

SURVIVAL M.D.



Dr. Radu Scurtu

SURVIVAL

Md .

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Introduction

We live in an era where safety isn't a given, where there are evils in our world that have designs on attacking us, and where simple things like food and clean water depend on a complicated linked chain of events that could fall apart if even one link in the chain is disrupted.

And we won't always have advanced notice or we'll have the same notice as everyone else and there will be a mad dash to the grocery stores and pharmacies, with a good chance that what you need will be something the stores are all out of.

What you need is a sense of preparedness for your family—some means of knowing that you and your family will remain safe during any disaster, crisis, or emergency. To be sure, it takes a great deal of planning and execution to make sure your family stays healthy during a crisis.

Doctors and emergency rooms may be unavailable or severely overloaded. You need to be prepared to stand on your own through whatever life sends your way.

What Emergencies Are We Talking About?

There are many possible things that can befall an otherwise developed nation. Believe it or not, within a few months, the US could be under a state of economic and social collapse. There can be martial law with an inability to get around when you need to. Food shortages can be a possibility if imports and exports fall apart.

The nation can be the victim of an EMP attack. This is an electromagnetic pulse attack that can happen as a result of a nuclear warhead being detonated above the earth's atmosphere. This is deadly for the nation's electrical power system and the world could have severe power disruptions lasting long periods of time.

Think about what would happen if we had prolonged lack of electricity. There would be limited ways of getting the news you need. Stores couldn't operate and there would be severe shortages of medicines and combustibles. Martial law would become a necessity.

A natural disaster can befall your family. As we learned from Hurricane Katrina, the Red Cross and FEMA have their limitations and your family can become the victim of floods, severe droughts, tornadoes, hurricanes, or earthquakes with minimal help from the outside for several days or weeks. You need to prepare your family for these kinds of emergencies so you can survive them safely.

There are manmade disasters that can befall a small or large area of your personal world. These can include acts of biological warfare with things like viruses, altered bacteria or bacterial spores.

Nuclear attacks kill large areas but there are areas outside of the "kill area" where people can survive and have needs for health and welfare. If you live in one of these areas, you'll need to be prepared to take care of your family because the government agencies will be overwhelmed and perhaps nonexistent.

Attacks to the power grid and other types of terrorist attacks can occur regardless of the government's ability to try and stop them. These attacks can occur suddenly and, even if you're not warned, you will want your family to remain safe and healthy throughout the crisis period.

Third World Healthcare

Think about it. At any time and without any notice, our country could, by virtue of crisis or disaster, become a third world country. The days of going to the emergency room and expecting to be seen within a reasonable period of time would be over and there would be no more regular doctor visits. Healthcare would be spotty at best. How would we survive?

We can learn a great deal from the successes of third world countries. With very little resources, many of these countries have set up an infrastructure that allows for the maximum health to the maximum amount of people.

They start with having village health workers whose job it is to know the people of the village and help them learn the basics of sanitation and nutrition. When people use proper sanitation,

they get sick less. When they eat the basics of good food and nutrition, people are healthier and maintain a healthy body weight.

Village workers also remind people to take their medication and take them to their doctors' visits. Trips to the emergency room for routine problems go way down and the really sick people get a chance to see the doctor.

In a post-disaster world, there could be a scenario where people are assigned a block of people to teach sanitation and food-finding or food-growing. They can also teach people to take care of minor illnesses themselves so that the doctors aren't inundated with minor illnesses.

People can learn the difference between what a serious illness is and what is not. Resources can be shared and people can learn how to stay healthy through healthy nutrition.

The United States can learn to rebuild again, village by village, city by city. How long is the crisis period going to last? That is something that is difficult to predict. In some cases, you'll only need supplies for a week or so; in others, it may be months before life is normal again. You should have your preparations be as big as the space you have to keep them in.

Prioritize your needs and allocate space accordingly.

Best of luck to you!

SECTION I: PREPAREDNESS BEFORE DISASTER HAPPENS

Why Prevention and Practice Make Sense

Imagine you're facing a full-blown, unavoidable disaster. It happens and you find an empty hospital, 100% fitted with MRIs, CTs, angiographs, cabinets full of opioids and all kinds of drugs, syringes: you have everything.

You enter that hospital and you have access to absolutely everything but it's all in vain, because you don't know what to do with any of it and you know that you can kill yourself by injecting who knows what crap into your veins.

So where do you start? What is the clue that makes the difference?

The Most Valuable Tool

There would be no medicine if the human body wasn't able to regenerate itself; to heal. Either the continuity of the skin is somehow restored through scarring, or certain organs such as the liver regenerate. The liver is one of the few organs that does this. You can cut half of it out and four years later you'll find almost a new extra lobe.

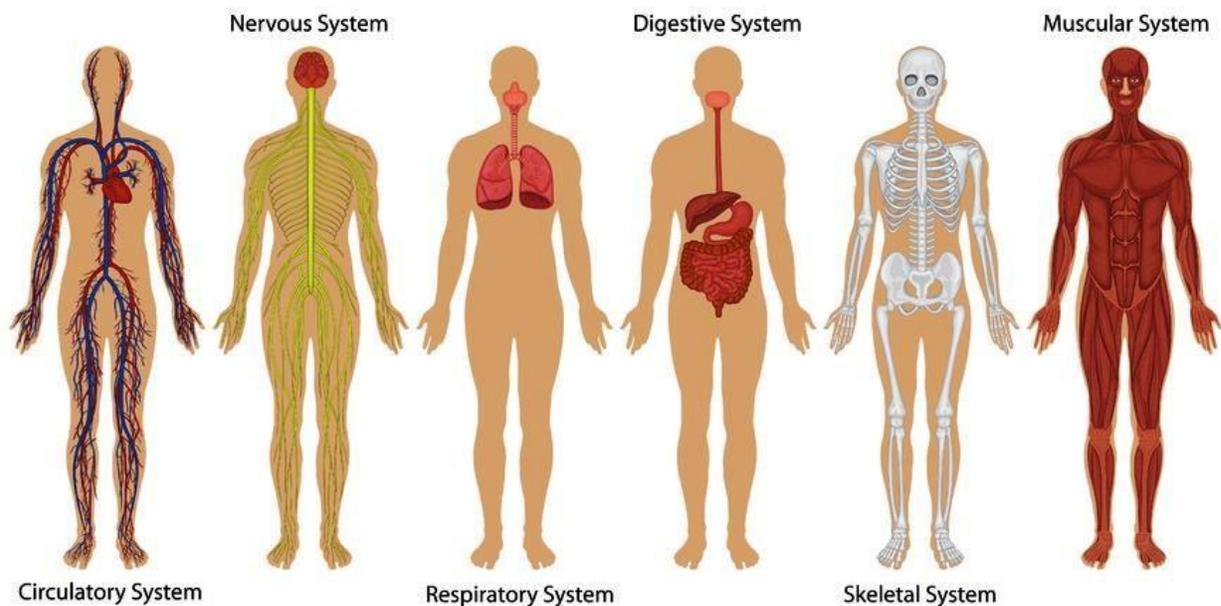
Everything regenerates in some way; the mucosa, the skin, bones, tissues and muscles heal. The human body is able to heal itself if given time and if given the necessary prerequisites for that healing to take place.

Do you know how legs were amputated 100 years ago? They would tie the patients to chairs where they were held down by 5 people. Then they would stick a piece of wood in the person's mouth, and 3 people would cut off the leg: two would hold it and one would cut it off, and he would cut it off in a few minutes or less because otherwise the person died from the pain,. The entire operation also often took off a couple of fingers from the helpers because the doctor had to cut so fast.

That can happen again; if we lose power and access to modern medical equipment, it will probably have to be done the same way, though at least now we have knowledge of bacteria and how to better avoid infections. Even then, some die, others live.

But who lives and who dies? The decision is often a matter of luck or fate, but the way the patient lived before also matters. Is he obese, is he a smoker, and is he an alcoholic? A healthy person maintains his body's equilibrium far better than a sick one, one; often physical condition is the determining factor between whether the person regains health or loses that equilibrium between life and death and dies.

Human Body Systems



That's why we start with the premise that the body is healthy, is in a state of equilibrium, because if you get past the injury and everything else is in good shape, the body may be able to recover. It takes much less trauma to unbalance a chronically ill patient than a normal patient to such an extent that he is no longer be able to recover.

Take care of your teeth - cavities get infected and you can die from that. Then in those non-sterile conditions, you make a decision that significantly lowers your chances of survival even further. You give yourself a 10% chance of survival when you pull a tooth out with tongs. The infection will spread through your system and damage your liver and kidneys. Once you get to dialysis you are finished under those conditions.

Also, do you still have your appendix? Guess what astronauts do before they go into space? They get their appendix removed. Astronauts get a prophylactic appendectomy, so they don't go up there, develop peritonitis and croak because of their appendix. So if you have gallstones get surgery, if you have problems with alcohol solve them. Get routine checkups and keep yourself healthy.

What you stock up on matters, but what's most important are the skills you learned before, because as I said concerning the body, you can be in a situation where you are trapped somewhere and you have nothing on you. The only thing that will save you is what you've learned and what you have trained for before. Because **skills are worth more than any of your stockpile.**

In the African hospital where I worked, I once had two patients. One was in a bed, weighed 170 kg, and only had an umbilical hernia. On the other bed there was another patient, who weighed about 45 kilos and was older than the first one by about 20 years. He had cancer surgery, and they had removed a tumor. Actually, they removed about half of his abdomen. That guy was going well three days after surgery, and the obese one was dying.

I was working at McDonald's more than 10 years ago, and an obese woman came in and asked for 3 Big Macs, 2 dollar-menu McChickens, 3 large fries, "and **one diet coke, please!**" What

irony! I hope this lady doesn't end up in disaster situation, because her chances of survival would be inversely proportional to her weight and her eating habits.

What's the point of all these examples? If you disregarded your health before the disaster happened, you can't be mad because it's entirely your fault. And you can't really demand anything of fate at that point.

7 Principles to Save a Man's Life

The first principle of medicine is "*primo non nocere*", freely translated as don't be a wiseass. In other words, don't do stuff without being sure that you know what you're doing, and that you do it with a purpose.

In most cases, you have time to look, open your eyes, touch, think, and figure out what is wrong. In 90% of cases, you have time; you don't have to make a decision in two seconds.

Under the circumstances, don't jump straight to stitching, plugging up, bandaging, putting it in a cast, giving shots or whatever. Don't do anything because most of the time, you have time to think, observe, and let the body make the work. The human body is a machine that is close to perfection and first you have to give it time to fight for itself before you intervene.

Considering my previous words on prevention, and what are you going to find out reading this book, if we were to concentrate on the principles that make it possible to save a man's life after a disaster, they would be:

- The body's ability to regenerate tops the list, and so does the existence of a current tetanus vaccine; the one currently available lasts for 10 years. These two factors are critical because what we rely on in a disaster, first and foremost, is the body's ability to recover itself in the first place.
- The only thing you always have with you and can always use is the human body; that's why first of all you need to know how to use it in order to get it to regenerate and heal itself. You can be in an environment where you don't have any other tools or medicine

when you become sick or injured. The only thing that you may have is your body so you need to act upon it first, to get it to regenerate as much as possible and to get the healing process started.

- Doctors and medicine don't heal; they help the body recover by itself. That's why it is so important that you hasten the process by having a healthy body with you at all times, one that is in a state of equilibrium.
- You need to know how the human body works, what the major points are that need to be protected, and which types of injuries or illnesses you have to act upon in emergency situations in order to improve your chance of survival.
- You must properly estimate your ability to intervene to help the injured person, on the principle of "*primo non nocere*," you do as much as you know for sure that you can do, but no more, so as to not do more harm than good.
- There is always more than one solution but you should choose the *simplest* solution so that in case things don't go the way you wanted, the negative effects are as minimal as possible. Only after the simple solution fails do you proceed to the next solution.
- Once you get into a dire situation and you have to intervene, you should avoid contact with infected environments in order to limit any intrusion that would ruin the prior equilibrium.

Specific Disease Preparedness

Many people go into a disaster situation with underlying illnesses that make it more difficult for them to survive the event. If you are prepared, however, you can increase the chances that everyone will survive comfortably throughout the difficult period.

Among the things described below, you should always have at least a month's supply of the individual's regular prescribed medications so they can keep their health as much as possible.

Ask your doctor to provide you with an extra prescription and keep them updated and not expired.

Nervous System Diseases



Human Nervous System

Nervous system diseases include stroke, paraplegia, hemiplegia, dementia, and degenerative diseases like multiple sclerosis.

What these share is a lack of mobility, which is difficult to deal with in a disaster situation. Many of these patients will be wheelchair bound or, at the very least, need to use a walker or cane.

If there is debris or damage to the home, the ramps you have been using to get the individual in and out of the house may need to be rebuilt. In almost all cases, the individual is confined to one floor of the house.

You need to stockpile some items for these individual. First you need to make sure that stroke patients have their prescribed anticoagulant medications, if indicated.

Most likely you will not be able to have blood tests to determine the amount of medication to take so you'll not want to deviate from the dosage that the doctor recommended.

Other things to stockpile include:

- Incontinence products
- Catheters for urinary drainage, if needed
- Something to puree food in that doesn't need electricity
- Clothing that is simple to put on

People with nervous system diseases have varying degrees of mobility and fall issues so you will need to observe them for falls and clean out cluttered areas so they don't trip on things. Have a comfortable chair for them—one they can't get out of with help if you don't want them to wander or one they can easily get out of if they are easily ambulatory.

Watch for worsening of their disease and adjust their lifestyle accordingly. If you have a dementia patient in your house, there can be behavioral issues you'll want to keep track of and help control them. If you have a dementia patient or a stroke patient in the house, you'll want to keep things as quiet as possible as they can become agitated in noisy areas.

Treatment of neurological conditions is not easy. You can't fix an additional stroke nor can you change the advancement of MS. Some exacerbations of MS can be treated with temporary high dose steroid tapers. You can start with 120 mg of prednisone for a week or so, followed by a week of 60 mg of prednisone, a week of 40 mg of prednisone, a week of 20 mg of prednisone, a week of 10 mg of prednisone and a week of 5 mg of prednisone. These should be stockpiled as part of the patient's regular prescription medications.

Dementia usually has a slow downward spiral so you shouldn't expect much in the way of decline if the disaster is short-lived. If the individual has a sudden change in behavior or a decreased level of consciousness, strongly suspect a bladder infection and treat with a week of Bactrim or Cipro.

Respiratory System Diseases

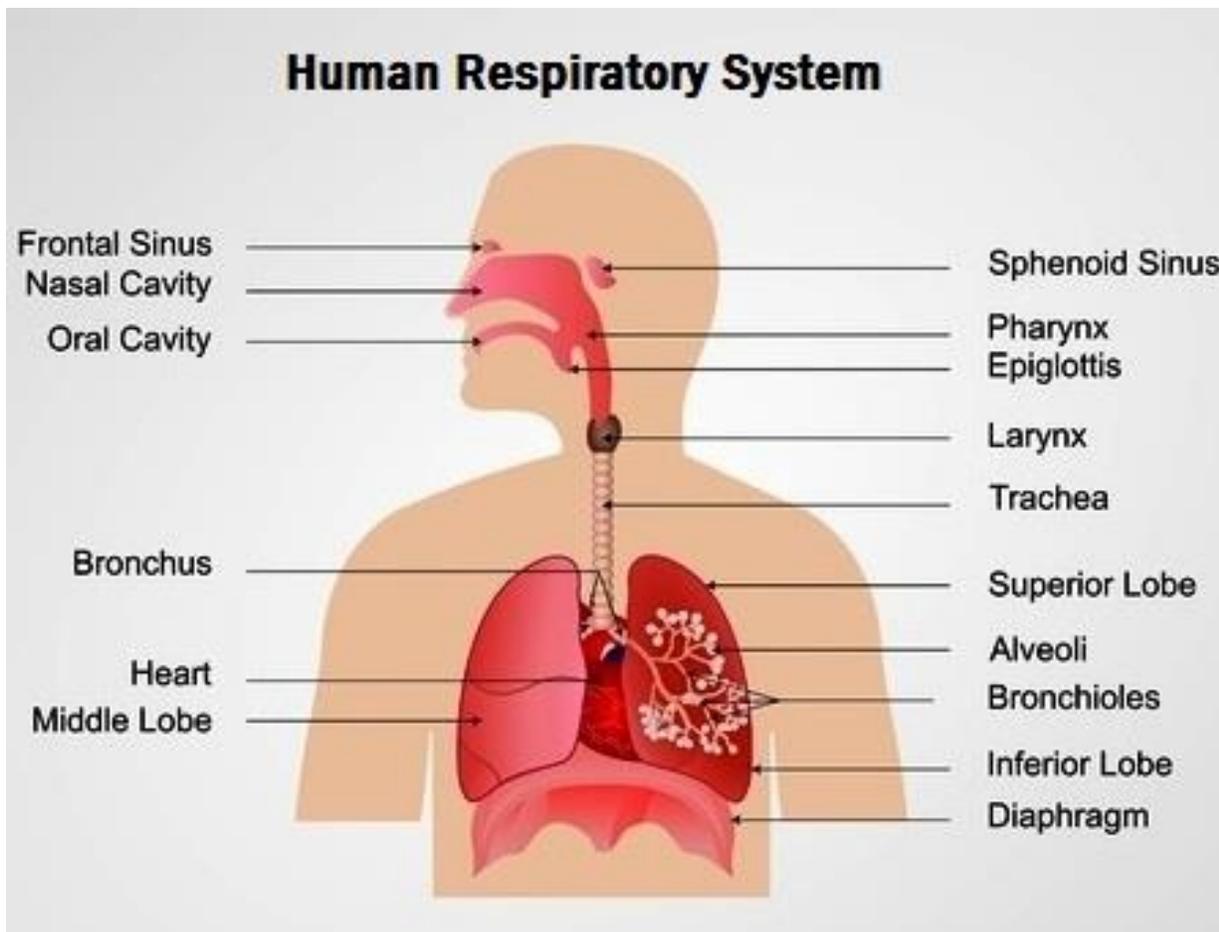
These include the following respiratory conditions:

- Asthma
- Chronic Obstructive Pulmonary Disease (COPD)/emphysema

Asthma is a disease of both children and adults. COPD and emphysema are similar diseases that are most commonly found in adults with a smoking history.

Both have cough, wheezing and shortness of breath, depending on whether or not they have a respiratory illness like bronchitis or the common cold and on the conditions of the air.

