection, I am inclined to conventional treatment to avoid damage but always rely on natural therapies to prevent and maintain kidney function.

Staying hydrated is very important, especially in this case, when the symptoms of the infection lead you to lose fluid. Cranberry juice or a supplement (*Cranberry dietary supplement, 1 capsule daily*) is also a good ally in maintaining kidney health.

In recent years, the benefit of adding algae to the diet has been studied for several organs, including the liver, the digestive system, and the nervous system. I particularly like them, especially wakame, and they have many properties, including preventing the formation of kidney stones and helping to reduce the size of existing ones.

On the web, you will find many examples of diets to detoxify the body and cleanse the kidneys. I never recommend this type of eating plan unless it is endorsed by a qualified nutritionist who knows your medical history and can foresee the complications you may have.

Although many foods can be harmless, remember that the chemical reaction they have in the body when eaten together can be different for each person. Don't rely on this type of proposition but go a little further.

If you don't want to go to the nutritionist, at least check out each component of the plan before you start.

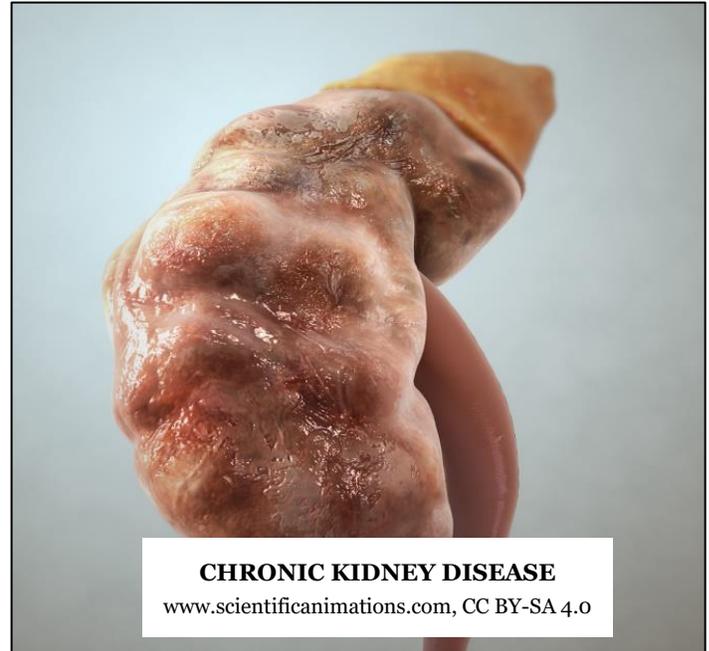
Kidney Failure

Kidney failure is a condition in which the kidneys no longer fulfill their function of filtering and maintaining the hydroelectrolytic state of the organism due to the deterioration of its structure. It is usually caused by chronic diseases that gradually damage the kidney until it no longer functions normally.

The main cause of renal failure is **diabetes mellitus**. Diabetic patients often have circulatory problems, especially in the smaller blood vessels. When the disease is not well controlled, the damage to the kidneys and eyes is irreversible and leads to deterioration and eventually total failure of those organs.

The second cause of kidney failure is **high blood pressure**, which, when uncontrolled, causes serious and irreparable tissue damage. In both cases, the kidney deterioration is chronic; it can take many years before you notice the first symptom of kidney disease.

In the next images, you can see the comparison between a healthy, transplant-ready kidney and one with chronic failure.



There is also a type of acute renal failure, that is, the organ begins to fail in its functions 48 hours after the disease is installed.

Blockage of the urinary tract is the main cause of acute renal failure. Whether it is kidney stones, prostate enlargement, cancer, or blockage by external compression (such as a tumor from a nearby organ), it can cause such dysfunction that the kidney tissue deteriorates in a short time and does not function properly.

a) Symptoms

The symptoms of kidney failure are related to the lack of blood filtration, which is its main function.

The body accumulates toxic metabolites that should be eliminated and brings consequences of intoxication or poisoning, such as dizziness, fatigue, disorientation, loss of consciousness, and, in severe cases, convulsions.

The accumulation of fluids is a consequence of the electrolyte imbalance, so there is swelling of the ankles and eyelids, especially in the mornings.

The decrease in the amount of urine is noticeable; in some cases, there is no discharge of urine. This state is known as **anuria**.

In some cases, kidney damage takes so long that the body adapts to the problem and has no major symptoms. In these cases, diagnosis can be made incidentally through laboratory tests.



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The experience I have of patients with kidney failure has been through those who have damage from problems in kidney blood flow, such as gunshot wounds with a lot of bleeding and patients with advanced cancer of the colon or uterus.

In the first case of an injured person who begins to have kidney damage because the blood supply is insufficient, the prognosis is poor.

After kidney failure, other organs, such as the liver and lungs, may fail. That is why the priority is the patient's hydration and restoration of blood cells through transfusion. Unfortunately, in some cases, the damage is very extensive and not much can be done.

One case that I always remember was a wounded man who had an injury of the vena cava with a lot of bleeding. He had to be operated on in several stages because he was decompensating during the surgery.

On the second day in the ICU, kidney failure began, and that same day, he was already showing signs of liver and blood failure.

Because he had a wound in the vena cava, his prognosis was already poor, but with the addition of multiorgan failure, his survival chance was reduced to less than 10%. My patient died five days after his admission because of the emergency.

In the case of renal failure due to compression from cancer of the colon or another nearby organ, I have seen radical improvements by removing the tumor that generates the compression.

It always depends on how long the kidney has been in that state, but that kind of failure can be reversed. If it's a chronic disease, it is not reversible due to the extensive damage to the kidney structure.

b) Management

A patient with a chronic disease such as diabetes or hypertension or who has a risk factor for acute kidney failure should contact his or her doctor immediately.

Be aware of unusual symptoms that are not directly part of the urinary system, such as tiredness, fatigue, and edema, among others. In this patient, it is necessary to control blood parameters, including the evaluation of renal values.

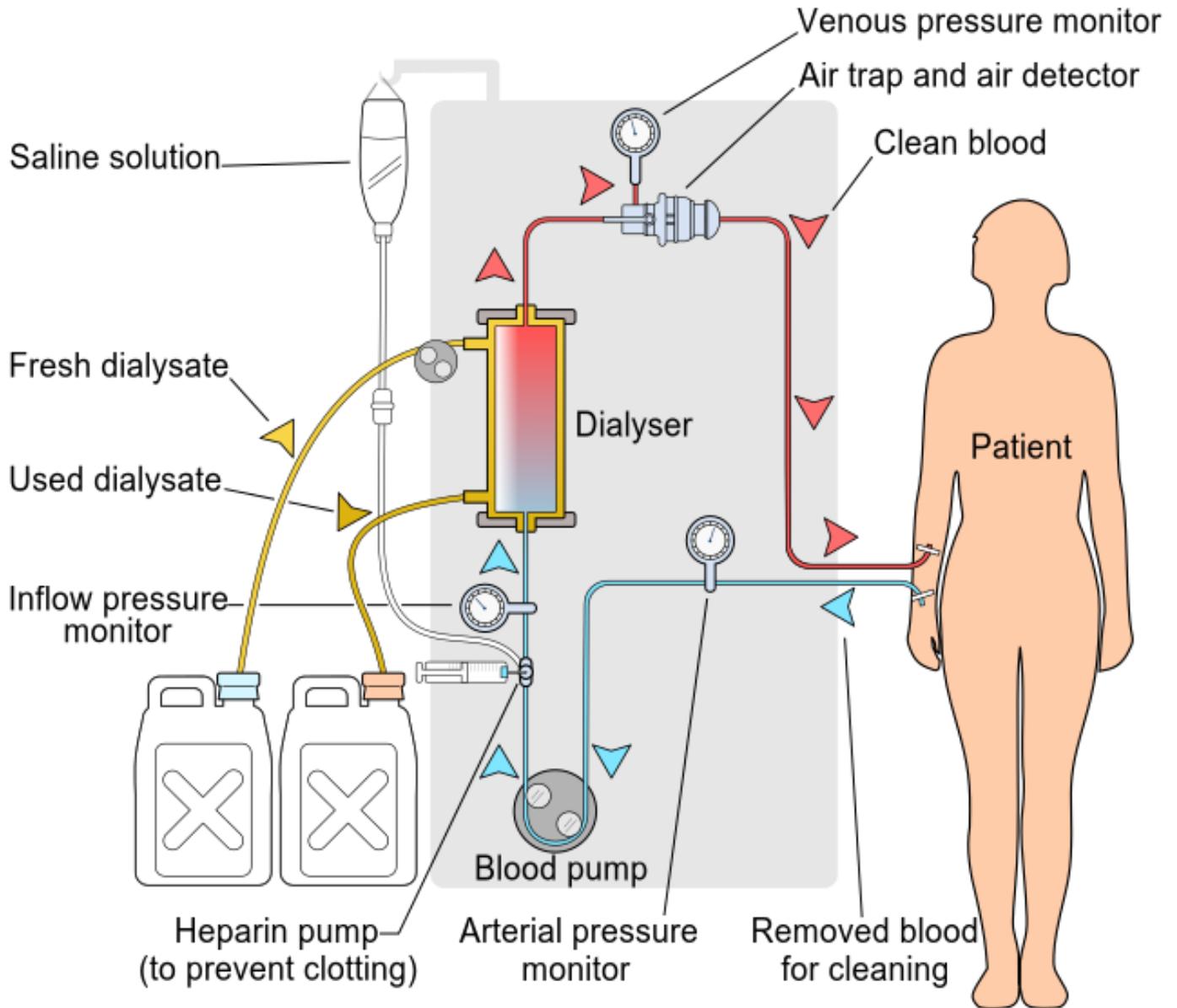
In order to know if the patient with renal insufficiency is a candidate for dialysis or transplant, a special test called GFR (Glomerular Filtration Rate) must be performed.

This test is done in a laboratory from a blood sample and takes into account several parameters to be calculated. This value indicates how much blood the kidney is filtering. The normal value is between 90 to 120 mL/min/1.73 m². In severe renal failure, this value decreases below 15, and that patient requires dialysis.

Dialysis is a process by which an external machine does the work of the kidney, filtering the blood and returning that clean product to the body. Dialysis is a vital process that cannot be left unchecked.

Depending on the function of the kidney, it is decided how often the procedure should be performed. The only solution to stopping dialysis is a kidney transplant.

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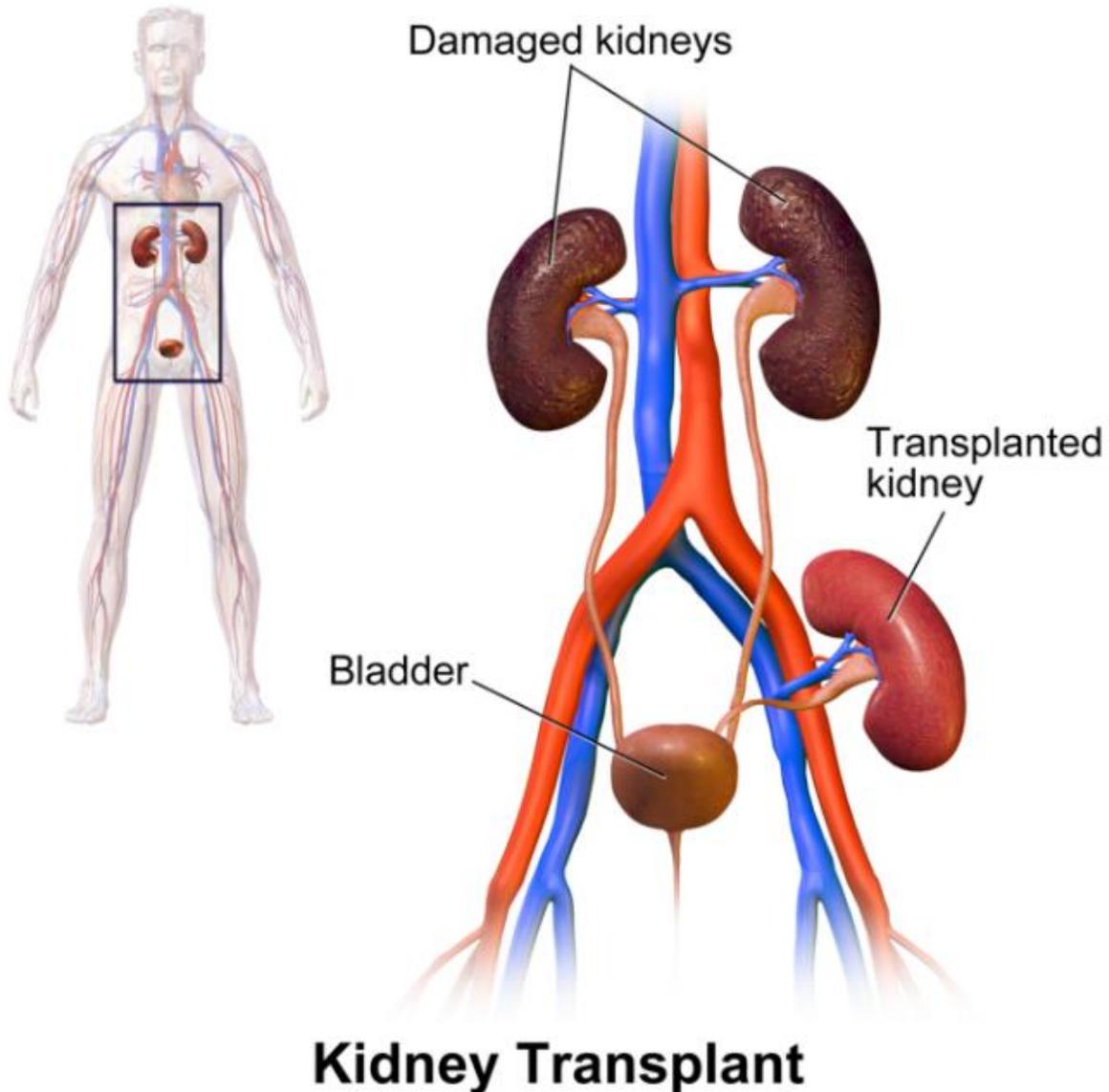


GYassineMrabetTalk. Own work, CC BY 3.0

I had a lot of experience with kidney transplants during my residency program as a general surgeon because sometimes patients would come to my hospital for transplants and organ procurement, and we, as graduate students, would help the surgeons who specialized in that type of procedure.

I had the opportunity to see a “live to live” transplant, which is not very common. Most often, the personnel in charge of the kidney would arrive to transplant it in a special cool box that maintains the cold chain.

The transplant recipient must follow a lifelong course of high-dose corticosteroids that help keep his or her body from rejecting the transplanted organ.



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c) How Do I know I Have Kidney Failure?

If you have a chronic disease such as diabetes mellitus, high blood pressure, lupus or another autoimmune disease, you should have your kidney function checked regularly.

In general, a decrease in the amount of urine even though you are drinking the same amount of fluid, urinary symptoms due to an enlarged prostate, fever, and confusion are alarming symptoms. If you think you are developing kidney failure, go to an emergency room.

This type of problem cannot be solved at home; it requires laboratory tests and a complete evaluation to know what type of treatment you require.

4. Female Genital System Common Issues

Vaginal Discharge

Vaginal fluid is a normal discharge that occurs from the cervix and vaginal mucosa. It has different characteristics depending on the phase of the menstrual cycle in which it is found, but basically it is odorless and its color is between transparent and whitish with a thick and soft consistency.

It is not normal for the flow to change to a dark color, contain lumps, or have a strong or foul odor. In these cases, a vaginal infection should be considered.

In the table below you will find the possible diagnoses according to the characteristics of the discharge.

| DISCHARGE CHARACTERISTICS | POSSIBLE DIAGNOSIS | OTHER SYMPTOMS |
|---|--|--|
| <ul style="list-style-type: none">• Bloody or brown | <ul style="list-style-type: none">• Irregular menstrual cycles• Cervical cancer | <ul style="list-style-type: none">• Abnormal vaginal bleeding• Bleeding with sexual intercourse• Pelvic pain |
| <ul style="list-style-type: none">• Yellow | <ul style="list-style-type: none">• Gonorrhea | <ul style="list-style-type: none">• Bleeding between periods• Urinary incontinence• Pelvic pain |
| <ul style="list-style-type: none">• Frothy, yellow or greenish with a rotten odor | <ul style="list-style-type: none">• Trichomoniasis | <ul style="list-style-type: none">• Pain and itching while urinating |
| Thick, white, lumpy | <ul style="list-style-type: none">• Yeast infection | <ul style="list-style-type: none">• Itching, painful sexual intercourse |
| <ul style="list-style-type: none">• White or gray with a fishy odor | <ul style="list-style-type: none">• Bacterial vaginosis | <ul style="list-style-type: none">• Itching or burning, redness and swelling of the vagina or vulva |

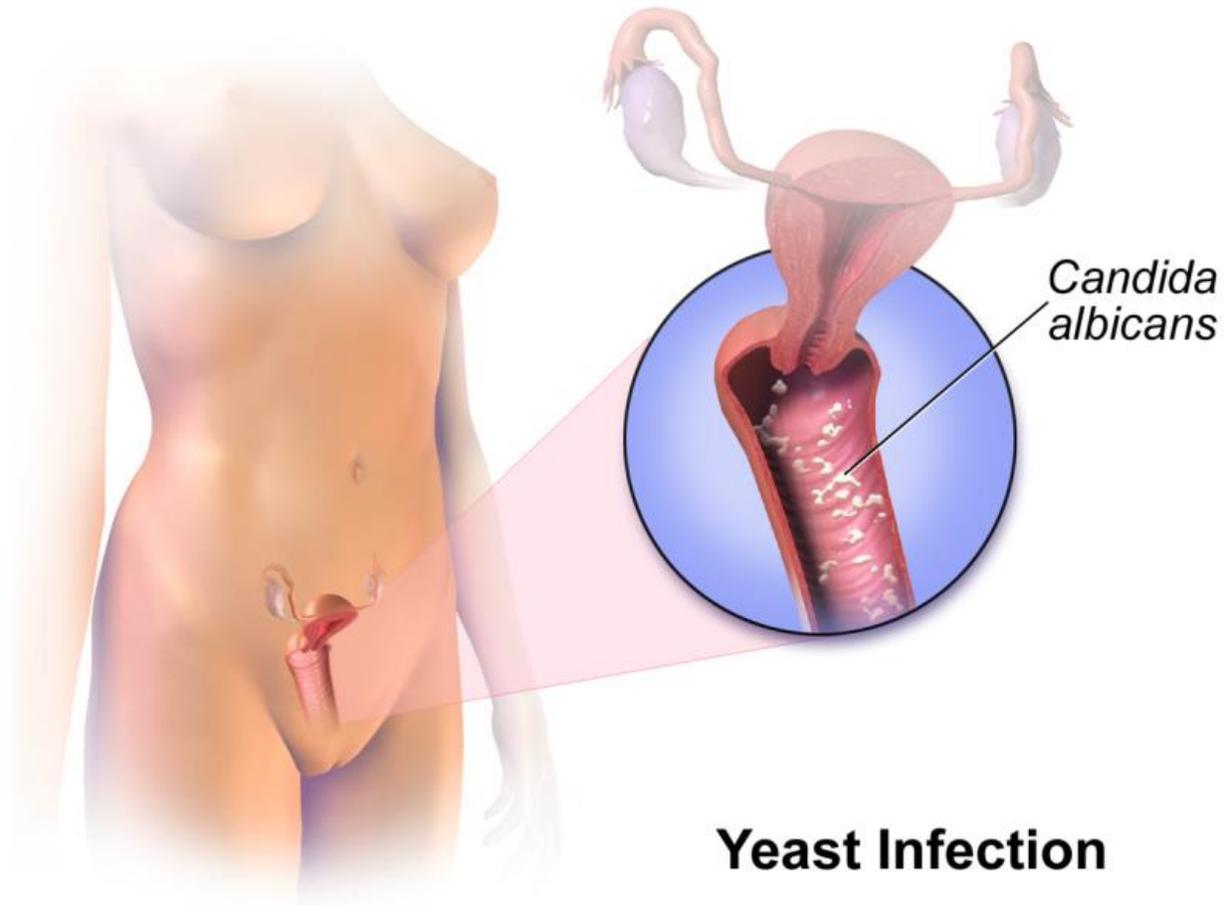
Gonorrhea and trichomoniasis are STDs that can be prevented by using condoms.

Vaginal yeast infection and bacterial vaginosis occur because of the abnormal growth of bacterial flora in the vagina, usually from douching or antibiotics.

Treatment is specific to each of the pathogens that cause vaginal discharge. As general measures, it is important to use a barrier method when having sex with a new partner, to avoid the use of douches and products that are not specific for this mucous membrane, and to have a gynecological examination annually.

Vaginal Yeast Infection

The vaginal yeast infection is usually produced by the fungus *Candida albicans*, the yeast that is part of the normal flora of the vagina. When it grows out of control, it infects the mucosa, causing symptoms such as itching, burning, cracked mucosa, pain with sexual intercourse, and a white discharge without a particular odor through the vagina.



Bruce Blaus, Own work, CC BY-SA 4.0

The infection occurs often when taking oral antibiotics that eliminate bacteria from the normal flora of the vagina, which favors the development and invasion of *Candida albicans*.

The diagnosis is made through the symptoms and physical examination. The white lumpy discharge from the vagina is very characteristic of this type of condition.

Treatment is fairly simple with antifungal vaginal suppositories sold over the counter, such as Miconazole (one suppository for seven days) or Tioconazole, which is a single-dose suppository.

These treatments usually come in a kit with the relieving cream to be applied topically to the skin. Remember that the suppository is a medicine that melts inside the vagina and leaks out, so it can get dirty in your underwear.

Among the natural products that can be used to prevent this type of infection, I recommend the use of probiotics, which are obtained through yogurt and kefir. These help to maintain the bacterial flora that prevent the abnormal growth of the fungus in the vagina.

I also recommend using cotton underwear and avoiding pantliners and douches, which, far from being a benefit, represent an aggression to the protective barrier of the vaginal mucosa.

Bacterial Vaginosis

Bacterial infection of the vagina can occur in patients of all ages for reasons similar to yeast infection. In these cases, the discharge is gray and has a very unpleasant fishy odor.

Treatment should be with oral antibiotics and the use of probiotics that help recover the lost bacterial flora. The antibiotic of choice is Metronidazole 500mg, 1 tablet every 8 hours for 10 days.

As always, the use of vaginal douches and pantliners that accumulate humidity in the genital area and contribute to the infection should be **avoided**.

Sexually Transmitted Diseases (STD)

a) Trichomoniasis

The infection caused by the parasite *Trichomonas vaginalis* is one of the most common sexually transmitted diseases in women.

It should be considered when you have had unprotected sex and you have a very bad-smelling greenish-yellow discharge. The smell of the secretion is the most representative characteristic of this type of infection.

The treatment is with oral antibiotics. Metronidazole is the one of choice. It is treated with a single dose of 2 grams (4 tablets of 500mg) for the carrier of the disease and her partner.

If the single dose fails, 1 tablet of 500mg every 12 hours for 7 days is recommended. Although the sexual partner does not present symptoms of the disease, he is an asymptomatic carrier. If untreated, the infection is perpetuated in the partner.

b) Gonorrhea

Gonorrhea is an STD caused by the bacteria *Neisseria gonorrhoeae*. Most women who get it are carriers without symptoms, but some may have symptoms such as burning during urination, pelvic pain, pain with sex, and yellow discharge.

If your partner has gonorrhea, you should be treated too. The treatment is antibiotic and is done with Ceftriaxone 250mg intramuscular and Azithromycin 1g oral in a single dose.

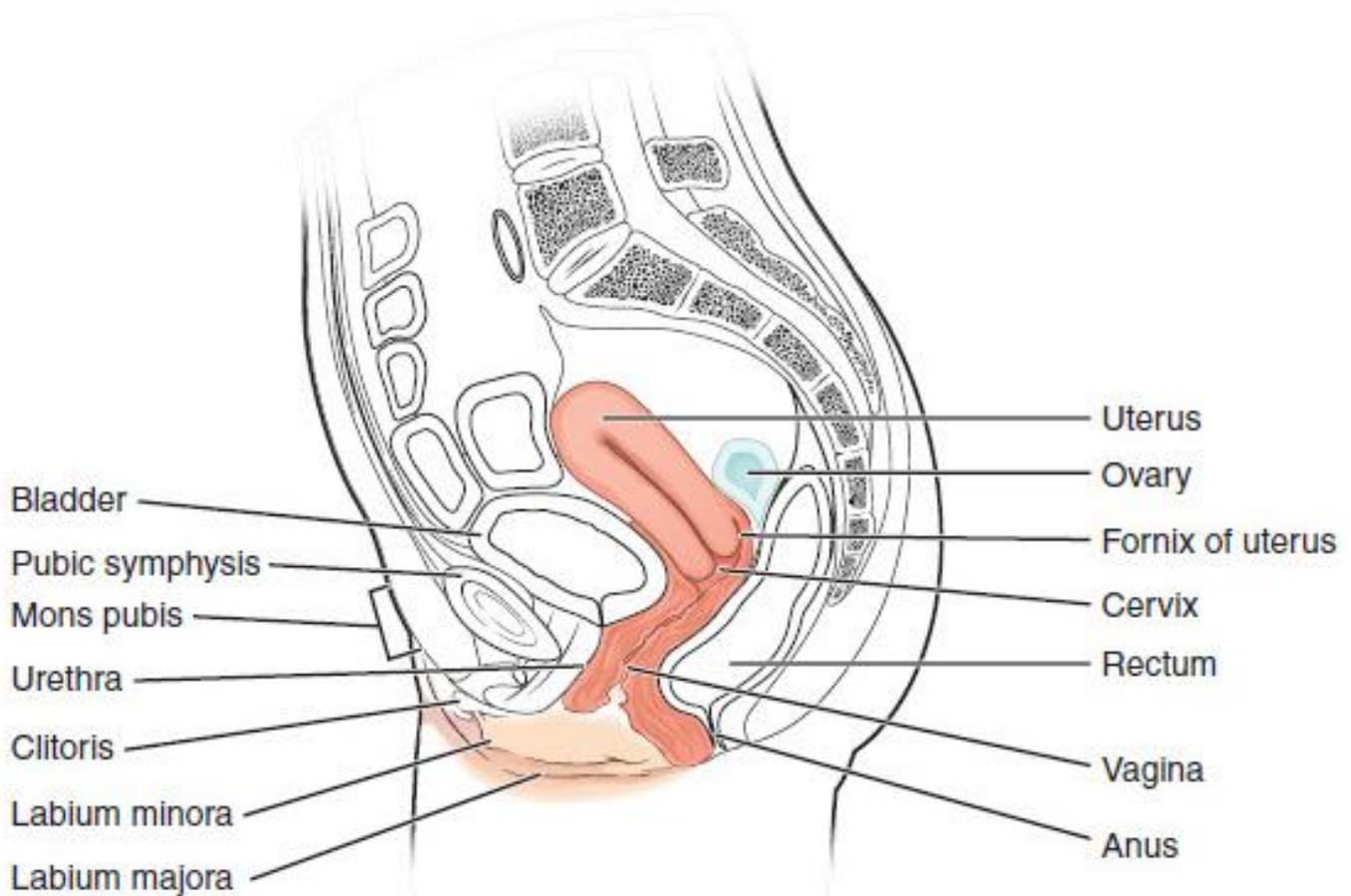
If there is no possibility of going to a center to receive a prescription for Ceftriaxone, you can take the oral treatment (*Azithromycin*) and rely on natural therapies, such as the use of probiotics and a turmeric supplement.

Pelvic Pain

Pelvic pain is one of the most frequent reasons for gynecological consultation. In order to guide the diagnosis, it is important to know the characteristics of the pain and if it is associated with any other symptoms. There are many diseases that manifest themselves with pelvic pain, some in the genitourinary area and others in the gastrointestinal system.

In men, pelvic pain is not a challenge since, anatomically, the male pelvis contains only the bladder and the colon.

In women, the entire internal genital system must be taken into account, which includes the uterus, uterine tubes, and ovaries in addition to the colon and bladder.



CFCF, Own work, CC BY-SA 3.0

Particularly, the first thing I notice in a patient with pelvic pain is whether she is of reproductive age or not. A woman who has regular periods and has had sex may be pregnant without knowing it. I then look at her general condition and if her face reflects pain or discomfort.

In the questioning, I focus on whether it is the first time she has the symptoms and her medical history highlighting STDs. It is important to know if the pain is accompanied by other symptoms, such as discharge through the vagina, pain when urinating, or menstruation.

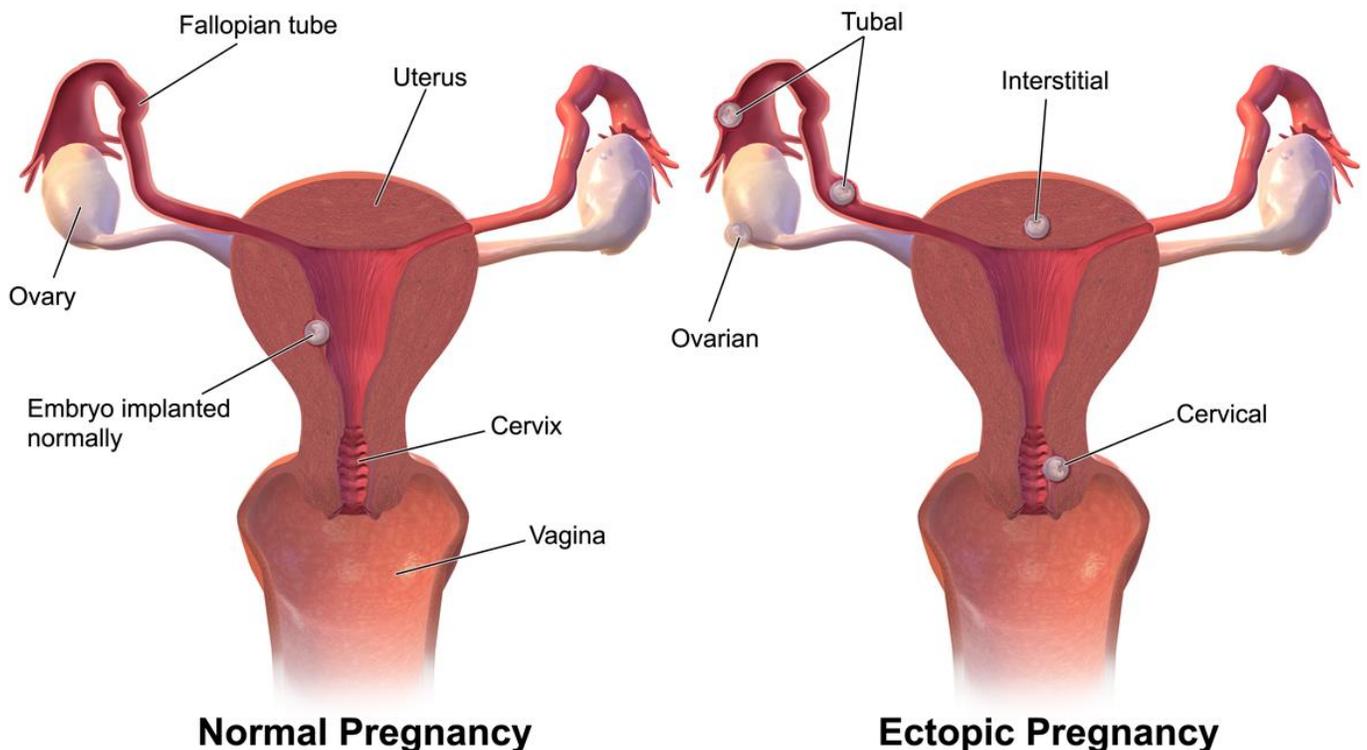
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As you begin palpation, remember to touch the site of the pain last so that the patient feels more comfortable and relaxed. With those simple questions, it can be ruled out that the pain is caused by some abdominal organ.

Watery appendicitis in female patients is more difficult to diagnose than in male patients. However, the most important thing is to identify the signs of peritoneal irritation that indicate that the patient requires surgery.

A patient who is agitated and pale, with pelvic pain and increased heart and breathing rates, may be experiencing a ruptured **ectopic pregnancy**, which is a major cause of acute pelvic pain.

An ectopic pregnancy is one that grows in a place other than the uterus, usually in the fallopian tubes. When it is not diagnosed in time, the embryo continues to grow until the tube can no longer hold it and breaks, causing a lot of bleeding in the abdominal cavity.



Bruce Blaus, Own work, CC BY-SA 4.0

I have had the opportunity to operate on some patients with ruptured ectopic pregnancies because an inexperienced physician was confused with some abdominal pathology. It is a surgery that I enjoy very much because of the fast and satisfactory results for the patients.

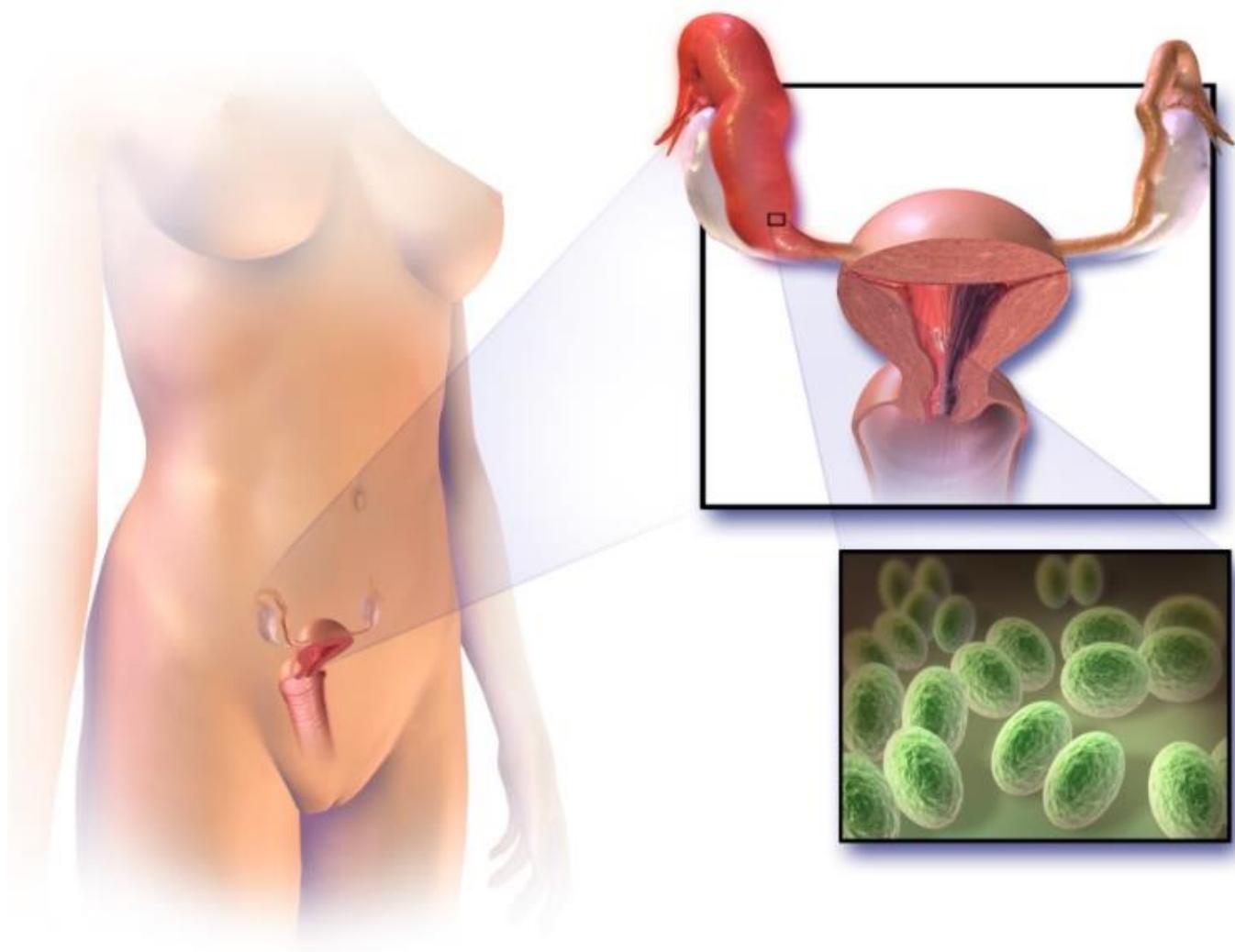
Burst or twisted ovarian cysts are also causes of acute pelvic pain, but they are not the most frequent since this type of pathology is usually operated on before it becomes complicated.