In disaster or crisis conditions, there may be poor air quality that makes breathing worse.



You'll need to stockpile the following:

- Albuterol inhaler to be taken approximately two puffs every 4 hours
- Advair inhaler which contains steroids and a beta agonist to be taken one puff twice a day
- Tissues to collect sputum
- Oxygen tank and tubing for a nasal cannula that can be used in cases of increased shortness of breath

You'll need to follow these patients carefully for increased shortness of breath, increased wheezing, decreased oxygenation, or secondary pneumonia. This may be the time to purchase a battery operated oximeter. Oximetry can tell the level of oxygen in a person's blood by percent.

A normal oximetry reading is between 97 and 100 percent oxygen. It fits on the end of a person's finger and reads the oximetry reading. Levels in the 80s can be "normal" for COPD patients so you'll have to get several normal readings to know what is abnormal. It can be done in children, too, so you know how severe their asthma is.

Look for signs of secondary pneumonia, which include having a fever, increased coughing, increased shortness of breath, and increased amount of sputum when coughing. If you find these symptoms, strongly consider a bacterial infection and treat accordingly.

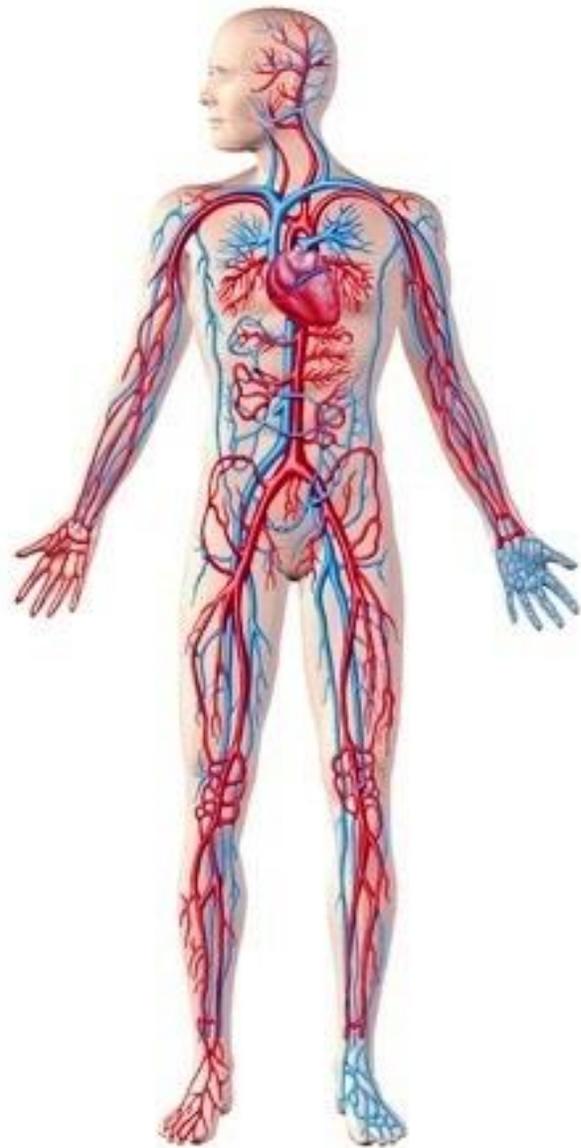
Treatment of respiratory diseases includes using an albuterol inhaler for wheezing. An Advair inhaler or one recommended by their doctor can be used on a regular basis. The steroid component can decrease the inflammation found in all of these conditions and can prevent recurrences. If there is a significant exacerbation, consider a prednisone taper starting at 60 mg for 3-4 days and tapering down as follows: 40 mg for 3 days, 20 mg for 3 days and 10 mg for three days. There should be improved breathing after the initial 60 mg strength is taken.

Kids can take a prednisone taper. Check with your doctor to find out what taper is appropriate for a child of your child's age. For pneumonia or bacterial bronchitis, treat adults with Cipro and children with Bactrim or Suprax suspension.

Circulatory System Diseases

Circulatory system diseases include peripheral vascular disease, stroke and cardiovascular disease. We discussed stroke under neurological diseases as, when you have a stroke, you have neurological findings such as left or right hemi-paresis or paralysis and speech/language problems.

- With peripheral vascular disease, the individual can have large vessel disease or small vessel disease. Large vessel disease involves blockage of the femoral artery in the thigh down to about the knees. It affects both legs equally but can affect one leg more severely than the other. The main symptoms are pain when walking that occurs in the calves or thighs. The lower leg skin is shiny and thin. It can be pale or red and purple secondary to changes in the vessels. These legs bleed easily when bumped and there can be open ulcerations secondary to poor vasculature in the big vessels. Pain can be increased or decreased in the feet. With small vessel disease such as you'll see in diabetic vascular disease, the small vessels of the toes and foot are involved first. There can be increased burning pain in the feet,



Human Circulatory System

open ulcers and cold feet that are pale and shiny. Small and large vessel disease can lead to necrosis/gangrene of the foot.

- Patients with cardiovascular disease or “heart disease” have blockages in their coronary arteries. They may have had a heart attack before or may simply be at a serious risk for heart attack. They can have chest pain or shortness of breath on exertion and they may have swelling of their ankles. Chest pain on exertion is called “angina”.

For peripheral vascular disease, you need to stockpile the patient’s anticoagulant which can help blood fit through tight arteries and arterioles as much as possible. Pain medication should be stockpiled for them along with a soft quilt or blanket. They won’t be able to use electrical heat to keep their feet comfortably warm but they can be covered for comfort.

People with heart disease will need to stockpile their nitroglycerine tablets if they take them. They may need to stockpile nitroglycerin 0.4 mg tablets even if they don’t need them prior to the disaster. If they take anticoagulants, these should be stockpiled as well. There may be situations in which oxygen from an oxygen tank can positively turn around the chest pain seen in cardiovascular disease.

You’ll need to watch people with cardiovascular diseases carefully. Those with peripheral vascular disease should have their toes and feet inspected daily for open sores which should then be covered with gauze and tape. They should be monitored for infection in the feet. Feet infections in peripheral vascular disease are difficult to treat because the circulation is poor and the antibiotic can’t get to the area of infection.

People with heart disease should watch their activity level and stop doing what they’re doing if they get shortness of breath or chest pain. They may need to take a nitroglycerine pill. The person with heart disease should be watched for swelling of the feet and, if you have a spirometer, you can check them for low levels of oxygen in their system. Then oxygen could be provided.

The treatment of people with peripheral vascular disease involves keeping their feet warm and well protected. It also involves taking their anticoagulant medication. If they appear to be

deteriorating with evidence of gangrene or increased sores on the feet, do not increase their anticoagulant as that can lead to bleeding elsewhere in the body. Instead treat with pain medications if needed. Sometimes gangrenous areas, like toes, will simply fall off.

Other times, a doctor is required to amputate a part of the foot or leg to keep infection and inflammation away from the rest of the body. Skilled cardiovascular surgeons can perform procedures that will open blocked arteries, something that will be hard to come by in a disaster or crisis situation.

It is difficult to treat patients with heart disease. Nitroglycerine has its uses but if a person is having a heart attack, you can only treat them with pain medications and oxygen.

The person with a heart attack should rest for several days and then gradually increase their activity. There is little else that can be done for them without a skilled cardiologist or cardiovascular surgeon.

Digestive System Diseases

Digestive system diseases fall under a few categories:

- Chronic heart burn/gastritis
- Food sensitivities like gluten sensitivity or dairy sensitivity
- Crohn's disease
- Ulcerative colitis
- Irritable bowel syndrome

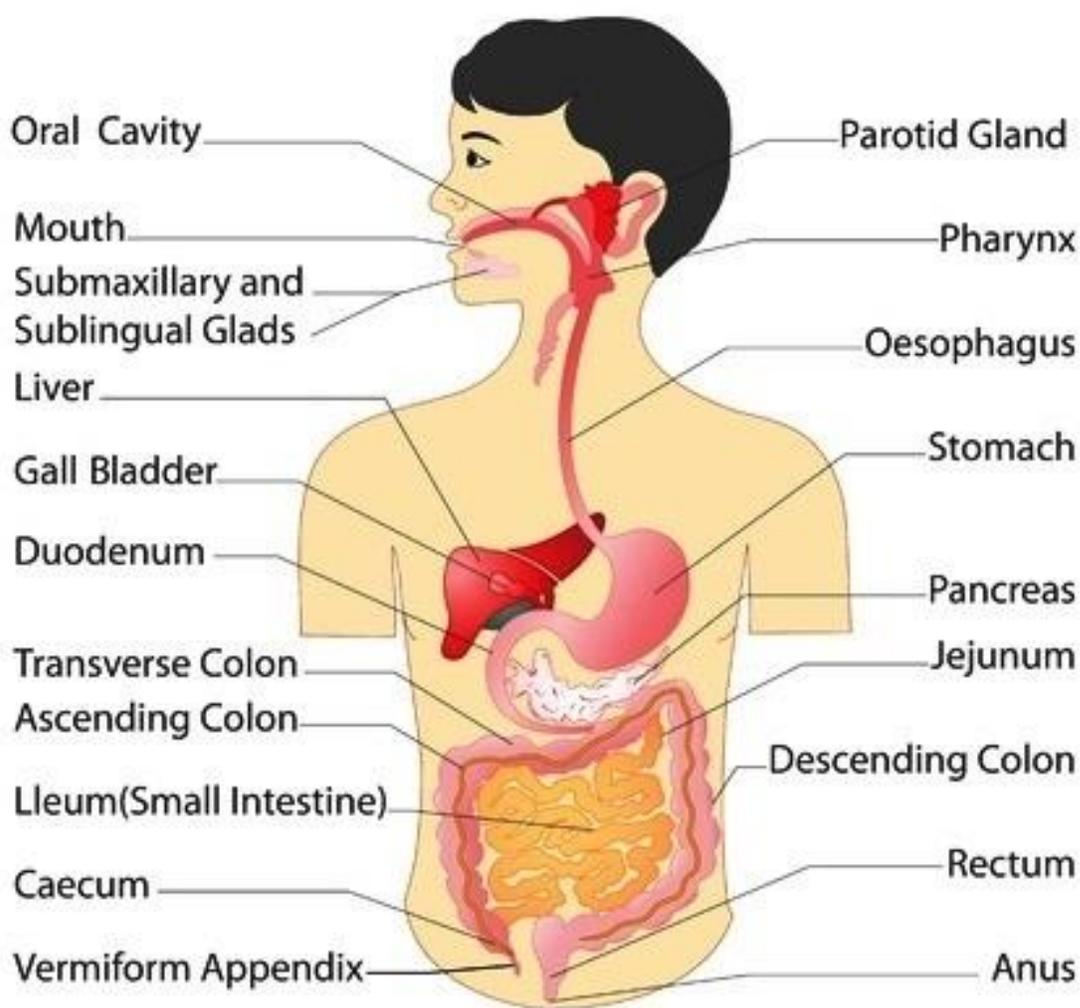
Heartburn stems from acid in the stomach, which comes up and coats the inner lining of the esophagus. The esophagus wasn't meant to be coated with acid so it becomes inflamed and painful. Everyone has heartburn on occasion but some people are chronically afflicted with heartburn. It is a painful condition to have.

People can have food sensitivities such as gluten or dairy sensitivities / intolerance. In gluten sensitivity, you can't tolerate proteins in wheat, barley, and rye. In dairy sensitivity, you are

intolerant to cow's milk proteins. These conditions can be hard to manage in a disaster situation when you must eat whatever is available. Symptoms of both diseases are abdominal bloating, gas, constipation and/or diarrhea.

Crohn's disease is an autoimmune disease in which the body makes antibodies against a part of the intestinal wall, from the mouth to the anus.

Symptoms vary according to the part of the body that is afflicted. Most have stomach cramps, lower abdominal cramps, diarrhea and/or constipation. Bloody diarrhea is possible.



Human Digestive System

Ulcerative colitis is a diarrhea-producing autoimmune disease in which the body makes autoantibodies against some aspect of the wall of the colon. The symptoms are similar to Crohn's colitis with the exception that all symptoms relate to the lower colon.

Irritable bowel syndrome involves having stomach and intestinal tract, food sensitivities, diarrhea and/constipation. The disease is very debilitating even though there are no structural abnormalities involved in the disease. Many people with irritable bowel syndrome are women who also have panic symptoms, anxiety, and depression.

Stockpiling for digestive system diseases involves having handy the medications the patient is used to taking by prescription or over the counter. As mentioned earlier in the book, you will be stockpiling TUMS, Zantac, and Prilosec for heartburn and medications for diarrhea and constipation for those symptoms.

In the autoimmune diseases like Crohn's disease and ulcerative colitis, the individual might benefit from a prednisone taper during flare-ups of their diseases. They should ask their doctor about what else to take during a flare-up and stockpile those medications as well.

For heartburn and gastritis, pay attention to pain in the chest, the sensation of acid in the back of the throat and an upset stomach. Take the strongest possible medication, Prilosec, in such cases.

For the other medications, monitor the stools for excess diarrhea and constipation. Take the medications as prescribed by the doctor or consider a prednisone taper in Crohn's disease and ulcerative colitis.

For these conditions and for food sensitivity, you need to pay attention to what foods make the situation worse and what make it better. Try to stick with foods that do not exacerbate the symptoms.

Urinary System Diseases

There are three major classifications of urinary tract problems that can be impacted by disasters or crises. These include:

- Recurrent urinary tract infections
- Kidney stones
- Various degrees of kidney failure

All of these conditions can be difficult to manage when the situation is normal. When there is a disaster or crisis situation going on, some of these conditions can be life-threatening and even fatal. Let's take a look at each condition and see how they play out in disaster situations.

Recurrent Urinary Tract Infections

A person with frequent urinary tract infections either has something wrong with their urinary tract outlet or has a poor immune system.

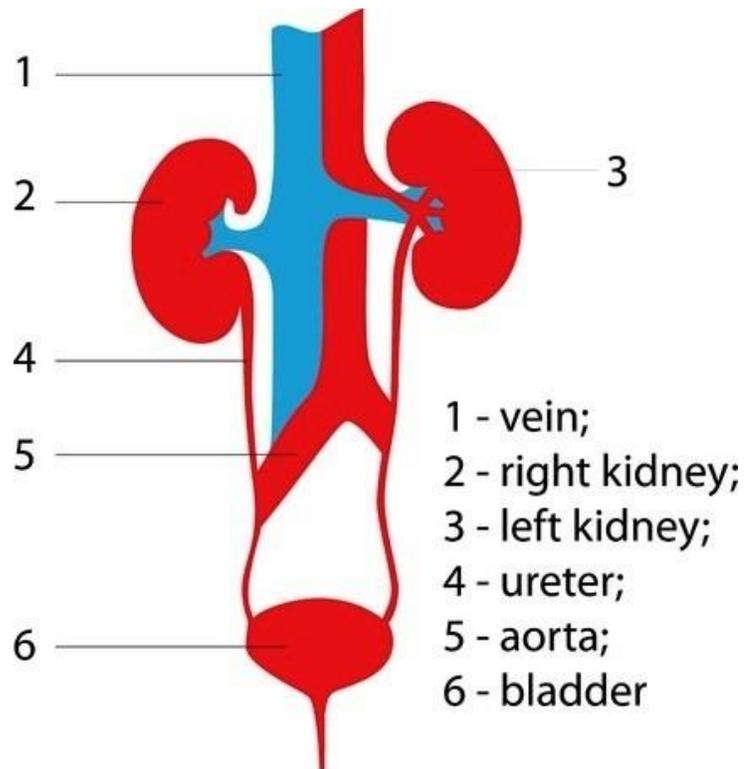
Symptoms include increased frequency of urination, burning on urination and having urinary urgency (being unable to wait to void).

More serious cases will involve fever and flank pain.

In the most serious of cases—especially those left untreated—the infection can spread from the bladder up to the kidneys and eventually to the bloodstream, causing a serious condition called urosepsis.

Urosepsis can be life threatening.

In a disaster situation, you'll want to monitor everyone for these sorts of symptoms because bladder infections can increase in risk in situations of water shortage.



Human Urinary System

Water flushing through the urinary tract can reduce the incidence of urinary tract infection, even in those who have the infection on a regular basis.

Stockpiling for people who suffer from urinary tract infections involves having enough water on hand and utilizing an antibiotic of choice for prevention of the infection. Many people take low dose Bactrim or Macrobid (nitrofurantoin) to prevent bladder infection recurrences.

If an infection occurs, you should have stockpiled Bactrim and possibly Macrobid to take in higher dose (one pill of either medication twice a day).

Push fluids as much as possible and urinate frequently. If the infection extends to become a kidney or bloodstream infection, more medical attention should be sought.

Kidney Stones

People can have one kidney stone their entire life. Alternatively, there are those with hereditary conditions that lead to recurrent kidney stones throughout life.

Many take medications to reduce the risk of urinary tract infections and these should be stockpiled as part of a person's prescription drug stockpile. In addition, a lack of drinking water can increase the risk of getting kidney stones, even in healthy people. Stockpiling enough water for everyone is paramount.

Symptoms of kidney stones include the possibility of blood in the urine and the sudden onset of extreme flank pain, radiating to the groin. The pain is often incapacitating, something you don't want to have in a disaster situation.

The treatment of kidney stones involves pushing fluids as much as possible and using antibiotics like Bactrim or a quinolone antibiotic if there is any evidence of a kidney infection secondary to the kidney stone.

Kidney Failure

Kidney failure happens when the kidneys fail to regulate the amount of toxins and salts in the body. There are very few symptoms of kidney failure until the kidneys have almost stopped. This is why it is a good idea to keep track of one's kidney function numbers, especially if you have diabetes, certain hereditary diseases and autoimmune diseases like lupus and multiple myeloma.

In a kidney failure situation, there can be malaise and shortness of breath from imbalances in serum salts and excess water in the system. There are types of kidney failure that result in too much water lost from the kidneys and other types that result from too little water excreted from the body. Most of the time, water is not excreted well in kidney failure.

There is nothing you can stockpile to prevent the complications of having kidney failure to the degree that one needs dialysis. If you need dialysis and are in a disaster situation unable to get to a dialysis machine, you are in dire straits.

There are a few things you can do to prolong your life: drink a modest amount of fluids, avoid bananas and apricots, avoid salt and avoid salt substitutes. People with kidney failure must avoid dehydration as well.

Metabolic Diseases

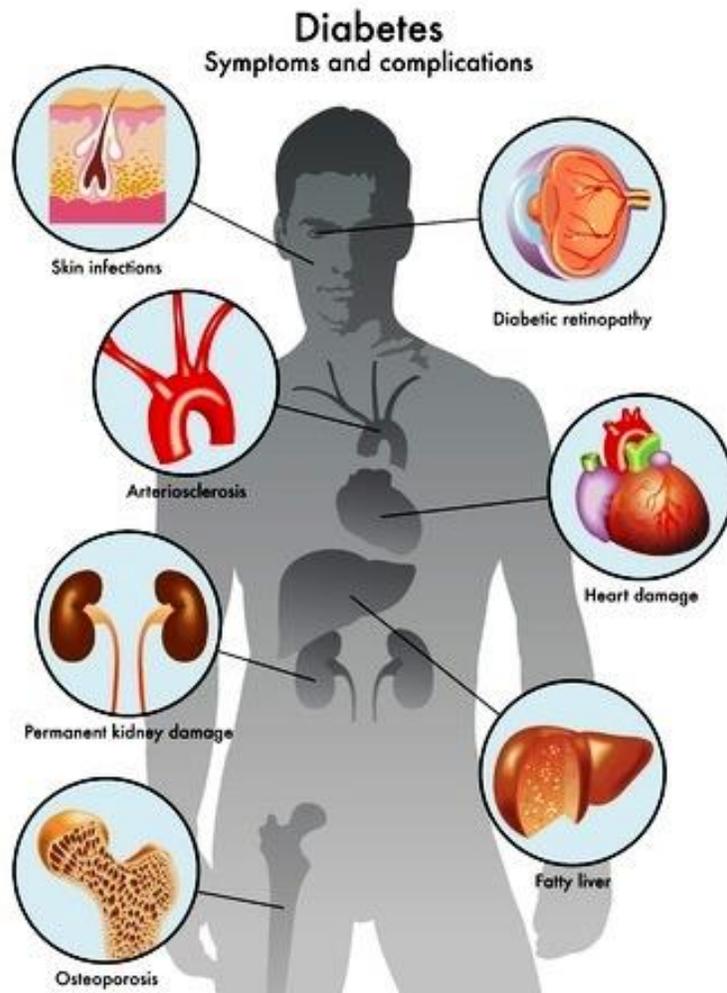
The main metabolic diseases are diabetes mellitus types I and II.

Type I diabetes is also called juvenile diabetes and is the kind of diabetes that is insulin dependent. It is an autoimmune disease that usually befalls children and adolescents and is lifelong.

Type II diabetes generally doesn't begin until adulthood. It generally responds to diet and pill medication but when it becomes severe, it often needs insulin.

Diabetes mellitus is a serious disease with patients suffering from numbness and poor circulation to their extremities, elevated blood sugar and resultant coma, and heart disease. Blindness is another disability arising out of prolonged uncontrolled diabetes.

Diabetics should stockpile their regularly prescribed medications and a glucometer, which can tell them when their sugar is too high or too low. They should also stockpile pre-made sugar solution for times when the blood sugar is too low.



Those with diabetes should be monitored for elevated or low blood sugar. Low blood sugar symptoms include sweatiness, nausea, and a decreased level of consciousness over a period of time. People with high blood sugar can have blurred vision, lightheadedness, extreme thirst, flushed hot and dried skin, and decreased level of consciousness. Breathing can be deep and rapid and the individual can die from this condition.

The treatment of diabetes is eating a healthy diet without a lot of processed sugars and taking the medications as prescribed. If high or low blood sugar is suspected, check a blood sugar reading with the glucometer. A low reading is usually below 40-50 and a high reading is above 450-500.

Treat a low blood sugar with oral sugar solution if possible. Treat high blood sugar with extreme hydration and subcutaneous insulin. Monitor the blood sugar carefully for several hours after an episode.

Survival Time

What would be the limits of your survival if disaster happens? Human body has its limits, but do you know your own limits?

Human Body Limits	
Body Heat	107.6 F – When core body temperature hits this limit a heart stroke can't be reversed and will prove fatal.
Cold Water	40 F – Water saps body heat, and you can last barely 30 minutes at 40 F in the sea. Life vests help to slow heat loss.
Hot Air	300 F – In a burning environment, adults can take 10 minutes at this temperature. Kids soon succumb in a 120 F car.
High Altitude	15,000 Feet – Consciousness fades at this limit. With bigger lungs and more red blood cells, highland dwellers are OK.
Diving Deep	282 Ft – Without equipment people black out before 2 min. and below 60 feet. The best free diver made it to 282 feet.
Lack of Oxygen	11 Minutes – Typically, you'd pass out within 2 minutes. With training people can hold their breath nearly 11 minutes.
Blood Loss	40% - You can survive after spilling 30%. At 40% you'd need an immediate transfusion.
Starvation	45 Days – Lose 30% of body weight and death is imminent, though disease will kill you before you starve.
Dehydration	7 Days – Every cell need water. Replace the quart or so you lose daily, or you won't last much more than a week.

Speed Limit	44.72 km/h – The human speed limit has been set by Usain Bolt has run 100 meters in 9.58 seconds.
Concentration	80 Hours – For people in jobs where concentration is critical, like truck drivers, power-plant operators or airline pilots, a 12-hour shift is the limit for most. Until 2004, doctors in the UK on weekend shifts used to work from Friday morning to Monday evening - 80 hours in total. At best they would snatch a few hours of sleep; at worst, none at all.
Vacuum	40 Seconds – Three Soviet cosmonauts died in 1971 when a faulty valve caused their Soyuz 11 capsule to depressurize at an altitude of 168 km. The cabin pressure dropped to zero for 11 minutes and 40 seconds, until the capsule hit the atmosphere. The crew died within 30 to 40 seconds from hypoxia.
Memory	Chao Lu has accurately recited 67,890 digits of pi from memory – but even that only hints at the brain's true capacity
Sleep	264 Hours – A 17-year-old schoolboy in San Diego, California spent 11 days without sleep - 264 hours. It remains the longest scientifically verified period without sleep, breaking the previous record of 260 hours.
G Force	9 Gs – Our tolerance of g-forces depends not only on the magnitude and duration of the acceleration or deceleration but also on the orientation of our body. We are most vulnerable to a force acting towards the feet, because this sends blood away from the brain. Five to 10 seconds at 4 to 5 g vertically typically leads to tunnel vision and then loss of consciousness. Fighter jets can pull up to 9 g vertically, and the more a pilot can take without blacking out, the better their chances in a dogfight.
Weight	457.5 Kg – In the heaviest dead lift recorded, British weightlifter Andy Bolton lifted 457.5 kilograms from the floor to his thigh.
Radiation	1000 Rems – If 100 people get a sudden dose of 350 rems of radiation, half of them will die in 60 days. 350 rems is considered LD50/60, which

	means 50% death rate in 60 days. If you get 1000 rems of radiation, you will die in one hour. If you are dosed with 500 rems, you may vomit right away, but the next day you will probably be ok (that's what the experts call the walking dead phase), but you will most certainly not survive beyond two weeks.
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People with chronic illnesses are often kept alive by the medications they take as prescribed by the doctor so many chronically ill patients will do as well as someone who isn't sick. The only exception is a patient with kidney failure needing dialysis. They will rapidly deteriorate and will die within a few days to a few weeks.

Insulin dependent diabetics will likely survive until after their insulin runs out. After that, their blood sugars will continue to rise until they develop a hyperglycemic coma. They will lie in a coma for a few days and will die after that. Type II diabetics can do well with a strict non-sugar diet. If they have severe disease and do not take care of themselves, they can suffer from a hyperglycemic coma and death within weeks of running out of their medications.

There is no way to predict what will happen to those who have cardiovascular diseases including stroke. If they are on anticoagulation therapy, they should do well. When these medications wear off and run out, the blood will be "thicker" and there will be an increased risk of fatal heart attack, fatal stroke, or loss of circulation to their legs and gangrene.

Gangrene can be fatal unless a surgeon can amputate the leg. The actual time a person suffering from these diseases dies can range from weeks, to months, to years.

People with digestive diseases and other urinary tract diseases will generally survive but will be miserable with their illnesses. Those with Crohn's disease and ulcerative colitis have an increased risk of early colon cancer sometime in their lives.

People with respiratory diseases who need oxygen will gradually deteriorate when off the oxygen. When the inhalers run out, there will be increased shortness of breath that will be

miserable and could lead to death within a few days. These people will be bedridden because their lungs cannot afford the exertion. With staying in bed, they may last up to a month or so.

Dental Preparedness

Dental emergencies are just as common as medical emergencies during a crisis. This is compounded by the fact that dentistry will be more disrupted than the medical field that has some training in emergencies.

Your dentist may not even carry office hours in emergency situations.

This means that as much as you can understand about dentistry and your teeth, the better off your family will be.

The stages of tooth decay



Let's take a look at some dental emergencies and what you can do about them:

- **Toothache.** A toothache represents an inflammation of the nerve supplying the tooth. In some cases a toothache lasts just a few hours or days and then goes away. In other cases, the toothache means that there is an infection beneath the tooth and it leads to a dental abscess.
These means that the toothache will likely not go away or will go away for a brief period and then return. The treatment for a mild toothache is to take Tylenol, Aleve, or Advil/Motrin. If the toothache is severe, try taking Vicodin or oxycodone and apply heat to the affected area (on the outside of your mouth). If it seems as though this is insufficient, take Keflex 500 mg twice daily for ten days. If this doesn't cure a toothache, it may have to be pulled out.
- **Swollen Jaw.** A swollen jaw in the absence of injury usually means you have a dental abscess or some kind of soft tissue abscess. Such swelling is usually associated with dull pain that responds to pain medication. If there is no tooth pain, assume that the swelling will respond to ice, which will dull the pain. If it is likely that an infection is involved (you can see redness along with tenderness), try local heat along with antibiotics as noted above to try and clear a dental or soft tissue abscess.
- **Oral Injuries.** If you have been struck in the face, you might have a tooth injury or a broken tooth. There is very little you can do to fix a broken tooth. It will have to be repaired by a dentist when the crisis is over. If a tooth gets knocked out along with the root, wash it gently in salt water and put it back into the mouth in the same position. It might actually "take" again and the tooth will repair itself. It helps to have a dentist put in a wire bridge to keep the tooth in place until it takes but in the absence of that, just put the tooth in and try not to use it or move it around very much.

- **Prolonged bleeding after an extraction.** Sometimes it is necessary to extract a tooth and there can be excess bleeding. If this is the case, you need to put a small piece of gauze onto the area that is bleeding and bite down for a period of time so the bleeding stops. Use Tylenol, Vicodin or oxycodone for pain and avoid aspirin, ibuprofen, and naproxen. These can cause excess bleeding to occur. If you have applied enough pressure to the wound, a clot will form and the bleeding will stop.
- **Broken Jaw.** This is a serious injury that cannot easily be treated without x-ray, dental care and surgery. The best bet in an emergency situation is to first determine if the bite is normal or if it is off. If the bite is off, take some oxycodone and see if you can get someone to straighten out the bite. Once it is straight and your teeth line up, drink only liquids or pureed food for at least a month until the bone has healed and don't open your mouth very much. It will throw off your bite and you will have to start over in getting your bite back to normal.
- **Painful Erupting Tooth.** If a wisdom tooth or other tooth is erupting and hurts in the process, the only real help you can give yourself is to take a pain medication and put ice on the side of the face near where the tooth is coming in. Eventually, the tooth will erupt completely but it may crowd out other teeth and will continue to be painful to some extent.
- **Cold Sores.** Cold sores are also called fever blisters and are caused by the Herpes Simplex I virus. These are tiny blisters that are located on the lips and sometimes just outside the lips. They are triggered by the sun, by stress, and by getting a fever and being run down. These are different from canker sores, which are flat and white, located on the tongue and the gums. Canker sores are caused by bacteria and are not contagious, while cold sores are contagious.
Cold sores will resolve after about a week but there are things you can do to prevent other ones from coming. These include changing tooth brushes as soon as you get an

outbreak, covering the cold sore with lip balm or petroleum jelly, applying sunscreen to the affected area to protect it from the sun, trying to keep from touching it, and avoiding stress. As a real home remedy, try sucking on a real licorice whip and put ice packs on it if possible.

Prevention Is Better than Treatment

When it comes to dentistry, it is better to have your teeth cleaned and examined on a regular basis than it is to have a cavity or broken tooth that really can't be treated in a crisis or emergency situation.

See the dentist twice a year and get things taken care of before a crisis happens.



Natural Dental Remedies

When dentistry was nothing more than extracting teeth, there existed a number of dental remedies that can help your dental health. Most of these are simple plants and herbs you can keep around.

- Green tea can be drunk as a way of stopping the growth of oral cancer cells. It is believed to actually kill cancer cells because of its antioxidant power.
- Clove oil can treat toothaches. Rub some clove oil on a sore tooth and it will feel better.
- Use calendula or Echinacea to soothe sore gums and to treat thrush in the mouth. They are good herbs for all kinds of yeast-related infections.
- Aloe vera gel works well to cleanse the teeth and is able to soothe sore gums. It can act as toothpaste, cleaning bacteria off teeth and reducing cavities. Aloe vera gel can treat canker sores of the mouth.

- Try honey to prevent tooth erosion. It has antibacterial properties that surprisingly work against mouth bacteria. Remember that honey shouldn't be given to those kids under the age of 2 as they don't have the immunity it takes to eat honey.
- Any kind of sores in the mouth such as abscesses and cankers can be dealt with using salt. Rinse your mouth several times a day using warm water with a little salt in it. It will help deal with the pain, but make sure not to put too much salt in it.
- Salt can also be used to extend the life of a toothbrush by simply soaking it in saltwater.
- A very efficient solution can be made by combining one part of fine salt with two parts of baking soda, which can be used on a toothbrush to act as a toothpaste replacement. It can also be mixed with water and used as a rinsing solution.

Vitamins for Dental Health

There are many vitamins you can take for dental health. To optimize dental health, take a multivitamin that includes:

- Vitamin A: maintains healthy mucus membranes
- B complex vitamins: stops inflammation of the tongue, reduces gingivitis symptoms, heals oral tissues, and helps treat yeast infections
- Vitamin C: prevents gum inflammation
- Vitamin D: Strengthens tooth enamel
- Vitamin E: Heals damaged mouth tissues
- Vitamin K: Helps in bone formation.
- Calcium: Important in reducing signs and symptoms of gingivitis

The most important thing you can do in a crisis is to remember to brush your teeth twice a day, regardless of the fact that you and your family are going through a crisis. This is no time to neglect your teeth.

Preparedness for Women: Sanitation and Hygiene

Women have a more difficult time with sanitation and hygiene because of their menses.

One thing a young woman can do to decrease the amount of flow and the length of the period is to take birth control pills, even if they don't need it for actual birth control. Birth control pills tend to make periods shorter and with less cramping than regular periods. This technique cannot be used in women older than 35, due to risk of stroke and other clotting problems.

You should stockpile tampons and sanitary napkins—enough for several months. Pay attention to how many tampons and/or pads you go through each month and use that as a guide to know how many of each to stockpile.

When you get your period, you will use up these products. When they are done, put the used products in a paper bag and keep it in a discreet location. When your period is over, seal the bag by folding over the top and burn the bag along with the rest of the trash. Repeat the process the next month.

There is no rational reason to douche but if you must, keep a clean douche bottle handy and mix a tablespoon of vinegar with enough water to fill the douche bottle. You can douche with this to clean the vagina and perineal area.

If you think you might be pregnant, use one of the stockpiled pregnancy test kits and, if you are pregnant, begin using the stockpiled prenatal vitamins right away to prevent birth defects in your unborn child.

To prevent getting pregnant, you could use pills or other contraception methods, as calendar method, basal body temperature method, or cervical mucus method.

Calendar Method of Contraception

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21
Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28
Day 29	Day 30					

Day 1 to 7 - Menstruation

Day 8 to 18 - Fertile Days

Day 19 to 30 - Infertile days

Day 14 and 15 - Ovulation Days

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Pregnancy

If you are pregnant during a disaster or crisis, hopefully you will already have confirmed the pregnancy and will have prenatal vitamins. Stash a book on pregnancy so you know what to expect during your pregnancy. You may not be able to see a doctor at any point in the pregnancy. If you can't, be good to yourself and eat as healthy as you can. Do not go outside for any length of time if there has been nuclear fallout. Your due date is calculated as follows:

Take the first day of your last menstrual period and subtract three months and add a week. Fast forward to the upcoming year and you have your due date.

For example, if your last menstrual period started on June 3rd, your due date will be roughly March tenth of the next year. When it comes to delivery, it helps to have someone nearby or in the family that is willing to learn how to deliver a baby or at least has done it before. Read your pregnancy book on labor and delivery so you know what to expect.

What to stockpile for labor and delivery:

- At least three sets of sterile latex gloves.
- Pack of 8-10 4 x 4 gauze, sterile if possible.
- A sterile scissors
- Absorbable suture size 3-0
- Laceration pack
- A clean blanket for the baby
- Clean sheets to lie on or a rubber sheet if you can find one
- A flashlight to see the area to be sutured if necessary.

If the delivery goes well without complication or laceration, you won't need most of these things but if there are lacerations of the perineum (the tissue between the vagina and rectum), it would be helpful to have someone in your group that could approximate the edges of the laceration with absorbable 3-0 suture.

If you are pregnant, expect that breastfeeding will be a necessity unless you have stockpiled formula. Powdered formula has a fairly long lifespan but liquid formula does not. As breastfeeding is healthier for the baby, you should breastfeed if at all possible. You will have to stay hydrated as you breastfeed but, if this is possible, go ahead and breastfeed the baby.

List of Medications to Stockpile

There are a great many medications to stockpile in order to plan for as many contingencies as possible. Think about your family's specific needs as well as the needs of your community.

There needs to be many more medications taken and stockpiled in seniors' medications than in children's medications. These medications include:

- Fiber laxative
- Aspirin as a blood thinner
- Atherosclerosis medication. Mevacor (lovastatin); Zocor (simvastatin)
- Blood thinners for stroke Coumadin (warfarin)
- Medications for arthritis Aleve (naproxen)
- Heart burn medications. Zantac (ranitidine).
- High blood pressure medication. (Lisinopril); Tenormin (atenolol).