A large percentage of chronic pelvic pain is caused by **pelvic inflammatory disease (PID)**, which is an inflammatory process that forms in the pelvis due to repeated infection with sexually transmitted diseases.

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These cases usually get better with painkillers and anti-inflammatory drugs, but sometimes the pain is so intense that the patient needs surgery.

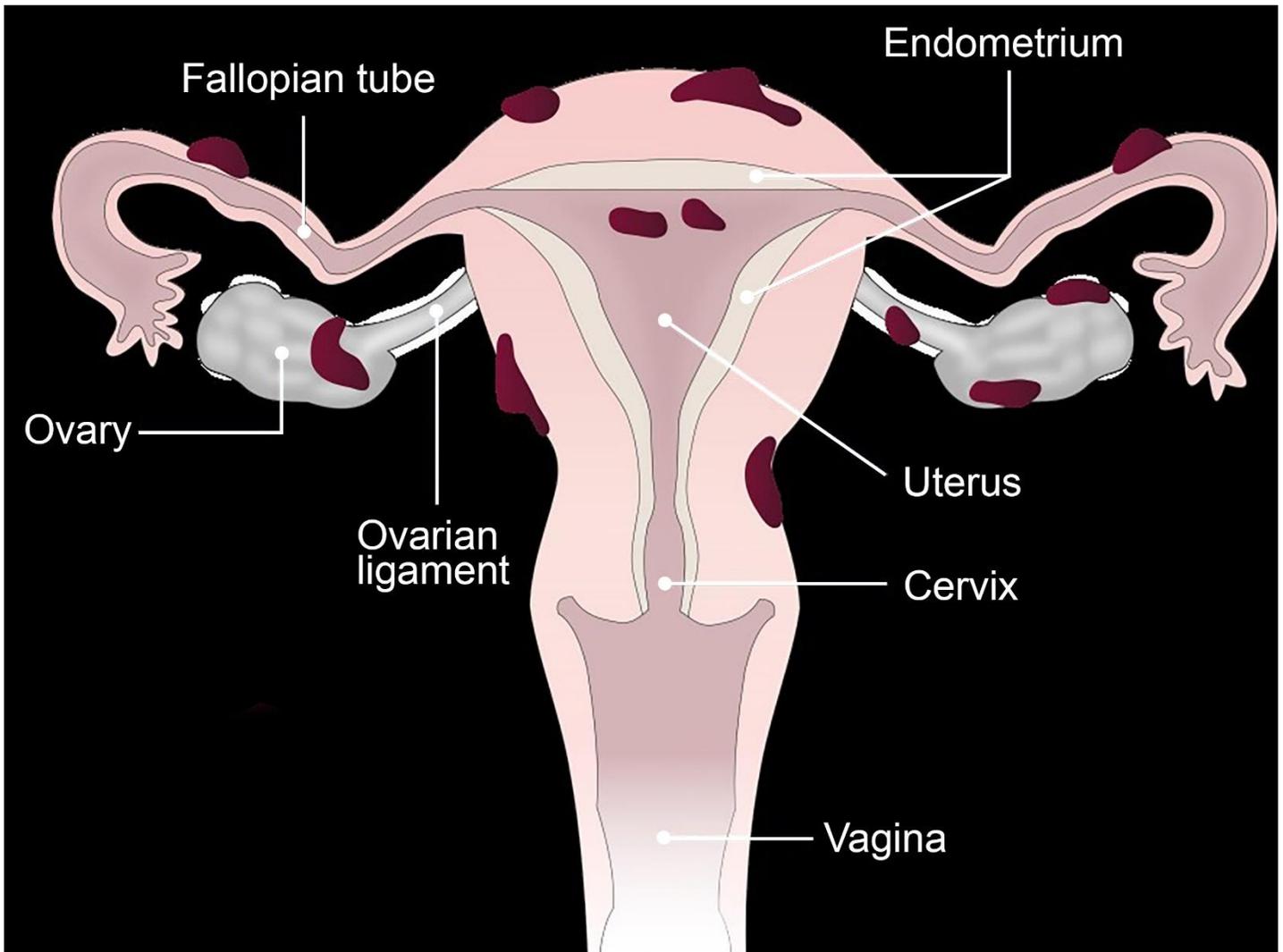
PID may extend to the entire pelvis, including part of the small intestine and bladder, or remain in only one organ, especially if it is the first episode of pain that occurs.



Bruce Blaus, Own work, CC BY 3.0

When pelvic pain is chronic and associated with menstruation, it is usually a case of **endometriosis**. Endometriosis is the presence of endometrial tissue anywhere other than in the uterus.

This tissue can be found anywhere in the abdominal cavity. During menstruation, this tissue is stimulated just like the uterus, and it has a scaling similar to menstruation. This process causes a lot of abdominal pain during the days of menstruation and is repeated each time.



Vega Asensio, Own work, CC BY-SA 4.0

The most important thing is to know if the pelvic pain requires immediate attention or not, and the way to do this is with the medical interview and physical evaluation that will guide you toward the probable diagnosis of that patient.

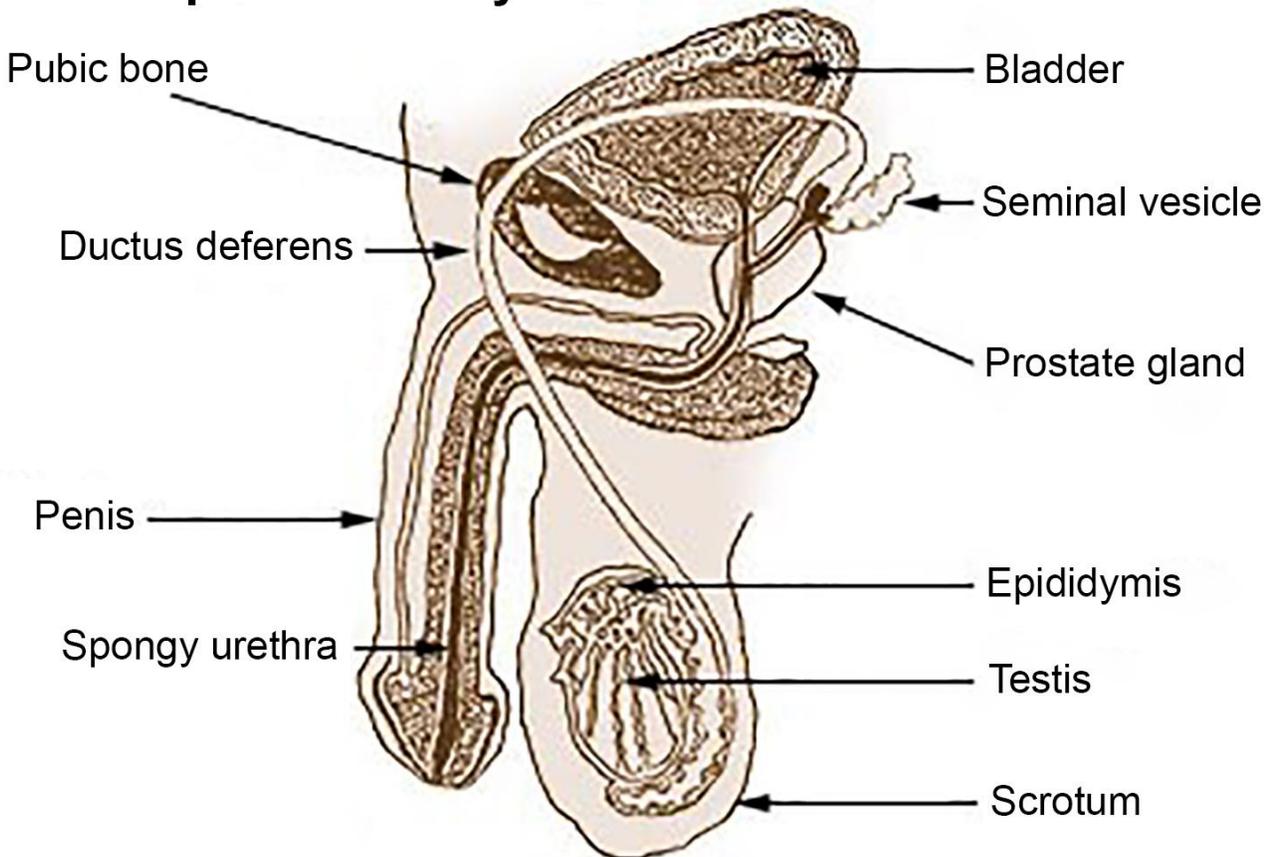
REMEMBER, A PATIENT OF REPRODUCTIVE AGE WHO IS PALE, WITH INCREASED HEART AND RESPIRATORY RATE AND LOW BLOOD PRESSURE, HAS A RUPTURED ECTOPIC PREGNANCY UNTIL PROVEN OTHERWISE. THIS IS AN ABSOLUTE **EMERGENCY** AS IT REQUIRES SURGERY. THINK OF IT LIKE A GUNSHOT WOUND.

5. Male Genital System Common Issues

Epididymitis

The epididymis is an elongated structure found at the posterior side of the testicles. Its inflammation is a common cause of acute testicular pain. Epididymitis can occur in men of any age but is most common between the ages of 14 and 50.

Male reproductive system



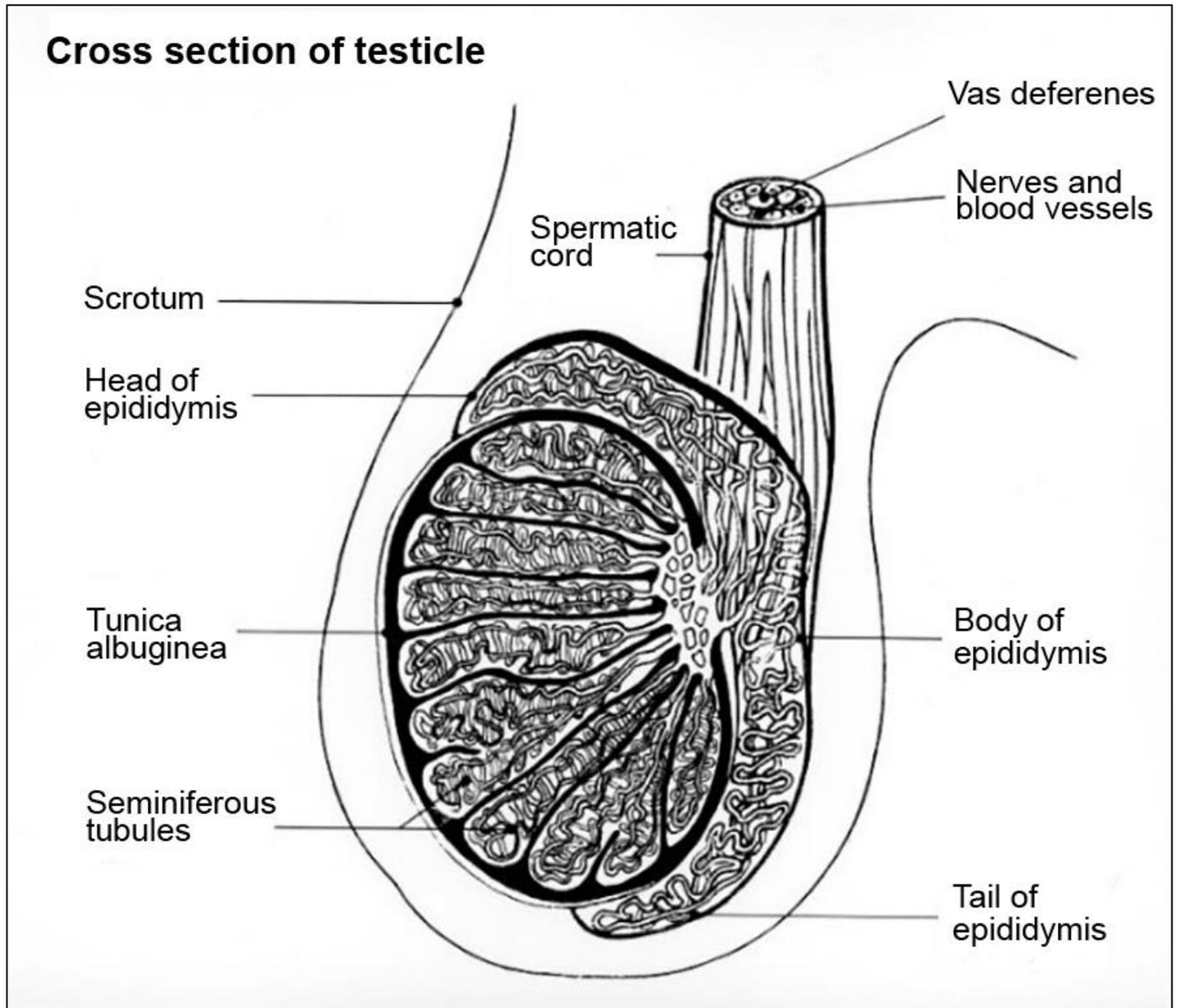
This is a bacterial infection that is directly associated with infection through the urethral passage, usually from diseases such as gonorrhea, chlamydia, or unprotected anal intercourse from bacteria in the intestine.

Symptoms that may occur are testicular pain down to the base of the scrotum, hypersensitivity, fever, and a very tender, palpable mass near the testicle. The treatment is antibiotic and is done with Ceftriaxone 250mg intramuscular and Doxycycline 100mg oral every 12 hours for 10 days.

In addition to this treatment, it is recommended to rest, take anti-inflammatory drugs, and apply cold at the site of the infection. Epididymitis should be treated with antibiotics as soon as the disease is diagnosed because the infection can progress to form a peri-testicular abscess that must be surgically drained.

Testicular Torsion

Testicular torsion occurs when there is a rotation of the sperm duct that causes the blood supply to the testicle to become obstructed. It is an absolute emergency and must be evaluated and treated by a professional within six hours since that is the maximum time the testicle can be kept without irrigation. After six hours, 90% of the testicles should be removed.



The patient with testicular torsion refers to scrotal pain radiating into the pelvis that starts suddenly, nausea, and vomiting. On examination, one testicle may be found to be higher than the other.

It is important to maintain a periodic evaluation of the testicles to see if there is anything different about them. I recommend performing a testicular self-examination by palpating the scrotum for masses and then following the surface of each one.

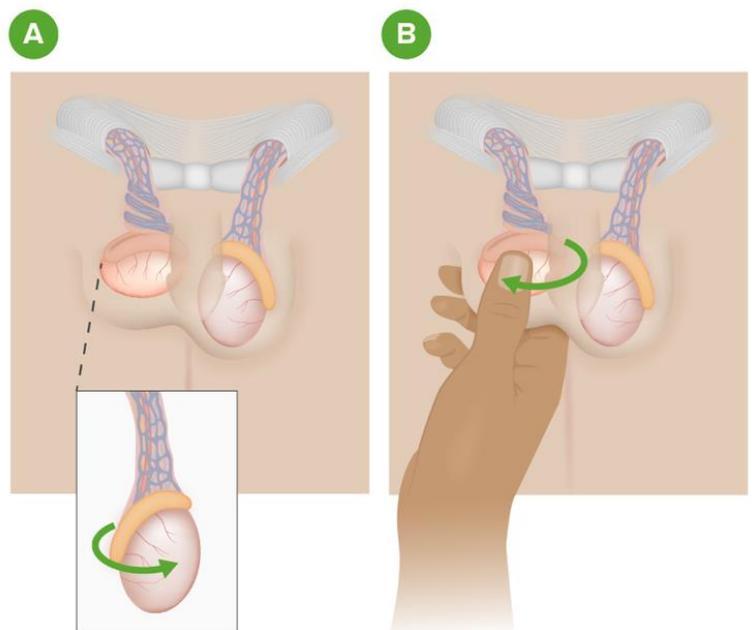


The cremasteric reflex is an involuntary retraction response of the scrotum to the stimulus of rubbing the inner thigh. This reflex is **lost** when there is testicular torsion.

In one type of testicular torsion, the spermatic cord does not completely rotate but has a back-and-forth motion, so there may be relief with acute periods of pain.

The testicle will have approximately six critical hours (known in surgery as “golden hours”) before irreversible damage starts because of blood flow compromise. This case should be considered an emergency as well because treatment will be surgical.

In the case of not being able to make it to an emergency department, manual detorsion will be the best option.



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Penile Fracture

The penis consists of two bodies of erectile spongy tissue, called the *corpora cavernosa*, that fill with blood to achieve an erection. When a rapid impact occurs against the erect penis, the layer that covers these formations can be damaged, causing its rupture and the consequent exit of blood that forms edema and hematoma.



This accident usually occurs during sexual intercourse, although it may also be due to very aggressive masturbation. It's an absolute emergency, and its resolution is surgical. As with testicular torsion, time is of the essence in order to restore vitality and complete functioning to that organ.

Priapism

Priapism is a condition in which a prolonged and painful erection occurs, not in response to stimuli but due to problems in filling the *corpora cavernosa*. This condition can lead to ischemia of the *corpora cavernosa* and irreparable damage to the penis.

Patients with sickle cell anemia may have priapism crises because their underlying disease is abnormally shaped red blood cells that cannot circulate in the bloodstream as they should. When they become trapped in the *corpora cavernosa*, the clinical manifestation is priapism.

The use of some medications, such as antipsychotics, antidepressants like Prozac (fluoxetine), blood thinners like Warfarin (coumadin), and illegal drugs such as cocaine can also lead to priapism. Even COVID-19, which has among its complications an exaggerated state of blood coagulation, has led to this type of erection in patients who are in the ICU. The treatment is a bit bloody, but the patient gets a lot of relief. Aspiration therapy through the glans and through the body of the penis are the ones I observed, in which blood is sucked from the penis with syringes. When that treatment is not sufficient, drugs such as phenylephrine are required.

Sexually Transmitted Diseases (STD)

a) Chlamydia

This is a bacterial infection that is transmitted sexually by contact with an infected person. It is one of the most common STDs in the United States. It is not so easy to identify because its symptoms are not specific and can be confused with other diseases. A greater percentage of men have symptoms than women. There may be a thick, whitish discharge through the urethra; testicular edema; and burning when urinating. The definitive diagnosis is made by analyzing the sample under the microscope. If we don't have this discharge, we can only make inferences.

The treatment is with antibiotics, the choice being Doxycycline every 12 hours for 10 days. If you are contaminated with chlamydia, your sexual partners should take the same treatment even if they have had no symptoms. Prevention, as with all STDs, is done by using a barrier method of contraception during sex.

b) Gonorrhea

Gonorrhea is a fairly common sexually transmitted bacterial infection among sexually active young people who do not use condoms regularly. The symptoms of gonorrhea in men are quite characteristic, so it is easy to diagnose. The patient with this infection has burning during urination; thick, whitish or green discharge from the urethra; edema; and itching of the glans.



Travelstudy, Own work, CC BY-SA 4.0

The treatment is done with antibiotics being the first line of defense: Ceftriaxone intramuscular 250 mg and oral Azithromycin 1 gram in a single dose. When it's impossible to go to a center to receive a prescription for Ceftriaxone, you can take the oral treatment and rely on natural therapies. Turmeric has potent anti-inflammatory agents that will help improve the symptoms. You can add it to a normal diet or take supplements.

Remember that your sex partners should also be treated even if they have no symptoms. They may be asymptomatic carriers who are spreading the disease.

MUSCULOSKELETAL SYSTEM

The muscles, bones, and ligaments form the musculoskeletal system, a complicated structure that gives the body mobility, stability, and elasticity. Each bone in the body is articulated with another, forming frames that guarantee the safety of the internal organs while providing stability and balance.

The functions of **bones** are protection, stability, serving as an anchorage point for muscles and ligaments, and production of blood cells. The muscles and ligaments are responsible for locomotion and strength. Damage to any of these causes a disability in the patient to a lesser or greater degree depending on the injury.

Regular **exercise**, such as walking for 40 minutes at a medium pace or intense exercise for 20–25 minutes, is important for keeping muscles toned and active, joints lubricated, and bones in good shape.

Getting enough **sun** each day helps the body to synthesize vitamin D, which is specific to bone metabolism. I always recommend sunbathing before 10 a.m. or after 4 p.m. because at these times, the sun's rays do not hit us directly.

In addition, there are **foods** that improve and maintain the amount of calcium required by the bones and the proteins needed by the muscles and ligaments. Some of these foods are yogurt, milk, cheese, salmon, tuna, green vegetables like broccoli, and nut butter. I particularly like Greek yogurt because it provides more protein. I always mix one cup with some honey and nuts and have a super food.

In Venezuela, when you have a joint problem, whether it is pain, a sprain, or a fracture, it is recommended to eat chicken feet soup. Chicken feet have a lot of collagen and, according to popular culture, also have almost miraculous properties for improving skin and hematological levels as well as eliminating discomfort and viruses in general.

I know that in other Latin and Asian countries, the feet are prepared fried and in other forms, but in Venezuela, the favorite preparation is a soup made of this curious ingredient. Here is the recipe if you would like to try such a delicious and miraculous delicacy.

Venezuelan Chicken Feet Soup Recipe

Ingredients:

- 250 g chicken feet
- 3 carrots
- 1 large potato cut into squares
- ½ pumpkin
- 2 onions
- 4 cloves of garlic
- 1 liter of water
- 2 sweet peppers
- ½ teaspoon salt

Preparation:

- Wash the chicken feet; clean them and remove the nails.
- Cut the carrots, potato, and pumpkin into small to medium squares.
- Dice the onion, and crush the garlic.
- Soak the chicken feet in water for 5 minutes.
- Bring the water to a boil and add the garlic. Then leave to cook for 5 minutes.

- Add the chicken feet and boil for 10 more minutes.
- Add the onion, potato, pumpkin, and carrot to the water and boil for 5 minutes.
- Add the sweet pepper and salt.
- Cover the pot and let it cook until the chicken feet and vegetables are soft.

Enjoy!

CHRONIC DISEASES of the musculoskeletal system are osteoporosis, arthritis, and myalgia.

When a **TRAUMA** is received, the first protection we have is the musculoskeletal system, which provides important protection to the rest of the organs. Sprains, dislocations, and fractures are common injuries that can occur to anyone at any time, and it is important to know how to differentiate and treat these injuries until help can be sought, to avoid serious complications.

1. Osteoporosis

Osteoporosis is the progressive depletion of bone minerals that makes bones weak and prone to injury.



Bruce Blaus, Own work, CC BY-SA 4.0

Age and sex are two of the main triggers of this condition. Women are at much greater risk for this condition, and I recommend always taking a calcium supplement from the age of 45.

In addition, menopause and treatments that eliminate female hormones, like some chemotherapy drugs, accelerate the process of osteoporosis.

Diagnosing the disease in its early stages is difficult because it does not have pronounced symptoms. There may be pain in the limbs and joints and some weakness. In the bone density test, we can objectively see the percentage of mineral in the bones and their risk of osteoporosis and fracture.

Preventive therapy is always the best option to avoid developing osteoporosis. However, if it has not been possible or your demineralization has advanced rapidly because of menopause, bariatric surgery, or some medication, there are treatments that can help.

Treatments other than calcium supplements are by prescription and are called bisphosphonates; these include Alendronate (Binosto, Fosamax), Risedronate (Actonel, Atelvia), Ibandronate (Boniva), and Zoledronic acid (Reclast, Zometa).

2. Arthritis

Arthritis encompasses a group of progressive diseases characterized by pain and inflammation of the joints. The most common types are rheumatoid arthritis, osteoarthritis, and gout.

Rheumatoid Arthritis

Rheumatoid arthritis is an autoimmune, hereditary disease that affects the body's joints but also has clinical manifestations in other organs, such as the skin and eyes. In addition to pain and decreased mobility and elasticity, arthritis causes deformity of the joints.

It is very common to see elderly people with deformity of the fingers that have thickened knuckles; these signs are typical of the disease.



James Heilman, MD, Own work, CC BY-SA 3.0

There is a subtype called “juvenile” rheumatoid arthritis that occurs in children and adolescents up to age 16. The diagnosis is made from the patient’s clinic and is corroborated with x-ray images and specific blood tests to find the genetic variation.



There is no prevention or cure for rheumatoid arthritis. Treatments to manage it are quite effective and slow the progression. Hydroxychloroquine is one of the most widely used medications. It is an antimalarial that has anti-inflammatory and immunological properties. This treatment should be strictly followed by your doctor as it has cardiovascular side effects.

DO NOT USE HYDROXYCHLOROQUINE WITHOUT MEDICAL SUPERVISION.

Nonsteroidal anti-inflammatory drugs (NSAIDs) are used for pain crises along with topical creams that can help inflammation. I do not recommend my patients use NSAIDs on a prolonged basis because of their gastric repercussions. I prefer to recommend natural therapies, such as rosemary, honey, ginger, and turmeric. Whether as an infusion or in capsules as a dietary supplement, these products are powerful anti-inflammatories.

Osteoarthritis

Osteoarthritis, also known as arthrosis, is a progressive degenerative disease that occurs due to the wearing away of the bony and cartilaginous structures of the joints.

Despite its similarity to arthritis, it does not share its genetic etiology or extra-articular manifestations. Osteoarthritis is limited to the joints, especially those that support weight, such as the knees and ankles.

The main cause is age, but osteoarthritis is also seen in high-performance athletes who overload the joints and in dancers, the latter presenting it in the



hip. In addition to symptoms such as progressive pain in a specific joint and lack of elasticity and range of movement, the diagnosis is made with a simple x-ray of the painful joint and MRI.

Omega-3 supplements, salmon, avocado, and turmeric provide great benefits for the symptoms of this condition.

Omega-3 capsules: 1 daily as prevention or if you are already diagnosed

The combination of Chondroitin and Glucosamine is also therapy that presents benefits that although not scientifically proven, are certified by testimonials.

Glucosamine Chondroitin Turmeric tablets: 1 daily if you have symptoms or are diagnosed

Special cases, such as athletes or people who are disabled by joint pain or blockage, are treated with replacement surgery of the affected joint. My recommendation is always to take the supplements and to exercise to avoid or slow down the wearing process.

Gout

Gout is an inflammatory disease of the joints that is caused by the accumulation of crystals of a blood product called uric acid. Uric acid is normally found in the circulation as a product of the metabolization of some foods by the liver. When it is in higher than normal amounts, it cannot be excreted and instead crystallizes. These crystals end up in the joints, causing a lot of pain.



Gout is known as the “rich man’s disease” because its appearance is associated, among other factors, with meat consumption. The joint most often affected is the one at the base of the first toe, where you can see increased volume, redness, and increased temperature. The pain settles in less than an hour and becomes very intense. Painful episodes can last up to 24 hours.



Gout may have extra-articular symptoms, such as gouty tophi on the arms and ears.



Although most patients with gout have only one attack during a year, a percentage have chronic episodes of pain that wear down the joints.

Once again, I recommend a natural anti-inflammatory. Ginger, turmeric, and honey help in this kind of process. Specifically, for gout, the cherry has been widely studied, and it is recommended.

If you don't like cherries, there are many supplement options that you can add to your normal diet.

Cherry softgels: 1 daily

3. Muscle Pain (Myalgia)

Muscle pain encompasses a range of conditions that may or may not be pathological. Strong physical activity, playing new sports, and sitting for a long time are examples of causes of muscle pain.

Viral diseases are very often associated with pain in the musculoskeletal system, especially myalgia. Infections such as the flu and the common cold can cause almost disabling muscle pain.

In Venezuela and all Latin America, dengue fever is a very frequent viral infection in which myalgia is part of the clinical picture. It is so intense that there is skin hypersensitivity. I can certify these symptoms from my own experience with two dengue infections that kept me in bed for a week each.

Muscle injury is a common cause of pain in athletes and construction workers. Having practiced CrossFit, injuries such as muscle hematoma and abscess were very common in the gym.

Whether from overuse and abuse of the muscle when trying to lift heavy loads or injuries from direct blows to the muscle from the bars and discs, on more than one occasion, these caused severe muscle hematoma to my teammates.

Muscle Hematoma

A hematoma within the muscle is an accumulation of blood that forms from the rupture or tearing of the muscle, usually from a direct blow to the muscle.

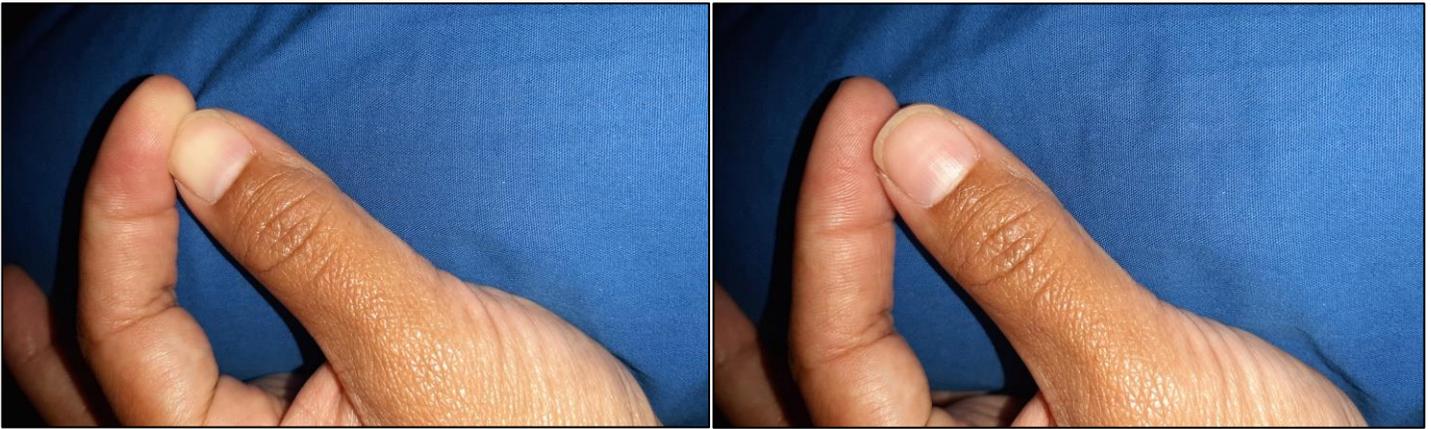
On physical examination, much swelling is evident with an intense black to violet bruise, which is very painful and disabling to the patient. Treatment includes immobilization of the limb with anti-inflammatory therapy and even corticosteroids.



This type of injury can be complicated by a serious condition called **compartment syndrome**, in which increased pressure within the muscle causes decreased blood supply to the entire limb, threatening its vitality.

This is why it is very important to treat this type of injury in a timely manner and to assess its evolution. Further physical therapy is especially important for the athlete. Eating quality proteins, such as lean meat, or grains, such as lentils, helps regenerate muscle damage.

If you see an intramuscular hematoma like the one in the image, you should evaluate the circulation of the limb. The easiest way is to look at the capillary filling, which is how fast the blood fills the nail bed. All you have to do is press a little on the nail and release to observe how long it takes to fill up again. The filling time should take less than 2 seconds.



Capillary filling is the result of circulation through the entire limb. It is a simple test that provides a lot of information. If the capillary filling takes too long and the nail bed looks pale, it is important to seek help because there may be vascular involvement from the swelling in the muscle.

Muscle Abscess

Muscle abscess is another complication that can occur after an intra-muscular hematoma. However, in addition to traumatic causes, there may be muscular bruising due to infection, especially in diabetic patients, HIV positive patients, and those who, for whatever reason, have a decreased immune system.

All muscle abscesses require intravenous antibiotic therapy for at least a few days to prevent necrosis of the nearby tissues.

When I worked in Amazonas, I had the opportunity to treat several patients with this pathology, caused by snakebite. When they went out hunting at night, it was not uncommon for them to suffer minor attacks from some animals.

In these cases, depending on the symptoms, I would inject corticosteroids, and begin therapy with antibiotics for three days. I would then continue with oral Ciprofloxacin 500 mg, every 12 hours for 10 days. I never had to attend to a poisonous snake bite, but I always had antiophidic serum so I don't think it would have been a major problem.

4. Sprain

A sprain is an injury to the ligaments of a joint by their sudden and excessive stretching with torsion. It is characterized by severe pain, much swelling of the affected area, and sometimes bruising of the skin.



There may be a genetic predisposition to sprains, but these usually occur when there is an overload of the joints. Being among athletes, I realized that this is a very common injury that even coaches learn to handle when they are mild. There are **three degrees** of strain depending on the severity of the injury:

FIRST DEGREE SPRAIN

This is a minor stretching injury with swelling and moderate pain.



SECOND DEGREE SPRAIN

There is partial tearing of the ligament, and the patient has pain, swelling, bruising, and some instability in walking.



THIRD DEGREE SPRAIN

This is a complete rupture of the ligament, sometimes even with fracture of the bone. The patient is unable to mobilize and stabilize the joint. There is a lot of pain and bruising.



Diagnosis

The sprain is easy to diagnose just by looking at it. It is a patient who has sprained a joint, most commonly the wrists and ankles, and has swelling and pain.

Try to gently move the joint so that you can appreciate the degree of resistance it presents. A very loose joint, which makes movements that are not proper for it, is an unstable joint and should be immobilized.

Treatment

Depending on the degree of the sprain, treatment will be either conservative or surgical. The general recommendations are to apply ice locally and to keep the limb elevated to improve the edema. Rosemary or chamomile infusions help to reduce the swelling of the soft tissues.

It is always a good idea to keep an ankle brace and a wrist brace on hand, which help support the joint and thus decrease swelling and discomfort. If you don't have one of these, you can use a normal bandage and make a firm dressing on the injured joint. Remember that the idea is to give stability.

An unstable, third-degree sprain should be evaluated by a specialist to decide if surgery is required. As long as it is not possible to seek help, it is necessary to immobilize that joint for at least four weeks. Ideally the immobilization would be with a brace, a splint, or a similar device.

If you don't have a splint, stabilization is done with homemade splints that you can make with strong boards, plates, or even with a ruler if you can't find anything else. Place the board under the limb you want to immobilize and secure the limb to that board with a bandage.

You want to give stability to the joint so that it does not keep moving in an errant way and does not have major damage. Obviously, this is not a definitive treatment, but it will help the patient feel better, avoid further damage, and rest the joint to improve swelling.

5. Dislocation

Dislocation of a joint is an injury in which there is separation and movement of two joint surfaces that are in contact. We cannot know right away the damage caused by the dislocation, because the swelling and pain do not allow for a proper examination of the patient, but you should be aware that there may be muscular, neurological, and even vascular injury.



Rbmoore, CC BY-SA 3.0

Dislocation is diagnosed by looking at the deformity of the joint. These patients have severe pain, little or no movement of the affected joint, swelling, and possibly bruising. If it's possible, an x-ray will give you a definitive diagnosis.



As with a sprain, ice is applied locally, and the joint is brought back into place. This can usually be done easily without applying too much force, unless it is a large joint like your knee or shoulder.

Fitting the joint is very painful but will bring great relief to the patient and, more importantly, eliminate the danger of vascular or neurological compression. After the joint is put back in place, it must be immobilized because it can become very unstable and dislocate several times.

Depending on the joint, immobilization can be done with a sweater or pants by pressing the crossed arm forward against the body in the case of the shoulder or with boards, as explained for the sprain. This is if you don't have the right device. The patient should be seen by a specialist as soon as possible to decide on the final course of action.

6. Fractures

A fracture is the loss of continuity in a bone, either partially or completely. Fractures are caused by various traumatic mechanisms, from sprains to direct blows, penetrating injuries and even shock waves in healthy bones, or low-intensity blows in diseased bones with osteoporosis or cancer.

Fractures are very painful because they damage the outer layer that covers the bone, called the periosteum, which contains the nerve endings. The diagnosis of the fracture can be intuited by analyzing the mechanism of the trauma together with the clinical signs.

If you were not present at the time of the accident, it is important to ask how it happened, if he or she fell from a height or from their own height, and what the blow was against or what object hit the bone.