The medications you stockpile can be easy to come by and are over-the-counter medications available at any large pharmacy. Others you need are more difficult to get. They include narcotic medication and other prescription medications you have been prescribed by a doctor. In some cases, the prescription medications can be gotten from your doctor.

You should have at least a month's supply. Narcotics are more difficult to get, even from your doctor. Narcotics are good for severe pain but are potentially addicting so most doctors won't write a prescription for it without good reason.

For prescriptions, including narcotics that you can't get at the doctor's office try looking for an overseas pharmacy online. It's hard to predict which ones will be reputable or not. Try purchasing just one or two items from them and if they deliver reliably a medication that has the manufacturing label intact with the right medication name, you can continue to purchase from them.

Often the labels are in another language but the generic name of the medicine is very similar or the same as the English version. Keep track of expiration dates. These should be good substitutes for American-made medications.



But there are also other ways to get these medications. I myself needed an antibiotic, and I went to the drugstore and didn't tell them I am a doctor. In some situations and in some places you can get antibiotics and non-narcotic pain medication over the counter, by claiming that you are on the treatment in question and that you need to continue it but that you're not at home and that you need a dosage for one day. Chances are good nowadays that they'll need ID and your doctor's phone number.

What if you don't have access to what you need, though? Can these drugs be replaced with other substances, such as veterinary substances? Yes they sometimes can, if you keep the proportions, and with caution. You must check the dose because the dose is important. Otherwise, you take a dosage for a horse and you die. Look on the blister and see what it is, then divide it with the knife, in 2, 3, 4, 5, dosages as necessary.

You should be stocking medications that you might need even though you don't need them now. You should also be stocking medications you use on a regular basis, including at least a month's supply of your prescription medications.

Stockpile medications nearby medications that are related to one another. For example, stock the respiratory medications together, the stomach medications together, etc. In a crisis, it pays to be organized.

Familiarize yourself with the generic names of medications because when you purchase over-the-counter medications or buy them online, the generic forms are often much cheaper by far than the name brands. In this book, we tell you the name brands when available so you know what

we're talking about. Knowing the generic names will help you determine what medications you're getting online as well.

Categories of Medication

There are several categories of medications you'll want to purchase. These include the following types of medication:

- Cold and flu medication: These include medications for congestion, cough, and the pain of sore throat and body aches.
- Allergy medications: Include sedating and non-sedating types of medication.
- Pain medications: Include over the counter and prescription pain medications.
- Breathing medications: This especially includes inhalers.
- Gastrointestinal medications: This includes medications for heartburn, stomach distress, diarrhea and constipation.
- Skin medications: These include sunscreen and medications for various rashes and skin problems.
- Antibiotics: Include those that cover for the majority of infections you might encounter.
- Birth control pills: A disaster is no time for a pregnancy, especially if nuclear radiation is present.
- Psychotropic medications. This especially involves medication for sleep and anxiety.
- Children's medications: If you have a baby or young child, you'll want liquid medications specially designed for their needs.

Cold and Flu Medication

The cold and flu are different viral infections but they share some of the same symptoms. For this reason, they are included together.

Cold and flu symptoms include congestion in the nose, sore throat, sinus pain, and cough. The flu also has a great deal of body aches and malaise, where you just don't feel good at all and need to lie down and rest. There is more fever when you have the flu.

Medications you'll want to have on hand include the following (the brand name is capitalized and the generic name is in parentheses):

- Sudafed (pseudoephedrine): This is for nasal and sinus congestion. You have to ask for it behind the pharmacy counter even though it is not a prescription medication because it is one of the main ingredients in methamphetamine and they don't want people to purchase large quantities of it at a time. Follow package instructions for sinus and nasal congestion. Usually you take 1-2 pills every four hours.
- Tylenol (acetaminophen), Advil (ibuprofen) or Aleve (naproxen): These are all good medications for fever, sore throat, and body aches. Take two every four to six hours.
- Robitussin DM (dextromethorphan): This comes in pill or liquid form and helps the cough. You need to be careful and just purchase plain Robitussin DM. Robitussin CF contains a decongestant that you already are taking when you take Sudafed. Robitussin DM also contains guaifenesin which breaks up the thick mucus in your system.

These three classifications are all you really need for the common cold or flu.

Allergy Medications



These are medications you take for allergies to mold, dander, or outdoor things like grasses and tree pollen.

There are sedating allergy medications for when you want to sleep and non-sedating allergy medications for when you need to be alert and awake. These include the following medications:

- Benadryl (diphenhydramine): This is a sedating antihistamine that will work for nasal allergies and skin allergies like hives. It

is easily available at any pharmacy without a prescription. The generic form is really cheap. Take 25-50 mg (one to two tablets or capsules) every 6 hours for allergies. If the allergies are really bad you can take it every 4 hours.

- Claritin (loratadine) or Zyrtec (Cetirizine): These are effective once a day antihistamines. They are available over the counter in pill form. Generic forms can be found and are much cheaper than the brand name product. They work for nasal congestion and hives but can't really be taken along with Benadryl products.
- Prednisone: This is a commonly used medication that can be used in serious allergy situations of any type. You need to take prednisone in a taper: start with a high dose and then taper off to a low dose. A common prednisone taper is 60 mg for 3 days, 40 mg for 3 days, 20 mg for 3 days, 10 mg for 3 days and 5 mg for three days.

Pain Medications

There is a range of medications that are successful for pain. The three main categories are simple pain relievers, anti-inflammatory medication, and narcotic pain relievers.

- Tylenol (acetaminophen): This is a simple fever and pain reliever that works on all sorts of pain. It is safe to take in anyone who does not have liver disease as it is metabolized by the liver. It is usually taken in adults as 2 500-milligram tablets every 4-6 hours. It has the added advantage of being able to be taken with anti-inflammatory medication in a pinch when the pain is severe and you want to take something more than Tylenol.
- Advil or Motrin (ibuprofen), Aleve (naproxen): These are anti-inflammatory medications that work best on pain caused by inflammation like arthritis. They also work on fever and generic pain. Some people will get stomach upset if they take these medications on an empty stomach so it's best to take them with a small amount of non-acidic food. Try taking 2-3 tablets or capsules of ibuprofen every 4-6 hours. Take naproxen at 2 tablets every 8 hours.
- Narcotic pain relievers. These work for strong pain and include Vicodin (hydrocodone and Tylenol) and oxycodone. Give one to two tablets every 6 hours. Be alert for signs of

confusion if the patient is taking too much. You can get this online or get a prescription from your doctor.

Breathing Medications

In some disaster situations, even people without asthma will have problems with wheezing and shortness of breath.

The best choice for this is an inhaler containing a beta-agonist, which opens the breathing passages. The trick is to use these medications in such a way that the medication gets in your lungs and not in the back of your throat. With inhalers, you take a deep breath with the inhaler in your mouth and when you're in the middle of the deep breath, press the plunger and keep breathing in. The medicine should get sucked down into your bronchial passages.

This is the main medication you'll need:

- Albuterol: This is available in an inhaler form but it can be given in liquid form to young children. It needs a prescription so get one from your doctor or on the internet. Take two puffs as directed above every four hours for wheezing and cough.
- Primatene Mist: This is a less effective over-the-counter medication containing aerosolized epinephrine. Take two puffs every four hours. Use it when you absolutely can't get albuterol.

Gastrointestinal Medications

As mentioned above, there are medications for heartburn and upset stomach, nausea, diarrhea and constipation. The medications listed below should cover for these symptoms:

- Zantac (ranitidine): This is a histamine-2 blocker that lessens stomach acid. It is taken in pill form in 150 mg tablets. You take it 1-2 pills twice per day for heartburn or stomach acid problems.

- TUMS: These are Calcium carbonate tablets that are chalky and are chewed and swallowed. There is almost instant relief of heartburn but it has the disadvantage of not lasting very long. You have to chew 2 tablets every 1-2 hours for maximum relief.
- Maalox: Alternatively, you can swallow Maalox liquid for heartburn and stomach acid relief. Maalox contains aluminum hydroxide and magnesium hydroxide that neutralize stomach acid and relieve heartburn. It also has the disadvantage of not lasting very long but it hardly matters much if you take extra. Take one to two teaspoons every 2 hours.
- Prilosec (omeprazole): This is a proton pump inhibitor that shuts off acid production at its source. It is the most effective heartburn reliever you can buy over the counter but it takes several hours to take effect. Try taking one pill every day for permanent blockage of heartburn problems.
- Kaopectate (bismuth subsalicylate): This is a mild reliever of diarrhea in children and adults. It is very safe to take and can be taken at 1-2 tsp every 4-6 hours. It should not be taken in children recovering from influenza or the chicken pox because it is a salicylate that carries the risk of Reye's syndrome. If you buy your Kaopectate in Canada, it will contain attapulgite instead of bismuth subsalicylate and is safer for children and babies to take.
- Imodium-AD (loperamide): This is a pill form of a medication helpful in treating diarrhea **when the disease is not a result of an infection**. It can be taken as 1-2 pills every 6 hours or closer together if the diarrhea is persistent.
- Ex-Lax (sennosides): This is an effective way of treating common constipation. It comes in pill form as well as in "chocolate form". In pill form, you take one to two tablets and wait to see if you get results in 24 hours.
- Correctol (bisacodyl): This is effective in the treatment of constipation. Take one to two pills and wait to see if it works within 24 hours.

Skin Medications

Skin needs a special set of medicines that usually come in cream or ointment form. These are medications especially for rashes that can come from insect bites, allergies, or other inflammations. The most common skin medications include the following:

- Hydrocortisone Cream: The maximum strength you can get over the counter is 10 percent or "Cortisone-10". It is used for a variety of rashes including some allergic rashes and things like poison ivy. It blocks the inflammation in the skin tissue.
- Benadryl cream: This is used for allergic reactions like hives. Apply as needed for itching.
- Prednisone: This is a tablet that comes in many strengths. It can be used for a variety of problems like asthma and internal inflammations but for skin, it is used in the management of poison ivy and hives. Purchase many 20 mg tablets and give 60 mg the first three days, 40 mg the next three days, 20 mg the next three days and 10 mg on the last three days. You can even use a prednisone taper like this for influenza. It doesn't cure the flu but it does make a person feel better while they have it.

Antibiotics

Antibiotics won't cure the common cold and they will do nothing for influenza but it does wonders for sinus infections stemming from the cold, a case of strep throat, and certain cases of bronchitis, pneumonia, bacterial skin infections and bladder infections. You need to use them judiciously, when you know that you're dealing with a bacterial infection.

This means you have a fever, yellow or green drainage from the nose or coughed up from the lungs and redness around a wound. Strep throat and bladder infections are hard to determine. You just have to guess.

Give the body, the limb or the spot in question where the injury occurred, time to recover.

Do not immediately jump to drugs, don't start pouring the entire reserve of drugs down the patient, because you won't solve anything like that. Sometimes the simplest solution is to not do anything, not to force it. Also, if you dole out antibiotics before you give the body a chance to heal, you're wasting valuable medical supplies that may be needed later.

Wait and see, and only when things are going towards the worse end should you start with antibiotics.

Any antibiotic must have several properties: it must be inexpensive, easy to administer, it mustn't cause resistance and it must act on as many bacteria as possible, in as short a time as possible.

On these principles, I recommend:

- Augmentin - up to 2 grams per day for adults, which can be taken either as 875mg 3 times per day or 1.1g twice a day. It's the most affordable for many types of infections, widespread use, apart from lung infections, meaning pneumonia, for which the best is Avelox.
- Avelox - for pneumonia, only one dose per day
- Cephalosporins (ceftriaxone, cefuroxin)

Other antibiotics that are good to have in your medical stockpile are:

- Keflex (cephalexin): This is a good broad-spectrum antibiotic good for strep, sinus infections, and pneumonia. The dosage strength is 250 mg-500 mg four times daily for around ten days.
- Erythromycin: This is good for skin infections and some cases of bronchitis and strep throat. Take 250 mg to 500 mg 2-4 times daily.
- Bactrim DS: In this case the "DS" stands for "Double Strength". It works well for bladder infections and can be used in respiratory infections as well. You take one tablet twice a day for 7-10 days.
- Cipro (ciprofloxacin): This is a quinolone antibiotic that has great strength for just about any kind of urinary infection. Save it for severe infections as you don't want to contribute to antibiotic resistances.
- Take 250 mg to 500 mg twice daily for 10 days, shorter if it's a bladder infection you're treating. Then you can go as little as 5-7 days.

Only take antibiotics if it's absolutely necessary to do so, otherwise they will not help, because they only fight bacteria.

Consider the advantages of taking antibiotics and think about the side effects they can cause: allergies, stomach problems, nausea, fungal infections.

- Flagyl: This is used for gastrointestinal infections like Giardia. When there is recalcitrant diarrhea in a setting where there can be food or waterborne infections, use 500 mg every 12 hours.

Birth Control Pills

Birth control pills come in several brand names but all you'll need are a couple of packs of estrogen/progestin pills in generic form. They are taken at the start of one's period and are taken every day throughout the month. There will be different colored pills for the time you don't have your period and the time of the expected period. Expect some spotting in the first month.

If you are already pregnant, stockpile prenatal vitamins and store a book on pregnancy to read.

Even if you are on birth control, it helps to have a pregnancy test (or more than one) to confirm a pregnancy early in its course so you can begin to take prenatal vitamins in the first trimester.

Psychotropic Medicine

In a crisis or disaster situation, there is bound to be some anxiety and sleep difficulties. These are the medications to consider.

- Xanax (alprazolam): This is a great short-acting medication for anxiety. Take 0.5 mg to 2 mg every eight hours for anxiety.
- Ativan (lorazepam): This is another short-acting medication for anxiety. The dosage is 1 mg twice a day or one milligram three times a day.
- Klonopin (clonazepam). This is a long acting anti-anxiety medication. The pill can be given once daily at 1-4 milligrams per day.

All of the above medications can be used for sleep. You can also use Benadryl (diphenhydramine) at 50 mg every night for sleep.

- Prozac (fluoxetine): This is a good antidepressant if the person meets the criteria for depression such as having a depressed mood, helplessness or hopelessness for at least

two weeks. Take 20 mg every day in the morning regardless of how you're feeling on that day.

Children's Medication

Older children can get by with half strength adult medications but small children need their own medication choices.

Your pediatric stock pile should include the following:

- Tylenol suspension: This is for fever or pain. Read the label on the side of this over the counter medication to find out the dose for your child's age or weight.
- Advil or Motrin Suspension: This is ibuprofen suspension that, like Tylenol, works well for fever and pain. It has anti-inflammatory properties as well.
- Benadryl liquid 12.5 mg per teaspoon: This can be used to help a child fall asleep if given around 1 tsp at bedtime. It can also be used for allergies in children, including hives. It will make them tired but they will be more comfortable.
- Children's cold medication: They really only have children's multi-symptom cold relievers so select one that covers for congestion, fever and cough and give that per the bottle's recommendation. Be careful not to add Benadryl or Tylenol to the mix because you will likely be double-dosing the child. Multi-symptom cold relievers often have antihistamines and fever reducers like Tylenol in them.
- Suprax (cefixime): This is a once daily antibiotic for kids. It can be used for ear infections, strep throat, and exacerbations of bronchitis. It is given in many strengths but get the 200 mg/5cc strength. Store it as a powder before making it a liquid as it lasts much longer as a powder. Ask the pharmacist how to reconstitute the powder. Give 8 mg/kg in a single daily dose.
- Bactrim suspension: This has a much longer shelf-life than other pediatric antibiotics and can be used for pediatric bladder infections. For a 22 pound child, give 1 tsp twice daily; for a 44 pound child, give 2 tsp twice daily; for a 66 pound child, give 3 tsp twice daily. Kids bigger than that can take adult strength Bactrim DS.

Overall, you have to have a method to keeping your medical stockpile organized. You need to do a monthly determination of the stability of the medication. Look at the date it goes out of storage and rotate those that have gone out of style with newer stock.

Things can be out of storage for several months so that you can give some wiggle room and so that you can have longer periods of time where the product is still good.

Hygiene Supplies

The one thing that can impact the presence of disease the most is a lack of hygiene. Hygiene can be impacted by several things:

- The presence or absence of water. Remember that water doesn't have to be perfectly clean to bathe in it, even if it is inappropriate or insufficient for drinking.
- Soaps and other cleaning products that can improve the degree of hygiene in the average family.
- The length of time of the disaster.
- The original condition of the people involved in the disaster? Did they get dirty as part of the event and did they get "dirty wounds" during the event?
- The type of individual involved. For example, a baby has a lesser immune system than an adult and needs to be cleaner. The same is true of diabetics, who get infections of the skin more frequently than non-diabetics.

When you are putting together your hygiene kit, you won't know the length of time of the disaster so you want to plan for the longest possible time that the size of the kit allows.

You may have to make some sacrifices in what you put in to the kit because of the size of some of the items.

The things you want to put into your "hygiene kit" include the following:

- A bar of antibacterial soap. If there is water, a bar of soap is a cheap and small-in-size way of bathing a lot of people for very little space. A good antibacterial soap can wash away

germs and can reduce the risk of skin infections. Unfortunately, water is not always plentiful in a disaster situation. A bar of soap can be shaved with a knife to be mixed with smaller amounts of bathing for rinsing off or for using to clean surfaces.

If you run out of soap, it can be easily made. You need 16 ounces of coconut oil, 16 ounces of olive oil and 16 ounces of palm oil. You also need 7 ounces of lye and 16 ounces of water. Add the lye to the water with maximum ventilation. Heat the oil mixture and the lye mixture separately to exactly 110 degrees Fahrenheit. Then add the lye mixture to the oil mixture stirring rapidly. Pour into molds or mold it into balls. It will make a number of balls of soap. You can make a crude soap by mixing hardwood ashes with oil. You really can't wash your body with it but you can wash dishes and surfaces with it.

- Antibacterial wipes for personal use. While these can take up a lot of room, for short term situations, they are the ideal way for survivors to clean up every day or every other day; they have antibacterial properties and have advantages for infection prevention.
- Toothbrushes and toothpaste? These are hygiene products we take for granted when there is no emergency. Do we really need them when we are in a disaster situation? If there is room, most people would feel happier if they could brush their teeth, even in an emergency situation. The same holds true for dental floss, which can have other great uses, because of its great tensile strength and usability in a number of circumstances. Make sure you have enough toothbrushes for everyone in your family. If you have an elderly person with dentures, try to have some kind of denture cream available to them as well.
- Toilet paper. While you can use other things like leaves and paper, toilet paper is one of those things that can make your home feel homier and everyone happier. You can buy it in bundles of twelve or more and store the rolls in the bottom of your kit. One ply rolls last longer and a package of 12 can save the bottoms of an entire family for many days or weeks.
- Combs. Combs pack more easily than hair brushes so throw in a few combs to keep people feeling like they are human. A disaster tends to dehumanize us so anything we can do to feel human is a step in the right directions. And a handful of combs take up very little space in a hygiene kit.

- Hand mirror. A small hand mirror can have several uses.
- Shavers. Men can go a long time without shaving and so can women. On the other hand, if you have soap and water, the men in the family can shave. It's another piece of what makes you feel human after a disaster. Shaver blades have other uses in a disaster as well, depending on whether or not you're in need of a sharp blade for cutting something.
- Antibacterial surface spray. Surfaces used for bathing or for cooking need to be cleaned with antibacterial spray. One can of spray goes a long way toward keeping surfaces clean and free of viruses and bacteria.
- Antibacterial surface wipes. These take up more space than a can of antibacterial surface spray but they have the added advantage of cleaning and abrading a surface. This makes things cleaner than simply spraying the surface. In that sense, they are a better choice than surface sprays.
- Paper towels or rags. Paper towels are a definite luxury but if you have room, they can clean surfaces and people very well. Small towels or clean rags have the advantage of being able to be washed and dried for easy reuse; they also take up less space than paper towels. Rags can be used with vinegar and water, antiseptic spray or soap to clean off surfaces for cooking or just to keep things clean and a lesser source of infection.
- A gallon of vinegar and a spray bottle. You can mix a half cup of vinegar with clean water and use it as an antiseptic mixture on soft or hard surfaces. Vinegar is cheap and lasts a long time in a stockpile.
- A sharp scissors. If the disaster lasts a long period of time, people will need to get their hair cut.
- One good stock pot. This can be used for boiling water and making soup. Remember that all water necessary for consumption, even for brushing your teeth, should be boiled. After boiling, it can be cooled and transferred to water bottles.
- Manicure set for keeping your fingernails and toenails clipped short.
- Feminine hygiene products. This will be discussed in a later chapter. It's important, though, to have enough to stock your whole family of women and teens.

- Shaving supplies. Not everyone wants to have a long beard at the end of this crisis. Soap, water and shavers will come in handy.
- Baby wipes. These come in handy if you have a baby and even if you don't. You can wipe your hands off with baby wipes and even wash your face. If you have a baby, however, this is a must have.
- Sunblock. This may be necessary even in the winter. You don't want to be nursing a sunburn because you were out all day long.
- Lip balm. Being outside all day can lead to cracked lips. Even if you are stuck indoors all day, it is nice to be able to apply lip balm every once in a while.

The goal of hygiene kits in a disaster situation is to help your family feel more comfortable and more "human" and to keep people clean and infection-free.

Hygiene products that contain antibacterial properties are preferable in a disaster situation where the environment may not be clean or hygienic.

As soon as possible after the crisis or disaster has happened, you need to find a place where trash can be burned. Burning trash is the best possible way to reduce infection and decrease clutter.

Remember that, even though you have a trash burning pile, you need to recycle what you can.

HOMEMADE TOILET PAPER

What you need: newspaper, general paper and even magazines as long as they do not have a shiny gloss; baby oil, or lotions or aloe in order to keep the paper from hardening.

- 1. Remove as much ink as possible from the paper, by soaking it in a tub or a bucket, then place it in a pot with leaves and grass which will help the fibers remain together. The pot should be filled with water so that it completely covers the paper and then left to simmer.*
- 2. After an hour of simmering comes about half an hour of boiling at high temperatures. Add more water if necessary, and remove the foam which begins to rise to the top, as this is mostly ink, glue and other unwanted materials.*
- 3. When the paper turns into a pulp, remove the water without disturbing the pulp. Wait for it to cool before removing the rest of the water. The pulp also needs to be taken out to remove the water, but it should not be done so that the pulp becomes completely dry. Once this is done the pulp is put back in the pot and it is mixed with the softening oils.*
- 4. Now scoop out the pulp. Do it in chunks and place them on a towel or a cloth on a flat surface, then use a rolling pin in order to spread out the pulp in a thin layer. Try to make it as thin as possible. A mallet can be used to gently deal with any lumps that might appear.*
- 5. Now a towel or cloth should be placed on top of the layer to create a sandwich. On top of this place something flat and rigid and then something heavy to remove all the excess water. If this is done you can remove the items placed on top. Be careful with the second towel as you do not want it to stick to the pulp. In order to remove the towel on the bottom, you will have to flip it all upside down. Do not try to remove the pulp off the towel.*

Then you are left with a big layer of thin paper which needs to dry in the sun. Cut it into pieces and you'll have your DIY toilet paper.

Medical Stockpile

A medical stockpile consists of those things your family might need medically in a disaster situation.

When thinking of your medical stockpile, you need to pay attention to who is in your family, including their ages and special medical needs. This may entail items appropriate for a baby, a school-age child, adults and the elderly. You also need to think about having a medical stockpile even if your family is healthy, because a disaster can change the health of your family in an instant.

What kinds of things should you include in your medical stockpile? The list is below but first a bit of advice on purchasing some items. When you purchase over the counter items, you need to check the expiration date on all items and buy those with the expiration date as far out in the future as possible. Make sure the expiration date is clearly marked on the packages you stockpile so you can quickly remove and replace those items that have passed their expiration date.

Items past their expiration date may still work, however they will have a lesser potency. In rare cases, a medication much past its expiration date will have altered its components to contain something dangerous if you take it but it is rare.

When in doubt and if in need, you can take something past its expiration date but it will have a lesser efficacy (effectiveness).

The items you choose for your medical stockpile should contain both prescription and non-prescription items. For the prescription items, you can solicit the help of your doctor in procuring these items or you can get many of the items on the internet. There are many reputable pharmacies in overseas locations that will give you a good deal on things like antibiotics and advanced pain relievers.

This is what you should have in your medical stockpile:

- **Simple pain relievers.** These should include Tylenol (acetaminophen) and Advil (ibuprofen) or Aleve (naproxen). Ibuprofen and naproxen both have anti-inflammatory

properties and technically, you don't need both. Ibuprofen is cheaper but naproxen lasts longer for pain so, in the end it's your choice in deciding what is more important for you and your family. Tylenol is only effective against pain but it is easier on the stomach than anti-inflammatories. Remember to get child-sized liquids for babies and children in the family. They also make chewable for older children.

Do you need every kind of pain reliever? You can certainly pick a favorite and hope it works for everyone. You can also simply pick Tylenol and an anti-inflammatory medication of your choice. It spares you from accidentally taking two anti-inflammatory medications at the same time, which would really be hard on the stomach.

- **An inhaler.** You don't know what the air quality will be like after a disaster and contaminants in the air can cause bronchospasm or narrowing of the airways, leading to wheezing. While wheezing and shortness of breath will be worse in asthmatics, a tight cough and shortness of breath in anyone can signal bronchospasm. The treatment most commonly used is inhaler therapy. They make Primatene-Mist over the counter but it is less effective than using an albuterol inhaler, available from your doctor. The recommended dose is 1-2 puffs every four hours or so. Albuterol can be given to children who are most like to suffer from clinical bronchospasm because they have such small airways.
- **Antibiotics.** Choosing a simple antibiotic is difficult because people have allergies and intolerances to antibiotics and there is no perfect antibiotic for every illness. Poll your family members for allergies before selecting one. A good choice is a broad spectrum antibiotic like cephalexin or Keflex. Two other choices include erythromycin (or azithromycin) and sulfa antibiotics like Bactrim or Septra (trimethoprim and sulfamethoxazole).

If you have these five classifications of antibiotics, you'll have covered for several kinds of infections including:

- ✓ Cephalexin: Respiratory and upper respiratory infections, skin infections
- ✓ Erythromycin or azithromycin: Upper respiratory infections and lower respiratory infections such as “walking pneumonia”, skin infections
- ✓ Bactrim or Septra: bladder infections, some gastrointestinal infections.
- ✓ Cipro or Levaquin: used for bladder infections, respiratory infections, or skin infections
- ✓ Flagyl: used for parasitic infections and some gastrointestinal infections

Ask your doctor in advance to give you pediatric strength antibiotics and adult strength antibiotics with directions for both. If you need to get liquid antibiotics, try to get the powdered form and have both sterile or distilled water and the directions for mixing the antibiotic suspensions. Many antibiotics for kids have very short shelf-lives once suspended but much longer shelf-lives in the powdered form.

Remember, not every ailment will respond to an antibiotic and using them when not needed only wastes resources. For example, antibiotics do no good in the treatment of the common cold or in the management of the flu. Only when the common cold progresses into a purulent sinus infection or you find yourself coughing up yellow or green mucus can you expect antibiotics to take effect.

- **Cold medicine.** This can involve a variety of different medications that take care of the runny nose, congestion, sore throat, fever, and cough associated with the common cold. There are two approaches. The first is to select single-ingredient medications that work on just a few symptoms. You stockpile medications for congestion and runny nose, separate from those for fever and sore throat and separate from cough. Doing this has the advantage of treating only the symptoms you have.

For example, you could stockpile:

- ✓ Pseudoephedrine: this works well against sinus congestion and runny nose and is available behind the counter at your local pharmacy. Note: There may be a limit to

the number of boxes you can get at one time because pseudoephedrine is a primary ingredient in the synthesis of methamphetamine so its purchase in large quantities is regulated.

- ✓ Acetaminophen: this is stockpiled above and works great for any sore throat or fever you may have. It also works for the aches and pains of influenza (the flu). As an alternative, you can use ibuprofen or naproxen for pain.
- ✓ Dextromethorphan: this is the main ingredient in Robitussin liquid medications. Choose the plain Robitussin syrup for excellent cough control.
- ✓ Antihistamines: there are several antihistamine medications like chlorpheniramine and dextromethorphan. These are good medications for allergy symptoms but have no real place in cold medications. Nevertheless, you'll find them in multi-symptom relief cold medications.

Alternatively, you can buy an all-symptom cold relieving liquid (or gel caps). You have to make certain you know what all of the ingredients are so you don't duplicate medications such as taking acetaminophen along with an acetaminophen-containing cold medication. Some people might find an all-symptom cold reliever to be simpler. It's all a matter of preference and if space is a factor in your medication stockpile, go for the option that takes up the least amount of space.

- **Skin ointments and creams.** There are several medications you need to have on hand for your skin. The first is antiseptic ointment. Use this for cuts and scrapes so they don't get infected. Conditions may not be optimum for keeping a cut or scrape clean so using the ointment is the next best bet. Most antiseptic ointments contain either neomycin or bacitracin or both. An ointment called Neosporin is good for all types of open injuries to the skin and contains both medications.

You might add a cream or ointment that contains hydrocortisone. The maximum over the counter strength of hydrocortisone you can get is 1 percent, which is effective for many

different rashes. Rashes like poison ivy or other itchy rash can be managed with hydrocortisone cream. Allergic rashes can be treated with hydrocortisone cream as well. Sunscreen and bug cream or sprays have to be considered, depending on the conditions. You might have to be outside for long periods of time and mosquitos can start to get to you. At all times of the year, the sun can be strong and you don't want to be stuck with a nasty sunburn on top of all your troubles. Stockpile some sunscreen and bug repellent because you can't predict the time of year or circumstances of a disaster situation.

- **Gastrointestinal medications.** There are a large variety of medication choices for the gastrointestinal system and you'll need to condense them down to just a few. You'll need something for the upper part of your GI system—your stomach.

Medicines for excess stomach acid and heartburn include TUMS, a medication like Zantac, and a medication like Prilosec. TUMS is just calcium carbonate and it quickly neutralizes the burn of heartburn or the rumbling of an acid stomach. If you can't afford to wait for a few hours, try Zantac, which is a histamine-2 blocker, blocking the production of stomach acid. If you can afford to wait a few more hours but want all day relief, try Prilosec, which is a proton pump inhibitor. It more thoroughly blocks the production of stomach acid; it just takes a few hours to kick in. The medication or medications you choose for stomach problems and heartburn depend on your personal preference and on how much room you have in your stockpile.

For nausea, the standard treatment is Compazine, given as 10 mg tablets or 25 mg suppositories if the person cannot tolerate oral medications.

There are medications for constipation and diarrhea— problems that can befall anyone in a disaster situation. For constipation, you can choose Miralax, a medication that must be mixed with a glass of water, X-Lax, which contains natural sennosides, or Correctol, which contain biscodyl. Of the three, biscodyl is the strongest, which means it might result in diarrhea if taken to excess. Choose the medication you are most familiar with and stockpile it.

For diarrhea, you can choose Kaopectate, which is for use in adults and very small children. It is a liquid medication that doesn't need water to use. You can also choose something like Imodium-AD, effective for adults only. If space is an issue, select only one of these medications.

- No medication stockpile would be complete without items for the **treatment of wounds, sprains and strains**. There are a number of items to choose from. While no one might become injured, disaster situations put people in positions they can't predict so make sure your injury kit is well stocked.

Items to stockpile include:

- ✓ Antibiotic ointment like bacitracin or Neosporin
- ✓ Antiseptic cleansing wipes
- ✓ Scissors
- ✓ Cloth or paper medical tape 1-2 inch wide
- ✓ 4 x 4 gauze; it can be folded over when the injury is small.
- ✓ Ace bandages — 3-5 inches wide for the lower and upper extremities
- ✓ Sling for the arm in adult and children's sizes
- ✓ Splinter remover to remove foreign bodies
- ✓ Ice pack; you can buy chemical ice packs that turn cold on hitting it with a fist

You can get very elaborate with injury supplies, such as buying upper and lower extremity air splints and buying cervical collars for neck injuries but that may be overkill. The above list will cover the vast majority of injuries you'll get in a disaster situation.

It pays off to have everyone in your family prepared for a disaster situation by being covered for tetanus. Tetanus immunizations are good for approximately 10 years but if you get a deep puncture or laceration and five years have gone by between your tetanus shot and your injury, most emergency rooms would ask that you get another shot just to cover your bases.

Don't forget the prescription medications your family takes on a regular basis. If your doctor allows it, have a month's worth of all your family's prescription medications in your stockpile. Check the expiration dates periodically and swap out the expiring medications with new ones.

Your medical supply kit will serve you well if you keep tabs on it periodically and store the medications in a cool, dark but not damp place. In a disaster situation, you'll be reassured that the medications and wound supplies you need will be available for your use.

Don't forget to have medications for your pets. If your pet takes a prescription medication, have that on hand. Talk to your veterinarian about getting an antibiotic and pain relieve at the very least.

Basic Medical Hygiene Supplies

There are basic medical supplies you need to have in mind so that you can manage the injuries that will come your way.

All of these supplies can be purchased over the internet, and without a prescription:

- Wound cleanser. This comes as a spray bottle that can be used to keep wounds clean.
- Sleeve of 4 x 4 gauze. This comes as a sleeve of 200 pieces of gauze for multiple uses.
- Betadine swabs.
- For aggressively cleaning out and sterilizing an infected wound. This comes in packages of three at a time.
- Steri strips (butterfly stitches), they will be used to close small wounds. They usually come in packages of 10 blisters x 3 strips per blister.
- 2 inch by 10 yds paper tape. Two inch tape is the most versatile of all possible tapes you can get. You can easily cover a wound completely, which provides some protection against leakage from blood or secretions.
- Ace wraps 3-4 inch width. These widths cover for most lower and upper extremity injuries.
- Abdominal pads. These are broad, thick pads that are used for large wounds with a great deal of secretions. They are taped to the skin over the wound.

- Band Aids of all sizes for small injuries.
- A package of surgical masks, ideal for pandemics.

Necessary Medical Instruments

The secret, even in third world countries, is that you don't necessarily need to have salt, vinegar, alcohol, or whatever else at hand. The only thing that you always have at hand is the human body, and first of all you need to know how to work with it.



But you need those clamps, the stethoscope, and surgical thread. You need infusion, infusion tubes, cannulas because you can't fit an infusion, and needles. But let's see what medical instrument would you need and fill a list:

- Stethoscope
- Pean clamp, Mosquito clamp, Kocher clamp
- Bone rongeur
- Forceps
- Surgical needles and threads
- Scalpel (#10 blade)
- Cannulas (different sizes)
- Syringes and proper needles for them

Have different needle sizes. As many of them as possible need to be reusable, because stocks run out quickly. Everything made of plastic will run out quickly. Everything will have to be used, sterilized and reused.

You don't necessarily need those so-called threaded needles, the ones that you can buy with thread on, but those will run out as well. You should buy those curved needles with a catch on the end like your grandmother had, not the "modern" ones with a loop. Buy the ones with a

catch that you press on to secure the thread, those are reusable needles. You can find them on eBay.

For thread, you can always use anything, but the idea is for it to be as thin and as resistant as possible. Even fishing line will work but it must be sterilized and it melts if you boil it so you'll have to use alcohol in extreme conditions.

SURGICAL INSTRUMENTS FOR YOUR MEDICAL AID KIT



Kocher Clamp



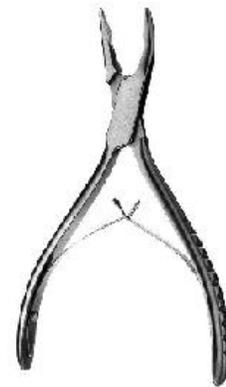
Mosquito Clamp



Peen Clamp



Scalpel #10



Bone Rongeur

survivopedia.com

As I've already told you, 100 years ago they operated without washing their hands, but it's not recommended. If you can't clean your hands, have some forceps already sterilized that you can use to hold the needle.

Forceps will also help you get the needle through the muscle or tissue. If you think about it, tissue is tough; it's resilient. You often can't pass through it with the needle just using your hand. You can try but it'll be hard.

Try these medical instruments on a piece of meat you buy, try it on a piece of chicken skin or on a tendon. You can't sew the tendon by hand, and you can't pull the needle out the other side unless you've done it before. It's that tough. You need to grab it with pliers after passing it through with the forceps, and pull it out the other side.

Do you need a scalpel in the kit? Yes, you can use a 10 blade for pretty much everything.

A golden rule concerning all these instruments is that you play with them before you actually use them. You have to know how to hold them, how to open them, how they drop from your hand.