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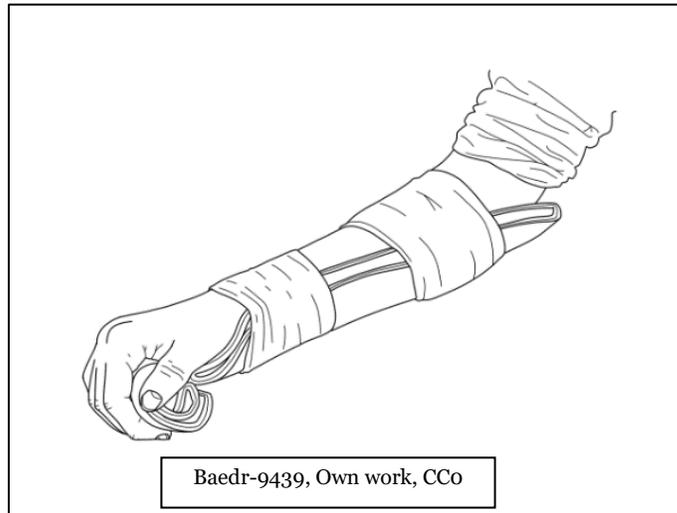
The fracture site will be seen to be enlarged by swelling and will be very painful and hypersensitive. If an x-ray is possible, that will make the definitive diagnosis.

When you encounter or suspect a fracture, make sure the person does not move the fractured limb. Try to immobilize the fracture with one of the techniques I mentioned earlier for sprains and dislocations.

In my country it is very common that when people have a fall or a trauma, they go to a specific place to get a special massage. These people (generally men) call themselves "sobadores" (rubbers).

They are supposed to have special techniques to heal any kind of ailment, similar to what Mr. Miyagi did in Karate Kid. Along with this rubbing, they say prayers to promote healing.

Sometimes people do get healed, but when there is a fracture, they only manage to make it worse because it can go from a simple fracture line to one with mobilization of both ends, which usually requires surgery. I think after reading this you might suspect that traumatologists hate "sobadores".

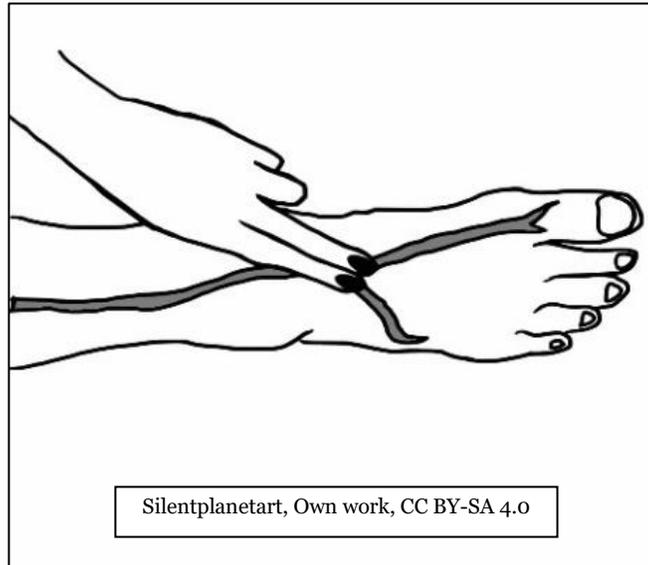


After immobilizing and relieving the pain with a painkiller, check their pulse to assess for vascular involvement. The pulse of the radial artery in the arm is easy to feel. It is located in the wrist on the same side as the thumb.

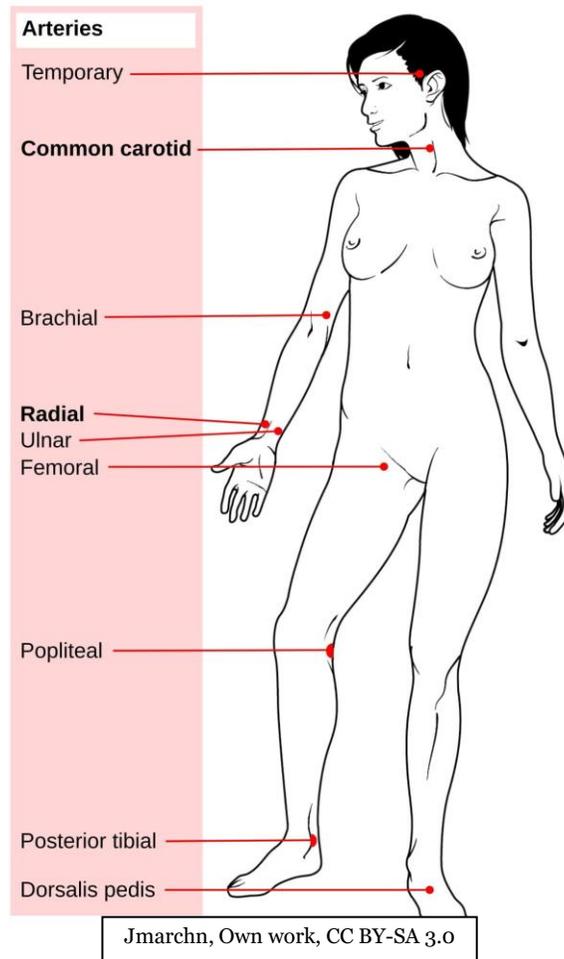


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In the foot, the pulse of the pedal artery will give you information about the circulation of the whole member. It is located in the central part of the metatarsal.



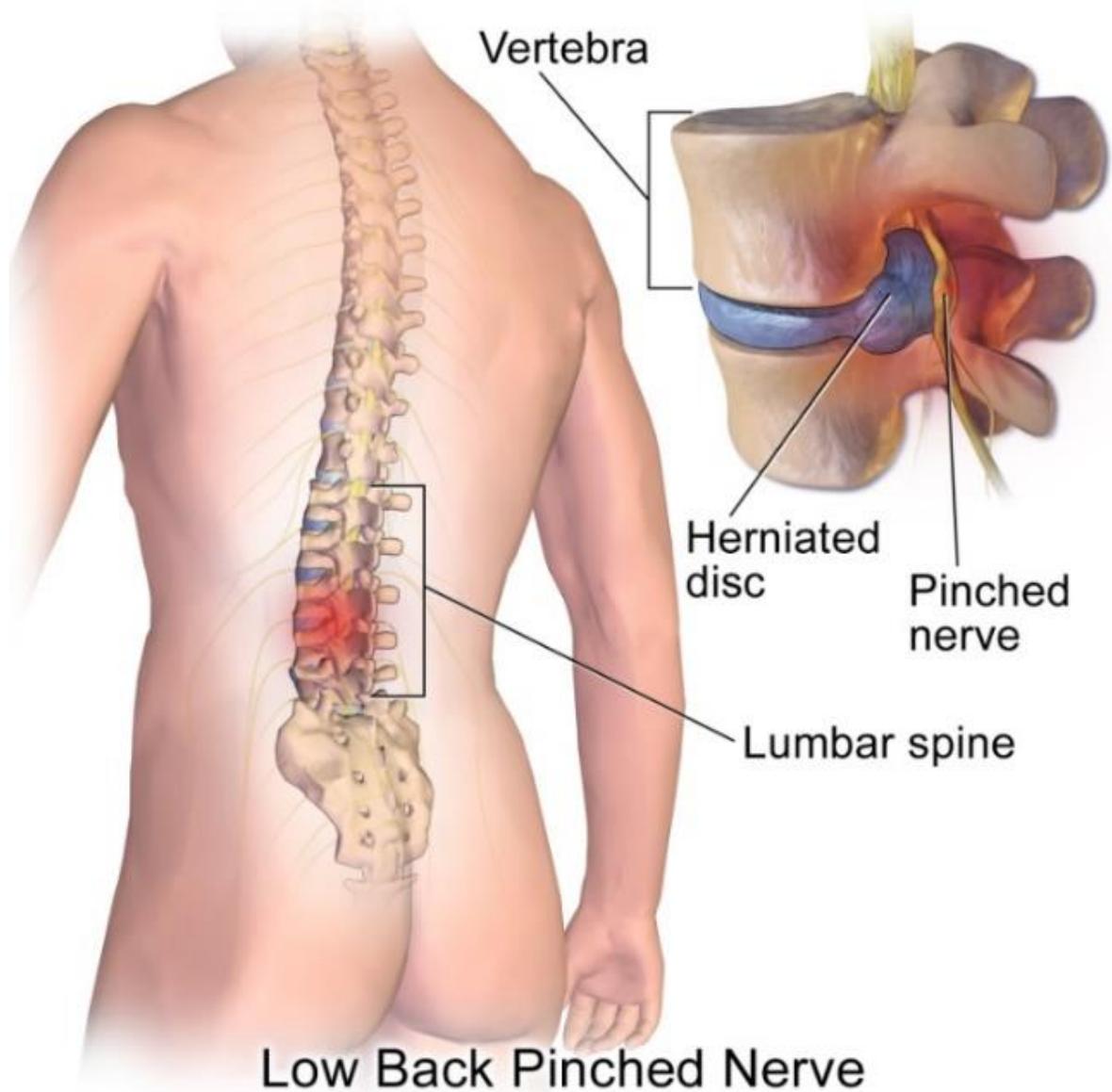
In the figure below, you can see all the places where you can find the pulse.



7. Back Pain

Back pain is one of the most common reasons for consulting orthopedic surgeons and chiropractors. It is a very general symptom that can have many diagnoses, both in the spine and in the surrounding organs. Low back pain is common.

It may be due to muscle pain that is usually caused by muscle contraction from poor posture while working or lifting very heavy loads. Discopathies in that area are also very common. These include disc herniation or wear and tear of the intervertebral disc. The most common site of disc herniation is the lumbar spine.



Bruce Blaus, Own work, CC BY 3.0

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The disc is a semi-solid collagen structure that lies between the vertebral joints and serves to cushion the impacts that the spine receives when walking, running, and jumping. Disc herniation can lead to complications such as nerve puncture and decreased muscle strength in one or both lower limbs.

Treatment

If special tests such as x-rays or MRIs cannot be performed, we can provide empirical treatment for pain so that the person with the pain can improve their quality of life. NSAIDs are usually sufficient to improve back pain.

If you get a medical evaluation, you may be prescribed corticosteroids, which are very efficient drugs for reducing inflammation.

Natural anti-inflammatories such as honey and ginger are powerful and very useful in combination with pharmacological treatment. Lidocaine patches are very effective too. They are used locally, and some are heated with body heat and create a very pleasant relaxing sensation.

When Should I Worry?

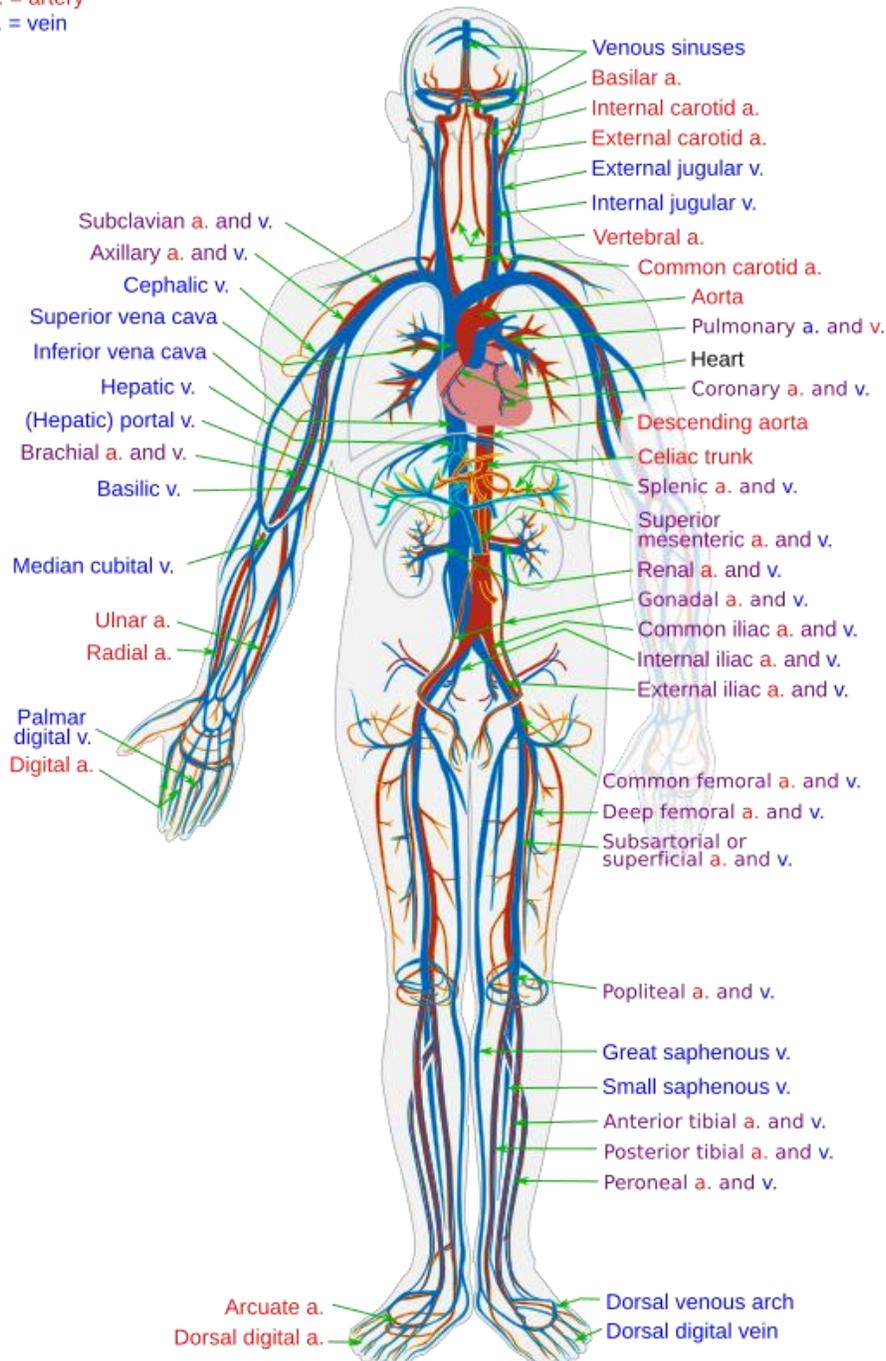
When there is weakness of the lower limbs and loss of sensation, it means that the spinal problem is compressing one or more nerve roots. This should be evaluated by a specialist who decides the most appropriate behavior.

Loss of sphincter control and involuntary urination and evacuation is an absolute emergency that must be solved as soon as possible.

CARDIOVASCULAR SYSTEM

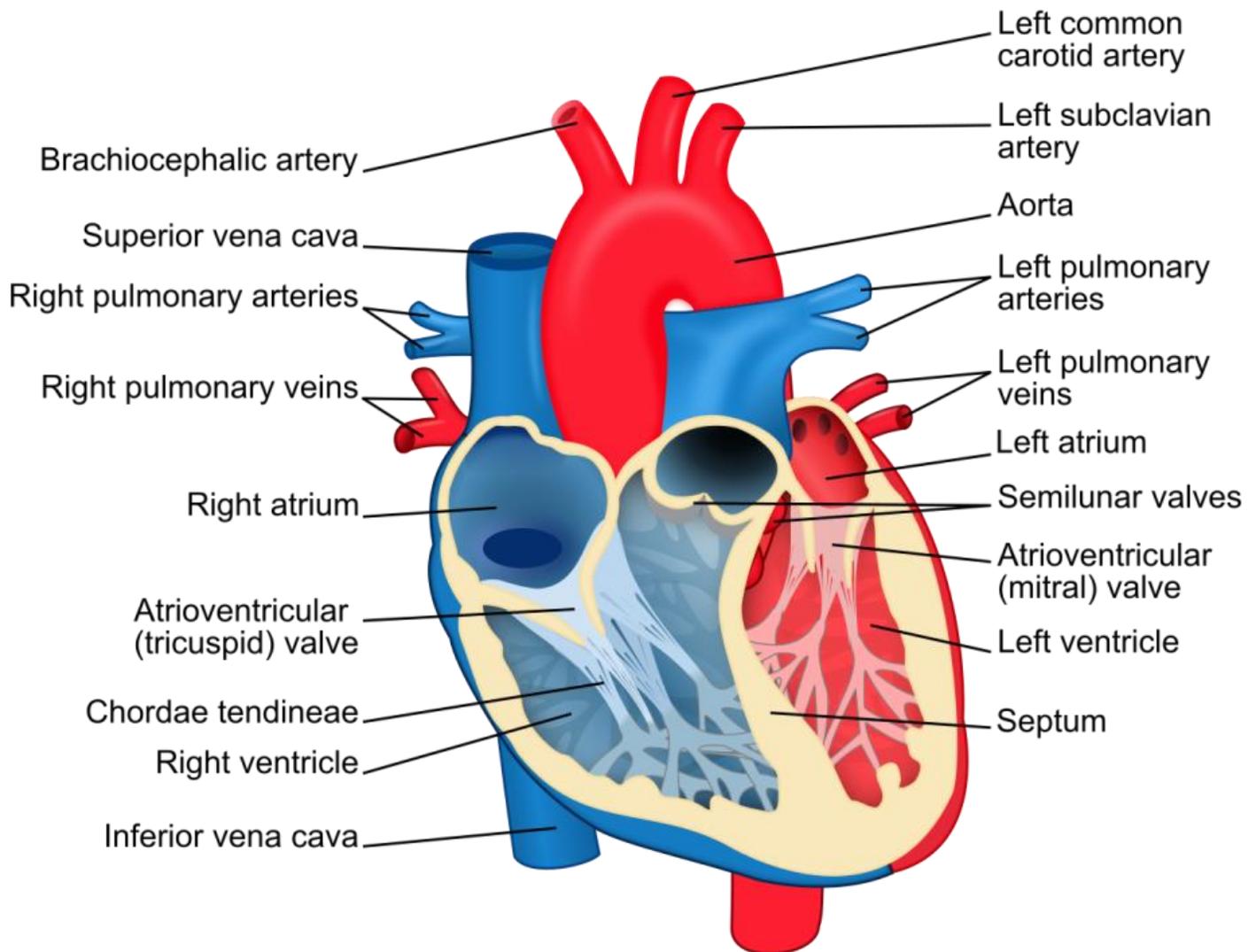
The cardiovascular or circulatory system is a group of organs that allow the transport of blood for the nutrition of all the cells of the body. It consists of the heart, blood vessels (veins and arteries), and blood. Anatomy textbooks and atlases usually depict the arteries as red, the veins as blue, and the lymph vessels as green.

A. = artery
V. = vein



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The **heart** is a hollow muscular organ that functions as a pump, carrying blood through two circulatory systems to the lungs and the rest of the body.



ZooFari, CC BY-SA 3.0

It is a vital organ, one of the most important in the entire body. Its injury is considered an absolute emergency, whether due to trauma or to changes in its structure, so you have to know how to manage a heart injury or failure to at least gain some time until help arrives.

The heart has a process of contracting and dilating its muscle that works automatically through electrical signals. Every heartbeat is the manifestation of that phenomenon.

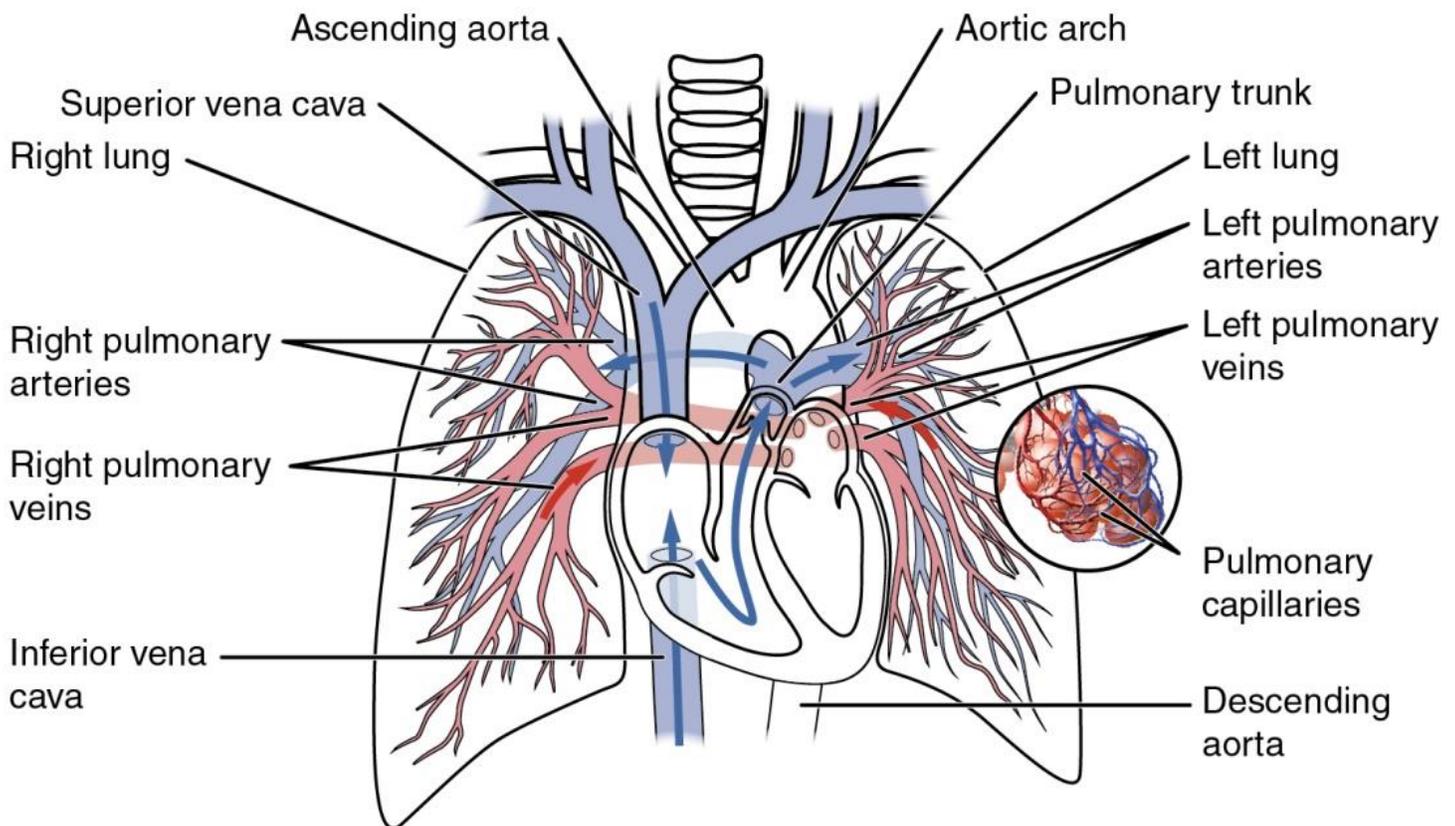
A heartbeat pushes blood out of the heart and into the other organs. This happens at a rate of 80 times per minute, which is what we know as a heartbeat.

Since it is a mechanism that works with energy, any external change, such as an electrocution, can alter the heart's rhythm.

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Arteries and **veins** are blood vessels that carry oxygenated and deoxygenated blood respectively. While the arteries are responsible for nourishing the organs, the veins collect the blood and return it to the pulmonary circulation to complete the oxygenation process and return it to the general circulation.

Pulmonary blood circulation, or minor blood circulation, is the process that occurs in the lungs through which blood without oxygen picks up oxygen ions and discards carbon dioxide ions, returning to the heart to enter the systemic circulation, or major circulation.



OpenStax College, CC BY 3.0

On the other hand, the systemic circulation is in charge of transporting the oxygenated blood from the heart to the rest of the body through the aorta and returning it through the vena cava.

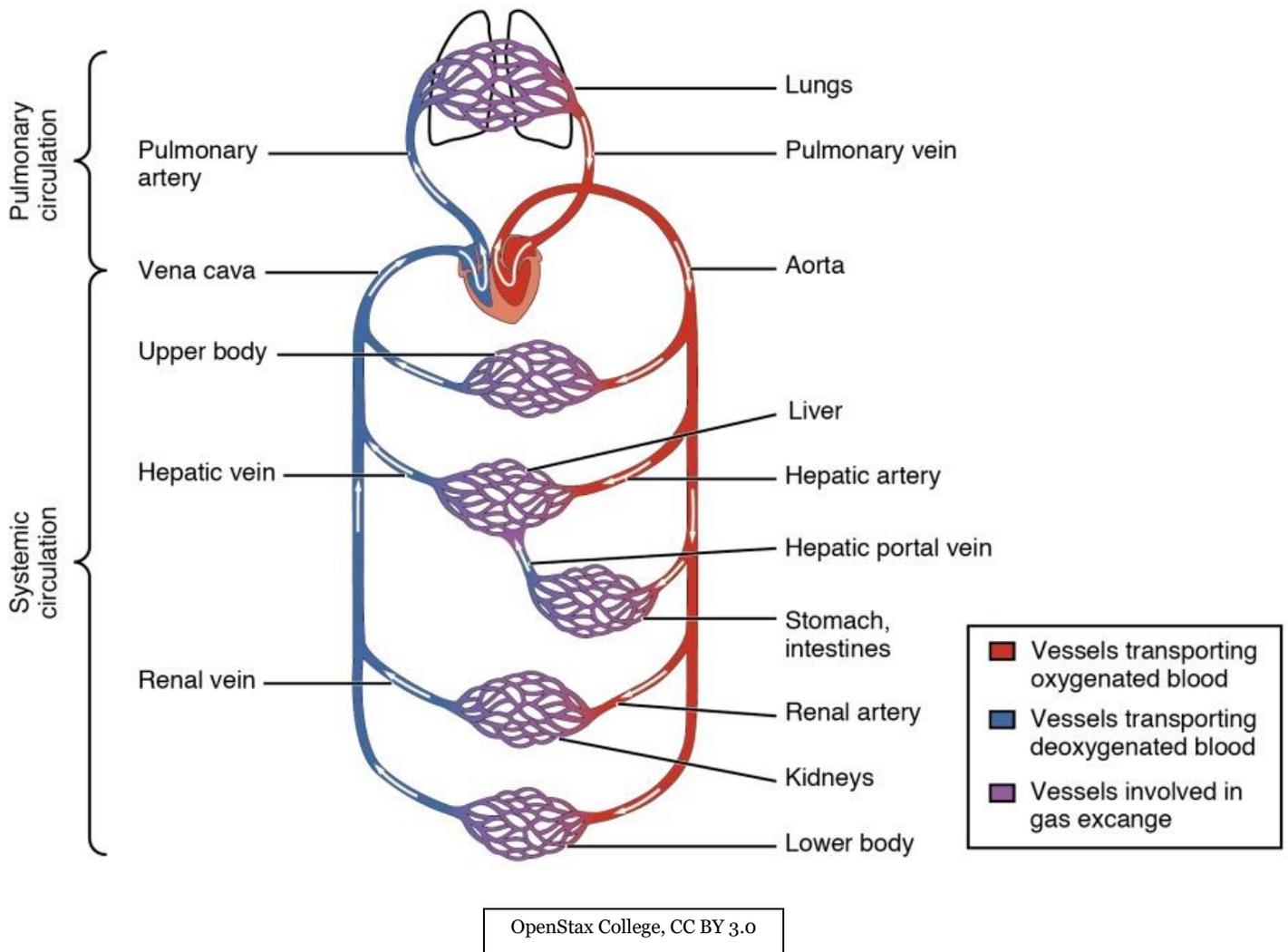
Arteries are also muscular organs that must maintain tension in order to withstand the pressure with which blood passes through them. This is what we know as blood pressure. There is a contraction pressure and a relaxation pressure, so it is read as two numbers.

The normal pressure for an individual at rest is 120/80 mmHg +/- 10. When the person is agitated, exercising, or stressed, the pressure increases. On the other hand, if the person is resting or sleeping, it can be very low.

Blood pressure is a parameter that helps us identify many disorders of the vascular system. If the person is chronically hypertensive, we can know that their kidneys are suffering as well as their eyes since these pressure changes alter the most sensitive organs.

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In addition, the arteries enter a state of stress due to the amount of force they exert and can break or collapse, generating serious problems such as cerebrovascular disease or myocardial infarction.

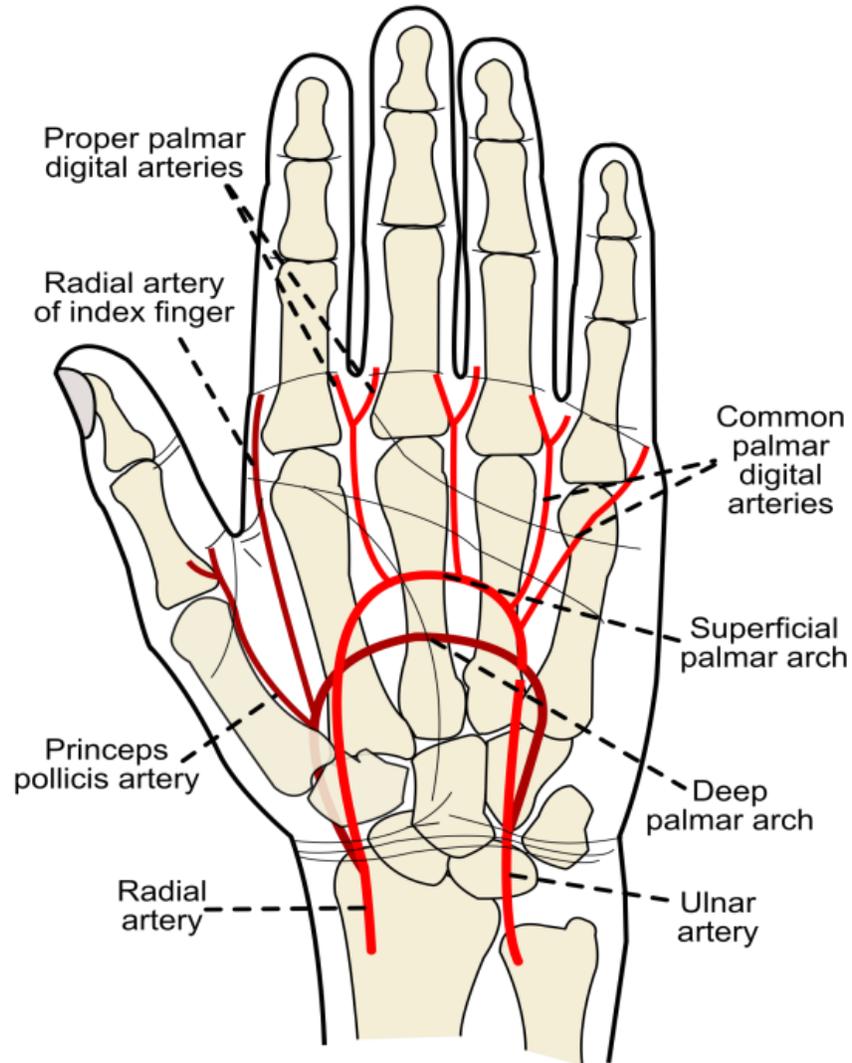


The physical assessment of the cardiovascular system begins with the identification of the pulse and blood pressure.

A blood pressure monitor is one of the best investments you can make. I have two at home, and I gave one to my parents since they are both hypertensive. Some monitors also mark the heart rate although I rely more on measuring it manually.

HOW DO I MEASURE MY PULSE AND BLOOD PRESSURE?

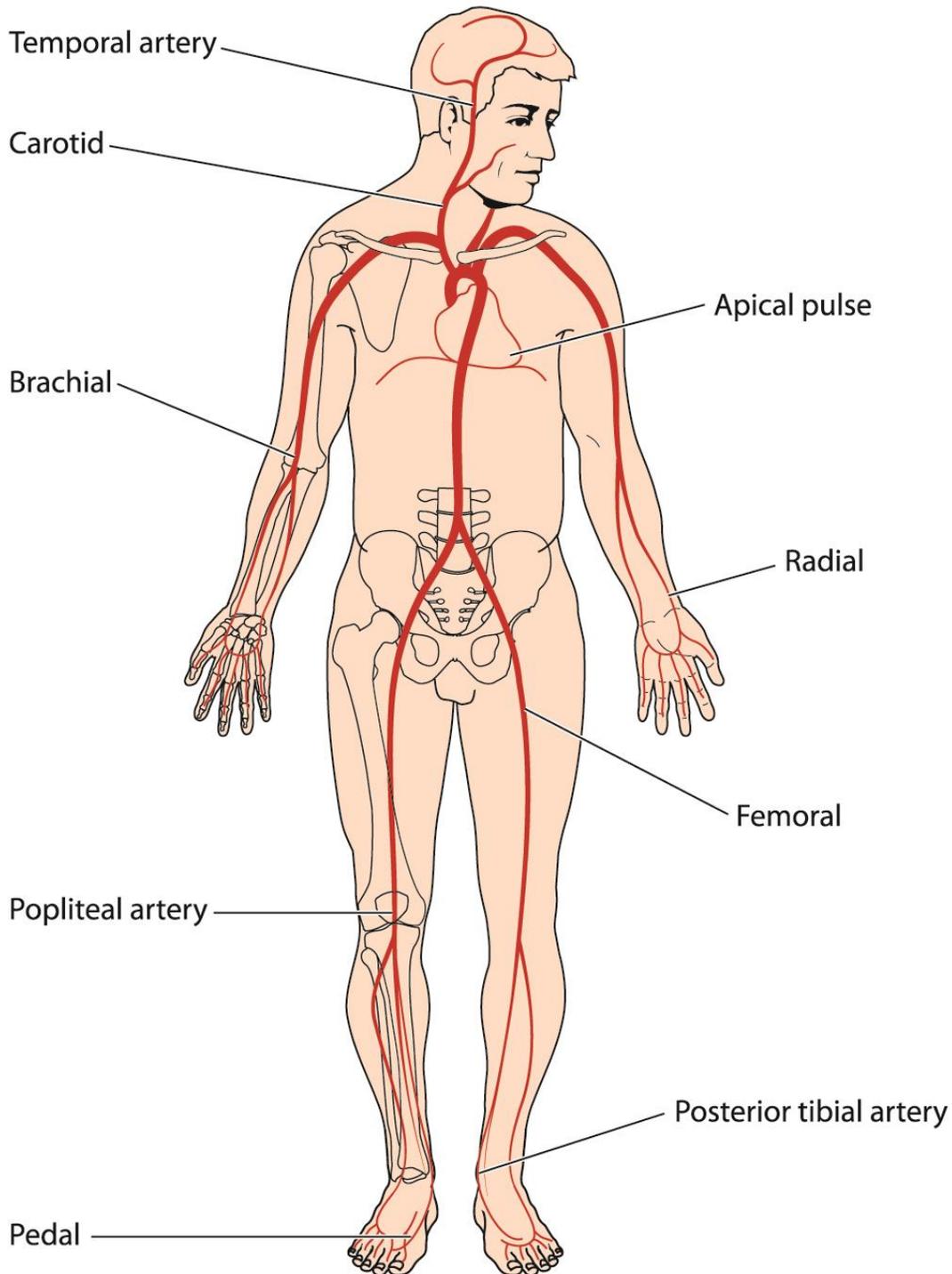
The most common way to take a pulse is at the wrist through the radial artery pulse, which is one inch from the wrist joint, following the line of the thumb. The pulse should be taken with the index and middle fingers, not the thumb, as the thumb receives waves from the pulse and can give an altered rate. Although this is the most common way, there are many other places where a person's pulse can be measured.



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There are situations where you will not be able to take a radial pulse, for example in very obese people, burned arms, and amputees, among others.

In addition, sometimes you will have to take other pulses not only to count the rate but also to evaluate the quality of the circulation in that site. In the following figure, you can see the places on the body where you find superficial arteries in order to feel a person's pulse.



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Blood pressure is the pressure that blood exerts on the arteries that makes them generate tension to maintain an adequate circulatory flow. At the doctor's office, you will probably have your blood pressure measured with a sphygmomanometer, which is a hand-held device for measuring blood pressure. It requires some training to use.