Buying Medical Response Kits

There are times when you're in the field and need specific items for a specific ailment. These include response kits for minor cuts and abrasions, wounds requiring sutures or staples, and wounds that are serious, like fractures or complex wounds. These kits can be wrapped in cloth and sterilized so that you can keep them fresh for when they are needed.

According to the CDC, dry sterilization of a pack of items that would be rendered useless by wet sterilization involves heating the pack to 340 degrees Fahrenheit for 60 minutes or to 320 degrees Fahrenheit for 120 minutes or 300 degrees Fahrenheit for 150 minutes. Basically, you wrap the kit in a cloth, like a dishcloth and heat it to sterilize it. Keep it on a shelf and don't open it until you need it. They need re-sterilizing every year.

These are some kits you might need:

Response Pack for Superficial Wounds

This response pack doesn't need sterilizing. Superficial wounds include things like abrasions and minor cuts. They need to be cleaned and covered so they don't get infected. Here's what you should have in your response pack.

- A betadine swab or more. You can buy them over the internet in packs of three. Use the swab to wash the wound. While you can use soap and water at home to wash a wound, it isn't readily available in the field so you should get the betadine swabs for on the go. They come pre-sterilized.
- Band-Aids or Steri strips. Have them come in all sizes so you are prepared to cover any size of minor wound.
- Paper tape. Considering all types of tape, paper tape sticks the best to your skin and lasts the longest. Use it to affix 4 x 4 gauze pads to larger wounds. It doesn't have to be sterilized.
- 4 x 4 gauze. These pieces of gauze come in woven and non-woven types and with different ply numbers. Choose a 12 ply woven or a 4 ply non-woven gauze that comes pre-sterilized. You can buy them cheaply in sleeves of 200 but they are un-sterilized and need to be sterilized for your use. For minor lacerations or abrasions that need covering with gauze, they don't have to be sterilized. They are clean after all, and that's all you really need for minor injuries.
- Neosporin or bacitracin ointment. This can come in small packages or tubes.

Using the response pack: For minor open wounds, clean them out with a lot of water, or use the betadine swabs if the wound got infected. The swabs are nice because they can mechanically clean out the wound and provide sterilization as well. Then dry off as much as possible the wound so the Band Aid / Steri strip will stick.

Use the inside of the dishcloth to dry the wound and apply the Band Aid. Put the Neosporin or bacitracin ointment just over the laceration or abrasion. If the laceration or abrasion is too big for a Band-Aid, use a gauze pad and affix it with paper tape.

The wound may need to be retreated in 24 hours or sooner if it is bleeding or oozing through the dressing.

Response Kits for Wounds Requiring Sutures or Staples

In such cases, it is possible to sterilize the entire pack over low heat as described in the beginning of this section.

Response kits for wounds requiring sutures or staples are a bit bigger and more involved than those for simple wounds. This kit works for lacerations involving primarily the skin and not deeper structures like muscle or tendons.

They include the following:

- Sterile latex gloves
- Betadine swabs. These come in packs of three and are available on the internet. Betadine sterilizes and debrides (cleans out unwanted tissue and dirt) the wound. Use all three swabs in the packet to clean the wound.
- Lidocaine (2 percent) liquid. This doesn't need to be sterilized as it is in a sterile bottle and is liquid.

- Syringe—6 cc. This should come with a 22-gauge needle or similar gauge. This is a large size syringe but it is better to have one that is too big than one that is too small. Fill it to the amount you think you'll need.
- Suture. Get Ethilon (non-absorbent) suture. Use 4-0 sized suture which will work for just about anything. Technically, lacerations on the face should have 5-0 or 6-0 Ethilon suture but we can't be too picky in a time of crisis.
- A suture holder: This is a special tool that holds the curved suture needle in place.
- Sterile scissors. This is for cutting the sutures after they are tied.
- 4 x 4 Gauze pads. These are for mopping up blood and cleaning the field as you suture. They can also be used to cover the wound, taping it with paper tape.
- Paper tape. This is the best tape for holding gauze to the skin.

Response Pack for Complicated Wounds and Fractures

You may need to care for someone who is more seriously injured, such as someone with a deep laceration or someone with a possible fracture. A response pack for serious injuries includes the following:

- A laceration pack similar to the one noted in simple lacerations except that it should include a container of sterilized water, a syringe without a needle that can be filled with sterile water and used to irrigate deep and dirty wounds. An irrigation syringe can be specially purchased for about \$0.50 on line. You'll also need to add absorbable Vicryl or cat gut suture. This is for approximating the ends of tendons, muscles and deeper fatty tissue. Absorbable suture prevents abscesses and pockets of blood called hematomas.
- For fracture care, you can purchase soft splints made of plastic. You zip the person in the splint and blow it up so that it firmly supports the bone and soft tissue. They make these splints for pediatric use as well as for adult legs and adult arms. Leg splints come in long sizes for femur, knee, and tib/fib fractures, and short ones for ankle fractures and severe sprains.

You start with the ABCs of Airway, Breathing and Circulation, and then fix lacerations and do fracture support with the kits we've discussed.

Alternative Medicine

In a crisis situation, all you may have are herbs and techniques involved in alternative medicine. If you need an alternative medicine herb that you don't already have, make use of someone who knows what these herbs look like or grow them in pots for future use. The mainstay of alternative medicine is the use of herbs and botanicals for the treatment of illnesses.

These include the following things you can have on hand. Many are taken as teas so you'll need a source of drinkable water to take them.

Herbal Medicine

The biggest problem with herbal medicine is that it often requires several herbs to treat the fever and it is hard to come by all of the ingredients. Nevertheless, you can try these:

For fever: Take a tsp of yarrow, a tsp of peppermint, and a tsp of elderberry flowers. Steep them for ten minutes in two cups of water, strain and drink the hot water. You will sweat, which will break the fever.

Catnip and peppermint can be used alone or in combination as good fever reducers. Put one to two teaspoons in a cup of hot water and steep for ten minutes. Strain and drink hot.

For pain: There are many herbs with anti-inflammatory and pain-relieving abilities. These include the following:

- Arnica flower oil: This is sold as a cream applied to bruises and sprains for pain relief.
- Bay Laurel: Mix some crushed bay leaf in some hot water to make a tea.
- Birch bark and birch leaves: Put either in hot water and infuse to make a tea for pain.
- Boswellia (frankincense): this is used for arthritic pain and is sold in capsules.
- Cayenne pepper: Mix 4 tsp in 1 cup of olive oil and use topically. It contains capsaicin, which is known to relieve pain when used several times a day for at least two weeks.
- Peppermint: Can be taken as capsules or in a tea for arthritis and pain.

- Willow Bark: Use a few drops of essential oil in oils and creams for topical use for pain.

For cold symptoms: You may need more than one herbal remedy to cover for the many symptoms of a cold, such as congestion, sore throat and cough.

Good decongestants include garlic, cayenne pepper, mustard, and horseradish plasters. They loosen the congestion, work quickly and cost only a few cents to make.

Sniffing eucalyptus oil will relieve congestion. Peppermint oil can be breathed in or drunk as a tea for congestion. Eucalyptus oil, hyssop, thyme or peppermint can be used in room vaporizers or diffusers.

Coltsfoot can be used in just about any cold situations, including congestion, mucus loosening and cough. Infuse a small amount (1 tsp) in a cup of tea and drink it. It also coats the throat, relieving sore throat.

Eyebright is used for nasal congestion. It is mixed at about one teaspoon in hot water and then strained and drunk as a tea.

For sore throat, consider using one of the pain relieving medications noted earlier. They also take care of the aches and pains of the flu or a severe cold.

You can make a good homemade cough syrup by adding honey, lemon, thyme, caraway powder and eucalyptus oil to a sugar syrup. They tend to work better than commercial cough remedies. Thyme, caraway, and eucalyptus also have infection-fighting properties.

There are dozens of herbs for fighting a cold. If you are interested in having a wide collection of herbs for colds, flu or other things, purchase an herb recipe book and choose from the selection they have there.

For diarrhea and constipation: There are many herbs for both but you need only a few for each symptom.

For constipation: Try dandelion tea, chicory tea and/or chickweed tea every day to prevent constipation. You can also put flax seed in food or psyllium in water to have safe and effective relief of constipation. Strong laxatives include aloe juice and turkey rhubarb. These should be only used on an occasional basis. Extract the fluid from cascara sagrada to make a mild laxative for delicate intestines and in the elderly.

For diarrhea: Drink plenty of water to replace lost fluid. Fresh citrus fruits have the electrolytes you need to replace with diarrhea. Add to distilled water a few drops of essential oil of lemon, raspberry, agrimony to replace fluid and electrolytes. Peppermint leaf teas are good as well.

Meadowsweet is a specific remedy for children's diarrhea. It is very bitter so they should hold their noses when drinking it.

Treat diarrhea with Oregon grape root or goldenseal. Oil of cloves and ginger can get rid of nausea and Geranium oil works well for diarrhea. Oak bark is steeped in tea and is a strong anti-diarrheal agent.

MEDICINAL PLANTS TO LEARN FOR SURVIVAL



Althea



Borage



Milk Thistle



Parsley



Rosemary



Valerian

survivopedia.com

Meditation

Meditation is a form of natural relaxation that is practiced in alternative medicine. It calms anxiety and relaxes a person so they often don't need anti-anxiety medications. It involves the following:

- Find a relaxing place to sit or lie down.
- Close your eyes and focus on your breathing. As you breathe slowly in and out, allow your arm muscles to relax.
- Relax your shoulders and the muscles of your face.
- Relax your trunk and finally your legs, ending up with relaxing the muscles of your ankles and feet.
- If you'd like, practice guided imagery, imagining yourself on an empty beach in a tropical land. Feel the breeze on your face and listen to the sounds of the ocean. Smell the ocean air and imagine you are there alone, relaxing in the sun.

Then gradually allow yourself to wake up, opening your eyes and letting the sun and surf fade away. Wake up feeling relaxed and calm, free of the worries you are facing.

Yoga

You'll need to take a class or watch a DVD to see what yoga is really all about. It involves focusing on the breath and performing certain poses that help your body relax and become more limber.

This can be done by those who are very physically active and those who are not active at all. It helps in anxiety and depression and has a long history of success, dating back to ancient Asian times.

Tai Chi

This is another ancient Asian practice that is a combination of breathing exercises, poses and martial arts.

The end result looks like a cross between a ballet dance and martial arts poses. It's beautiful and it is relaxing. It eases anxiety and depression, helping you stay in the present time without having to use any tools or instruments.

Preparing for First Aid

In a disaster situation, you won't be able to run to urgent care or to the drug store to manage life's frequent booboos. And, in a disaster situation, there are bound to be more injuries than any you have seen before.

At the very least, you should have a first aid kit that covers for the day-to-day things that can cause injuries. When disaster strikes, you may need more than a simple first aid kit.



Elements of a Basic First Aid Kit

A basic first aid kit should contain at least the following items:

- Band Aids of different sizes and shapes, including circular Band Aids and Band Aids that are H-shaped to fit over the end of a finger.
- 4 x4 gauze pads — at least four sterile pads

- A 2 inch rolls of gauze for wrapping wounds in.
- Antiseptic pads which can clean wounds. You can buy them online.
- 1-2 inch paper tape, which sticks best to skin.
- A 3-4 inch ACE wrap for wrapping sprains in.
- 2-4 extra strength Tylenol capsules or tablets for pain or fever.
- An Epi-pen to treat anaphylactic reactions
- Latex non-sterile gloves

This is a pretty well stocked first aid kit that will get you through many minor and some not-so-minor injuries and ailments.

Elements of a Comprehensive First Aid Kit

You may wish to beef up a basic first aid kit to include things for treating complex problems.

This includes the following items:

- Your basic first aid kit
- Extra gauze and Band Aids
- Rubbing alcohol for cleansing wounds
- Betadine swabs for cleansing wounds
- Hydrogen peroxide for cleansing wounds that need to have debris bubbled out
- Snake bite kit
- Surgical masks to prevent contamination of disease or for suturing
- Scissors for cutting tape and gauze rolls

Elements of a Bug Out Bag Kit

The bug-out-bag is your main survival bag. As such, it should contain all of your major survival equipment, as well as a stock of food to last you at least three days. Keep in mind that you will have to carry this, so you want to keep the weight reasonable for your personal physical condition. It should have everything you need for food, water, shelter and fire.

These represent those things you'd need to survive for 72 hours in a disaster situation. The items you'll want to have include:

- A sturdy back pack to hold everything
- A water bottle for holding drinking water
- A reflective blanket
- A poncho for rain protection
- A 2 man tent
- A rubberized flashlight loaded with appropriate batteries
- A folding water container containing 1 liter of water
- An AM/FM radio with appropriate batteries,
- Water purification tablet
- A hygiene kit with toothbrush, toothpaste, razor, comb, some shampoo, a bar of soap, shaving cream, tampons or pads, a washcloth, hand sanitizer, toilet paper roll and a small sewing kit
- First aid kit with butterfly closure, bandages, sterile sponge dressings, Q tips, an iodine pad, alcohol pads
- Guide for emergency preparedness, sealed in bag
- Portable aqua tablets
- 5 gallon water bags
- Waterproof pouches
- Mosquito net
- Straw filters
- Protein bars
- Dry soup kits
- Lighter or matches to light a fire

Elements of a Bug Out Vehicle Kit

You might be lucky enough to have a vehicle to escape a disaster from but there are things you'll need to make your getaway in:

- A flashlight with appropriate batteries in it
- A two man tent
- A couple of water bottles
- A tablet for purifying water
- A fold over 1 liter plastic water container
- Matches or a lighter
- Protein bars, several dozen
- A hygiene kit like the one noted above
- A first aid kit like the one noted above

Simple and Effective First Aid Techniques that You Need to Learn

Always remember the ABCs of first aid – Airway / Breathing / Circulation.

First, you establish an airway, which means adjusting a person's neck so that the airway is open or getting rid of obstructions of the airway so the person can breathe. Next is breathing - if the person isn't adequately breathing, you will need to do rescue breathing. Then the person needs to have some chest compressions to get the heart going. More on this in the section about CPR near the end of this book.

If the patient is hemorrhaging, stop the bleeding with whatever you have. If they have no pulse, start CPR to circulate the blood. This will be discussed in the section on CPR.

If you run into a simple cut or abrasion, rinse it off with clean water. If it's infected, use a betadine swab. Decide if it needs stitches by assessing whether or not the wound edges are together or separate. If the wound edges are separate and need your fingers to hold them together, it likely needs stitches.

With any abrasion or laceration, cleanliness is the first thing you want to think of. Rinse dirty wounds with copious amounts of water first and pick out any obvious pieces of debris. When it is washed out, use antiseptic wipes to complete the cleanliness, then cover the wound with a Band Aid or gauze and tape.

If a person is injured and may have a fracture or sprain, you can still use the ACE wrap to firmly wrap the area to be protected. It will protect the injury until further determination of what's going on can be undertaken.

To Learn: Treatment of a Bullet Wound

If faced with a bullet wound victim, make sure both you and the victim are safe. Move the person to safety if safety is in question. Keep the victim warm and talk to them frequently to keep them conscious and paying attention to something besides their bullet wound.

Follow the ABC's of bullet wounds:

- A. Airway — make sure they have a clear airway by assuring they can talk and are having steady undisturbed respirations. Turn the head to one side to get the tongue out of the way and to have the person breathe better.
- B. Breathing — what are respirations like? Are they spontaneously breathing on their own or is their breathing raspy and irregular? You may need to do rescue breathing on someone who is not breathing on their own.
- C. Circulation — be prepared to use a tourniquet or direct pressure to control bleeding. There are different techniques to control bleeding depending on whether it is a head wound, a chest wound, or a sucking chest wound. For example, chest wounds must have pressure on three sides to allow air to escape but sucking chest wounds must be sealed on all sides in order to seal the air outside of the chest cavity due to the bullet wound.
- D. Disability — check for movement of the extremities so you know there isn't any spinal cord injury. Look for obvious deformities of arms, legs or neck or extremity.

- E. Exit wound — look for an exit wound as there can be just as much bleeding from that. Be prepared to treat the person for shock by keeping them warm and elevating their legs to keep the blood pressure up. Tear off strips of cloth for extremity injuries to use as tourniquets.

Tourniquets can be made from anything that can go around the extremity and can stop the bleeding. One way to do a tourniquet is to tie a knot into a strip of cloth that goes around the extremities. Have the cloth have long tails. Then get a stick of about 5 inches long and tie it onto the tourniquet using the long tails. Place the tourniquet around the extremity closer to the core of the body than the wound. Begin winding the stick until the tourniquet has stopped the bleeding and keep the stick in place at that level until healthcare can be obtained.

Tourniquets have had a bad rap in medicine lately but with the last few decades of war, tourniquets have come back into favor as a way to maintain blood volume until help from a doctor or hospital can be obtained.

For chest wounds, have one end of the dressing open to the air to equalize the pressure. If there is a sucking chest wound, make the wound occlusive and seal on all edges.

In abdominal wounds, cover them on both sides, put pressure on the wound and look for someone in healthcare for help.

Emergency Sanitation

In a crisis or disaster, you can expect that no garbage disposal service will be coming to your house anymore and garbage builds up very fast. This is where you have to get serious about garbage disposal and recycling to make the most of your garbage.

Preparations to Purchase

For emergency sanitation, these are the things you need to stockpile:

- Matches or lighters to start sanitation fires
- Boxes to store recyclables
- A board or boards to sit on while defecating or voiding
- Rope or strong string to hang a sheet on
- Safety pins in bulk to pin the sheets on
- Toilet paper in bulk
- Tooth brushes
- Toothpaste in bulk
- Combs
- Dry shampoo
- Regular shampoo
- Bar soap
- Rags or small towels for cleaning the body
- Nail clippers
- Stain remover
- Soap for clothing
- Deodorant in bulk
- Tampons or sanitary napkins
- Small paper bags to store sanitary napkins or tampons before burning

Garbage Disposal

As garbage will quickly become a priority, you need to be thinking about what you will do when you are solely responsible for getting the garbage out of your home. These are the things you need to do to make use of your garbage:

- You need to burn paper and similar items in a burning pit. You make a burning pit by digging a shallow hole and putting rocks around the hole to contain the fire. You can burn medical waste, milk cartons, paper and certain paper-based containers.
- Keep a box handy for recycling glass bottles and plastic containers. Clean them thoroughly before storage or they will start to stink and will be more difficult to clean if you wait until you need them. Keep the covers on once the bottle or container has dried inside. They may come in handy for storage of just about any item.
- Think about a compost heap for leftover food or peelings. Good dirt that comes from these compost heaps will come in handy for planting a garden if the crisis lasts long enough that you'll need to grow your own food. Save your seeds!