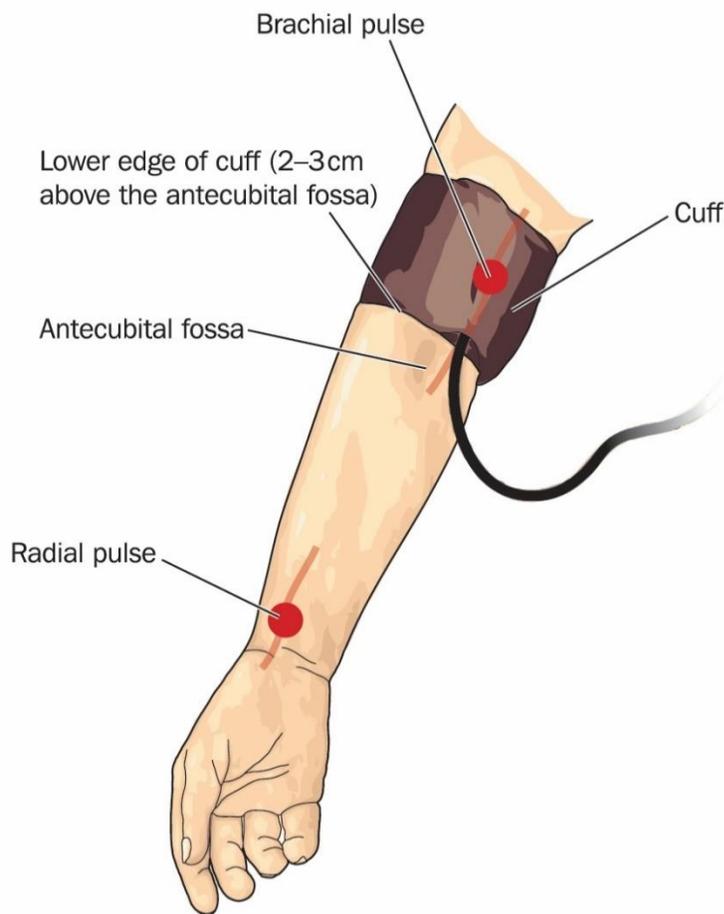
That is why at home, the simplest and most practical thing is to have a digital pressure monitor.

Physical activity alters blood pressure values, so before measuring, it is important that the person is kept at rest for 10 minutes. The pressure is taken with the patient sitting halfway down, and the arm resting on a surface so that it is at the same level as the heart.

If the gauge is a wrist gauge, you must ensure that your hand is at heart level.

To measure the tension in the arm, you must be shirtless or wearing short sleeves. The idea is that you don't have to roll up your sleeves so they are tight on your arm.

The pouf should be positioned one inch above the crease of the elbow without tightening it or leaving it too loose as this can alter the result. The hose is aligned with the brachial artery, which runs through the middle of the elbow crease. This way the results will be most accurate.



It is appropriate to take several pressure readings during the day so that you can see if the pressure fluctuates or if there are times when high-pressure peaks occur.

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It is very important to note the result with the date and time. All this information will be useful in an emergency. Remember that the more information you have to provide, the better.

MEASURING BLOOD PRESSURE WITHOUT EQUIPMENT

You should know that without the proper equipment, you can only make a rough estimate of the blood pressure. Nowadays there are phone applications that can calculate your pressure. They are all inaccurate, but this is a tool that eventually will become part of everyday use.

Another method is even more inaccurate than the previous one, but as I said before, it is important to know since it is a guide that you can take into account in an emergency. This measurement is done with three pulses: the carotid, the radial, and the femoral.

The carotid pulse is taken in the neck, on the sides of the larynx, where the artery makes its most superficial route. When you feel a clear pulse without pressing your fingers on the artery, it means that your diastolic blood pressure is above 60 mmHg.



The radial pulse is then taken using the technique explained above. Palpation of this pulse means that you have a systolic blood pressure of at least 80 mmHg.



Finally, the femoral pulse is palpated, in the groin. When this pulse is palpable, the patient has blood pressure of approximately 70 mmHg.



If these three pulses can be clearly felt without any effort, that person has acceptable blood pressure. When a strong pulse is felt and hits the fingers, the blood pressure is elevated. Conversely, when it cannot be felt, it means low blood pressure. This test should be correlated with the rest of the patient's symptoms.

Remember that this is a very basic test that only gives you a rough reference of the blood pressure but not enough to take a drug treatment.

1. High Blood Pressure

High blood pressure could be a chronic condition characterized by a sustained increase in vessel pressure over time. Its importance lies in the fact that many times by the time it is diagnosed, there has already been irreparable damage to various tissues as it presents very few or no symptoms at all in its early stages. That is why it is called the “Silent Killer.”

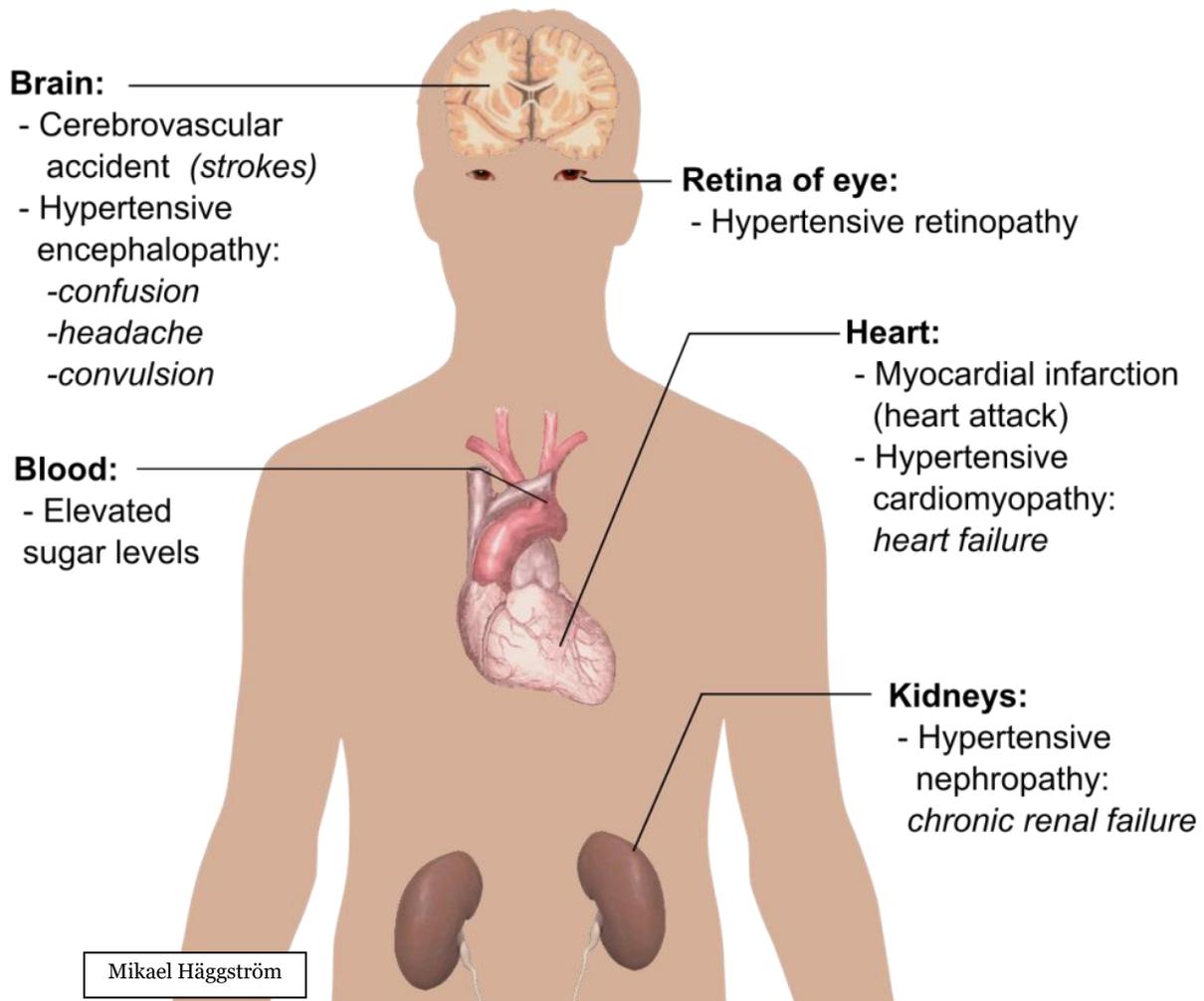
The diagnosis of hypertension or high blood pressure is made by measuring blood pressure for seven consecutive days, twice a day at the same time. If the pressure is found to be high all or most days, the patient is diagnosed with the condition.

International Society of Hypertension: Global Hypertension Practice Guidelines (2020)

| Category | Systolic, mmHg | Diastolic, mmHg |
|----------------------|----------------|-----------------|
| HYPOTENSION | <90 | <60 |
| NORMAL | <130 | <85 |
| HIGH NORMAL | 130-139 | 85-89 |
| Grade 1 HYPERTENSION | 140-159 | 90-99 |
| Grade 2 HYPERTENSION | >160 | >100 |

Left untreated, high blood pressure causes damage to various organs, and if it is not diagnosed in time, the damage may be irreparable.

Main complications of persistent
High blood pressure



Treatment

The pharmacological treatment of hypertension is delicate and is indicated by a specialist according to the type of hypertension and the damage that occurs. Usually an antihypertensive is indicated, and this is combined with diuretics, which are drugs that increase urination.

In this section, I want to focus on natural treatment as there are many ways to lower blood pressure with infusions and dietary changes. From the many scientific studies that have been done, evidence has been found that they work very well to decrease high blood pressure.

At no time do I seek to replace the medications that must be taken for high blood pressure. I am simply interested in sharing all these remedies, some learned in Amazonas and others from patients' comments, who always keep me informed of the classic popular medications I don't know about.

Natural Management of High Blood Pressure

Antihypertensives are relatively new agents, developed only in the 20th century. However, hypertension as a disease was described by Al-Akhawayni Bukhari, a 10th century Persian physician who made important contributions to modern medicine.

His book, *Student's Handbook of Medicine*, the oldest document of Iranian traditional medicine, details a disease with symptoms similar to those of high blood pressure. It was attributed to an overload of blood in the body. The treatments proposed at that time resembled the current ones, suggesting changes in lifestyle, physical activity, and the consumption of some foods that currently have been shown to have beneficial effects on this disease.

What was done in the 10th century and is still in practice today?

1. Leeches

Although it is not the most widely used treatment nowadays, there are still populations that use leeches as a medical tool. They are widely used in fractures and in traumas that are considered serious for their analgesic, anti-inflammatory, and anticoagulant properties in addition to the number of enzymes found in their saliva.

They are used for high blood pressure because they decrease the amount of blood circulating so that the arteries do not need to exert as much pressure.

In addition to leeches, bleeding therapies were used by breaking a blood vessel and allowing it to bleed in a controlled manner until the treatment was considered to be effective.

Leeches are not uncommon in modern medicine; for some time, they were used as a means of securing reimplants of limbs, especially hands and fingers. In Amazonas, among the indigenous people, this practice exists for many purposes, such as improving the heaviness of legs due to varicose veins and cleansing those who suffer from bad temper or bad luck.

2. Bitter Tea

Bitter tea is an infusion prepared with a flower called Jamaica (*Hibiscus sabdariffa*), which is widely used in natural medicine for its healing, anti-inflammatory and relaxing properties. Its benefits have been observed for a long time as to how it controls high blood pressure, which has led to scientific studies demonstrating its usefulness.

It can be taken cold or hot; it has a very particular taste that some will find very acidic, but it can be sweetened and looks fantastic. In addition to its use for high blood pressure, it is a natural diuretic, so it helps with fluid retention, relieves inflammation, and helps with sleep because it is a powerful relaxant.

3. Garlic

Garlic is used both as a spread and as a poultice or included in food as an anti-inflammatory, vasodilator, and antiseptic. In the case of high blood pressure, its dilating effect on blood vessels helps to lower it by up to 10 mmHg. I have heard many strange ways to consume garlic. The strangest one someone told me about was garlic tea. According to this patient, this infusion tastes very bad, but its healing properties are worth it. She sweetens it with honey to mitigate the strong taste.

There are those who eat garlic cloves raw, and others who eat it roasted; I can say from experience that it is delicious that way. There are also garlic capsules for those who cannot stand the taste or the breath but want to receive the benefits.

It is not recommended in the case of bleeding or stroke because it seems to have an anticoagulant effect. In fact, this warning is specified in Al-Akhawayni Bukhari's 10th century handbook.

My patient's garlic tea recipe

You will need 4 cloves of garlic, 2 cups of water, 1 tablespoon honey, and lemon (optional). Peel and cut the garlic cloves in half. Bring the water to a boil with the garlic cloves. Let it cook for 7 minutes, turn off the heat, and add the honey and lemon, if desired. You can consume it cold or hot up to 3 cups a day.

4. Dark Chocolate

Cocoa is a typical product of my country with a lot of history. From the times when it was mixed with tobacco and smoked to the chocolate bar we know today, cocoa has been used for medicinal purposes for quite some time.

Dark chocolate has at least 70% cocoa. This ensures that you can enjoy the chocolate bar and all the medicinal benefits of cocoa as well.

This product is rich in flavanol, a natural chemical that increases the release of nitric oxide and dilates the blood vessels, decreasing blood pressure. A one-ounce serving of dark chocolate is recommended daily to take advantage of the antihypertensive effects.

Venezuelan cocoa is some of the best in the world in terms of quality. There are many cocoa-producing areas, mostly coastal zones, where they sell unusual cocoa products, such as cocoa paste, wine, cream punch, cocoa shell tea, body creams, bath splash, bath salts, scrub, handmade soaps, and special syrups for different ailments.

Other foods, such as oats, almonds, berries, and potassium-rich fruits such as bananas and tomatoes, have good results in the natural treatment of hypertension, although there is no scientific evidence for the products listed above.

Preventing Hypertension and Keeping Blood Pressure Low

Some beneficial lifestyle changes are included in the treatment and prevention of hypertension.

Regular physical activity helps lower the resting heart rate, which benefits cardiovascular health. I recommend one hour of gentle exercise, 40 minutes of moderate activity, or 30 minutes of vigorous activity daily.

Quitting smoking is one of the most important recommendations for improving the condition of the cardiovascular system. Smoking produces a vasoconstrictive effect and affects the circulation in the small arteries, even clogging them.

If you are overweight, getting to an appropriate weight is very beneficial for cardiovascular health.

Losing weight is not just a matter of aesthetics. Obesity brings problems to many systems, including circulatory problems due to the accumulation of atheroma plaques. It also increases the risk of heart disease. It is important to maintain an adequate body mass index (BMI). The BMI is calculated with the formula $weight (kg) / height (meters)^2$. A BMI below 25 kg/m² is normal.

Obesity and Body Mass Index (BMI)

$$BMI = \frac{\text{weight (kg)}}{\text{height}^2 (\text{m}^2)}$$



Normal
<25 kg/m²



Overweight
25 – 29 kg/m²



Obese
≥ 30 kg/m²

Bruce Blaus, Own work, CC BY-SA 4.0

Given the alarming levels of obesity worldwide, the terms “morbid obesity” for people with a BMI greater than 40 kg/m² and “super obese” for people with a BMI greater than 50 kg/m² have been included.

Whether an overweight or obese person loses weight naturally or through bariatric surgery, the benefits at the metabolic level are visible, especially its effect on hypertension.

Improving stress levels through meditation, exercise, or yoga helps maintain proper blood pressure. Eating a balanced diet with sufficient sources of protein and fat, such as avocado and salmon, has the same effect.

Remember that the only way to diagnose increased blood pressure is by measurement. Otherwise, it is a condition that has no major symptoms, so it can be present for many years without manifesting itself and the first symptoms can be serious, irreversible damage.

2. Cardiovascular Emergencies

Chest Pain

Chest pain is a warning sign because it can mean a life-threatening situation, such as a heart attack. However, there are many entities that cause chest pain, both cardiac and non-cardiac.

Non-cardiac causes include gastrointestinal, pulmonary, bone, and muscle causes. Also, infections such as herpes zoster (shingles) cause pain from the passage of the nerve that is infected and can be a cause of chest pain.

| Characteristics of Chest Pain | Diagnosis |
|--|--|
| <ul style="list-style-type: none">• Starts after eating, bringing up food or bitter-tasting fluids• Feeling full and bloated | <i>Gastro-esophageal reflux (GERD)</i> |
| <ul style="list-style-type: none">• Starts after chest injury or chest exercise• Feels better when resting the muscle | <i>Chest sprain or strain</i> |
| <ul style="list-style-type: none">• Triggered by worries or a stressful situation• Heartbeat gets faster• Sweating• Dizziness | <i>Anxiety</i> <i>Panic attack</i> |
| <ul style="list-style-type: none">• Gets worse when you breathe in and out• Coughing up yellow or green mucus• High temperature | <i>Pneumonia</i> |
| <ul style="list-style-type: none">• Tingling feeling on skin• Skin rash appears that turns into blisters | <i>Shingles</i> |

3. Coronary Artery Disease

Atherosclerotic heart disease is a condition that occurs when the arteries that nourish the heart muscle are partially blocked. It is characterized by heavy chest pressure or squeezing pain and fatigue at medium to high levels of exertion.

Angina due to atherosclerotic plaques is the most common diagnosis, and myocardial infarction is the most serious complication.

Angina

The pain produced by the partial blockage of the heart arteries is known as angina, and this is a predictor of heart attack. Angina is not a disease but a symptom of the lack of adequate oxygenation of the heart muscle. It is a warning sign. The chest pain caused by angina is similar to that of a heart attack, except that it is limited. It can be an oppressive or squeezing pain. It can also be reflected in the left arm, the jaw, and the mouth of the stomach. It can even mimic gastritis or gastrointestinal distress.

Causes

The conditions that trigger angina are those described as risky for all cardiovascular problems:

- High blood pressure
- Smoking
- Diabetes
- Overweight or obesity (BMI > 30kg/m²)
- Metabolic syndrome
- Inactivity
- Age (Men: 45 years, Women: after 55 years)
- Family history of early heart disease.

Each of these conditions adds up to cardiovascular disease, from partial arterial blockage to complete blockage and heart attack.

How Do I Know I Have Angina and When Should I Call 911?

The pain of angina often resembles that of a heart attack, so it can be very alarming. However, at other times, the pain is not so clear-cut that it leads to a heart problem. In these cases, you should take into account other characteristics, such as triggers of the discomfort, associated symptoms, underlying diseases of the patient, medications taken, the stress situation, or how it gets better.

If the pain is associated with meals, it improves with antacids or NSAIDs, and there are no associated symptoms, it is likely to be a non-cardiac cause.

The patient should be observed, but it is not an emergency. On the other hand, if the description of the rest of the questions points to pain of cardiac origin, it is important to contact 911 to make the diagnosis and indicate treatment.

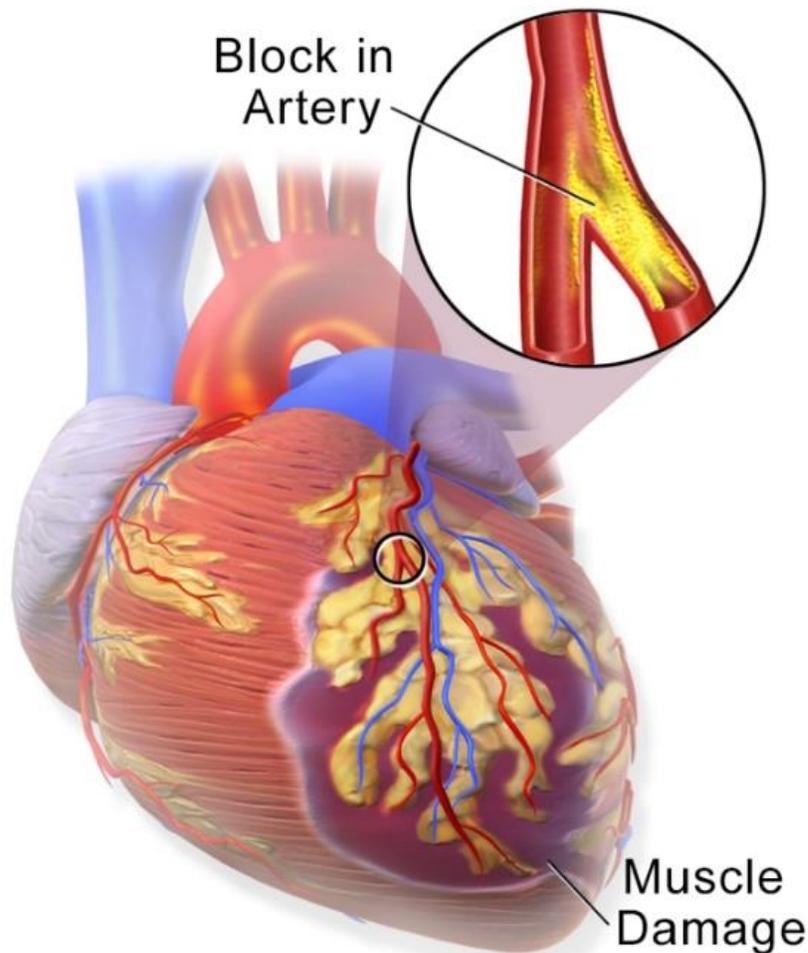
If the pain becomes more severe with mild exertion, such as walking from one room to another, or does

not improve, the degree of blockage may be serious, and you may need to be treated by a cardiologist at an emergency department. Initial treatment of angina is done with agents that dilate the blood vessels so that oxygenation of the heart muscle is improved. Nitroglycerin is the most commonly used drug as the first step in resolving the condition.

If you suspect angina, contact 911, and if you have this medicine at home, indicate it so that you can start therapy before help arrives.

Myocardial Infarction (Heart Attack)

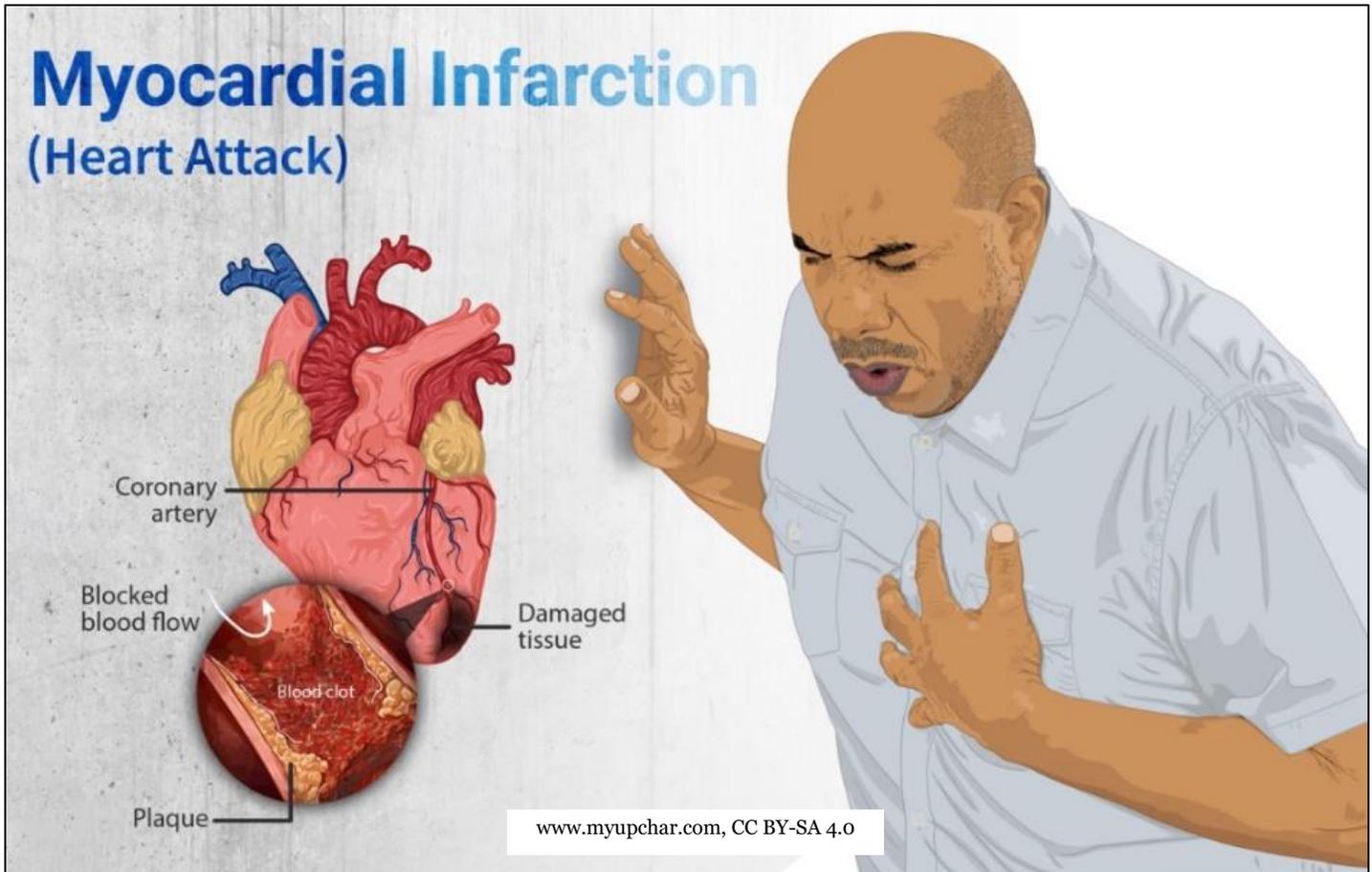
A heart attack is damage that occurs to the heart muscle, or myocardium, when there is a complete blockage of the arteries that provide nourishment to it. The blockage is caused by atherosclerotic plaques or clots within the lumen of the coronary arteries.



Heart Attack

Blaesen Medical Communications, CC BY 3.0

When one of the atherosclerotic plaques or a clot becomes detached from the blood vessel, it travels through the coronary arteries to the point where it cannot pass because it is too large and causes a complete blockage, obstructing the blood supply to the myocardium. A heart attack occurs with very severe, oppressive pain in the chest. This pain becomes more intense as the minutes pass and is reflected in the left shoulder, neck, back, or jaw. In 70% of cases, the pain is accompanied by nausea, cold sweat, fatigue, and stomach pain.



The most important risk factors for a heart attack are below:

- High blood pressure
- Overweight, obesity (BMI: $30\text{kg}/\text{m}^2$)
- Smoking
- High blood cholesterol
- Diabetes
- Sedentarism.

The diagnosis begins with the patient's medical history and symptoms. **Once a heart attack is suspected, 911 should be called immediately.**

The electrocardiogram will show some changes that are specific to the electrical activity of the heart after the infarction. The definitive diagnosis is made through a laboratory test that reflects the elevation of specific heart muscle proteins that are released abnormally when the heart is damaged.

Aspirin for Heart Attack Prevention: Myth vs. Reality

Something that my patients ask me a lot is if it is okay or beneficial to take a daily aspirin to prevent heart attacks and strengthen the circulatory system. The truth is that even though some people indicate this therapy as prevention, it is not for everyone.

Aspirin is a drug that prevents blood from clotting; my patients say it makes the blood “more liquid,” and in part, it does. This anticoagulant effect works in the case of ischemic pathology, when there are thrombi that have formed inside the blood vessels or the heart.

However, we must remember that not all circulatory pathologies are ischemic; there are also hemorrhagic ones, for example, hemorrhagic stroke. In these cases, aspirin seriously worsens the problem since it takes longer for the blood to reach the coagulation state.

If you suspect a myocardial infarction, the first thing you should do is call 911, without postponing it.

You should try to remember as much information as possible, such as the time the pain started, and places where it is most intense, pain in the mouth of the stomach, among others, as well as the treatment you are taking, if any, and not to take any medication unless the responder suggests it.

4. Vascular Trauma

Although vascular trauma is not the most common, I can say that it is seen with relative frequency.

Especially with the rate of insecurity in my country and the number of wounded, especially from firearms, I think Venezuelan surgeons have quite a lot of experience in dealing with vascular trauma.

The first time I saw one was when working as a general practitioner at a clinic where a lady came to the emergency room with a small wrist injury she got while peeling a pumpkin.

The wound wouldn't stop bleeding and had a small lump just below it. The surgeon on duty diagnosed a vascular injury that, when explored, was a small cut in the radial artery.

Accidents such as stabbing, shooting, violence, internal abdominal trauma from collision, displaced fractures, and dislocated joints are common causes of vascular injury.

Vascular wounds can be arterial, venous, or capillary, with venous wounds causing heavy bleeding of dark red blood.

Arterial wounds, on the other hand, have pulsating bleeding, and the blood is bright red. Bleeding from capillary damage is slight and self-limiting.

The most important thing when faced with a vascular injury is to stop the bleeding. When compression is applied to a blood vessel, the coagulation mechanism is activated.

In the case of venous injuries, doing moderate compression can partially stop the bleeding while waiting for emergency personnel. Arterial bleeding has a much higher pressure, so this type of bleeding is more difficult to stop.

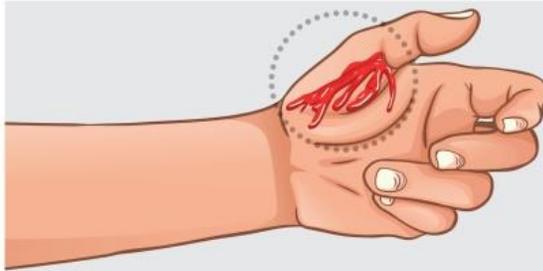
Pressure should be applied firmly against a bony surface.

Types Of External Bleeding



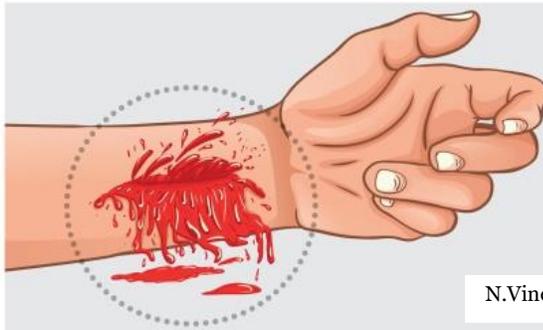
Capillary

Slow And Oozing
Easily Controlled
Stops Spontaneously



Venous

Steady Flow
Easier To Control
Low Pressure System



Arterial

Rapid And Profuse
Spurting With Heart Beat
Most Difficult To Control

N.Vinoth Narasingam

How Do I Know if the Trauma Damaged a Blood Vessel?

Sometimes the bleeding is external, and you have no problem recognizing that there is a vascular trauma due to the amount of blood coming out of the wound. However, this is not always the case. There are some criteria to take into account when evaluating an injury:

| | |
|---------------------|--|
| HARD SIGNS | <ul style="list-style-type: none">• Active hemorrhage• Absence of distal pulses or ischemia• Expanding or pulsatile hematoma• Bruit or thrill |
| SUBTLE SIGNS | <ul style="list-style-type: none">• Subjective reduced or unequal pulses• Large non-pulsatile hematoma |

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Shots, impact trauma, and vascular trauma from fracture or dislocation are sometimes tricky. Gunshot wounds usually have some degree of vascular damage.

One of the worst I've seen was a patient with two wounds in the abdomen and one pierced the vena cava to lodge in the dorsal spine. That patient died.

In the case of the stab wounds, which usually have external bleeding, I also remember one where the weapon made a small wound in the heart that could be repaired.

Thus, it is important to look for signs of peritoneal irritation and to evaluate the degree of mucosal skin paleness and peripheral pulses, depending on the site of the wound.

Complicated fractures and dislocations can cause compression damage or cause a real blood vessel injury.

The first thing to do in the case of a fracture where the ends of the bone are displaced, or a dislocation, is to check the pulses of the limb and the color and temperature of the skin, looking for cyanosis (bluish skin); then align the bone again.

Only with this maneuver can you secure the irrigation of the limb, which may be blocked by compression.



IF YOU SUSPECT VASCULAR INJURY, STOP THE BLEEDING AND CALL 911.

How Do I Stop the Bleeding?

Stopping bleeding is the first rule in active bleeding, whether you are treating yourself or someone else. The first maneuver is to apply force to the wound. If this doesn't work or we can't put enough pressure on it to stop it, we use a tourniquet.

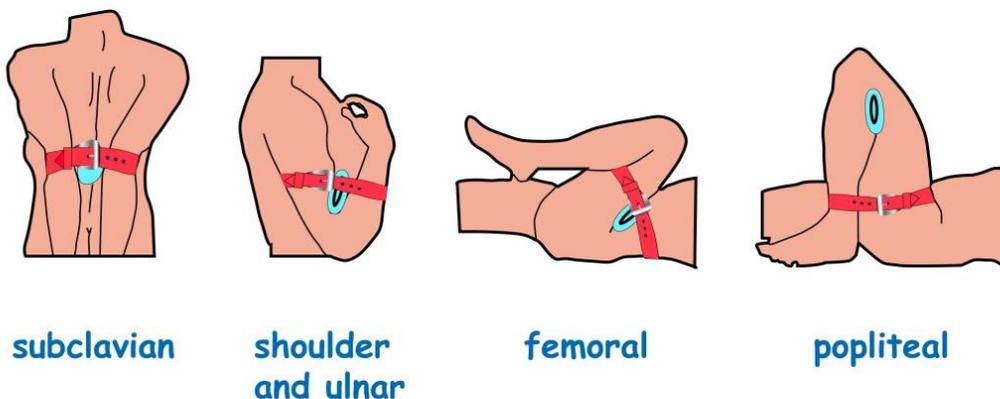
There are tourniquets of suitable and resistant material that are good to have at home, but a tourniquet can be made from any cloth that can be tied tightly around the patient's limb. Shoelaces, straps, shirt sleeves, gloves, and other materials can be used.



In the figure above, you can see an improvised tourniquet with black plastic tape on a patient with a traumatic amputation of the distal phalanx of the finger. The tourniquet should go over the wound. If there is a lot of blood, try cleaning it with alcohol or hydrogen peroxide to locate the bleeding injury. Then begin tightening the tourniquet until the bleeding stops or is controlled as much as possible.

It is believed that leaving a tourniquet in place for more than 40 minutes caused irreversible damage to the limb. However, current guidelines for dealing with vascular trauma indicate that the benefits of keeping the patient alive outweigh the damage that can occur from leaving the tourniquet in place for more than 40 minutes.

Some arteries have so much pressure that they are very difficult to control even with a tourniquet. In the figure, you can see techniques to block the bleeding in these arteries.



Zvitaliy

With a vascular injury, the only tool we have at home is the one described above. By stopping the bleeding or removing the blockage by lining up a fracture, you will gain important time until the emergency team arrives.

Vascular injuries are life-threatening, so don't put off calling 911.

5. Anemia

Anemia is a decrease in hemoglobin in the blood below its normal value of 12-14 mg/dL. This results in a decrease in the amount of blood circulating in the patient's body. Although there are hereditary diseases that cause anemia and bring many problems to those who suffer from them, the main cause of chronic anemia is iron deficiency as a consequence of malnutrition.

In my country, malnutrition has long been a serious problem that has worsened over the past 10 years. It is now common for patients who come to public facilities to have very low levels of hemoglobin due to nutritional deficiency.

The main dietary source of iron is protein. It is so useful that it is not necessary to take any special supplements. By maintaining an adequate diet, the iron receptors in the blood are kept at adequate levels. However, economic problems, inflation, speculation, and product control have led much of the population to consume a diet based on carbohydrates, which are more economical and filling.

Anemia is diagnosed with a simple hemoglobin test done on a blood sample. There are banding devices for measuring hemoglobin, although I don't know how practical it is to have one at home, mostly because of the cost/benefit balance.

Iron deficiency anemia is one of the first symptoms of malnutrition and can be diagnosed with the naked eye by looking at the color of the person's skin and mucous membranes. The gums and the inner edge of the lower eyelid are the two places where pallor becomes most noticeable.

Throughout my practice, I have noticed that the soles of the feet and palms of the hands are a clearer reflection of pallor and are the first places I look.



Other symptoms of anemia include headache, fatigue, tiredness, depression, shortness of breath, tachycardia, and heaviness. A high number of anemic people with hemoglobin values below 8gr/dL eat a lot of nonfood items (ice, dirt, rocks, and hair, among others), and this is a common presentation of anemia. This is known as Pica syndrome.

Raising Hemoglobin Naturally

Depending on how serious the anemia is, treatment will depend on the patient's values. If the anemia is very serious, below 6 mg/dL, a blood transfusion is recommended. However, most cases can be treated at home with iron supplements. It's important to know that there are multiple causes of anemia, and it's important to consult an expert to diagnose the specific cause. That way you can approach it in the best way. As I said, in Venezuela, anemia is a serious problem, so there are many natural recipes that promise to raise hemoglobin quickly. Some of these I have tried, and others I have not dared yet. I'll list all the recipes, most of them fancy shakes that many of us have taken to raise our hemoglobin, improve our appetite, strengthen our immune system, and keep ourselves well fed, among other benefits.

3-IN-1 JUICE

This is one of my favorites because it tastes so good and because it reminds me of my childhood when my mother used to make this juice to keep me and my brother strong.

Ingredients:

- 1 liter of natural orange juice
- 1 medium carrot
- 1 medium beet
- 1 teaspoon of honey or sugar (optional).

It can be prepared with a juice extractor or in the blender.

RED PEPPER AND TREE TOMATO (TAMARILLO) JUICE

Ingredients:

- 5 peeled tree tomatoes (tamarillo)
- 1 red pepper
- 1 liter of water
- Sweetener of your choice.