Human Waste

While you may be able to flush your toilet in an emergency situation, things could get desperate in case you may not.

For the short term, you can make a trench in the back yard. If you have two trees or a tree and the side of the house, you can string a rope between the two items and hang a sheet for privacy next to the trench. People can void or have a bowel movement in the small trench and cover it up with dirt next to the trench. You can get fancy by making a board with a circular hole in it before the disaster and store it until it is needed.

Alternatively, you can use two boards put parallel and several inches apart. You put your butt cheeks—one on each board, voiding between them. If this is to be a longstanding crisis, think about building an outhouse (described later in this section).

Personal Hygiene

Personal hygiene entails taking a bath or shower, keeping your nails trimmed, brushing your teeth and combing your hair. It also involves wearing clean clothes.

If there is no running water, you'll need to save water as much as you can and use rags or towels and a small amount of soap and water to clean your body. Every day is excessive; every third to seventh day is more appropriate for cleaning your body. Hopefully, you will have stockpiled shampoo and can use some water and a bit of shampoo every 7 days. You can purchase dry shampoo for use in between actual shampoos.

Stockpile a nail clipper with a built in nail file for keeping nails short and stockpile toothpaste and a handful of toothbrushes that you can use for keeping the teeth clean and fresh. You can purchase combs in bulk to comb your hair. Clothes cleaning can be difficult and you may not want to waste water to wash clothes.

Alternatively, you can hang them outside on a rigged up clothes line. Wear deodorant so clothes don't stink after a short period of time. You can use stain remover to get rid of stains so you don't have to wash the entire outfit.

Building an Outhouse

If the disaster is expected to last for an extended period of time, you will need to build an outhouse. An outhouse should provide a prolonged place for people to void and defecate in. No outhouse is without some odor but this should provide privacy and can eliminate the need to dig trenches.

A very simple outhouse involves building a 24-inch by 24-inch by 20-inch high box. Use 2 x 4 pieces of wood to create a simple frame that is framed on five sides with the bottom open. Then use plywood to close the framing on five sides. The top side should have a circular cut out or a space in the middle of two pieces of plywood for the waste to pass through.

Dig a deep hole that the box can fit over and use four two by fours to go upwards about five feet high.

String a piece of string around the top of the four 2 x 4s so that you can hang sheets for privacy. It's not much but it doesn't require a lot of space or wood to make.

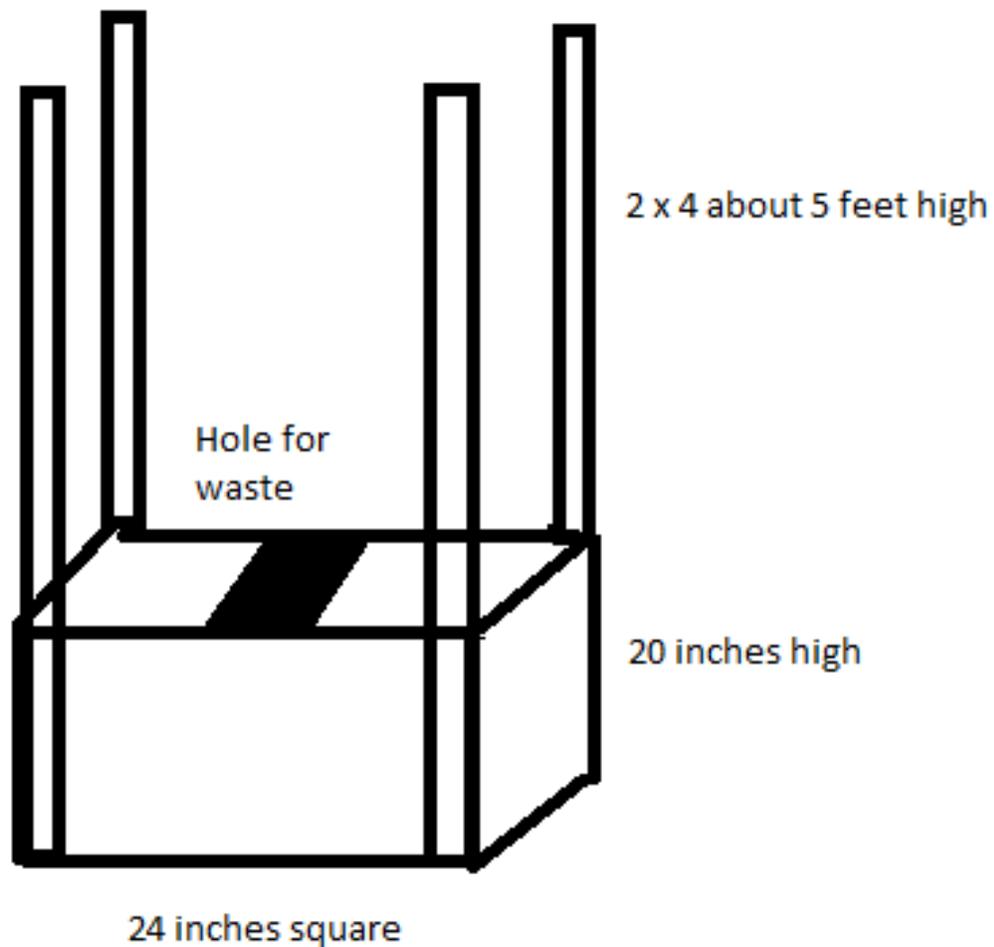


Figure above shows a simple outhouse.

A more ornate outhouse involves using plywood to cover the long 2 x 4s so the outhouse is about five feet tall. Keep it open at the top for ventilation and use a sheet to cover the front. You may need to have a small covered container for toilet paper to keep it dry from the rain. You can also build a covered container with wood that holds the toilet paper.

When the waste hole is getting full, move the outhouse to a new location that has been dug out to hold waste and cover the existing hole with dirt to remove odors and keep the area as sanitary as possible.

Making Homemade Hand Sanitizer

You can get fancy with scents and coloring but in a disaster situation, these are not a necessity. You'll need to stockpile 99 percent isopropyl alcohol and aloe vera gel.

In a pump bottle, preferably one that is recycled, take 1 part aloe vera gel and mix it thoroughly with 2 parts alcohol. If you don't have a pump action bottle, just pour a little bit out on your hand and rub it in. If you don't have aloe vera gel, just mix one part water with two parts alcohol and pour a little on your hands.

The aloe vera gel is good because the latter recipe can dry your hands.

Making a Compost Heap

This is something you should have made and be using prior to any disaster. It just makes sense to have it in your back yard, if you have one. It is a great way to get rid of vegetable and fruit peelings, as well as old or rotten fruit and vegetables. Just about any food you would otherwise throw away in the garbage and that won't easily burn.

A compost heap will provide you with healthy dirt that will be great when you're in the position to garden again.

Here's how to make a compost heap:

Gather the following:

- Dry leaves, straw, shredded newspaper and/or dead garden flowers
- Grass clippings, fruit and vegetable peelings (no meat scraps); manure from grass or other grain-fed animals; no manure from carnivores, including cats and dogs.

- A shovelful or two of garden soil.
- Pick a site that is three feet long by three feet wide.

The directions are as follows:

- Spread a layer of coarse brown leaves, cornstalks or straw.
- Top with green things like peelings, and old fruit.
- Add a small layer of soil.
- Add another layer of coarse brown stuff.
- Water the layers lightly.
- Continue layering with the above ingredients with three parts brown mixture to one part vegetable parts.
- Eventually reach a height of three feet.
- Turn the pile with a shovel or pitch fork every few weeks so that the stuff in the center moves to the outside and vice versa. The pile should steam from decomposition.
- Eventually, the middle of the pile will turn into black, crumbly compost. It is great in the garden as soil/fertilizer.
- You can buy or build a compost bin that is three feet by three feet by three feet. It keeps the compost heap neat and easier to turn every couple of weeks.

Compost heaps are wonderful ways to get rid of scrap foods while at the same creating something wonderful for your garden. Disasters are times to regroup and find ways to come back from tragedy. Compost heaps can help you do that.

SECTION 2 - MEDICAL PREPAREDNESS

AFTER D-DAY

What To Do When There Is No Doctor Around?

This is a likely scenario in a disaster situation. Doctors will be completely overloaded, taking only the most serious cases, or you won't be able to get to a doctor at all. This means you're on your own when it comes to medical care.

With the medical stockpile you have, you will be able to handle most minor illnesses. Things get trickier when a person has a serious illness like appendicitis, sepsis, or severe pneumonia. Things are also trickier with children and the elderly that have more serious reactions to illnesses and don't have the best immune systems. In such cases, you do the best you can with the medications you have.

When it comes to trauma, you need to use the laceration kits and you need to make use of the splints for long bone injuries. If trauma involves the spine, you run the risk of having a spinal cord injury and paralysis of the legs in paraplegia or in the arms and legs in quadriplegia. Such cases are very sad because there is little you can do for these people but keep them comfortable. Bed sores and secondary infections are common.

With no doctors around, you have to accept the inevitability of death. Some people will die without advanced medical care and even if a doctor was present, he or she may only be able to do the same things you can do. Without x-ray and advanced care with IVs and machines to help a person breathe, the individual will die.

Be prepared to bury your loved ones if they succumb to an illness when a disaster or crisis is present. It is far better to bury a person yourself than to wait until you can get the services of a funeral home. Mark the spot of their burial in case things change and you can bury the person again in a regular cemetery.

The TeCaMoLo Principle

The TeCaMoLo principle is part of the medical history and helps to clarify the circumstances in which the injury occurred. The principle comes from:

- The time factor, **T**emporal – when the injury occurred,
- **C**Ause comes from what was the factor that provoked the injury,
- **M**Odal is how it occurred,
- Place is the **L**Ocation, where it occurred.

Let's take an example. A patient comes in and says that he hurt his leg. What happened? "It was an aeronautical accident. I was looking at a plane and I stepped into a pothole."

The **cause**, what was the cause? Inattention, he looked elsewhere: he looked up, and fell. **How** did he fall on his leg (**the mode**)? "I turned that way, I fell on my knees and it rotated to the left, then to the right." Now you can figure out the mechanism by which it happened. You can also determine if it could be a fracture or severed vessel or a pinched or damaged nerve. If the injury is light, the leg is not broken.

The **time** is also important. It can be a fresh thing, i.e. recent, now, or it may be an old thing. When did it happen? "3 days ago." If that wound is infected and dirty and ugly and shows necrosis, then that can't be the case. It's much older than the patient claims. The patient can lie, but it's important for you to figure out if it happened recently or if it's old, considering how the injury looks like.

This principle must be applied in every situation, so a person without proper medical training could always perform an objective examination of an injured person.

How to Recognize the Signs of Medical Distress

A person can be injured and still show no signs of being injured on the surface. Closer look, however, can define who is injured in a minor way and who is injured in a serious way.

There are some things to look out for:

- Pallor. The patient is pale in appearance, either from internal blood loss or from emotional shock. Pallor from emotional shock tends to get better over a few minutes but pallor from blood loss gets worse or stays the same.
- Weak, rapid pulse. Practice finding the pulse on either side of the neck as this is the easiest way to find a pulse on anyone. A normal pulse is between 60 and 100 beats per minute. Pulses that are rapid can indicate blood loss or anxiety. Know what a normal strong pulse is like so you can recognize a weak one.
- Confusion. A head injury or internal bleeding can lead to confusion. The person keeps asking the same questions over and over again and can't say the day of the week or where they are. They also can't identify the method of injury that happened to them.
- Obvious signs of injury such as pain or deformity in a bone, paralysis, active bleeding from a wound or bleeding from the rectum in some forms of internal bleeding. Let pain be your guide that someone is injured and in medical distress.

To find out exactly what the problem of a victim is, find out his medical history (talk to the patient) and perform an objective examination (look, feel, listen). You can do that to help you figure out in which direction to go.

How to Perform a Body Check

To figure out what is wrong with a patient, you examine him from head to toe. Perform a full body check in order to see what his state is. This objective examination involves performing 4 actions on the patient:

- inspection (look) palpation (touch to check the consistency and how things move),

- percussion (tap lightly to see if the sound is full or hollow),
- listen (with or without a stethoscope).

Percussion is done only when examining the abdomen and lungs: if it sounds like a drum that means there is air in that area, if it sounds clogged or full, that means there could be fluid in abdomen or something more complicated.

The patient is lying down, usually undressed if you're in a doctor's office. You start from the top and work your way down. Look at the head, examine the skull for anomalies. Press on the head.

The face has some sensitive areas: the forehead around the eyes, the nose, the jaw, the mandible and the temporal-mandibular joint. You press on them, and you look for fractures, because many fractures can occur around the nose and the mouth. Whoever performs the body check looks into the eyes, inside the ears, to see whether there is any blood flowing and to see if the pupils dilate equally.

Next, move to the neck. Press gently on the neck and check the spine to see if there is any pain or not. If there is a fracture, the body must be returned along its axis at the same time, with the help of 2-3 people: one holds the head, 2 turn the torso and 1 turns the legs. The idea is not to twist one end of the body faster than another to keep it free of twist.

If it's a fracture, it hurts a lot. Why does it have to hurt? To prevent you from further damaging it. Take a look at a puppy that crushed his paw in a fence, or got ran over by a car. He doesn't place that paw on the ground and he doesn't step on it. Instinctively, he doesn't step on that foot, so as to not grind down the traumatized area. The body's reaction tells you that you have to shelter the damaged area, to let it recover. That is why you immobilize it.

Check the trachea, presses the collarbone, shoulder blades, and shoulders. Listen to the lungs, press on the ribs to see if everything is stable and doesn't hurt. After that, press on the abdomen and ask if it hurts. Press down on the hip to see if it's stable.

The legs are next. Press down along the bones. Rotate the ankle to see if it's sprained or if it stays in place and you need to move the foot a bit to check for mobility and pain. Finally, check the second hip and ankle.

Now you need to find the pulse. And how do you take the pulse?

Use 2 outstretched fingers and find the carotid artery. Count for 15 seconds and then multiply that number by 4, or count for 30 seconds and multiply by 2 to get beats per minute.

Remember that when the pulse rate increases, and the blood pressure drops below what we discussed, the patient starts to become unstable.

Check the arms. Look at the fingers to check for fractures and check the capillary refill in the fingernails. Press on the fingernail to make it turn white, then release it and see how long it takes for it to turn pink again.

It must take less than 3 seconds, so you know that circulation is good. If it stays white that means there's something effecting with circulation. Blood flow isn't reaching the fingertips.

It can be hypothermic shock due to cold. Through contraction, not enough blood reaches that location. The hand no longer warms up, because blood does not reach outlying areas properly and it feels like it's freezing.

Vasoconstriction also happens when you sever a vessel. The body somehow reacts and wants to stop the flow of blood and then it tightens the vessel through a reflex so that the blood doesn't leak out. Your body will do what it can to restrict blood flow so that you don't bleed to death.

Taking a Pulse



Place 2 fingers of your other hand on the artery, and count the beats for 30 seconds. Double the result to get the total number of beats per minute.

! DO NOT USE YOUR THUMB, BECAUSE IT HAS ITS OWN PULSE THAT YOU MAY FEEL AND COUNT !

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During this time, try to determine the GCS -- Glasgow Coma Score, by talking to the patient, and asking him to react, in order to reach a conclusion towards his general situation.

Use the stethoscope. You can also use your ear in case you don't have a stethoscope by laying your ear on his abdomen and listen. However you won't hear as well as you hear with a stethoscope.

Place your ear on his stomach to see if you can hear his bowels. This will sound like gurgles – basically, you want to hear his belly growling and doing its thing. If you hear that, it's a good thing because you can no longer hear them in peritonitis.

Self-Diagnosis

In a crisis situation, there may not be adequate medical care from hospitals or clinics. This is why you have such a stockpile of medical supplies and medications; these cover for most of the things you might get.

You still may need to see a doctor on some occasions and it pays to know when it is vital to see a doctor.

By all means, you want to see the doctor when it is appropriate and not when you could have handled it on your own. It is time to see a doctor when:

- Oral antibiotics are not working for an infection.
- A wound is too difficult to stitch or is infected and unresponsive to oral antibiotics.
- You have a fever and cough unresponsive to oral antibiotics.
- You likely have a large bone broken. Fingers and toes can be splinted with Popsicle sticks and tape if necessary.
- You have been sick for a week with an illness you cannot figure out or if the illness is deteriorating.
- You are in labor and no one can deliver the baby in the group you are in.
- You have preterm labor or preterm rupture of membranes in pregnancy.

- You have pain unresponsive to oral oxycodone or Vicodin.

Medical Kit and Sterile Conditions

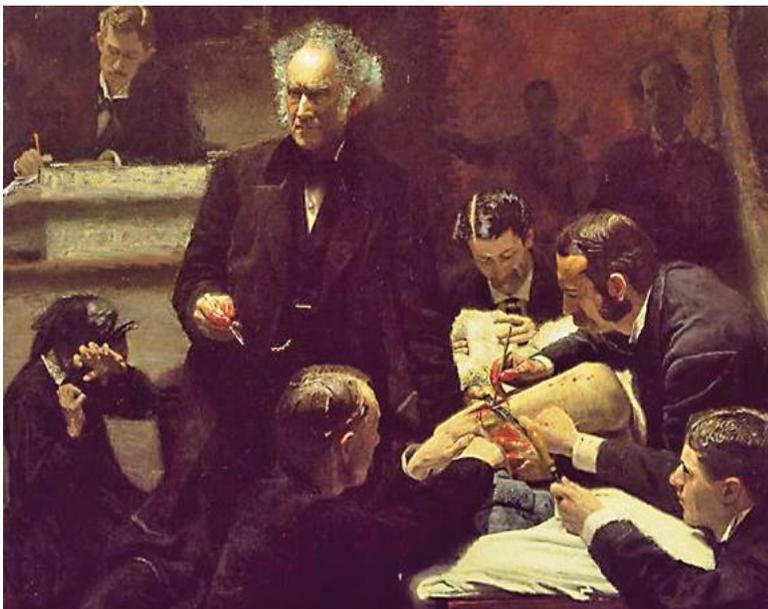
Not everyone will have first-aid kits because most people aren't preparing for disaster. Suffice it to say that whoever has them will be in very high demand, which means that providing sterilization of your medical kit will be mandatory, in order to prevent spreading disease.