RED PEPPER AND GUAVA

Ingredients:

- 2 lbs. of guava
- 1 red pepper
- 1 liter of water
- Sweetener of your choice.

The following I have never tried, and I don't know if I will, but many of my patients have. In fact, they're the ones who give me most of these recipes. If you dare to drink them, welcome to the world of high hemoglobin!

BEEF LIVER + TREE TOMATO + GUAVA

Ingredients:

- 1 piece of beef liver
- 5 peeled tree tomatoes
- Lemon juice (optional)
- Sweetener of your choice.

COW'S EYE JUICE

This juice is said to be very nutritious. Not only does it increase hemoglobin but it also improves concentration and immunity, increases protein levels, and even improves sexual performance.

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I heard about this juice when I went to the Venezuelan Andes, which is basically the only region where they prepare it for sale. It is so popular that there are businesses dedicated exclusively to its preparation. They add other ingredients to the base recipe, including oatmeal, baby cereal, and cream of rice. Some people order a complete blender of the juice and drink it there.

Ingredients:

- Sprouts
- Spinach
- 2 tablespoons of avocado
- 1 quail egg
- 1 egg
- 4 cups of milk
- 1 cup of blackberries
- Essence of vanilla
- The content of 1 beef eye.

FRUIT JUICE AND BEEF BRAINS

This prescription was given to me by a patient who needed to increase her hemoglobin in order to start chemotherapy. In three weeks, her values were within the normal range, and she told me she drank this brain juice daily during that time.

Brains are a high source of iron and magnesium, plus they are full of vitamins and minerals. I think if I try a preparation with brains, I'll prefer a meal to a juice. However, here is my patient's successful recipe.

Ingredients:

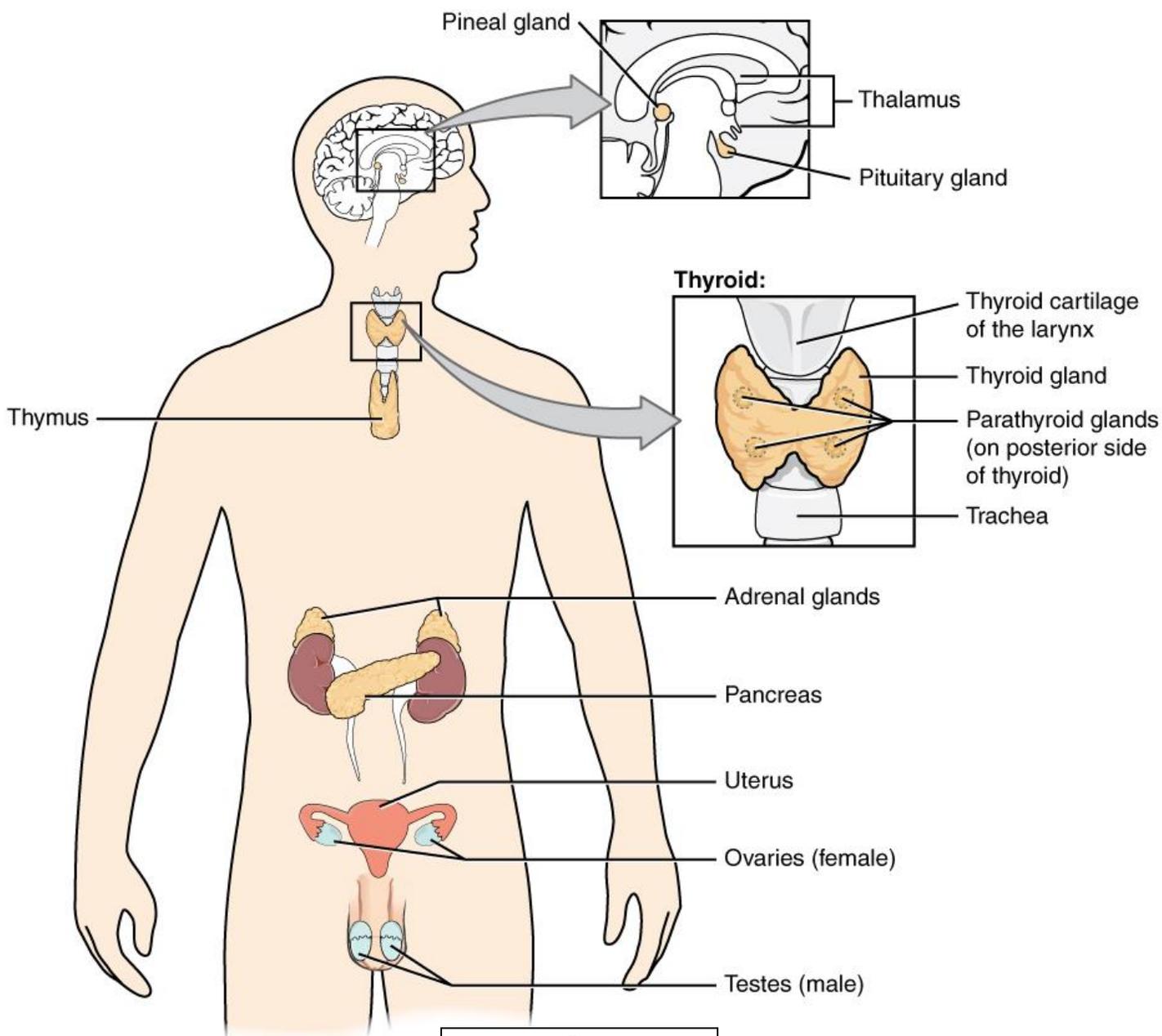
- 2 cups of blackberries
- 1 medium banana
- 1 cup of orange juice
- 1/4 piece of beef brains.

All the ingredients contained in these recipes have common characteristics. At least one of them is a high source of iron, and there is at least one citrus ingredient in almost all of them, which facilitates the absorption of iron. That's why I have no doubt that they work, and I always see the results in my medical practice.

ENDOCRINE SYSTEM

The endocrine system is an organized mechanism of glands that produce and secrete chemical substances named hormones, which are used for different metabolic processes in the body.

It is comparable to the nervous system in the sense that the former uses nerve impulses to carry out its functions and the latter uses hormonal action. Some glands have ducts through which they release their secretions, such as the salivary glands. These are called exocrine glands. On the other hand, endocrine glands are those that have their product travel through the circulation and selectively find its target organs.



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The endocrine system, through hormones, regulates many important metabolic processes. Some of its functions are:

- Growth and development
- Sexual function and reproduction
- Heart rate
- Blood pressure
- Appetite
- Sleeping and waking cycles
- Body temperature

The endocrine system regulates its functions through feedback loops. This means that a hormone that stimulates the secretion of a product stops being produced as soon as that product is in circulation in sufficient quantity.

Once the amount decreases, the hormone production will be activated again.

By the time any hormonal imbalance occurs, the symptoms are noticeable, and treatment is required to regulate the secretion and use of the hormones. This treatment is sometimes medical and sometimes surgical.

In the figures below, you can see the hormones produced by each of the body's endocrine glands.

Hypothalamus

Thyrotropin-releasing hormone
Dopamine
Growth hormone-releasing hormone
Somatostatin
Gonadotropin-releasing hormone
Corticotropin-releasing hormone
Oxytocin
Vasopressin

Thyroid

Triiodothyronine
Thyroxine

Pineal gland

Melatonin

Pituitary Gland

Anterior pituitary

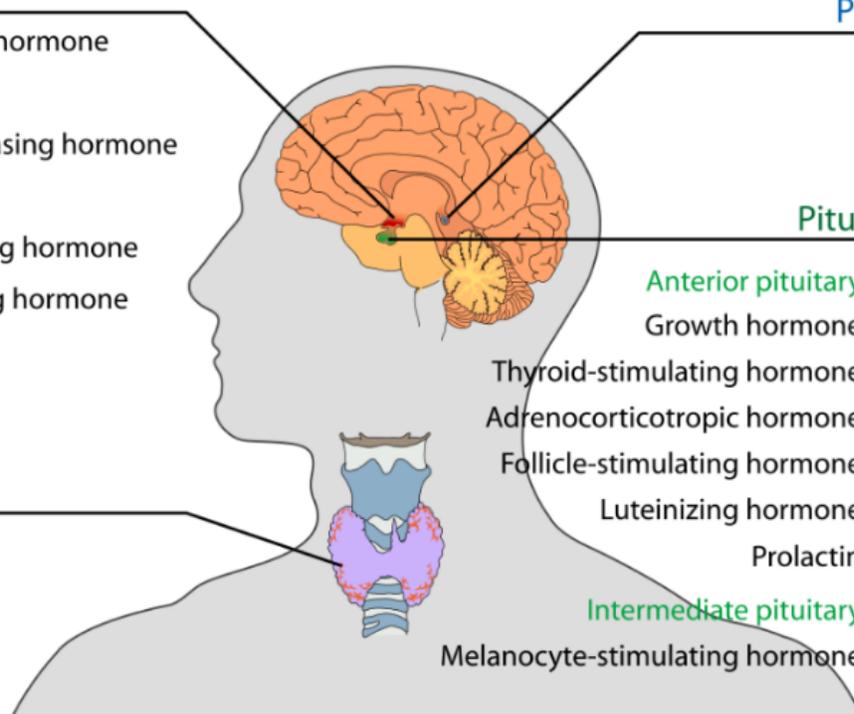
Growth hormone
Thyroid-stimulating hormone
Adrenocorticotropic hormone
Follicle-stimulating hormone
Luteinizing hormone
Prolactin

Posterior pituitary

Oxytocin
Vasopressin
Oxytocin (stored)
Anti-diuretic hormone (stored)

Intermediate pituitary

Melanocyte-stimulating hormone



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Liver

Insulin-like growth factor (somatomedin)
 Angiotensinogen
 angiotensin
 Thrombopoietin

Stomach

Gastrin
 Ghrelin
 Neuropeptide Y
 Somatostatin
 Histamine
 Endothelin

Duodenum

Secretin
 Cholecystokinin

Pancreas

Insulin
 Glucagon
 Somatostatin
 Pancreatic polypeptide

Kidney

Renin
 Erythropoietin
 Calcitriol
 Thrombopoietin

Adrenal glands

Glucocorticoids
 Mineralocorticoids
 Androgens

Adrenal medulla

Adrenaline
 Noradrenaline
 Dopamine
 Enkephalin

Ovary

Progesterone
 Androstenedione
 Estrogens
 Inhibin

Placenta (when pregnant)

Progesterone
 Estrogens
 Human chorionic gonadotropin
 Human placental lactogen
 Inhibin

Testes

Androgens
 Estradiol
 Inhibin

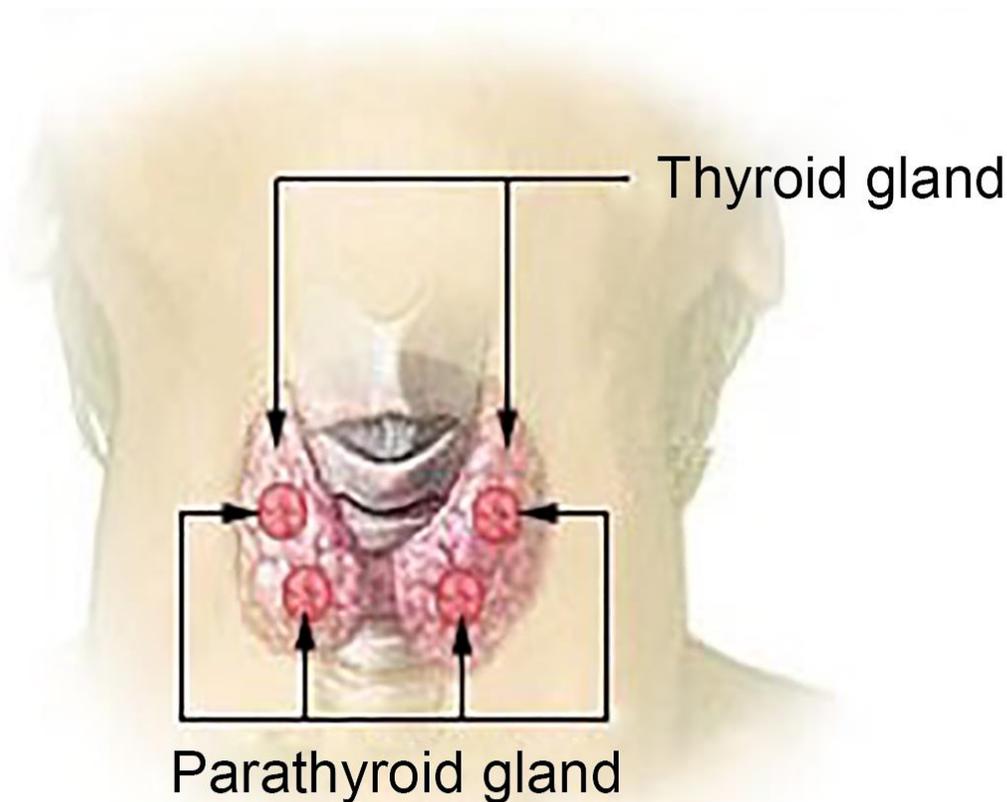
Uterus (when pregnant)

Prolactin
 Relaxin

1. Thyroid Gland: Hyperthyroidism and Hypothyroidism

The thyroid is a gland located in the front of the neck. Secretes three hormones: Triiodothyronine (T₃), Thyroxine (T₄) and calcitonin, a peptide hormone.

These hormones have metabolic and cardiovascular functions and development effect in children. Calcitonin plays a role in calcium metabolism. Secretion of the two thyroid hormones is regulated by thyroid-stimulating hormone (TSH), which is secreted from the pituitary gland.



When the gland is overactive and begins to form more hormone than normal, the patient manifests the symptoms of an overactive thyroid, known as **hyperthyroidism**.

This disease can develop due to hyperactivity in the pituitary gland or due to thyroid problems such as benign or malignant tumors, inflammation, or auto immunological diseases such as Grave's disease, among others.

The symptoms of hyperthyroidism are metabolic acceleration, with anxiety, tachycardia, insomnia, nervousness, irritability, weight loss, and heat intolerance.

In Graves' disease, in addition to these symptoms, an ocular pathology called exophthalmos is added, which is bulging of the eye anteriorly out of the orbit.



A person with hyperthyroidism can live with medical and pharmacological control without major problems. However, the thyroid storm is a complication that must be recognized because it can be fatal.

Thyroid Storm

Thyroid storm is a rare complication of hyperthyroidism but one that you should be aware of, especially when you are treating yourself. It is a condition in which hyperthyroidism enters an exaggerated state of hyperactivity, generating a metabolic response with tachycardia, arrhythmias, fever of 102-104°F, agitation, high blood pressure, confusion, and diarrhea.

This overactive state can be triggered by poor treatment of hyperthyroidism, infection with sepsis, dehydration, or psychiatric illness. Thyroid storm is an absolute emergency requiring hospitalization and monitoring in the Intensive Care Unit (ICU).

Hypothyroidism is the condition in which the thyroid does not produce enough thyroid hormone, so it is underactive. It is the exact opposite of hyperthyroidism.

You've already seen that the thyroid hormone controls the body's metabolism at many levels, including regulation of body temperature and fat distribution and storage.

In the case of hypothyroidism, this decreased activity causes a slowing down of these functions. Therefore, the patient has feelings of tiredness and sleepiness, depression, constipation, decreased heart rate, hypotension, and intolerance of cold.

The most common cause of hypothyroidism worldwide is a lack of iodine in the diet. More than 50 years ago in Venezuela, in the area of the Andes that is very far from the coast, the inhabitants suffered from hypothyroidism.

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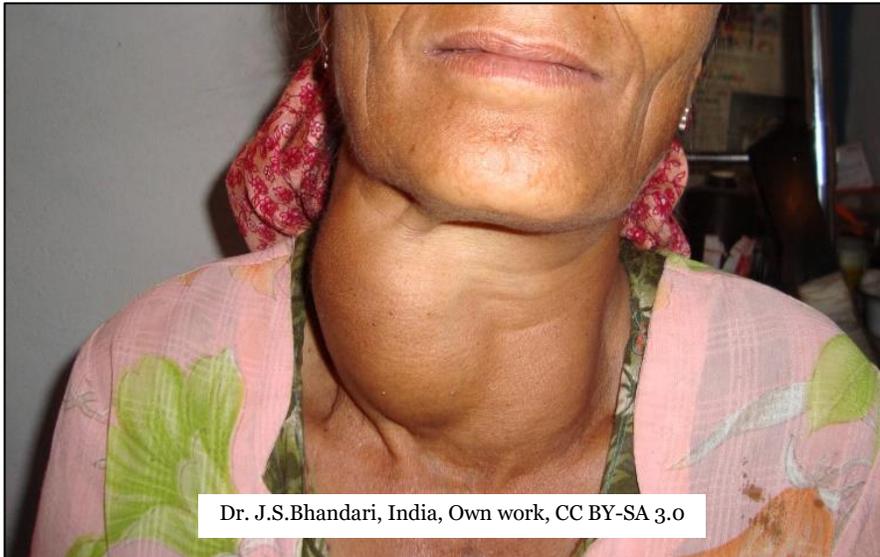
Eventually the sanitarians realized that their diet did not have any source of iodine, so they decided on an action that had been taken in some other countries, which was to iodize cooking salt, thus solving the problem that existed in this region.

Iodized salt has been used in the United States since the mid-1920s, when a large number of people with hypothyroidism were discovered in the Great Lakes and Pacific Northwest regions.

Since the implementation of this policy, great benefits have been seen in the world's population, such as increased IQ and productivity of the young workforce, which improves the global economy.

Hashimoto's thyroiditis is the second leading cause of hypothyroidism worldwide. This is a chronic autoimmune disease that destroys hormone-producing thyroid cells through an exaggerated inflammatory process.

It is manifested by a painless enlargement of the thyroid (goiter) with symptoms of hypothyroidism.



There is a false belief that goiter is synonymous with an overactive thyroid gland, but it is not. The increase in thyroid size may be due to increased or decreased thyroid activity. In other words, goiter is a sign of thyroid dysfunction.

When the thyroid is completely removed, the patient is expected to develop hypothyroidism. We control it from the beginning with the administration of hormones and periodic evaluation with the endocrinologist.

What Can I Do if There Is a Shortage of My Thyroid Treatment?

For the last few years in Venezuela, due to the current economic situation and the policies of importing medicines, thyroid hormones are very scarce and those who sell them bring them from Colombia at very high prices.

For reasons like this, it is important to know all the natural tools we have to treat thyroid conditions as it is absolutely necessary to maintain control of this gland.

Dietary adjustments are essential to keep thyroid hormone production under control. In the case of hyperthyroidism, a **diet low in iodine** is recommended, that is, avoiding cooking salt, seafood, dairy products, and egg yolk.

L-Carnitine is a supplement that, despite not acting directly on the thyroid, prevents some organs from having an affinity for its hormones. The consumption of L-Carnitine improves the cardiovascular effects of hypothyroidism, lowering blood pressure and tachycardia.

Its presentations of Acetyl L-Carnitine and Propionyl L-Carnitine are the most beneficial for the symptoms of the nervous and circulatory system. L-Carnitine L-Tartrate is mainly used for physical training purposes.

Acetyl L-carnitine capsules 1200 mg, Dosage: 2 capsules daily

Bugleweed is a medicinal herb that has been used for centuries in the management of metabolic diseases. Although there are not enough scientific studies to support it as a therapy for hyperthyroidism, positive testimonials from patients who have used it are valid evidence.

Bugleweed: liquid extract, Dosage: 40 drops in 2 oz. of water or juice between meals

Glucomannan is a fiber of plant origin that has been studied with special interest as a natural treatment for hyperthyroidism. The latest studies have found its effectiveness in decreasing the amount of circulating thyroid hormone.

Glucomannan capsules 600 mg, Dosage: 2 capsules a day; 1 before breakfast and 1 before dinner

In the case of hypothyroidism, it is recommended to increase iodine intake in the diet through seafood, eggs, and dairy products.

Also recommended is the intake of zinc and vitamin A, which can be found in carrots, nuts, and spinach. It is important to consume polyunsaturated and Omega-3 fatty acids, such as those found in salmon and tuna, which improve the absorption of thyroid hormone.

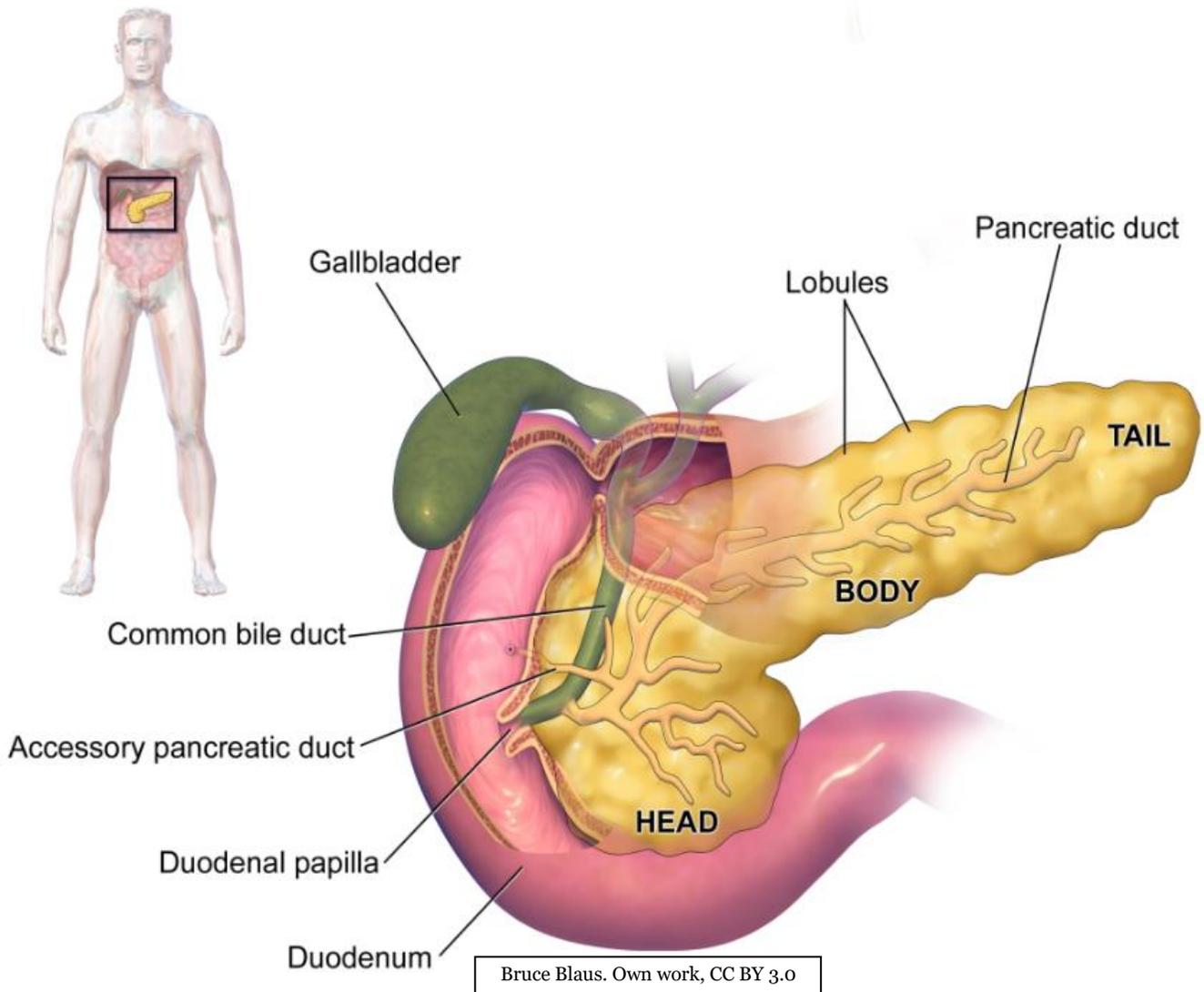
According to a 2006 review published in the official journal of the American Thyroid Association, it is advised to avoid the consumption of soy and its derivatives by hypothyroid patients since these foods decrease the absorption of thyroid hormone.

Finally, glutathione is a supplement that helps improve the immune system and thyroid damage.

Glutathione capsules, Dosage: 1 capsule daily

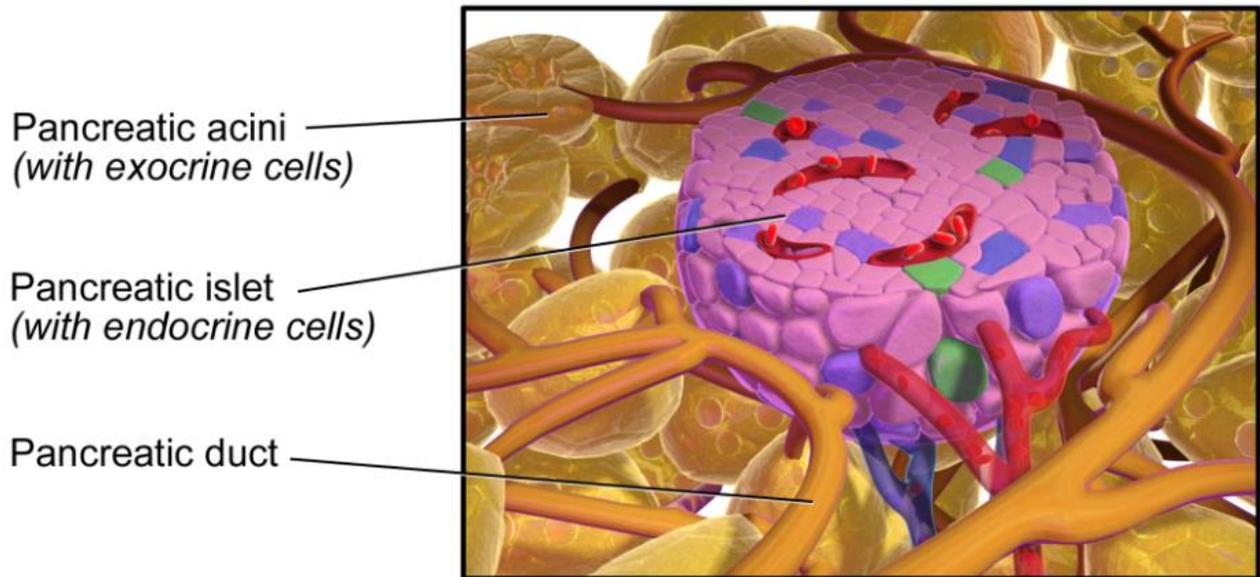
2. Pancreas: Diabetes Mellitus Types 1 and 2

The pancreas is an organ of the digestive system located in the upper abdomen, behind the stomach. It is in direct communication with the duodenum through a duct where it discharges digestive enzymes. It also has functions in the internal metabolism of glucose.



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The pancreas regulates the amount of glucose in the blood through the release of various hormones, with insulin being the most important in the process. The pancreas is said to be an organ with both exocrine and endocrine function.



Bruce Blaus. Own work, CC BY 3.0

Pancreatitis

Inflammation of the pancreas, or pancreatitis, is a process generally associated with the presence of stones in the gallbladder. In fact, it is one of the complications of this disease and one of the reasons why it is recommended that the patient undergoes surgery to remove the gallbladder as soon as the gallstones are diagnosed.

When one of the gallbladder stones is too large to pass through the bile duct, it blocks the flow of bile and pancreatic fluid. This begins the inflammatory process that leads to pancreatitis.



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The other major cause of pancreatitis is the patient's lifestyle. Obesity, high fat intake, high triglyceride levels, above 1000mg/dL, alcohol, and smoking are all triggers for pancreatitis.

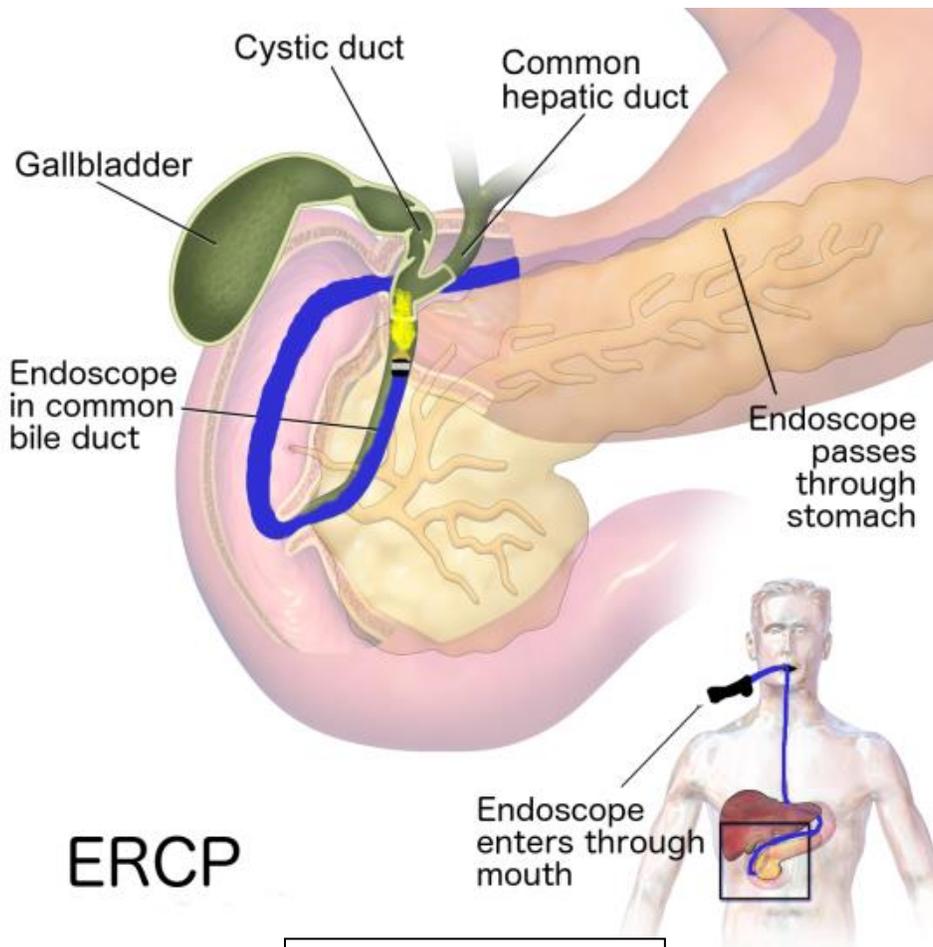
The main symptom of pancreatitis is a dull pain that wraps around the upper abdomen and involves the back. In Spanish, it is called a "bandlike pain pattern."

The definitive diagnosis is made by performing a CT scan of the abdomen that shows an enlarged pancreas and laboratory tests for pancreatic enzymes: Lipase and Amylase, which will be found to be elevated to about three times the upper limit of normal.

The problem with having a disease like pancreatitis is that its complications are serious, such as diabetes, and can even be fatal. When pancreatitis is suspected, it is important to start decreasing the intake of fats and grains to give the pancreas a rest.

The emergency service should be contacted immediately. A patient with suspected pancreatitis should be studied with the corresponding laboratory and imaging tests to corroborate the diagnosis.

In the event that the resultant pancreatitis is a gallstone obstruction, the blockage should be removed as soon as possible. This is done through a specialized study called endoscopic retrograde cholangiopancreatography (ERCP) and should not be postponed since complications include infection, sepsis, and death.



Drus1a, Own work, CC BY-SA 4.0

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Pancreatitis is a medical emergency that must be treated right away. However, if this is not possible, some of the patient's signs that indicate worsening should be taken into account: fever, increased breathing rate, continuous and progressive pain, and purple on the sides and around the navel.

These signs denote necrosis and destruction of pancreatic tissue that will likely require surgery and management in the ICU.



Herbert L. Fred, MD and Hendrik A. van Dijk, CC BY 2.0



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Diabetes Mellitus (DM)

Diabetes is a disease in which the patient has increased levels of glucose (blood sugar) over a long period of time. There are two types: type 1, or juvenile, diabetes, in which the pancreatic cells do not produce insulin, and type 2 diabetes, in which the tissues lose their affinity for insulin.

The symptoms of diabetes are increased thirst (polydipsia), increased hunger (polyphagia), and increased urination. In addition, patients suffering from this condition have progressive damage to the kidneys, eyes, and sensitive nerves of the hands and feet. The patient with diabetes loses sensitivity in their hands and feet (“glove-and-stocking anesthesia”), so it is common to have wounds in these places that later become ulcers that are very difficult to heal because diabetes affects the scarring process.

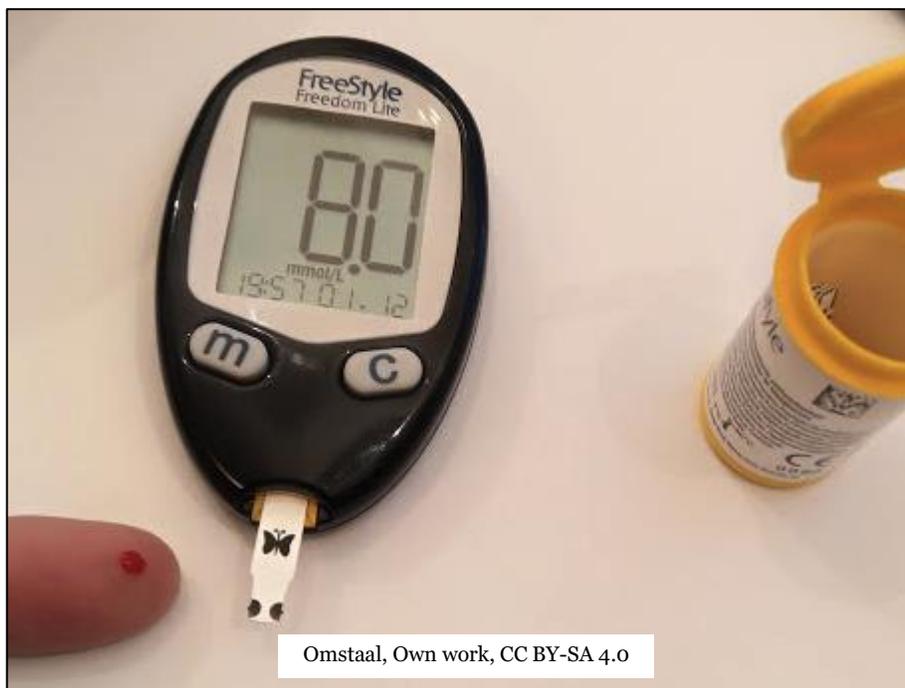
Type 1 diabetes is an autoimmune disorder in which the immune system attacks the cells that produce insulin by destroying them. Its symptoms occur acutely, usually in adolescence or youth. It is also called “insulin-dependent diabetes” because there is no other way to treat it but with insulin.

Type 2 diabetes develops over time. It starts with a condition called **insulin resistance**, which is reversible with lifestyle changes. At first it can be treated with oral medication, but if the process continues to progress, insulin will eventually need to be prescribed.

a) Diagnosis

The diagnosis is made by measuring blood glucose. The normal value is 80 to 110 mg/dL. A person with a value greater than 126 mg/dL after an eight-hour fast, or greater than 200 mg/dL at any time, is considered diabetic.

The measurement can be made with a small device called a glucometer. To use it, a blood sample is taken from the fingertip and placed on a special glucose measuring tape. This tape is inserted into the glucometer to give the result.



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I always encourage my diabetic patients to have a glucometer at home as it is an excellent tool for monitoring their blood sugar values when they are not feeling well.

Symptoms such as dizziness, confusion, blurred vision, and lethargy are often manifestations of hyperglycemia. If the increase in glucose is not treated, you run the risk of suffering the complications of the disease that can trigger coma and death.

Symptoms such as increased hunger, irritability, tremors, sweating, cold, loss of consciousness, or seizures are associated with hypoglycemia. A glucose reading below 80 mg/dL is considered hypoglycemia.

This emergency can almost always be managed at home with the ingestion of a teaspoon of sugar, water with sugar, or a piece of candy. More severe cases should be hospitalized for intravenous glucose solution. Once the affected person consumes sugar, the symptoms quickly reverse, and they return to normal within minutes.

b) Treatment

There is no medicine that cures diabetes. In the case of early type 2 diabetes and insulin resistance, drugs are given that increase tissue sensitivity to this hormone. In the case of type 1 or advanced type 2 diabetes (conditions in which the cells do not produce insulin), insulin is indicated.

For patients with type 2 diabetes, there are several natural options for glycemic management. One of my aunts is diabetic, and currently, in the area where she lives far from the capital, she cannot find her treatment, so she has had to use natural medicine, which so far have proved to be quite good in combination with some dietary and physical suggestions.

BERBERINE

Berberine is an extract from the roots of several plants that has long been used as a natural medicine to treat various metabolic conditions with considerable success. Although it is not well known how it works, in the case of diabetes, its results have been studied, and there is scientific evidence that it is able to lower blood glucose levels.

It is not advisable to take it together with a hypoglycemic such as Metformin, because the effect can be very strong. That is why I recommend taking it independently, recording glycemia levels every 4 hours.

Berberine capsules 500 mg, Dosage: 1 capsule before every main meal

APPLE CIDER VINEGAR

Apple cider vinegar is one of my favorite supplements, and I take it daily for all its properties. In the case of diabetes, it improves the sensitivity of the tissues to insulin; taking it together with the usual therapy helps to manage adequate glucose levels even on an empty stomach.

I take two spoonful mixed in on glass of water, on an empty stomach. If the taste doesn't sit well you, you can use it as a salad dressing or as a marinade for meat.

Do not take it undiluted, as it can damage the tooth enamel.

It is used to control stomach acid secretion, improve breath, and acidify skin pH. It seems to have effects on varicose veins and circulation, but they have not been completely studied.

ALPHA LIPOIC ACID

This supplement is very beneficial in the case “gloves and stocking anesthesia.” Using it for three months has shown excellent results in partially recovering sensitivity.

It also has a minor effect on increasing tissue sensitivity to insulin.

Alpha Lipoic Acid (ALA) capsules 300mg, Dosage: 2 capsules daily for 3 months

Lifestyle changes have beneficial effects on the diabetic patient and can reverse insulin resistance. Losing weight and exercising daily improve the sensitivity of tissues, especially muscle, to insulin so glucose is better metabolized.

Reducing carbohydrate consumption is important since during the digestion process, carbohydrates are converted into glucose.

A colleague once taught me a technique for remembering the best foods for diabetes: “If it grows above ground, it can be consumed. If it grows under the ground, it should be eaten in moderation.

If it is white, it should be avoided. And if it walks, flies, swims, or crawls, it can be eaten.”

Another important point is to get used to reading labels and not to buy the product just because it is special for diabetics.

Many times these types of foods compensate for the decrease in sugar by adding fat to maintain the flavor, so they are still harmful to your health.

3. Obesity and Metabolic Syndrome

Metabolic syndrome is a group of diseases that increase the risk of developing cardiovascular complications.

If a person has three or more of the following characteristics, metabolic syndrome is diagnosed:

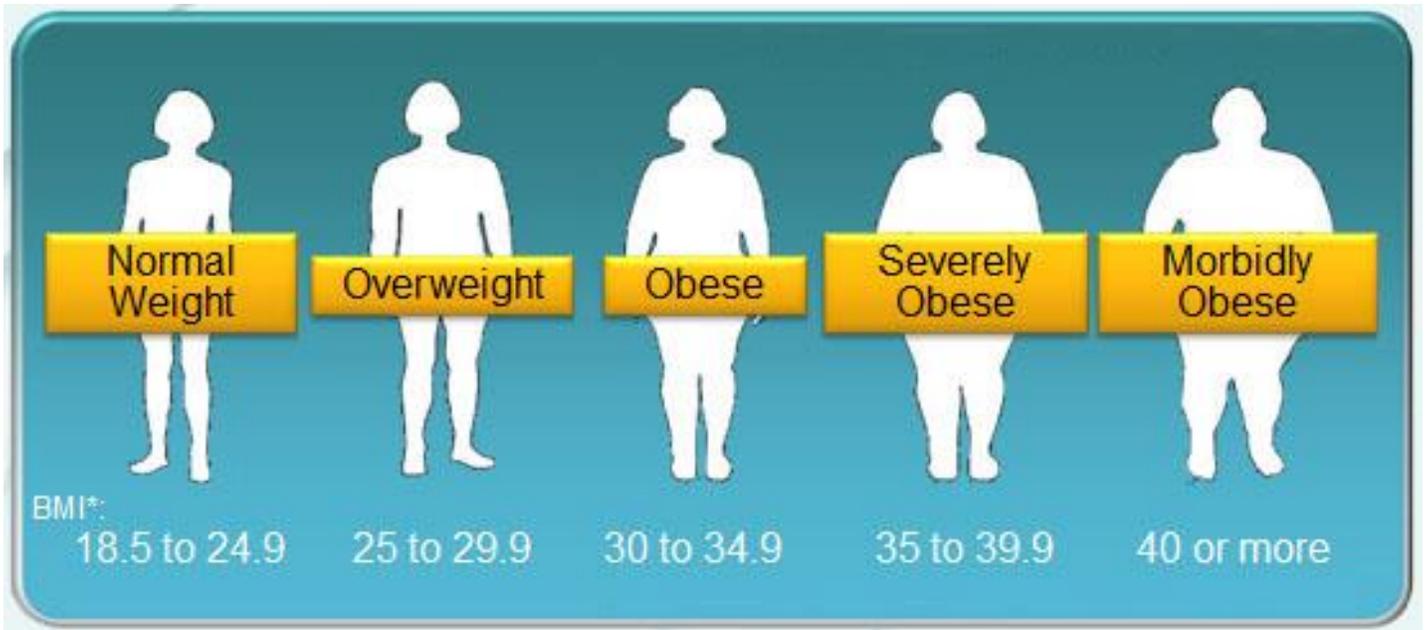
- Abdominal obesity: Waist circumference greater than 40 inches in men, and 35 inches in women
- Triglyceride level of 150 mg/dL or greater
- HDL cholesterol of less than 40 mg/dL in men or less than 50 mg/dL in women
- Systolic blood pressure of 130 mm Hg or greater, or diastolic blood pressure of 85 mm Hg or greater
- Fasting glucose greater than 100 mg/dL

Each of these conditions is a risk for cardiovascular disease, but when they are part of a group, the risk increases dramatically, putting the patient’s life at risk.

Metabolic syndrome can be reversed if lifestyle changes are made. If you lose weight and exercise at least 30 minutes a day, your blood pressure values will drop and your tissues will become more sensitive to insulin, lowering your blood glucose value.

Obesity is measured by the value of the body mass index (BMI), which is calculated using the formula $\text{weight (kg)} \times \text{height (meters)}^2$.

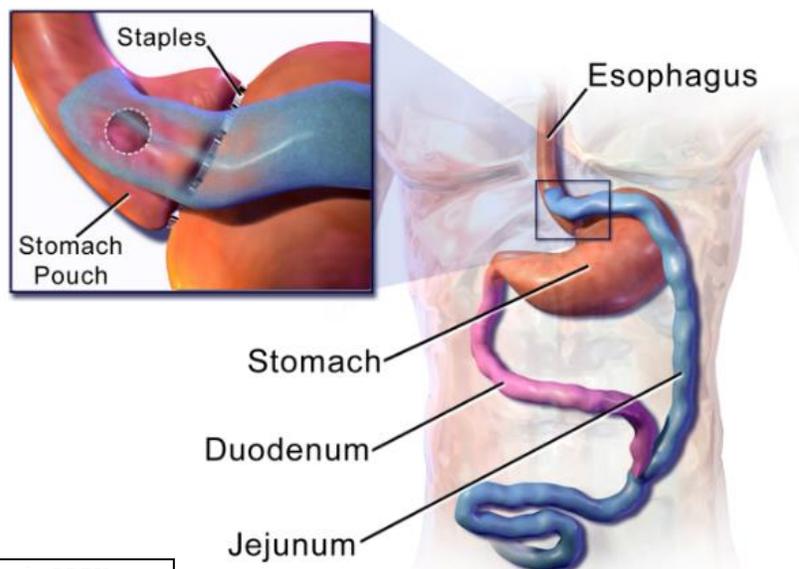
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Thiruthonti, CC BY-SA 4.0

Obesity is a metabolic disease that increases the risk of hyperlipidemia and hypercholesterolemia (increased blood fats and cholesterol). In addition, it conditions the poor management of glucose as tissues tend to lose their sensitivity to insulin.

We've all known obese people who lose weight and then have a rebound effect and gain even more than they had lost. Most spend a large part of their lives this way, subjecting the body to the stress of this hormonal and systemic imbalance. These patients are the perfect candidates for obesity surgery or bariatric surgery. This procedure helps the patient to lose weight by means of the restrictive mechanism, cutting out a good part of the stomach, and the malabsorption mechanism.



Blaussen.com staff, Own work, CC BY 3.0

After bariatric surgery, patients lose approximately 50% of their weight within six months of the procedure and reach their goal weight between one and one and a half years after the surgery.

Although other bariatric techniques have been used that include only the restrictive mechanism, such as sleeve gastrectomy and gastric banding, none has shown as good of results as the gastric bypass. This is why it remains the standard for the treatment of morbid obesity.

It has been shown that after significant weight loss as well as bariatric surgery, metabolic syndrome begins to improve. Blood pressure levels improve significantly as well as glucose levels. Over time, the abdominal circumference also decreases. This eliminates all cardiovascular risk factors.

Nutritional Supplements in the Bariatric Patient

Since this procedure consists in part of leaving the patient with a definitive process of digestive malabsorption, nutritional supplements should be indicated for these deficiencies. Vitamin B complex, vitamin A, iron, and zinc are important to prevent anemia.

In the post-bariatric patient, hair loss is observed, among other things, due to deficient protein absorption, especially during the first months after surgery, when it is not easy for them to eat a complete meal.

For this reason, whey or vegetable protein supplements are indicated, according to their habits and preference, to complete the amount of daily protein needed and not to fall into malnutrition.

Currently there are specific multivitamins for post-bariatric patients that contain all the necessary vitamins at the right dose.

NERVOUS SYSTEM

The nervous system is the part of the organism that is responsible for directing the motor elements and interpreting the senses in order to function properly. Through the nervous system, we can relate to the environment around us.

It is divided into central and peripheral. The former consists of the brain and spinal cord and the latter of all the nerves and neurological cells in the body.

As it plays such an important role, diseases involving the nervous system manifest themselves with very noticeable symptoms, whether they are involuntary movements or loss of muscle strength.

When a person complains of some discomfort involving motor or sensory deficits, we must be vigilant as these may be some of the conditions affecting this system.

WHAT DAMAGES THE NERVOUS SYSTEM?

Conditions related to the nervous system can be traumatic, infectious, or degenerative. Traumatic injuries are quite frequent, and their consequences may be reversible in many cases but will depend on the type and mechanism of the injury.

Infectious diseases can be bacterial, viral, or fungal; bacterial diseases affect children more frequently. The degenerative causes are chronic diseases, such as Alzheimer's, Parkinson's disease, and multiple sclerosis, which all evolve over time.

EVALUATION OF THE NERVOUS SYSTEM: HOW DO I KNOW IF THE PATIENT IS OKAY?

The physical examination involving the nervous system is one of the most fun and logical in the field of medicine. There are no tricks or ambiguities; everything is quite clear because each nerve controls a specific part of the body, and each area of the brain has specific functions.

The examination of the nervous system begins, as always, with questioning. This is followed by a physical examination, which in this case involves muscle-tendon reflexes, sensitivity, and muscle strength.

By simply talking to the person, we are already assessing the brain areas and their temporal and spatial orientation. Questions such as "What day is it?", "What year is it?", or "What is your full name?" tell us if the patient has any level of amnesia or confusion.

Muscle strength is assessed by asking the patient to squeeze your hands simultaneously with full force. Lower limb strength is also tested with the patient sitting up and pushing up while you try to lower the leg.

In medicine, when we examine paired organs, it's all about comparison.

The sensitivity of the skin is examined with a sharp element and a soft one (it can be a needle and a cotton ball); that way we can know if the person has lost sensitivity and to what degree.

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There are conditions in which the cotton ball cannot be felt but the needle stick can be felt. These changes have different interpretations. You have to be meticulous.

There are professional tools, such as the *neurological hammer*, that come with some items to evaluate sensitivity.



Ali Raheem, Own work, CC BY-SA 3.0

With the hammer, which is actually a strong rubber mallet, you can evaluate the skin muscle reflexes. The easiest one is the knee, or patellar, reflex, and it helps us to see the proper functioning of the communication between the brain and the muscles.

With the patient seated, take his or her leg behind the knee and strike the ligament between the knee and the leg with the hammer. This forces the person you are examining to kick involuntarily.

My idea is not to teach you a professional neurological exam but to show you the basics so that you can make a diagnostic approach and understand how serious the situation is that you are facing.

1. Parkinson's Disease

Parkinson's is a degenerative disease that affects the central nervous system, specifically manifesting itself with motor symptoms such as tremors and stiffness, among other symptoms.

It is common in the elderly even though it can also be seen in young people, although in much smaller numbers.

It is believed that there are genetic factors, that is to say, if there is more than one member of the family with the disease, there may be some hereditary component.

Its slow evolution and its primary signs can go unnoticed. At first, the lack of expression of the face, known as facial masking, is a sign with which a specialist can make the diagnostic approach, although it must be related to other motor symptoms, such as fine tremors and rigidity.

As the disease progresses, the person becomes slower in their motor responses, including speaking and walking.

Parkinson's patients have a very characteristic tremor in their hands. It is a continuous movement of the fingers toward the thumb, as if making a circle or rolling a spherical object. It's called pill rolling tremor.

Behavioral symptoms, such as depression and anxiety, are also associated with motor signs and can be seen in the early stages of the disease. However, they often go unnoticed.

How Can I Care for a Parkinson's Patient at Home if Asking for Help Is Not an Option?

Parkinson's disease has no specific treatment. It is a degenerative disease that gradually progresses to its final stages, when the patient has almost complete rigidity of the body.

If it is necessary to pay attention to a patient with this disease, and the first thing we must know is what stage he is in and what type of treatment he is on.

The therapies are symptomatic; usually antidepressants or anxiolytics are indicated because they help with the behavioral part. Some other drugs improve the motor symptoms.

Remember that this patient can get frustrated quickly; it is important to try to make everyday things simpler for him so that he can achieve an easier relationship with the environment.

The Parkinson's patient can and should do activities as it keeps them active and they can have better control over their body. Activities such as yoga, walking, and Tai Chi, among others, are excellent tools for achieving this goal.

Remember that the person with Parkinson's disease may have motor problems but is not disabled. There are activities they can do independently, and it's good for them to feel useful.

As a caregiver, you may feel sad and frustrated knowing that this disease is incurable and irreversible. That's why it's important to take time for yourself when not involved in the care of the sick person.

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Meditating, listening to music, or doing some relaxing activity will take your mind off the role of caregiver.

On the web, you can find a lot of information about the disease as well as support groups. These types of groups are not for everyone. However, knowing that there are other people in your situation who have success stories always helps.

At the Michael J. Fox Organization, you can find information about available support groups and treatment strategies that are currently being researched.

Actor Michael J. Fox (*Back to the Future*) started the Parkinson's Disease Research Foundation in 2000. He was diagnosed with the juvenile variant of the disease in 1991, when he was 29 years old.

I was always a fan of his work, and after I learned about his illness, I followed the struggle he is leading to get resources approved for treatment research.

This is the speech he gave to the U.S. Senate explaining, simply and powerfully, the problems a person with the disease faces.

The day he attended he did not take his medication so that everyone could see how the motor part of the affected patient behaves.



Michael J. Fox speaks about
Parkinson's disease

Can Parkinson's Disease Be Prevented?

There are many theories regarding this question, but since the etiology is not clear, it is difficult to establish prevention.

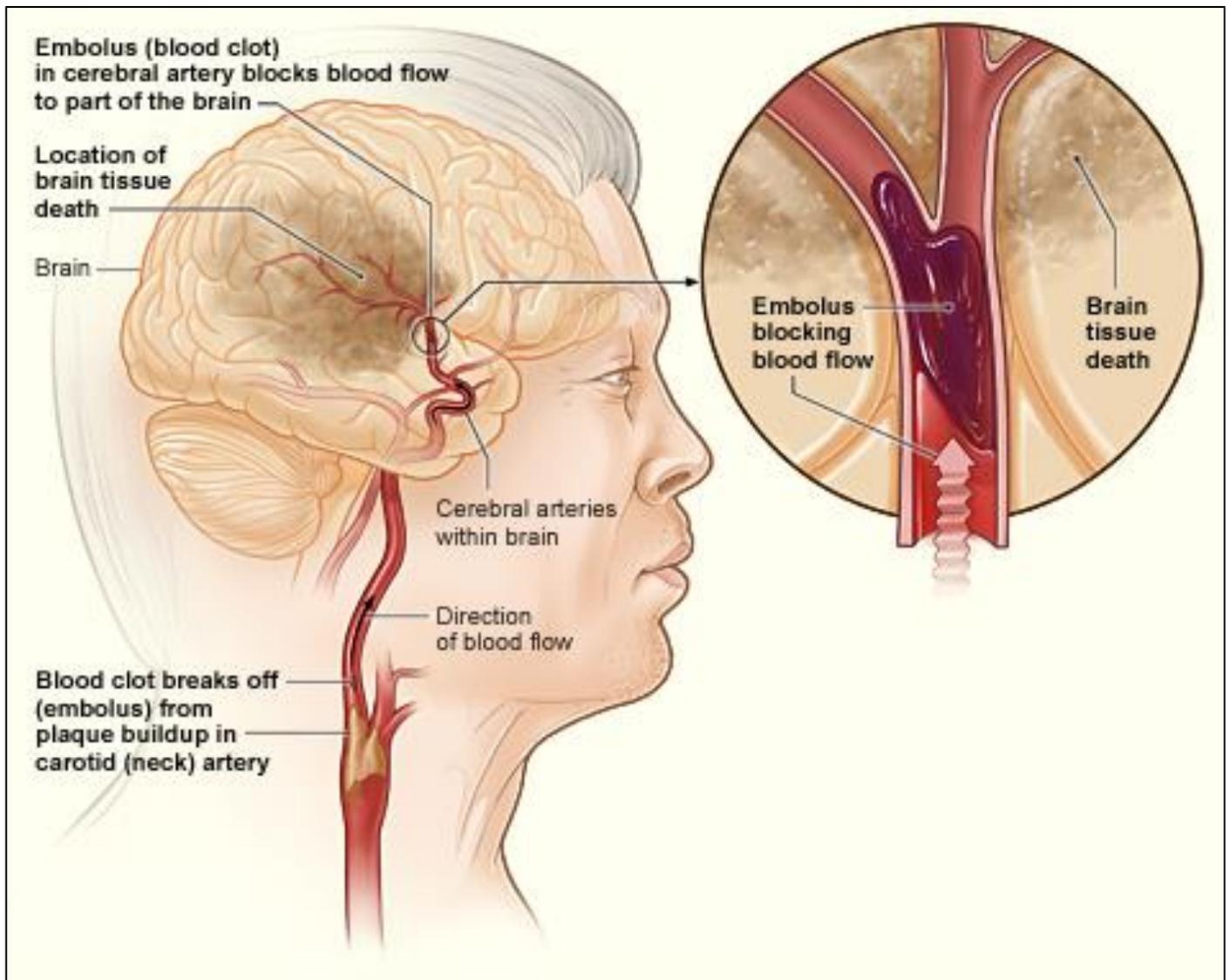
Throughout the years of research, it has been seen that people who carry out regular exercise and physical activities are less likely to develop the disease. And those who do develop it have a lower complication rate.

A favorable relationship was also observed with caffeine consumption. Coffee drinkers develop the disease to a lesser degree. As I said before, these are theories, and the only evidence we have is observation. Scientifically, there is no known prevention of Parkinson's disease.

2. Stroke

A stroke is a medical emergency that requires immediate attention. Sometimes it brings serious complications, and sometimes it can be resolved without major problems.

Not all strokes lead to death or paralysis. Even when the patient is left with some consequences, a high percentage can improve completely with the help of physical or verbal therapy.



Ischemic strokes occur because a blockage in the artery prevents blood from flowing normally to the brain.

This can be due to local damage, fatty plaques (atherosclerosis) inside the artery, or a clot that forms in the heart and travels through the larger arteries but gets trapped in the smaller ones.

Symptoms

Ischemic stroke causes a heart attack in an area of the brain. This means that the blood supply is stopped because of a blockage in an artery that reaches a specific area of the brain.

The symptoms will depend on the area affected, but there are three symptoms that are common to all ischemic strokes. The best way to learn the symptoms to identify an ischemic stroke is through the mnemonic **FAST**. This acronym stands for:

- **F**ace drooping
- **A**rm weakness
- **S**peech difficulty
- **T**ime to call 911



In the photo above, you can see the asymmetry in the patient's facial expression. On one side, she can open her eye wide and expression lines can be seen, while on the other side, the mouth is fallen, the eye is halfway closed, and her forehead is not wrinkled.

No matter what area of the brain is affected, these symptoms will always be present and must be recognized.

IF A STROKE IS SUSPECTED, IT IS ABSOLUTELY NECESSARY TO CALL 911.

3. Transient Ischemic Attack (TIA)

Also known as a “mini-stroke,” TIA is a condition similar to an ischemic stroke. It works as a kind of alert for the patient because when suffering it, he has a great possibility of having a stroke in a few years.

The physiopathology is exactly the same. In these cases, the clot or atheroma plaque does not manage to completely obstruct the blood flow or does so for only a short time.

A few years ago, I was working for a breast cancer NGO. The director was undergoing special treatment because she had suffered from breast cancer a year ago and had to continue her hormone therapy.

One day she arrived dressed in what looked like pajama bottoms and a dress shirt, talking about events that had already happened and not recognizing her personal secretary.

I decided to question her in her office and noticed that she was very confused, so I called the emergency service, which quickly took her to a center for further examination. She had a transient ischemic attack that manifested itself in this way.

Although I had never seen this type of presentation before, it was easy to observe the erratic behaviors, from the clothes to the conversations she was having at the time.

The treatment she was taking for breast cancer, increases blood clotting, so one of those little clots must have traveled to get stuck in an arteriole and eventually continue into the circulation.

While the lack of blood flow lasts, the patient presents symptoms identical to the ischemic stroke, but once the blood flow returns to normal, the symptoms improve. It usually lasts a few hours, and within a day, the patient is recovered.

4. Seizures

Seizures are sudden, involuntary movements that occur because of a problem in the brain’s electrical activity. The movements are most clearly seen in the arms, hands, and in the face. The lips tend to make a movement that resembles suction. The expressionless face and dilated pupils are also obvious signs that the person is having a seizure.

Working as a general practitioner, I was able to attend to several seizure episodes in non-epileptic patients, which was a relatively frequent reason for consultation. A seizure can be triggered by drug interactions, especially psychotropic drugs such as Tramadol, a fever over 100°, head trauma, and strokes. Some people suffer from epilepsy, which is a condition characterized by periodic seizures. These patients are usually diagnosed at an early age and maintain lifelong treatment.

How Do I Know Someone Is Having a Seizure and What Should I Do?

Recognizing a seizure is easy. It is an unconscious patient with repetitive, jerky movements who expels large amounts of saliva from the mouth, like foam. These movements make the muscles very tight and can cause the person to hit their head and bite their tongue, causing injury.

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During a seizure, you should try to stay calm. Before you call for emergency services, it is important to treat the patient so that he does not hurt himself.

A seizure can take less than a minute. During that time, it is necessary to assist the patient. The 911 call should be made, but it is essential to attend to the urgent situation.

Place the patient in a horizontal position, and put the head to the side to prevent choking on saliva or the tongue. If the seizure is starting, you can tuck a tissue between the teeth to prevent tongue damage.



Melanie Bui

Check for details such as sphincter relaxation, meaning involuntary urination or evacuation, and keep track of the time the seizure lasts. This will be important information for the emergency team.

After the seizure, the patient may be very confused, with amnesia of the last minutes before the episode, and sleepy. Try to calm them down and explain what happened while waiting for professional help.

IMMUNE SYSTEM

The immune system is a defense structure that acts to protect the host. The human immune system is complex and consists of two parts, one innate and primitive, which is with us from birth, and another that is learned by specialized cells for that purpose.

The skin is our main barrier against the adverse elements of the environment. It is the largest and most visible organ of the immune system. We develop protection against allergens, bacteria, viruses, and other microorganisms over time.

A newborn baby has been exposed to almost nothing, so it only possesses the primitive immunity and some cells of the mother's immune system.

This is why the mother's care during pregnancy is always encouraged, including a good diet and prenatal vitamins, since these cells are the ones that will help the newborn during the first weeks, along with the breastmilk.

The human being has several organs that are specifically responsible for immunity through the creation of antibodies against the pathogens we face. That's actually how vaccines work in the body.

For example, a 20-year-old person will have already had several diseases, such as flu and maybe chicken pox. However, if he is faced with a new pathogen that his system does not recognize, he will have a mild immune response.

But that pathogen within the body is studied by specific cells with cellular memory. These memory cells, which already know the pathogen, are cloned into some of the organs of the immune system, and that patient is protected from further infection by that organism.

Another example is when young children leave the house to start school or daycare. The first few days, dealing with other children and a different environment from home will lead you to get small infections in a row, over a period of time.

After a couple of months that same child can be with his peers without any health problems.

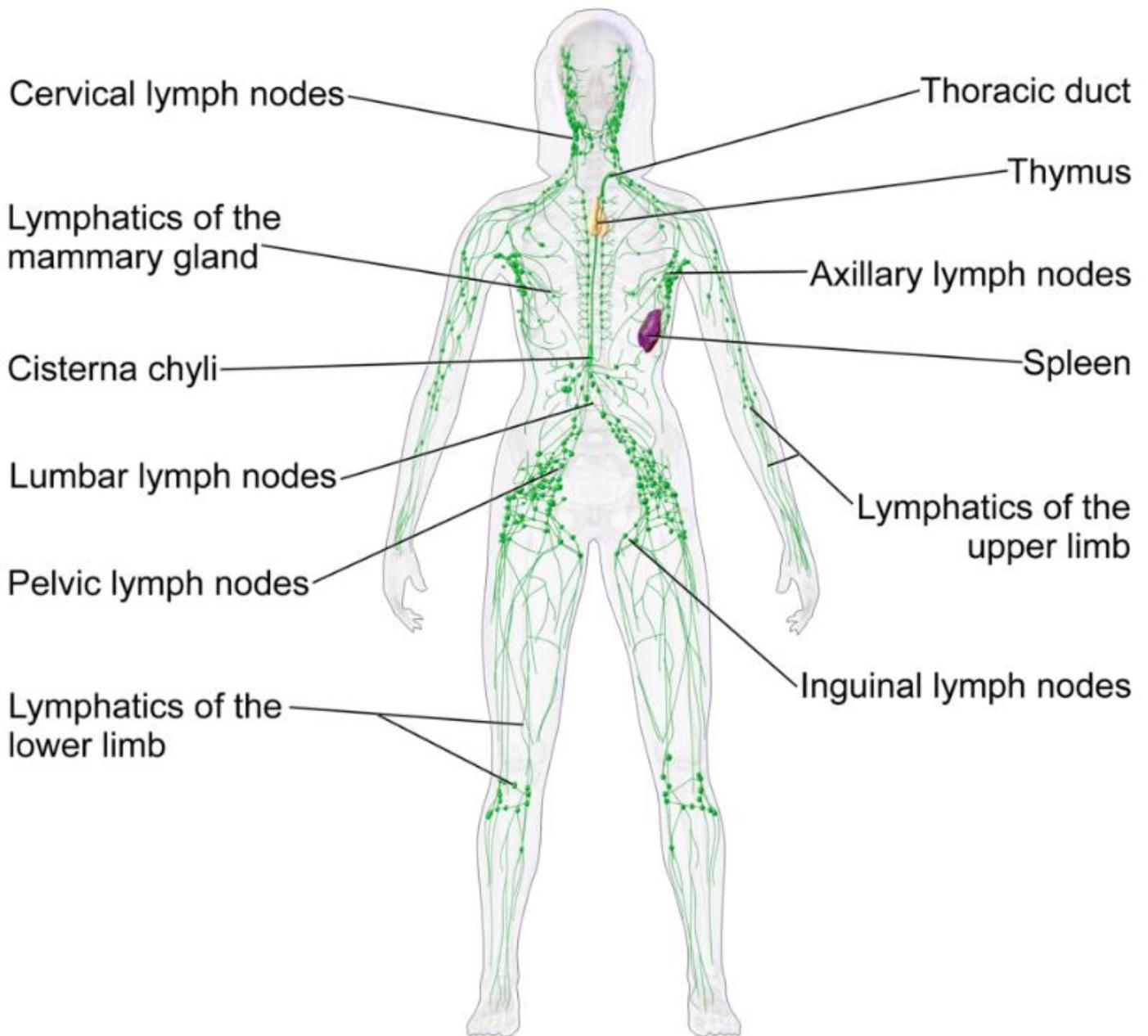
1. Lymphatic System

The lymphatic system is a collection of organs and vessels that are part of the circulatory and immune systems.

I like to explain this system in a simplified way so that the important task it fulfills can be properly understood. So, the lymphatic system is in charge of filtering, retaining, and destroying microorganisms and toxic products and returning that filtered liquid to circulation.

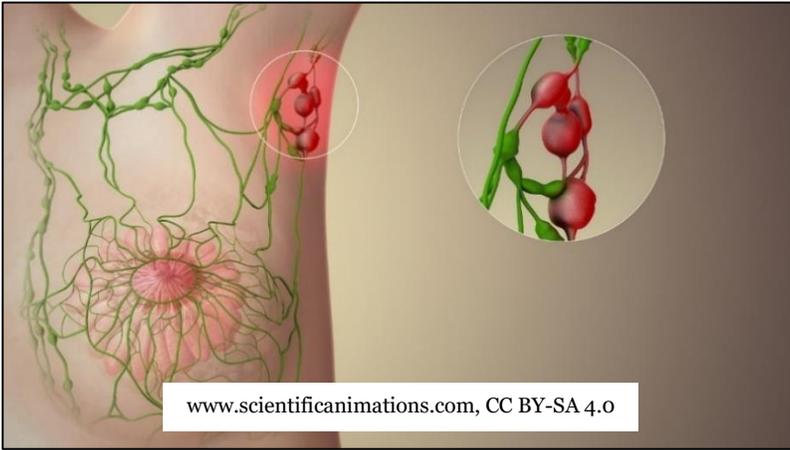
The lymphatic vessels are located throughout the body and have lymph node stations, which are located together at specific sites. These are stations where filtration occurs routinely.

When bacteria are lodged in the lymph nodes, they increase in size as a sign of inflammation. You may have felt them in your neck when you have the flu.



Bruce Blaus. Own work, CC BY 3.0

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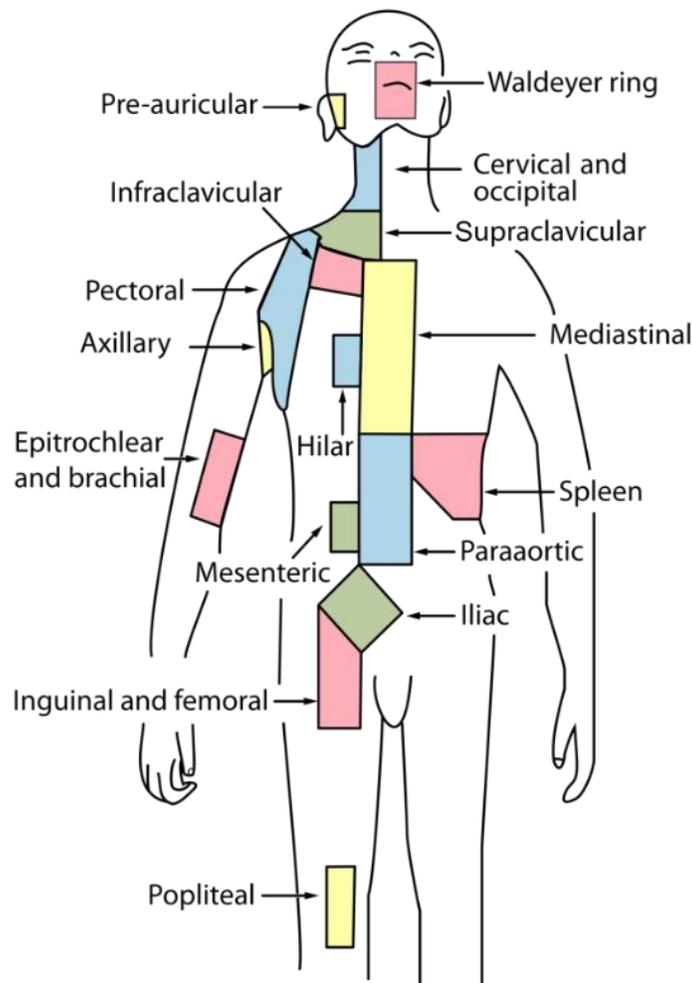
Tumor cells also travel through this system, if they manage to reach it, and invade the lymph nodes. They progressively increase in size until they become part of the disease. This is known as nodal metastasis.

Lymph nodes are very complex structures with their own circulation and play a very important role within the whole organization of the immune system.

They are responsible for trapping microorganisms and bringing them into

contact with specialized cells called antigens (antibody generators) for detection and creation of late recognition cells.

There are ganglion nodes throughout the body, but they are organized in strategically placed filtering stations as sentinels for each area of the body. The more superficial ones can be examined through palpation and are important markers of some diseases, both benign and malignant. Below you can see a diagram of the lymph node regions.



**LYMPH NODES
REGIONS**

How Do I Know if My Nodes Are Enlarged?

Examining the enlarged nodes is a matter of practice. Lymph nodes are usually not palpable. When they are, this is due to pathological processes, either infectious or tumoral.

It is preferable to try to palpate those that are easier to locate: the cervical nodes, which are on the sides of the neck; the axillary; and the inguinal nodes.

Sometimes they are so big that you can see them with the naked eye, like the one in the picture. Nodes that are this big usually mean mononucleosis or cancer.



As a mastologist, I have a lot of experience palpating nodes as it is important for me to see if the tumor process in my patients has spread to the armpit. I always explain to my patients that nodules that are infectious have completely different characteristics than tumors. When there is an infection, the nodule is painful because it becomes acutely inflamed within a few days.

In contrast, in a tumor, the nodes have been growing for a long time, which gives the body time to adapt to this new size. That is why they are not painful and are very hard; they are described as stony.

When they are infectious, they are rather soft, even if their size is large. There are chronic infections that cause gingival disease with true abscesses. One of them is glandular tuberculosis.

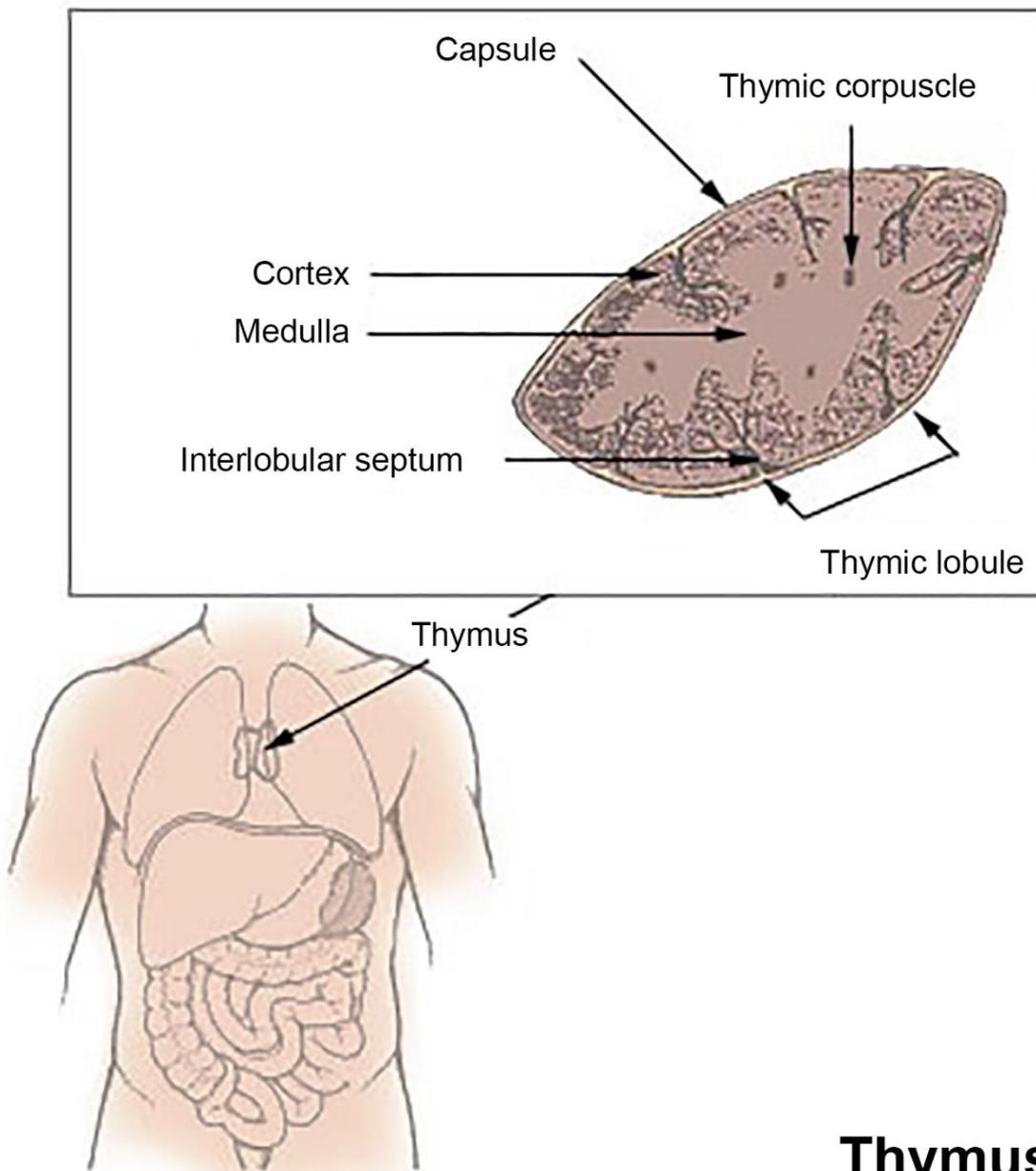
My recommendation, so you can learn to feel the ganglia properly, is that you try to do it if someone is sick or has a hand or head injury. That way, by gently feeling with your fingers the areas of the armpits or neck, you can find these smooth, round formations that lie deep within the tissues.

It is common for people with breast prostheses to have palpable axillary nodes as this foreign body creates a chronic inflammation process. These nodes alone have no significant clinical relevance.

Organs of the Lymphatic System: Spleen, Tonsils, Appendix, Thymus, Bone Marrow

While lymphatic tissue is spread throughout the body, there are organs that are specific to creating cells that specialize in host immunity. These organs contain tissue with its own cells and lymph cells.

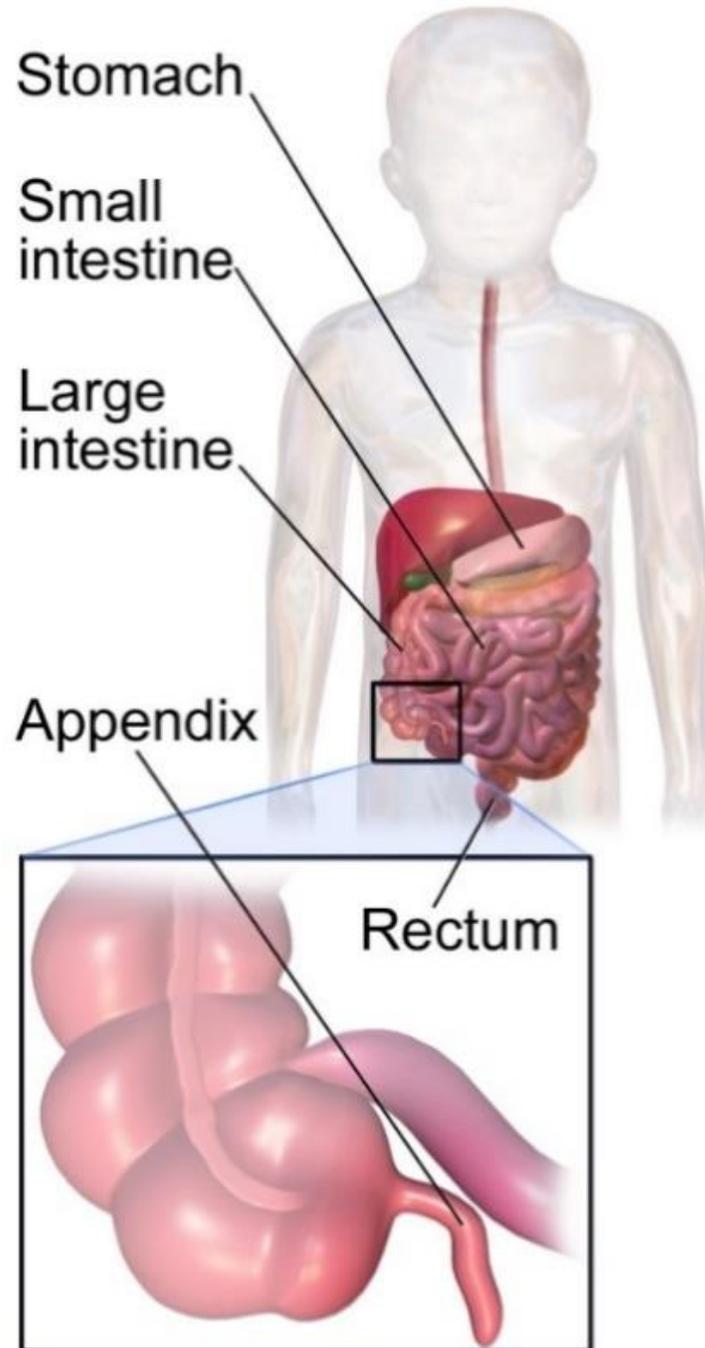
The thymus is an organ that is found only in childhood but later atrophies and disappears completely in adults. However, it is part of this system and protects the most vulnerable.



Thymus

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As for the vermiform appendix, until relatively recently, its function was unknown, and it was thought that it was only a remnant that would eventually stop appearing in more phenotypically evolved humans.



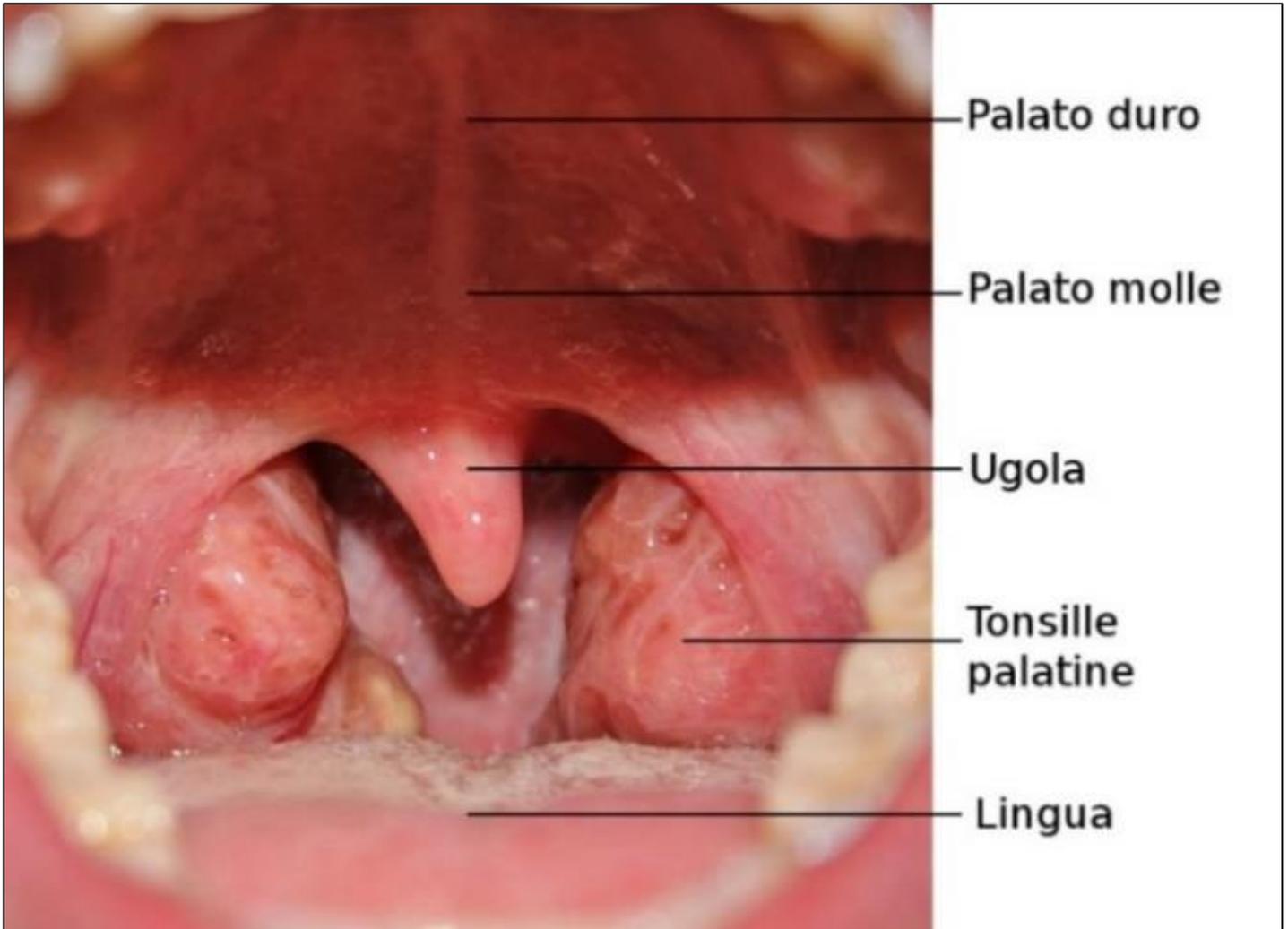
Location of the Appendix

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However, it is now known to play an important role in pathogen uptake and mucus formation that aids in nutrient absorption.

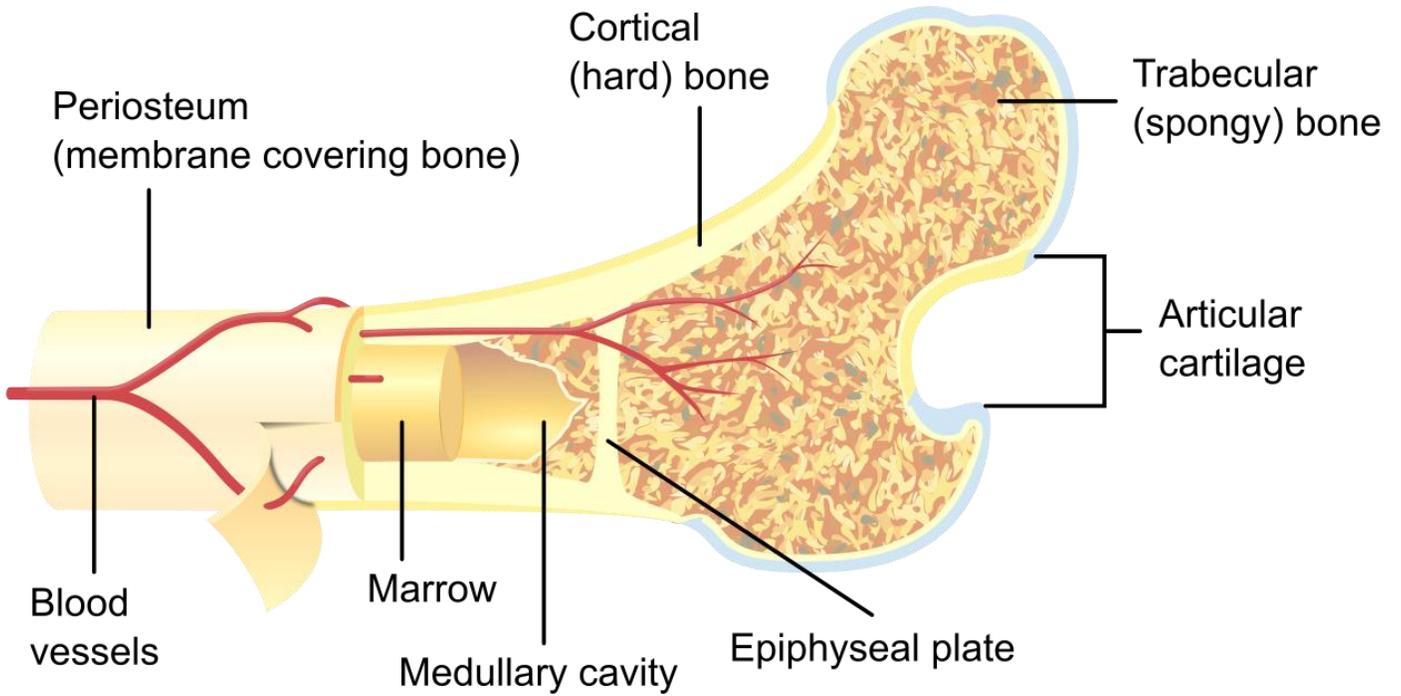
Its tissue is very similar to that of the tonsils, which also become inflamed by some viral or bacterial processes that attack the upper respiratory tract.



Adert, CC BY 3.0

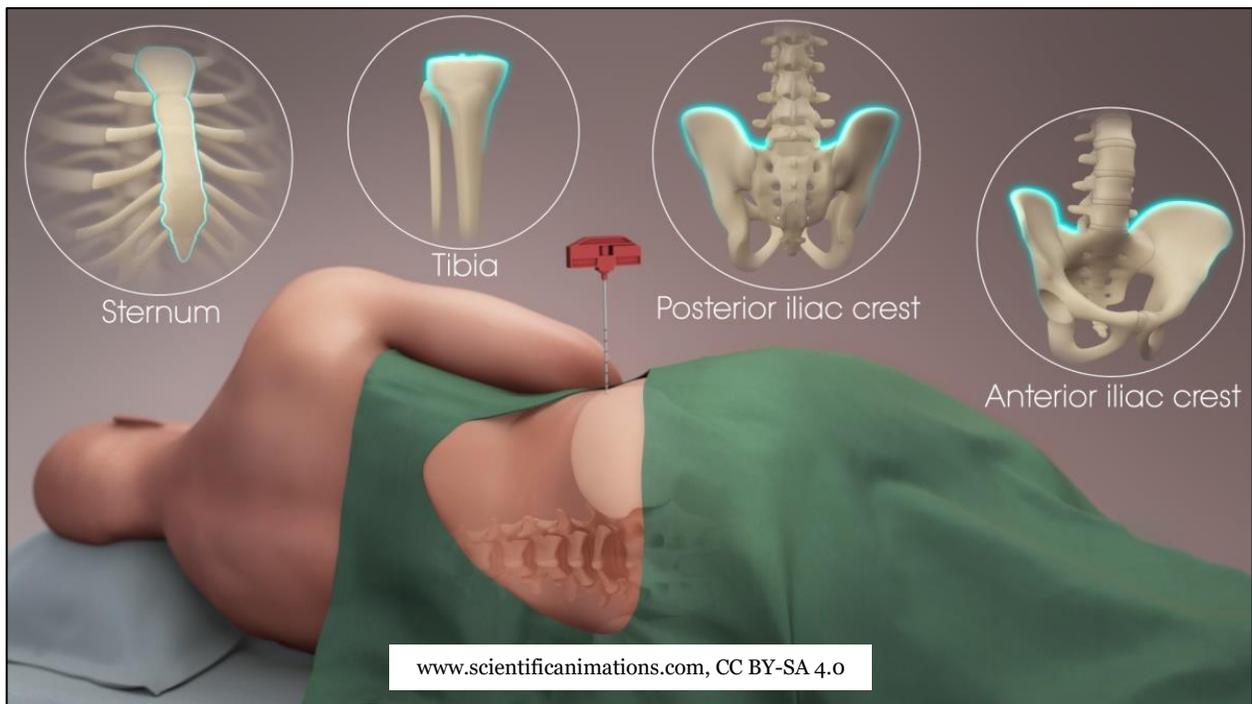
The spleen and bone marrow are cell-forming organs. The bone marrow forms primitive cells that specialize in one of the chains of the circulatory system (see picture on the next page).

This is where red and white blood cells are formed as well as other blood cells.



Pbroks13, Own work, CC BY 3.0

The bone marrow is the organ where hematological diseases such as leukemia begin. A painful bone puncture is used to diagnose the disease and to perform transplants if necessary. Although all bones contain spinal tissue, some are more accessible and resilient, so they are preferred for performing these procedures. In the figure below, you can see these sites.



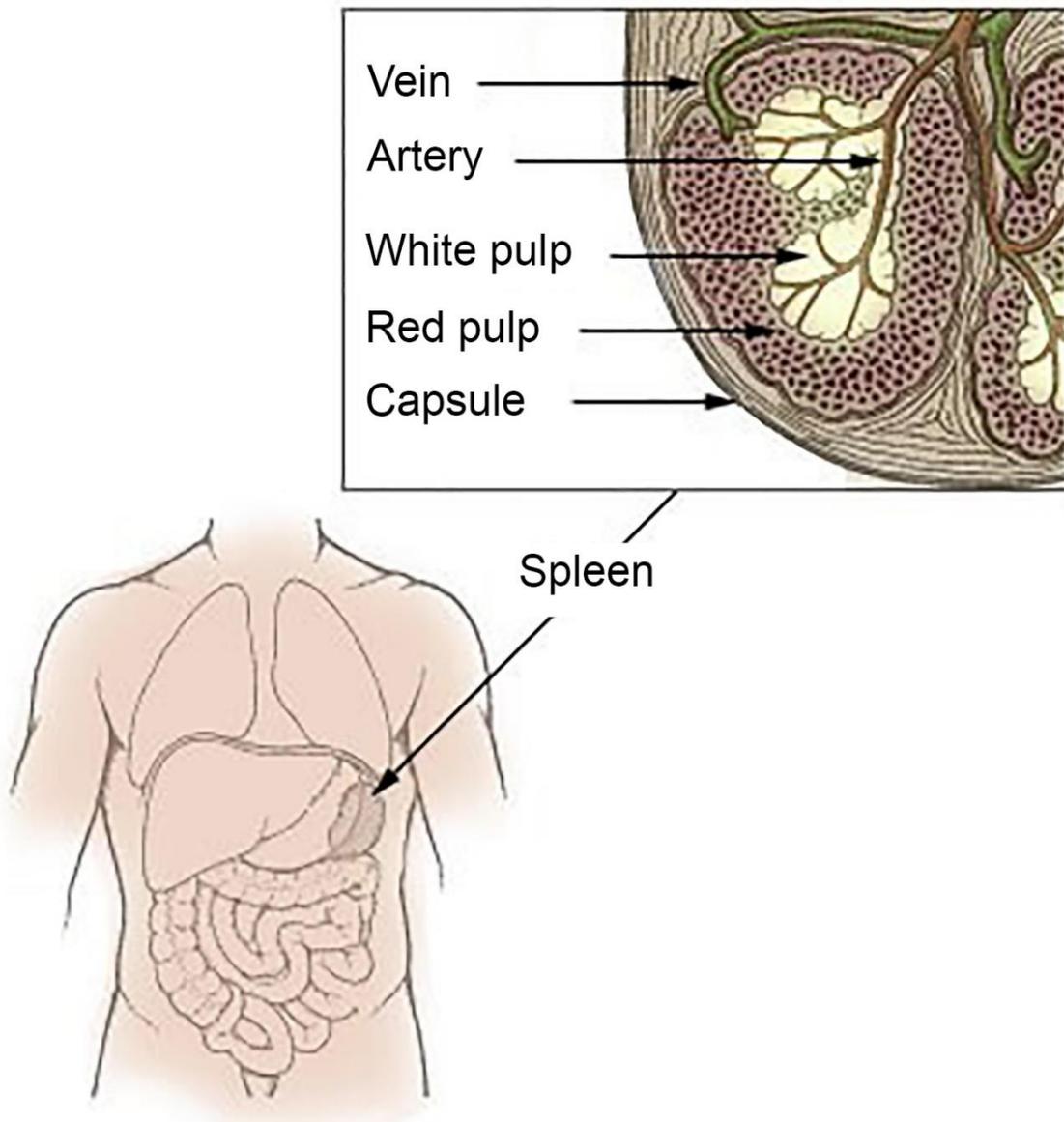
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The spleen is an organ that fulfills an important immune function as a cell maker and protector of the body. It is also a cell builder that has great activity during the fetal period.

It works in conjunction with the bone marrow.

Spleen



When it becomes diseased for any reason and has to be removed, the patient should be vaccinated with Pneumovax 23, the pneumococcal vaccine, and meningococcal because they are at risk for complications of influenza, pneumonia, and meningitis infections.

2. What Can Disturb My Immune System?

In addition to the diseases of immunity, there are everyday situations that weaken our immune systems. Stress, which has been called the “epidemic of cities,” tops that list. I am among those who live in the midst of work and housework, without much time for leisure. While keeping busy is important for many of us in our professional development, it’s not the best for the body. Like fatigue, when the body needs a break, it simply puts different mechanisms to work to get you to stop for a while.

Poor nutrition is a major trigger of disease because of low defenses. Food is fundamental in the process of cell formation. Without adequate nutrition, the little the body can salvage as fuel is directed to the vital organs, leaving the rest neglected. Thus, malnutrition can lead to anemia, and low defenses are the logical consequence.

Malnutrition brings many associated problems, some of which are infection with opportunistic pathogens. These types of microorganisms are those that under normal conditions rarely enter the body.

However, they take advantage of any situation of diminishing protective barriers to make their triumphant entry. Some types of fungi, tuberculosis, and some skin infections, among others, are some of these infections.

3. How Do I Strengthen My Immune System?

Simple habit changes, such as daily exercise, will keep your immune system at acceptable levels. If you add to that a proper diet consisting of proteins, whether animal or vegetable; healthy fats; and vegetables, you can be sure that you will stay healthy.

However, there are some foods that help us strengthen and maintain our defenses at 100% of their potential. If we cannot leave the house and we cannot exercise as we are used to, it is necessary to keep our defenses at the highest possible level.

One of my favorite recipes is **golden milk**. This is an Indian drink that goes back thousands of years. It has been used as an anti-inflammatory, digestive aid, and relaxing and restorative sleep aid. I prepare it by mixing in a cup of milk (I use almonds), two tablespoons of turmeric, one tablespoon of cinnamon, a teaspoon of freshly ground black pepper, and ginger.

Green tea is another of my favorite drinks. It’s a top-notch antioxidant as well as a diuretic. It increases the rate of metabolism and is an aid to the oxidation of body fat. I do not recommend taking it after 5:00 p.m. as in some people it has an excitatory effect on the central nervous system.

Vitamin C is absolutely necessary in the defense against daily pathogens and even more so against new ones. Do not exceed the daily vitamin C consumption however.

The recommended daily amount of vitamin C is 90 milligrams for adult men and 75 milligrams for adult women. Many, many foods contain it, and there are also many supplements.

We all know that citrus fruits contain vitamin C; however, few know that broccoli, spinach, and brussels sprouts are among the most complete foods in terms of the supply of this specific vitamin.

In my country, there is no shortage of the famous **chicken foot soup** when it comes to raising the defenses and fighting any kind of ailment. This extra-collagenous preparation has many benefits at an immunological level and, above all, at a bone level. If you are adventurous, dare to give it a try.

As you have realized throughout this book, **garlic** is one of the foods with the most properties, so of course, it improves the immune system. Whether you start adding it to your food, drink it as a tea, or take it in capsules if you don't like the taste, it will give you all the benefits this food provides.

Garlic capsules 500 mg, Dosage: 2 daily

Acai is a fruit I was familiar with in the Amazon. They use it for many purposes, from food to ornamentals. I had seen this fruit many times growing on the palms one finds on the beach. However, I had never paid attention to it, so I didn't even know it was edible. They say this fruit strengthens and restores your defenses if you've been in the rain or in the river for a long time. Its consumption is also indicated in the elderly and in people with muscle or joint pain. It can be eaten fresh with the skin, and it tastes great. A few years ago, it became very popular in the world of fitness as it is considered a superfood that provides excellent nutritional and health benefits. From that moment on, this fruit has been named much more in preparations such as smoothies and fruit bowls. Where fresh fruit is not available, there are liquid, capsule, and powder supplements that will also give you the benefits of the fruit.

Acai capsules 300 mg, Dosage: 2 daily

Finally, I must mention that rest is absolutely necessary to maintain good health, not only immunological but general health. Some techniques that I recommend are establishing the time of sleep and trying to achieve a routine in which you sleep at the same hour every night and/or do activities before you go to sleep that send your body the message that it is getting close to the time of rest. Try to stick to it as much as possible, and you will see very positive improvement.

4. Immunological Diseases

There are some diseases that are the result of abnormal functioning of the immune system and are known as autoimmune diseases. In these cases, the cells that are supposed to protect you from foreign agents do not recognize your own tissues. For this reason, they attack your tissues and create inflammatory reactions against completely normal organs. One of the hardest to face is when antibodies are created against the fetus that then attack the embryo product of fertilization.

These diseases are of unknown origin, and many of them develop in adulthood due to external factors that trigger a latent disease. They are not completely curable, but with treatment, they are controlled enough so that the person can have a good quality of life.

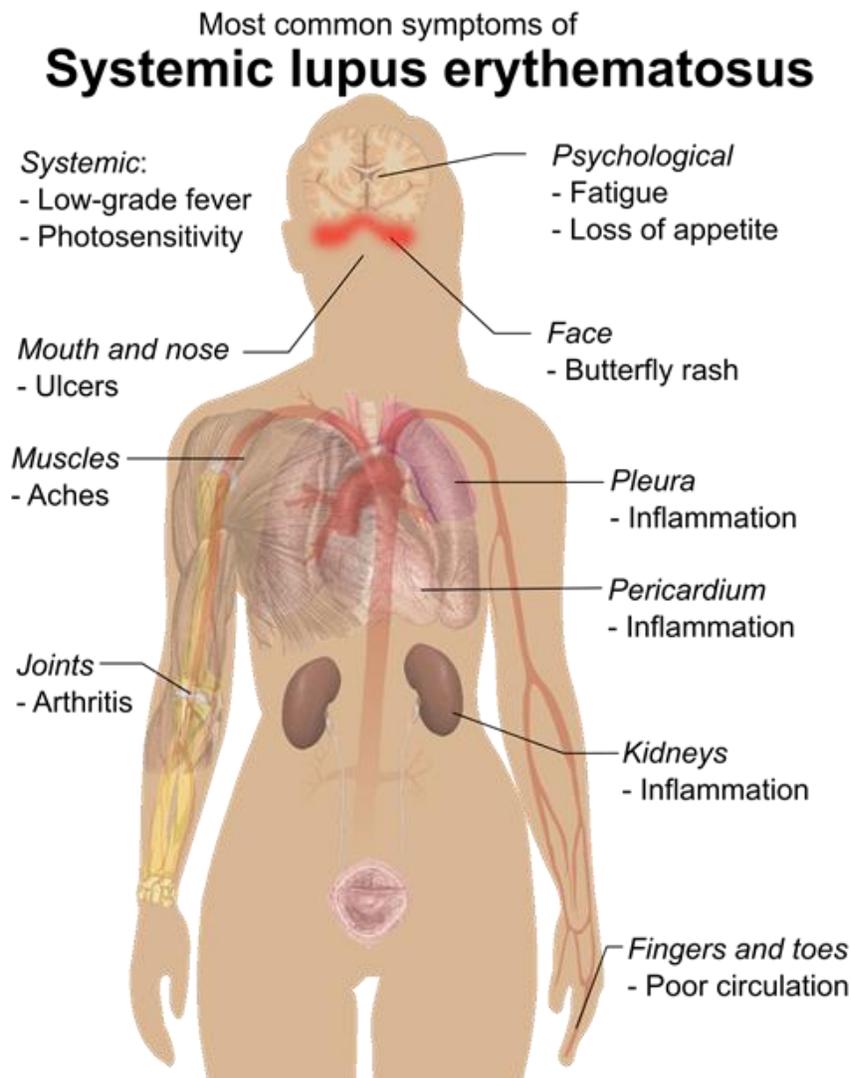
Systemic lupus erythematosus (SLE) is one of these diseases. It is characterized by the patient's immune system attacking various types of tissue in the body. There are very aggressive varieties and lighter ones. The fact that it does not selectively attack one tissue earned it the nickname "great mimic" since its symptoms mimic other diseases, leaving SLE as the default after other diseases are ruled out.

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Most patients with SLE have skin symptoms, with a rash appearing on the face that is acute in the more common forms of the disease. There is a skin form called Discoid Erythematous Lupus, in which true scars are formed. A well-known face with this variety of the disease is the British singer Seal.

Joint and heart symptoms are also frequent, with cardiovascular deficiencies being found in the inflammation of the outermost layer that covers the heart and in the inflammation of the joints in a reaction similar to that of rheumatoid arthritis but not as severe.

Kidney damage is not common, but cases of kidney symptoms involving tissue destruction leading to failure are reported. One of the most challenging patients you can have in medical practice is a patient with undiagnosed SLE.



The symptoms are actually so nonspecific that they involve too many differential diagnoses. It's no surprise that it's called "the great imitator". In the hospital, I had the opportunity to see a couple of cases that presented with palpable lymph nodes as the first symptom. In those cases, we did the biopsy of the node thinking it was an infectious disease only to realize that each node had severe inflammatory characteristics. It's like being at a crime scene and finding absolutely no evidence.

Some of the neurological symptoms are among the most alarming in SLE, ranging from depression to psychosis and mimicking different neurological and psychiatric pictures. In short, it's a real challenge for any doctor.

Psoriasis is another autoimmune disease but is not as common or severe as SLE. In this condition, the body creates specific antibodies against the skin. The clinical manifestations are cutaneous, having the typical red, flaky, and well-circumscribed patches that are seen spread on the body, especially in the elbows and the back.

This disease is not contagious, even though its appearance may give that impression. The scaling is just dead skin, and the red part is an exaggerated inflammatory process that



the body itself carries out. It usually occurs in youth and is triggered by a period of very intense stress or a virus or other infection. The skin lesions are so characteristic that they immediately lead to a presumptive diagnosis. For the definitive diagnosis, a biopsy is necessary for microscopic evaluation and verification of the specific changes in the disease. Treatment with immune system suppressants and steroids should be indicated and managed by a specialist as they are delicate drugs. The treatment of psoriasis has a curious effect that I saw in a friend at the university, which is to change hair gray.

What Can I Do When I Don't Have Treatment for My Autoimmune Disease?

In extreme situations, medicines can be scarce, and that is when we rely on natural medicines that have been used for centuries. In the case of autoimmune diseases, we cannot unfortunately attack the cause, but we can attack the symptoms. Natural anti-inflammatories, such as ginger, honey, turmeric, green tea, and avocado, help with this process of an accelerated inflammatory response.

In the case of SLE, it is recommended to take apple cider vinegar. Apple cider vinegar helps to lower the pH of the body, which seems to be associated with the improvement of the symptoms of the disease.

Psoriasis, on the other hand, is characterized by episodes in which the disease becomes more severe. These episodes range from a stressed mood to a wound on the skin. A change in lifestyle will undoubtedly bring benefits to the patient. This, along with balanced nutrition that includes fatty foods such as avocado and salmon, will do a lot of the work. Aloe vera crystal gel has proven to be an excellent tool for improving the scaly patches characteristic of psoriasis.

Although psoriasis is an autoimmune disease, it is not as serious as others; however, the difficulty of the aesthetic aspect in addition to other rare but real complications makes it hard to overcome.

Anti-inflammatory foods will help to attenuate the heightened inflammatory response that comes with this type of illness. If you don't have your medicine or the option to buy it, you should make natural medicine your first tool to improve the barrier of the immune system.

A FEW RECIPES PUT TOGETHER FOR YOU

1. A Before-Bed Recipe to Sleep Like a Baby Again

I detest sleepless nights – those nights when you can't help but toss and turn in your bed because sleep just evades you. I have had my fair share of difficulty sleeping for too many reasons.

Sometimes, it's because of thinking too much about something that has happened or will happen. Other times, it's because of my arthritic pain attacking me. And some other times, it's because my body just doesn't want to sleep even though it is tired.

There are many possible causes of insomnia that we cannot control. Regardless of what your reason is for those sleepless nights, I know one thing that we share: the tired and grumpy feeling the next day. Lack of sleep does not only affect our physical health, but also our mental and emotional health as well.

The Answer to Sleepless Nights

Due to the fact that I do not want to take medically-prescribed pills, I chose to look at natural alternatives until I came across a recipe for a deep sleep salve made from natural ingredients. At first, I was adamant to try it. However, when I gave it a try for a few nights, I realized it made my sleeping pattern better. I can sleep quite well and easily now.

I will share that sleeping salve recipe with you. It's very quick and easy!

You will need:

- 2 Tbsp. coconut oil
- 2 Tbsp. grapeseed oil
- 2 Tbsp. beeswax pastilles
- 10 drops tea tree essential oil
- 20 drops lavender essential oil
- 5 drops of Vitamin E oil.

Putting Together the Recipe

1. Combine the coconut and grapeseed oil with the beeswax pastilles in a double boiler.



If you do not have a double boiler, you can get creative and do a make-shift one like what I did. Simply get a saucepan and fill it half with water.

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Place a heat-proof container, like a stainless bowl, a pyrex, or even a mason jar in the middle of the pan. Place all your ingredients in the heatproof container.

2. Let the beeswax melt on medium-low heat. Make sure that you stir occasionally.

3. Once the beeswax has melted, remove from heat. Let it cool.

4. Add the essential oils and vitamin E oil when the mixture has somewhat cooled down.

It is important to note that essential oils lose their effectiveness if exposed to too much heat. Hence, this step is very crucial for your deep sleep salve to work.

5. Transfer to a container/jar. This recipe creates approximately 20-30ml salve. Label the container/jar with the date.



Why These Ingredients

- *Coconut oil* is one of my miracle oils. I love how it moisturizes and restores damaged skin.

- *Grapeseed oil* is beneficial to the skin's elasticity. It makes the skin softer and it also works well with vitamin E.

- *Lavender essential oil* is one of the most popular choices for sleeping. Its aroma proves to be useful for improving sleep quality and relaxation. Hence, it is a good choice for people who have insomnia, anxiety, and even depression.

- *Tea tree essential oil* is used often, but seldom for sleeping purposes. The tea tree has a good relaxing effect on our body and mind. It relaxes us and provides a better sleep experience, as well as decreases anxiety and stress.

- *Vitamin E oil* supports skin health, improves immune function, and is a very effective antioxidant that fights off free radicals. It also helps reduce the damage caused by UV to the skin.

How to Use and Store

To use this amazing deep sleep salve, you can rub it on your soles 30 minutes before sleeping. It works well if you cover it with socks too because absorption is way better with socks on. However, if you do not like to wear socks on hot summer nights, then you can simply rub the salve on your temples and pulse areas before sleeping.

Inhaling the salve scent before closing your eyes may also make you feel more relaxed and calmer. The relaxation and calmness brought about by the smells of lavender and tee tree will help you sleep.

This salve keeps for 6-8 months. However, I recommend using it all up on or before the 6-month period. Store the salve in a dark area at room temperature. Now that you have this recipe, I hope you'll get enough rest and better sleep at night. Relaxing nights with good sleep will surely make you feel more alive, more energetic, and more enthusiastic about the days to come!

2. A Natural DIY Antibiotic Salve Recipe to Keep Around

There are several OTC antiseptic ointments to choose from at the local market, which are normally applied directly to the wound. They are meant to prevent infection from developing. While these options often work and the products have some helpful ingredients, they also have some unnecessary ingredients, so they can be mass-produced.

Fortunately, there is an alternative for those of you who choose to live a more natural life, without the unnecessary added ingredients to everyday products. This isn't about saving money, because to be honest, the ingredients are not necessarily inexpensive for the initial purchase.

On the other hand, they will last a very long time and make several batches of antiseptic. Or, you can share by making this for family and friends who also want to benefit from a purer approach to healing.

Making the Ointment

The recipe we are sharing is packed with anti-germ properties, which will aid in keeping a minor wound from becoming infected. It will also help in reducing any possible scarring.

The ingredients are well-known for their healing tendencies, as well as their effectiveness in fighting off infections. So, combining them into a natural homemade ointment to have on hand just makes sense.

Here is the list of ingredients you will need:

- 5 oz. beeswax (pellets melt quicker)
- 1 cup almond oil (could replace this with olive or coconut oil)
- 0.5 tsp. tea tree oil
- 25 drops vitamin E oil
- 20 drops of lavender essential oil
- 10 drops of lemon essential oil.



But, before we discuss the steps in making this ointment, it's good to know why each of these ingredients is important:

- *Lavender Essential Oil* not only soothes, but also works as a pain reliever, antibiotic, anti-viral, anti-fungal, and antibacterial.
- *Tea Tree Oil* is known for its anti-fungal, anti-viral, antibiotic, and anti-bacterial properties.

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- *Lemon Essential Oil* acts as an antibiotic, anti-viral, anti-fungal, and anti-bacterial.
- *Vitamin E Oil* aids in healing the skin and reducing any scarring that might occur from a minor injury.
- *Almond Oil* has helped a few people heal breakouts of various skin conditions.

Now that you know how each ingredient contributes to making this ointment work, here are the easy directions to putting them all together in creating a healthy and useful antiseptic ointment.

Step 1: In a small pot, melt the beeswax and almond oil on a very low heat setting.

Step 2: Once that has melted, take the pot off the heat source.

Step 3: Add the tea tree oil, vitamin E oil, lavender oil, and lemon oil, stirring with a wooden spoon.

Step 4: After the mixture is blended, pour it into a small and sterilized container, and let it cool.



Step 5: When it's cooled down, store in a cool and dark place.



That is all there is to it – a very simple way to make an ointment for minor wounds. If you experience a minor cut, scratch, or abrasion, dab a little bit of this ointment on the wound a couple of times a day until it is healed. This ointment has a shelf life of about five years. On a side note, for those who do not like the smell of lemon or lavender, you can substitute either one, or both. Lavender can be replaced with chamomile essential oil, and lemon can be replaced with fir essential oil.

3. A Simple “At-Home” Protocol for the Flu and Other Respiratory Issues

Viruses are a part of life that humans have had to live with for centuries. Many viruses can affect us year-round, but during the winter months, flu and other respiratory viruses seem to get worse and cause more issues. There are many reasons for this.

First, the lack of sunlight causes a deficiency in vitamin D. Vitamin D is necessary to keep our immune systems strong. Make sure that you are taking a vitamin D supplement during the darker months. In addition to less sunlight, our bodies become bogged down by unhealthy eating during all those holidays and lack of exercise since many of us become cooped up indoors due to cooler temperatures. Try to remain active and eat healthy, whole foods as much as possible.

If and when you do happen to come down with a respiratory virus, you can take steps to help your body heal and recover quickly. You can even do this in the comfort of your own home! The remedies below have been used to strengthen the immune system and body for centuries. In addition, many of the ingredients just might already be in your pantry.

1. Old-Fashioned Fire Cider

Nobody is completely sure where the term “fire cider” came from, but herbalists around the globe have been preparing this special concoction for many years to fight various viruses. Fire cider recipes differ between herbalists and countries, but many require the use of spicy plants that stimulate the immune system and speed up recovery.

Fire Cider Recipe

For this recipe, you will need:

- Glass jar
- Jar rim lid
- Cheesecloth
- Raw, unfiltered apple cider vinegar
- Three to four jalapenos
- Two to three cayenne peppers
- Chopped onion
- Four to five chopped garlic cloves
- Chopped horseradish
- A few sprigs of rosemary
- A few sprigs of thyme
- A few sprigs of oregano
- Chopped ginger
- Chopped turmeric.

- #1. Place all the chopped plant ingredients in a glass jar.
- #2. Completely cover the plant material in apple cider vinegar.
- #3. Place cheesecloth over the top and then secure it on with the jar rim lid.
- #4. Let this sit in a cool, dark place for four weeks before straining it out. Bottle the liquid and take a one ounce shot at the onset of a virus and every few hours as needed for stimulating the immune system.

2. Killing a Cough

If you just can't seem to shake a cough, give this recipe a try. This recipe is made from common household items and can be whipped up fast if you need relief. If a cough is keeping you up at night, follow the steps below:

Quick Cough Relief Syrup

For this recipe, you will need:

- Small glass
- Apple cider vinegar
- Raw honey or molasses
- Ground ginger
- Ground cinnamon
- Lemon juice.

- #1. Add one half teaspoon of apple cider vinegar to the glass.
- #2. Add one teaspoon of raw honey or molasses to the glass.
- #3. Add one fourth teaspoon of ground ginger to the glass.
- #4. Add one fourth teaspoon of ground cinnamon to the glass.
- #5. Squeeze the juice of a half a lemon into the glass.
- #6. Stir everything together well.
- #7. Drink this mixture, but gargle it a little in the back of your throat as you swallow it. This will help to coat and soothe the throat and prevent coughing fits.

3. Homemade Onion Cough Syrup

Onion and honey are two wonderful ingredients from nature. Both of these have strong anti-inflammatory properties and are great as a home remedy for fighting both colds and the flu. Besides having strong anti-inflammatory properties, honey and onion are also good for your immune system. So, at the first sign of flu, grab this onion syrup and suppress those viruses that are trying to make you ill. Onions are antimicrobial, anti-inflammatory, and immune stimulating.

For this recipe, you will need:

- Glass Jar with non-metal lid (as the honey has an acidic pH and reacts with metallic surfaces)
- Onion to fit in the container
- Raw Honey (preferably local).

- #1. Layer honey and fresh cut onion slices in a jar.
- #2. Make sure the onion slices are fully covered in honey.
- #3. Seal the jar tightly, and let it sit at room temperature for 1 to 2 days.
- #4. If you want to use it sooner, you can start using it within 12 hours.

#5. Ready to use! Simply eat a spoonful of this syrup as needed to soothe your cough. Store in the refrigerator.

Note: You can strain out the onions once the syrup is done, but it is not necessary.

4. Medicinal Pickled Garlic

Garlic is a wonderful ingredient from nature. It has strong anti-inflammatory properties and it is great as a home remedy for fighting both colds and the flu. Besides having strong anti-inflammatory properties, garlic is also good for the immune system. So, at the first sign of flu, grab this pickled garlic, or even garlic clove, and suppress those viruses that are trying to make you ill. Garlic is filled with allicin, a compound known to have anti-microbial properties. Apple cider vinegar contains prebiotic pectin, an essential for good digestion, which helps foster the growth of probiotics in the gut. Raw honey is also a prebiotic food that may promote healthy gut flora.

How to Prepare Medicinal Pickled Garlic

For this recipe, you will need:

- Peeled garlic cloves
- 1 cup of Apple Cider Vinegar (Raw, organic apple cider vinegar is ideal)
- 1 cup of Raw Local Honey.

#1. Fill a jar with the cloves (Leave 1-inch space from the top of the jar) and pour apple cider vinegar until they are completely covered.

#2. You may prefer to experiment by adding a little honey to customize the flavor.

#3. Put the lid on and close it. Leave the jar at room temperature for 1 to 2 weeks, then move it to a cellar or other cold, dark storage.

#4. You may need to “burp” the lids a few times over the first couple of days to release any built-up pressure in the jars.

You can wait at least 2 to 3 weeks before eating, but you can try it in order to discover your preferred taste. You can eat a clove of the garlic whenever you wish. In case of a cold or flu you can eat about 3-5 cloves a day.

5. What Happens If You Put Garlic in Honey?

Garlic and honey are two wonderful ingredients from nature. Both of these have strong anti-inflammatory properties and are great as a home remedy for fighting both colds and the flu. Besides having strong anti-inflammatory properties, honey and garlic are also good for your immune system. So, at the first sign of flu, grab this garlic-infused honey, or even garlic clove, and suppress those viruses that are trying to make you ill. Garlic is filled with allicin, a compound known to have anti-microbial properties.

Fermented Honey Garlic Recipe

For this recipe, you will need 1 cup garlic cloves (peeled) and 1 1/2 cups honey (I used acacia).

#1. Peel the garlic and place it into a clean jar.

#2. Drizzle the honey over the garlic. You can pour the honey directly over the garlic or drizzle in by using the wooden honey spoon. Do not use a metal spoon as the honey has an acidic pH and reacts with metallic surfaces.

#3. Once the garlic is covered with the honey, place a lid on the jar.

#4. Make sure the cloves are covered in honey. You can flip the closed jar upside down and place it in a dark place.

Within a few days, the fermentation will begin. Bubbles will appear. This is the first sign your garlic is ready to consume. (Of course, you can wait a few days more or even weeks, until the honey is thinned down and garlic drops to the bottom of the jar).

6. The Surprisingly Soothing Power of Eggs

Have you ever sipped on a glass of eggnog and thought “This will surely soothe my sore throat!”? Yeah, me neither.

Apparently, we should think again.

This concoction of egg yolk, honey, and milk, served while still warm, can be a real saver.

Egg and Honey Drink Recipe

#1. Heat 2 cups of whole milk in a medium saucepan over medium heat, whisking constantly.

#2. Separate 1 egg, pour the yolk into a bowl and gently beat it with 2 teaspoons honey.

#3. Put an ounce or so of hot milk into the egg mixture and whisk well. This tempers the yolk and prevents it from scrambling in the pot. Pour the egg mixture into the pot and whisk for about 30 seconds, until frothy.

#4. Pour the final results into a cup and sprinkle some cinnamon if you want. Drink it while it is still warm. Your throat will thank you for it.

7. Homemade Onion and Walnuts Syrup

Onion contains allicin, a compound that's a strong, natural antibiotic. It can also reduce inflammation and loosen phlegm, making cough more productive. Meanwhile, the outer skins of onion provide an excellent source of vitamins A, C, E, and numerous antioxidants. The skins of onions are also a rich source of flavonoids, particularly quercetin, a potent antioxidant and anti-inflammatory. Walnuts are also very healthy and nutritious. They contain a large amount of minerals, vitamins, antioxidants and Omega 3.

This onion and walnuts syrup is simple, cheap, easy to do and it can be consumed to strengthen the immune system and help alleviate cough symptoms and sore throat.

For this recipe, you will need:

- 5 yellow onions;
- 3 whole walnuts;
- 2 cups of water (16.6 oz.).

#1. Wash the onions and cut them in four.

#2. Wash the nuts and crush them gently, so they remain almost whole.

#3. Put the onions and nuts in a pot with 2 cups of water and slowly bring them to a boil. Boil them for 30 minutes until the water lowers to half and syrup gets thicker.

#4. Strain out the onions and nuts and pour the syrup into a jar. If you want, you can also add honey, when the syrup is not warm anymore. You can keep it in a refrigerator and use it in the next 7 days. You can drink 3-4 tablespoons per day.

4. How to Make Calcium Pills from Eggshells

Many of us were brought up to eat eggs reasonably carefully, making sure that we didn't accidentally eat a piece of shell. In fact, as long as it's small enough to go down safely, it probably would do more good than harm! Eggshells are a brilliant source of calcium. Consisting of 95% calcium carbonate, the composition of essential minerals can be enormously beneficial to our bones and teeth.

Many chicken owners grind up the shells and feed them back to their chooks. If that's what you do, then hold back a few to supplement your own diet! If you buy your eggs, then for the purpose of making these supplements, search out organic, free-range eggs if possible.

How to Take it, How to Make it

The supplement couldn't be easier to make. You're basically aiming to grind the clean eggshells into a very fine powder, so that it can be taken easily.

We generally need around 1000 – 1500 mg. of Calcium every day (1 tsp. of eggshell powder equals around 1000 mg.). While it's possible to get some of that from a balanced diet, taking a supplement can sometimes be necessary.

Calcium carbonate is more bioavailable when taken in doses of no more 500 mg. at one time, so you could aim for two or three doses throughout the day, unless you've been guided by a medical professional to aim for anything more or less than a standard dose.

Another way of storing eggshell powder is to make up your own batch of supplements, by filling empty capsules (gelatin and vegetable cellulose types are widely available online) using a paper funnel and storing in a clean, dry jar.

You'll need:

- Eggshells – as many as you can use/have
- An electric or manual coffee/spice grinder, or pestle and mortar
- Clean, dry jar with lid
- Empty supplement capsules (optional).

Method:

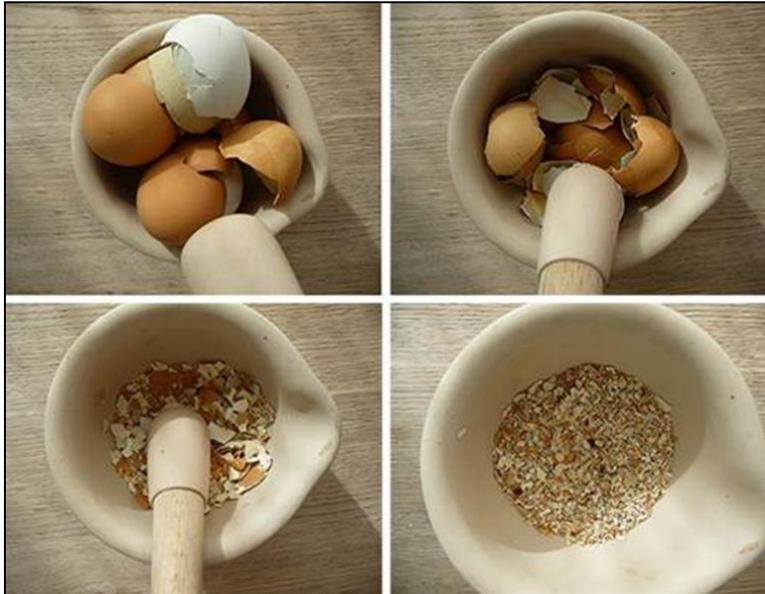
1. Use your eggs as usual, but retain the shells. Wash them in hot water, removing any dirt. Don't take out the membrane inside – it's rich in minerals.

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2. Boil the shells for five minutes and leave to dry. You can place them in an oven set to a low heat for 15 minutes, if you want to speed things up.



3. Once completely dry, place in your pestle and mortar or grinder and grind/pound to a very fine powder.



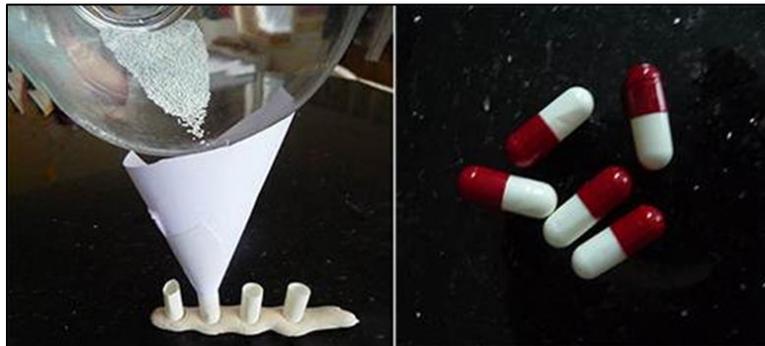
4. Sieve to remove any remaining large particles and place into a clean, dry jar with a lid.

5. If you want to fill empty capsules, then secure one half of each of the capsules using non-toxic putty or dough as a base.

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6. Now make a paper cornet and fill the capsules, then store them in a clean, dry jar.



Uses and Calcium Supplement Shelf Life

It's believed that the calcium carbonate in the eggshell powder becomes more bioavailable when added to certain other foods and liquids. Vinegar, lemon juice and live yoghurt are all good for that. Many people sprinkle the powder on cereal – particularly granola or muesli – or mix it into a fruit smoothie-type drink.

In fact, the latter option is a particularly good one. If you add a banana to a homemade smoothie, the magnesium it contains helps with bioavailability and calcium absorption.

Eggshell powder has other uses too – some add it to toothpaste or mix it with a little coconut oil for a natural exfoliator.

Kept dry and out of direct sunlight, the calcium powder should last for 2 months, possibly more. If you unscrew the jar and it smells bad, then start again – it's possible that some moisture got in there.

5. How to Use Salt and Oil for Tooth and Gum Decay

Our teeth are one of the first things people notice about us. A combination of genetics, diet, and unhealthy habits can lead to issues with the teeth and gums. One such issue is tooth and gum decay. Our mouths are full of bacteria. Some of these bacteria are helpful and some are harmful. The harmful bacteria are responsible for tooth and gum decay because they can cause a type of infection that use sugars in certain foods to make a harmful acid that eats away at the teeth and gums. Over time, this acid can cause serious decay and leave us hiding our once beautiful smile.

Spotting Decay Early

Tooth and gum decay happens to everyone. One of the first signs that a problem exists is a white spot on the tooth indicating that minerals have been lost in that area. If you see this spot, don't panic.

This is a good sign that you may have caught the decay early and can do something to reverse it! Our tooth enamel can actually repair itself using minerals from our own saliva, as well as fluoride from toothpaste or other substances. One of those other substances is salt.



The Benefits of Salt and Oil for Reversing Decay

Salt is a source of natural source of fluoride that can promote the repair of teeth and gums. Not to mention, salt can act as a mild abrasive to remove stains and brighten teeth. If you want to use salt for this purpose, try a finely ground Himalayan salt or sea salt.

In addition to salt, you can use mustard oil to further aid in combating decay. Mustard oil helps to strengthen your gums and can make plaque removal easier. When salt and mustard oil are combined, you can create a truly natural and beneficial at-home treatment for tooth and gum decay.

There are other helpful ingredients you can add to this mixture to maximize the effects and have your teeth looking great in no time. Below are some recipes using salt and mustard oil to try.

1. Remineralizing and Decay-Fighting Toothpaste Recipe

This powerful recipe combines decay-reversing natural ingredients like salt and mustard oil with calcium phosphate to help remineralize teeth and restore damage to the enamel. You may begin to notice a difference in the look of your teeth in just two weeks.

This recipe also utilizes magnesium oil. Studies show that teeth with higher magnesium content are less prone to decay. The addition of clove essential oil helps to stop decalcification of teeth as well.

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Ingredients:

- 2 Tbsp. organic mustard oil
- 10 drops magnesium oil
- 2 drops clove essential oil
- 1 drop peppermint essential oil
- 1 tsp. calcium phosphate powder
- 1 Tbsp. finely ground sea salt or Himalayan salt.

Directions:

Add the mustard oil to a bowl. Blend in the essential oils, as well as the magnesium oil until all the oils are mixed thoroughly. Slowly blend in the salt and calcium powder, adding small amounts, until everything is blended thoroughly. Store this in a sterile glass container.

Using a small spoon, add a small amount to your toothbrush when you brush your teeth. Try to use this at least twice a day.

2. Detoxifying Tooth Decay Reversal Toothpaste

If you're looking for a toothpaste recipe that helps to detoxify the mouth while helping to reverse tooth and gum decay, try the recipe below. The addition of charcoal can help to clean the mouth while brightening teeth. Bentonite clay pulls toxins out of the body and helps keep your mouth healthy.

Ingredients:

- 2 Tbsp. organic mustard oil
- 2 drops clove essential oil
- 1/2 tsp. powdered charcoal
- 3 tsp. bentonite clay
- 1 Tbsp. finely ground sea salt or Himalayan salt.

Directions:

In a bowl, blend together the mustard oil and clove essential oil. Next, add the powdered charcoal and stir well. Add the bentonite clay and blend thoroughly. Finally, add the salt and stir everything until it is evenly combined. Store this in a sterile glass container.

Add a small amount to your toothbrush when you brush your teeth. Use a small spoon to place the toothpaste on your toothbrush to avoid contaminating the contents of the jar. Brush your teeth with this blend at least twice daily.

In addition to the recipes above, you can try oil pulling to help further reverse tooth decay. Blend one teaspoon of coconut oil with one teaspoon of mustard oil and swish this around in your mouth for three to five minutes before spitting it out. Do this daily, along with a toothpaste recipe above, for best results.

PLANTS WITH MEDICINAL PROPERTIES

There are circumstances, such as the current worldwide pandemic, in which conventional pharmaceuticals may not be available due to a higher demand, less manpower available to produce, etc. In these times, it is practically invaluable to have information at your fingertips you can use to pinpoint the right treatment for various issues, even if you do not have access to a certain medication.

As an alternative to some pharmaceuticals, it is entirely possible to use medicinal plants in these situations. When prepared and used properly, medicinal plants can act like antibiotics, painkillers, antivirals, and anti-inflammatory drugs.

Below, you will learn what plants to use in place of various pharmaceuticals, should you ever find yourself in a situation where you don't have access to what you need.

1. Painkillers

Below is a list of plants that act as painkillers, similar to over-the-counter pain relievers. However, the plants below do not have the liver and kidney-harming side effects that many over-the-counter painkillers possess.

1. Wild Lettuce, *Lactuca canadensis*, *L. virosa* and *L. serriola*

Through the ages, wild lettuce has been utilized for its painkilling abilities. It is said by some to have an "opiate-like" effect on pain. It is the white ooze inside the plant that is responsible for these attributes.

One of the best ways to prepare this very common "weed" is to boil it down into a decoction. Harvest the aerial parts of this plant and use the stem and leaves in your decoction.

Take one cup of finely chopped fresh leaves and stems (anything full of the milky substance) and add it to a pot with two cups of water. Let this boil down until only one cup of water is left.

Stir continually to avoid scorching. Strain out the plant material when it has cooled a bit and bottle this decoction.

Drink one ounce every four hours as needed for pain.



2. Valerian Root, *Valeriana officinalis*

Valerian root acts as a Central Nervous System depressant, helping to relax the body and keep nerves calm. As a result, valerian root has been proven successful at treating nerve-related pain.

This includes pain from headaches, fibromyalgia, and nerve-related back issues. Make a strong tincture with the chopped roots by filling a sterile glass jar with the roots and completely covering them in at least 80 proof alcohol. Let this sit and infuse for four to six weeks before straining it out.

Take five to ten milliliters of this tincture under the tongue every four to six hours as needed for pain. Valerian root makes many people drowsy and is often used as a natural sleep-aid. Make sure you do not take it while operating heavy machinery.



3. Toothache Plant, *Acmella oleracea*

Toothache plant can be a godsend when you are struggling with mouth pain. This plant has the unique and somewhat surprising ability to completely numb the mouth when a bud is applied to the area where you are experiencing pain from a cavity or similar issue.

While a strong numbing effect can be felt with just one bud chewed in the mouth, you can harvest the buds and tincture them to create a numbing treatment to have on hand when you need it. To do this, simply fill a jar with toothache plant buds.



To create a strong tincture, try macerating the buds in a little 80 proof alcohol in a blender and then pouring this into the jar. Then top it off with more alcohol so that you have the plant material completely covered. Let this sit for four to six weeks before straining it out. To use, place a few drops in the mouth where you are experiencing pain and let them sit on the area as long as possible. You will begin to feel the numbing effects almost immediately. Apply a few drops as needed for pain.

4. Ginger

Ginger is known for its anti-inflammatory actions, but right along with the reduction in inflammation comes a reduction of pain when using this plant. Ginger has also been shown to increase blood circulation, helping to aid in healing to any areas where you may be experiencing pain. Many people swear by ginger for helping with migraines and headaches. It has also been used with success by those suffering from arthritis and



painful joints. You can drink ginger in tea, but to get a stronger formulation you should make a tincture with this plant. Start by finely chopping the root and filling a jar. Completely cover the chopped ginger in 80 proof alcohol and let this infuse for four-six weeks. Strain this out and add it in a dropper bottle. Take two-three droppers full every two hours as needed for pain.

5. White Willow, *Salix alba*

The beautiful white willow tree is where early man figured out how to cure pain using the inner bark. After centuries of utilizing this tree for pain, pharmaceutical companies caught on to this and discovered that the compound in the bark responsible for relieving pain is called salicin. Salicin was then extracted from the plant material and used to make what we know today as Aspirin. However, you can make your own “aspirin” at home by collecting the inner bark shavings from this tree and making a tincture.



Fill a jar with shavings of the inner bark and then completely cover this in alcohol. Strain it out after four to six weeks and bottle it. For an even stronger tincture, use the strained tincture to cover more bark shavings in a jar and strain this out again after four weeks. You will have a doubly strong salicin extract. Take two droppers full every two hours as needed for pain. This will also help reduce a fever if needed.

2. Antibiotics

Perhaps one of the most crucial medicines we might need in a serious situation are antibiotics. The advent of antibiotics saved many lives, but unfortunately, after a century of their use we now have to deal with strains of “super germs” that are resistant to many antibiotics. This is because antibiotics have been largely overprescribed and germs adapt, just like everything else. There are plants that work much like antibiotics in the body and can help to cure many types of infections, including throat infections, wounds, and urinary tract infections. The plants below have proven to have powerful antibiotic attributes.

1. Usnea

Usnea is a type of lichen that can be found on dead tree limbs. It is often called “Old man’s beard.” It has been utilized for its ability to fight a broad spectrum of infections including strep throat and staph infections.

To fully utilize this lichen, harvest it and fill a jar with what you collect. Wash it out well first, as bugs like to hide in it. When you have your jar filled, cover it with at least 80 proof alcohol and let



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this infuse for four to six weeks. Strain out the liquid after the allotted time and bottle it. For strep, gargle five to ten milliliters for one minute before swallowing it. Repeat this every three hours until the infection is gone. For staph, apply the tincture to boils every few hours and cover this with a bandage. You can also take five milliliters internally to cleanse staph from your system.

2. Goldenseal, *Hydrastis Canadensis*

Goldenseal has been a highly sought-after plant for treating infections. So much so that it was overharvested for years in the Midwest. Now this plant has had a chance to flourish once again. The golden roots of this plant led to its name.

While the roots are powerful, when you tincture this plant, tincture the leaves as well. The leaves contain compounds that help make the healing properties in the roots more effective.



Fill a jar with the chopped roots and leaves of the goldenseal plant and cover this in at least 80 proof alcohol. Let this infuse for four to six weeks and then strain it out. You will have a beautiful golden tincture to use to treat infections like urinary tract infections and throat infections. You can even apply it to infected wounds. Take five milliliters two to three times daily.

3. Echinacea, *Echinacea spp.*

Echinacea is both antibiotic and antiviral. It helps the immune system fight various infections and viruses by giving it the boost it needs to fight off unwelcome guests. It makes an excellent companion with any of the other antibiotic herbs mentioned in this article to help tackle a variety of infections.

Create a tincture with the aerial parts of this plant and even a few chopped roots as well. Cover your plant parts in alcohol and let this infuse for four to six weeks. Strain it out and bottle the liquid. Try gargling five milliliters of Echinacea and Usnea for a doubly powerful strep treatment. It also makes an excellent wound wash.



4. Pau d' arco, *Tabebuia impetiginosa* or *T. avellaneda*

This powerful antibiotic treatment comes from the bark of a tree that grows in the rainforest. Pau d'arco is highly antibacterial and can help treat a variety of infections including urinary tract infections, throat infections, infected wounds, and more.

Create a strong decoction with the bark by adding four tablespoons of the bark to two cups of water in a pot on the stove. Let this boil until the liquid is reduced by half. Strain this



out when it cools a bit and then use this to wash wounds, gargle for throat infections, or take internally. For internal use, take one half ounce every three hours. Refrigerate between uses and discard after two weeks.

5. Garlic, *Allium sativum*

Garlic is one of the oldest remedies for infections and still remains one of the most powerful. One of the best ways to use garlic for infections is to infuse it in olive oil to treat ear infections.

Chop three cloves of garlic and add this to a double boiler with one cup of olive oil. Let this sit under low heat for eight hours and then strain it out. Let the olive oil infusion cool enough to comfortably drop inside the ear and lie on your side with this in your ear for ten to fifteen minutes. Repeat this with the other ear if necessary.



Garlic can also be taken internally for infections. You can treat bacterial vaginosis by inserting a garlic clove into the vagina for several hours each day or infusing several chopped cloves into coconut oil (similar to the recipe for the ear oil) and then straining this out to cool. When the coconut oil is almost fully solidified, roll it into a ball and insert it into the vagina at night before bed.

3. Anti-Inflammatories

Many pharmaceutical anti-inflammatories come at a price. This price is often damage to other organs and a dependence on using them often because their effects are very temporary. There are several anti-inflammatory plants that can help relieve inflammation, and as a result, pain and discomfort.

1. Cabbage, *Brassica oleracea*

Cabbage leaves are one of the best anti-inflammatory treatments and they are so easy to come by! To use them, simply apply the leaf to the inflamed area, such as a sprained ankle. To maximize their effectiveness, apply plastic wrap over the cabbage leaves to hold them in place. You can reapply every few hours as needed.

Cabbage leaves also make an extremely effective remedy for the inflammation that comes with engorged breasts and mastitis. Simply apply the cabbage leaves to the breasts and you will notice an almost immediate reduction in swelling, fever, and pain.



2. Turmeric/ Curcumin

Turmeric is a close relative to ginger, so it's no surprise it works for inflammation and pain. Turmeric

contains a compound called curcumin that helps to reduce inflammation and swelling in many areas of the body. It is great for back inflammation, chronic inflammation, autoimmune-related inflammation. Create a strong extract by chopping the roots and filling a jar. Completely cover the chopped roots in at least 80 proof alcohol and let this infuse for four to six weeks before straining it out. Take two to three droppers full up to three times a day to counter inflammation.



3. Black Pepper

Like turmeric, black pepper also contains anti-inflammatory compounds. In fact, it is recommended that you combine turmeric and black pepper for the best of both worlds and even better absorption into the body! To do this, when you fill your jar with chopped turmeric to make turmeric tincture, add two to three tablespoons of black pepper seeds. Follow the same protocol outlined above and strain it out after four to six weeks. Take two to three droppers full up to three times daily.



4. Aloe

Known for soothing external burns, Aloe also has powerful anti-inflammatory properties. One of the best ways to utilize it is to take it internally. It helps alleviate inflammation in the bowels caused by irritable bowel disease and similar maladies. It also helps to calm an inflamed urinary tract and bladder if you suffer from constant urinary tract infections or Interstitial Cystitis. Harvest the inner gel by slicing the leaves open and scraping it out. Bottle what you collect and add one to two ounces to smoothies. Drink one to two ounces daily. Only take enough to use each day or you will need to refrigerate the leftovers.



5. Goldenrod, *Solidago* spp.

Goldenrod is a powerhouse of antioxidant action, helping to significantly calm inflammation as well. If you suffer from inflammation in the stomach lining, bowels, bladder, or urinary tract, you may benefit from drinking one to two cups of golden rod tea as needed. Harvest the aerial parts in the fall and chop them finely. Add this to a tea infusion bag or tool and infuse this in a cup of hot water for ten minutes before consuming.



The plant world is full of surprises, but knowing that there are many options if you run out of vital pharmaceutical resources is one of the most pleasant surprises. Additionally, the fact that these plants have been used for centuries and have proven to provide gentle yet effective treatment is valuable.

FINAL CONSIDERATIONS

Natural medicine is a type of therapy that has been used for centuries without changing much because of its effectiveness. Although traditional scientific evidence has sometimes been lacking, testimonials are still evidence of the good or bad functioning of a treatment.

All the techniques and treatments explained in this manual have been corroborated, not only in the medical literature but also by patients.

These patients can explain how to take care of dengue fever with chicken foot soup and also eliminate bad luck by bathing three days in a row with “Purple Cariaquito” water (*Lantana trifolia*)—all in a single conversation.

This whole world fascinates me, and since my time in the Amazon, I have taken the opportunity to recognize those ancestral therapies that I now share with you.

Even though no therapy is 100% harmless, I have no doubt that it will always be better to start from the basics and increasing the level depending on the patient’s response.

That is why I think it is very important to know this information, especially in the scenario of a catastrophe in which everyone must know what it is like to live in precarious situations.

Remember that at no time is the idea to eliminate traditional treatment, especially for diseases such as diabetes or hypertension. On the contrary, the aim is to nourish knowledge and bring benefits to the therapy.

In extreme cases of shortage, it will undoubtedly be a very important tool to know all this information that is now in your possession.



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AUTHOR'S NOTE

- by Dr. Maybell Nieves -

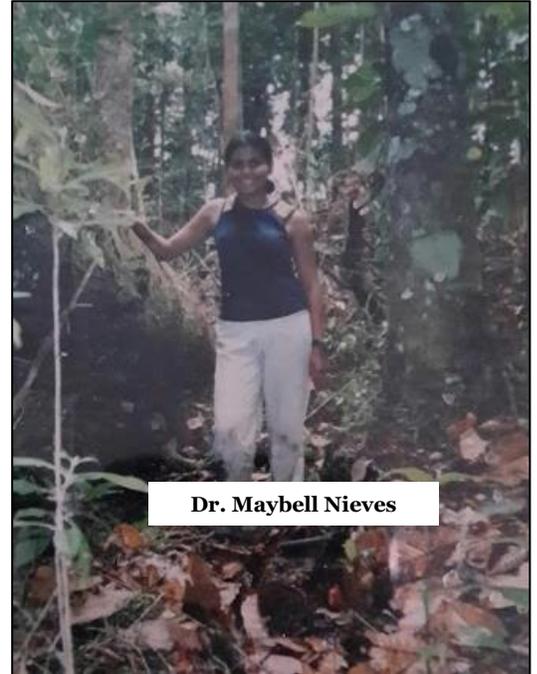
Survival is a pretty strong word. Not everyone cares about this kind of information, but for me, this is an important achievement. I had never organized all these homemade techniques that we do as a daily practice in my country. When something becomes routine, we forget the importance that this knowledge has.

Although it may sound strange to some that a drug treatment may be in short supply, I can say from experience that you only think it's strange until you experience it.

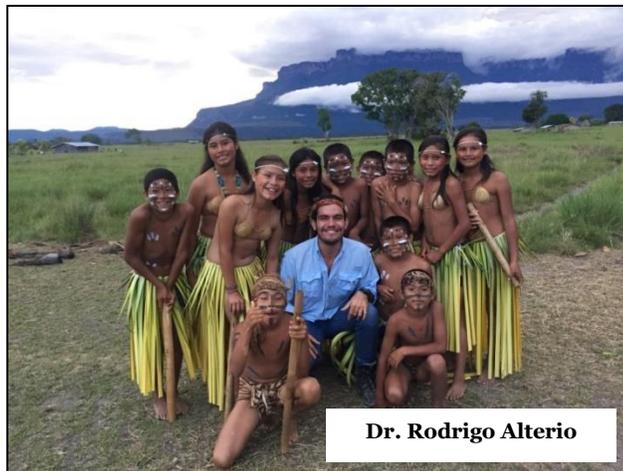
A few years ago, Venezuelan treatments for hypertension and anticoagulation and thyroid regulators were impossible to find due to the health and economic crisis. It was at that time that I had to resort to natural medicine out of necessity, and I feel that it is an apprenticeship that has completed my professional aspect, being able now to indicate some age-old treatments in combination with modern therapies.

Venezuela is a country of welcome, where no one looks down on the foreigner but, on the contrary, makes him part of their family. Maybe because of that same culture, we accept the changes that come along without making much noise but just look for adaptation and survival.

If my experiences of daily life and those of some 15 years ago in the Amazon serve to benefit one, two, or many people, I will be very happy to have shared them. They are a part of my history and culture that is still present and intact in Venezuela.



Dr. Maybell Nieves



Dr. Rodrigo Alterio

About the Authors



Dr. Maybell Nieves is the head surgeon of the Unit of Breast Pathology and general surgeon at Caracas University Hospital in Venezuela.

Dr. Maybell studied at the prestigious European Institute of Oncology in Milan, Italy, under Professor Umberto Veronesi, the man who revolutionized modern breast cancer surgery worldwide, who was her guide and mentor.

She is known for developing new, ingenious methods of treating patients after Venezuela's economy collapsed and hospitals and pharmacies ran out of medicines, supplies, electricity, and running water. The methods she developed and pioneered are now studied and applied in conflict zones all over the world.



Dr. Rodrigo Alterio is currently working in the surgery department at UT Southwestern Medical Center in Dallas, Texas. Most of his ongoing research is mainly based in Surgical Oncology.

But in 2017 Dr. Alterio lived with and was the primary care physician of an indigenous community called “Kamarata” (Pemóns), deep in the Amazon jungle, many hundreds of miles from civilization. There are no roads there and the community is only accessible by small planes; no Pharmacies or Hospitals.

Away from civilization, Dr. Rodrigo had to make do with what he had on hand to perform a wide range of medical procedures for accidents, diseases, and delivering babies.



Claude Davis - in his own words:

“I’m NOT what some people would call a Domsday prepper. I don’t think the world is going to end anytime soon, but I do believe that all of us will end up facing some hardships during our lifetime.

Me personally...this is what I prep for. I don’t like to place my family’s lives in the hands of others. I like to think I am in charge of my own destiny, just as our grandparents and great-grandparents were in charge of theirs.

They stockpiled food for winter and for dark times. They created their own remedies from wild plants so when they couldn’t afford meds during the Great Depression, they could still treat injuries and diseases.”