The old kits are preferable - there used to be some metal boxes with holes and a grill inside, which held the old glass syringes like those you see in cartoons. These are preferable because you can sterilize and safely reuse glass.

To what extent is it possible to ensure sterilization, or how can you do it? Boiling does not sterilize 100% but you get rid of enough of these bacteria to be reasonably sterile. Proper hand washing is going to be key.

Before we knew how germs spread, surgery was being performed without washing hands. Surgeons (or often dentists or farriers), often operated with bare, unwashed hands, without gloves, and people survived even then. Later someone thought this may cause an infection.

It was a long time before people wondered why patients became infected, why abscesses



continued developing and why those wounds wept.

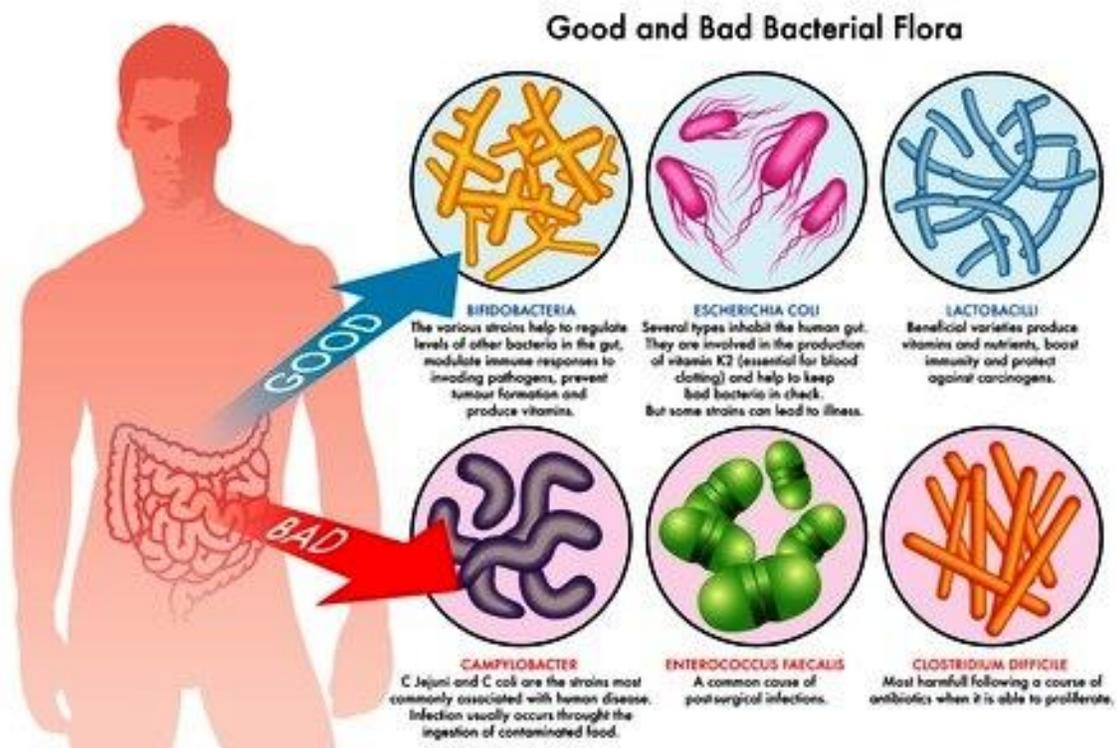
They wore regular hats and street clothes and operated in auditoriums with 7 people around them, so it's hard to imagine those conditions as sterile. And one day, someone washed his hands, but operated with his bare hands, without gloves. Following

this, it was noted that infection decreased by half. At that point, people started to realize what was going on.

History often repeats itself and if that were to happen, we would start everything from the beginning again. Disease will be spread by ignorant people and all that you can do is to be fanatical about cleanliness yourself.

After the world ends, if you want to intervene and reduce the risk of infections, boil kits and medical instruments and use face masks so as to reduce the likelihood of spreading and disseminating infections.

Always wash hands and maintain a very strict hygiene in this respect. Don't perseverate on it because you don't want to fall in the other extreme, i.e. cleaning yourself with alcohol every 5 minutes, either. If your hands get raw, they'll be susceptible to infection and you'll have defeated the purpose. Also, there are protective bacteria called saprophytic flora, on your skin and washing too often, especially with antibacterial solutions, kills the good along with the bad.



Before you eat or touch your face, and after you go to the bathroom should suffice under normal circumstances. When helping someone, make sure that the area in which you are doing this is as contaminant-free as possible. Clean the place and have as few sources of infection as possible.

Leaving aside that *Primo Non Nocere*, have someone beside you that is able to help you and is as knowledgeable as you are. There are no hospitals in which there is a single person to do a procedure without anyone next to him and you should practice this, too. You need some relatively informed help in executing the procedures.

That's why there are 2 surgeons operating at the same time, not a single surgeon, and that's why there are 2 pilots in an aircraft. That's why you have instruments, and that's why there are nurses. Medicine and flying a plane have a great deal in common.

In both professions, there is stuff that needs to be verified, check lists that should be consulted before, during, and after the procedure, reviews in which we discuss what went right and what went wrong. It's a collaboration and it's very hard to show people who have no idea of how things work, why medical procedures have a specific order, or to demand that one help the other.

That's why there is a rank, there is a pilot and a copilot, and there is the first hand and the second hand. That person needs to help you and to support you, but there must also be a hierarchy. Usually the person that knows the most under those circumstances will have to be in charge, just as in providing first aid.

There are other things that should be taken into account when providing first aid in makeshift conditions and not in a hospital room: you need enough space and sufficient light. You have to have the space to move around, you need space around each patient. Always lay the person down, not standing or sitting, because if he faints, in addition to the fact that you are stitching him, you'll also have to hold him. Somehow you have to think about these things.

You can use mostly any tool as long as it works for the job, because medical kits are the same, as long as they don't have many accessories and embellishments. All of those tools harbor infection, pliers for example, so as long as they're sterilized, ones that you bought at the hardware store will work just as well as ones that came in a med-surge kit.

In third world countries, surgery is still performed with technical instrumentation. In orthopedics in particular, they operate with drills, pliers and pincers purchased from stores. They have disinfected and sterilized them before wrapping them in sterile gauze, but they use instruments that might not be designed for medical use in the first place.

If SHTF, it will definitely happen because it's logical that there is going to be someone who will remove a tooth with auto pliers when he won't have a pair of those medical pliers. Perhaps that's why it's anticipated that the rate of infection will increase and you end up with scores of infection in all hospitals, but see that it's worked and it's still working. It's all about sterilization.

What do you do if you don't have time to sterilize? You intervene, but don't close the wound, or stitch it, but wash it daily, because you start from the premise that it's already infected.

If you can't boil your instruments for an hour or two, use any alcohol with as strong a concentration as you can find, but that doesn't always ensure that no complications will develop. There are also extreme solutions - like Rambo did, putting the knife in the fire and then in the wound, because fire cauterizes the wound - but it's not advisable.

In the 19th century, they poured gunpowder into the wound and set it on fire. Burning gunpowder destroys impurities, and stops the bleeding. But we're talking about an extreme solution: if you use this method, you will cause a lot of pain and ugly scarring. Also, you don't just close off the blood vessel but also the muscle, causing an extra burn which can become infected.

Moment X

When you try to help others by providing first aid, you'll experience that moment where you have to choose whom to help. That's the moment of triage, when you decide whom you should save first.

It's hard as a human to make the decision to leave someone to die and help somebody that you can save, but usually you are not alone. You can delegate; you can tell someone else what to do to help the patient. You can also tell the wounded person what to do for himself, if he is conscious -- do that, press here or squeeze there, so that you can go give first aid to the one that needs it more and then return to this one.

The most difficult thing that can influence you a lot here is the emotional connection between you and one of the patients. If you have your child who has a slight injury and a stranger with a serious wound, who will you help, if you can? You'll want to go to yours and leave the other one to suffocate; to bang his head against the car alone.

That's human nature. Unfortunately for some of the wounded, the decision has to be made subjectively. You have to be ready for such a choice from the beginning and you have to know what you will choose if you get into this situation.

How Do You Recognize a Deceased Person?

When you die, there are post-mortem symptoms, other than lack of breath and heartbeat. One of them is lividity on the side of the body next to the ground due to the pull of gravity against bodily fluids that are no longer flowing.

When a person is placed horizontally, the blood flows down. It flows through the body as through a sponge and you can see that from half way down the body is more colorful, bluer.

If the person has already reached this stage, there is no helping them; they can't be brought back.

Medical Emergency Protocol

An emergency has happened and a number of people are injured. You are among the fortunate few who are uninjured. There is no doctor around and none are expected. What do you do to save as many people as possible, assuming you have your medical stockpile handy?

You need to be introduced to the idea of triage. Triage is a way to medically handle large groups of people in the most appropriate way possible. Triage is used in military situations, in emergency rooms and in situations where there are less than perfect resources — like your situation. Triage is a way of prioritizing patients in reverse order of injury severity. They help you decide who to treat first.

A conventional way of deciding who is injured and why is the following list:

- **Black.** These are people that are so massively injured that they will die regardless of what you can do. Their time of death can be minutes, hours, or days. The best treatment is to give pain killers and hope there is someone to sit with them. These include severe traumatic injuries, large area burns, and life threatening injuries, cardiac arrest, and shock, head injuries with coma, sepsis, or lethal radiation dose. You cannot practically spend any time with these people.
- **Red.** These people need immediate attention. Or attention by a specialist. They need immediate ambulance transfer. They are critical but have survivable injuries. In a disaster situation without an ambulance available, they are treated like Black patients and are kept comfortable. They may or may not die of their injuries right away.
- **Yellow.** These patients can be observed for later treatment if a hospital is available. In the absence of a hospital, you will treat these people first because it will take

too much time and effort to manage Red patients. These are people with fractures or heavy bleeding that can be controlled with pressure and suturing. These patients could have severe injuries you don't know about but they aren't showing themselves. Treat them as though they have treatable injuries using the resources you have.

- **Green.** These are the walking wounded who will need care at some point but they can wait. These include minor lacerations and minor head injuries. Put them to some use sitting with Black patients to provide them some solace and calm, and to give them pain medication.
- **White.** These are people that can be dismissed to go home. They may need first aid care like a Band Aid or washing of an abrasion. They can treat themselves at home or can make use of your first aid kit.

In World War I, French physicians would use the following triage categories to treat patients injured in war:

- Those who will probably live, regardless of their treatment.
- Those who will probably die no matter what care they receive.
- Those who will likely live if they receive immediate care.

This model may be easier to understand and may be more appropriate for your situation, in which the resources are limited.

You can make your own triage tags that are color coded. Ideally a triage tag should identify the patient by name, identify priority of treatment, identify hazards such as the need for decontamination, identify findings, and track the patient's process through the triage process.

If you can't track the patient's progress or write anything on the card, at least have it color-coded so you know who to treat first and who to treat next.

Having a triage system will spur you to learn more about how to treat severe patients. As a lay person, you should be able to learn the following:

- How to treat mild to moderate burns
- How to straighten and splint fractures
- How to stop moderate bleeding
- How to take care of complex lacerations

If you study Prepper's reading list, you may find other things you can learn, which will change your stockpile of medical items to include things like IV bags and catheters to start IVs with.

You may find yourself being able to treat patients with shock or with complex injuries, similar to what you'd find in battle.

Understanding CPR

There are situations in which CPR can save a life and other situations where there is no chance you will save the patient's life, even with CPR, because the patient is severely injured. You may not be able to tell the difference and, if this is the case, you might want to err on the side of giving them CPR. You might restore breathing and circulation to the point that the individual eventually survives.

These are the things you need to know to save a life using CPR or cardiopulmonary resuscitation:

The American Heart Association identifies three kinds of resuscitators:

- An untrained resuscitator. If you haven't had a CPR class, call for paramedics and give chest compressions only at 100 beats per minute until you are exhausted or until help arrives. Do not try to do rescue breathing.
- Trained confidently. Begin with chest compressions and then check the airway and do rescue breathing. Do at least thirty chest compressions in the beginning before checking the person's airway and giving chest compressions.
- You are trained but are rusty in your skills. Only do chest compressions and skip airway until help arrives. If no help is expected, do thirty chest compressions at 100 per hour and then try rescue breathing as described below.

The idea behind CPR is to keep oxygenated blood flowing to vital organs such as the heart and brain until something can help the heart establish its own rhythm.

In a disaster or crisis, it means having an automatic external defibrillator. It can defibrillate the heart in a situation where the heart has no rhythm or has an abnormal rhythm that does not circulate blood. You may want to stockpile an automatic external defibrillator (AED) in your medical stockpile.

Without CPR, oxygen will not get to vital organs and, at room temperature, the individual will die within 8-10 minutes.

To really understand CPR, you should take an accredited class; however, in the absence of that, you can follow the following directions.

Quickly Assess the Patient

- Check to see if the individual is conscious or unconscious.
- In an unconscious person, tap on their shoulder and ask in a loud voice, "Are you okay?"
- If two people are available and the person is unresponsive, have one person call 911 to have someone come as soon as possible, while the other person begins CPR. If the person has suffered a drowning or other suffocation injury, do CPR for a minute and then call 911.
- If an AED device is available, deliver a single shock if the device recommends it and then start CPR.

Somebody has to assume the role of the leader, and ask a certain person to call 911 and provide help during performing CPR, or clearing the area of debris or to keep the other people away.

CPR

First aid starts from the principle of **ABC - airway, breathing, circulation.**

All the organs in your body have a certain life reserve, and if deprived of oxygen can live more or less time. The bone lives a long time and the muscle lives a long time. That's why you can apply a tourniquet and leave it for an hour or an hour and a half. Your arm won't die without getting any blood for a short period of time.

The heart lives about half an hour. The liver and the internal organs also live quite a long time without blood flow – an hour or two. However the brain cannot go for more than 4 minutes

without oxygen, and if it doesn't receive oxygen for 4 minutes, you saved that patient for nothing, because he's brain dead; for all intents and purposes, he is dead.

(That's why all these cases of organ donors are brain dead. The body still lives, maintained by machines, more or less, depending on the types of coma, but the brain, and thus the person, no longer lives).

You have 4 minutes to reestablish the flow of oxygen required by the brain, and it doesn't help to make a hole in his head to let oxygen in there. It must be oxygen brought by the blood, by hemoglobin. You begin CPR by ensuring a clear airway: to bring oxygen to the brain you need air to enter the lungs.

Before you begin CPR or even check the patient, you need to assign somebody to call for an ambulance and you need to make sure that the scene is safe for you to enter. Don't start CPR in a puddle of oil or gasoline or near a burning vehicle, because things might go badly for you, and there will be two victims instead of one.

So before you start on any of this, remove the victim from that environment if it's safe for you to do so. You don't start with a bear next to you, with gasoline and with flames or carbon monoxide, or with smoke in your face. Otherwise you won't last and your mind will start playing tricks.

When your mind is stressed and full of emotions it plays tricks on you, and you don't react as you should. Usually you don't react 100%, you access about 80% of what you know and so a leader is appointed. He says what needs to be done. This all happens quickly, as you're assessing the scene.

You need to quickly weigh the risk of moving the patient against the risk of leaving him there. If he's in a place such as a burning vehicle where he is going to die, a spine injury is secondary; you obviously need to get him out of the car. The same idea applies if he isn't breathing; he's going to die if you don't begin rescue breathing so getting him to a flat surface is crucial.

However, if he's breathing and the scene is safe, don't pull him from the vehicle because he may have a spine injury and moving him can do more damage than good.

If you've determined that he needs to be moved, you take the person out of that environment and start checking his status. See if he is breathing yet. Open the mouth, check the airway and begin cardiac massage (chest compressions) if he needs it.

In most cases you can tell a seriously wounded person to open his mouth, and he does. If he can independently open his mouth when asked, he doesn't need CPR. Rescue breathing may still be necessary for some patients that aren't breathing but have a heartbeat. When a patient is unconscious, comatose with his mouth clenched, all muscles contract and you can't open his mouth. You have to open his mouth, and to do so you use your thumbs and forefingers.

Stand at the patient's head and put your thumb on the jaw joint and your index finger on the chin, then do the same on the other side. Gently lift the jaw to pull it forward then press down on the chin with your fingers as if you're trying to open his mouth.

You have to open the mouth to check; the airway. When you open the mouth, look into it to see if there is food or who knows what else, or if he swallowed his tongue. If it's clear and he starts breathing, then you're done.

If not, then you need to remove the object that's blocking the airway. To get it out, you put a finger or two next to the cheek inside the mouth as far as you can go, and if you find anything, you take it out. You usually won't find anything, but if you see something then it should be removed because it's elementary. It would be foolish leave something that acts as a plug there, for the person to die.

You don't want to start CPR before you're sure that he's not breathing on his own. To see if he breathing put your ear on nose or his mouth, because you can do 3 things at the same time: you can hear if he's breathing, you can feel if he's breathing because he is blowing air, and you can see if his ribcage is moving or not.

For artificial respiration, it's good to have the respirator mask and balloon because you risk coming into contact with pathogens through the person's saliva, or he can and bite you unconsciously if the rescue is a success.

Once started, CPR needs to be done until the patient recovers or until the patient is declared dead. Perform the cycle so that you're providing 5 rescue breaths, then, 30 chest compressions.

Only do CPR from the left side of the patient if at all possible, otherwise it's hard to perform. If there is no way to reach that side, of course you do it from any side, but you usually do it from the left.

You don't have to count aloud but it's good to count quietly to keep yourself on track; if you lose track of how many you've done, don't panic. . Nothing happens if you do a couple more or a couple less; the idea is being close so that you're providing oxygen by breathing then pumping it to the brain using the compressions.

After five cycles, or about 2 minutes, you need to stop and redo your patient inspection. Quickly check the ABCs; check the pulse again and check the breathing again; you don't perform it if the patient has begun breathing or if his heart has restarted. If it's not successful yet, you move on and do another cycle of compressions and rescue breathing.

Usually while you're rechecking, calls are made for an ambulance. Hopefully during this time, someone with a defibrillator comes. If help can be called, issue the direction to do so; things need to happen behind you.

Under normal social conditions the first thing is to yell for someone to call 911. Assign somebody to do it personally, though. Otherwise, start doing CPR and everyone stands around you in a circle and stares, but nobody called for an ambulance. There is an explanation for this: when there are more people, each is under the impression that someone else will it.

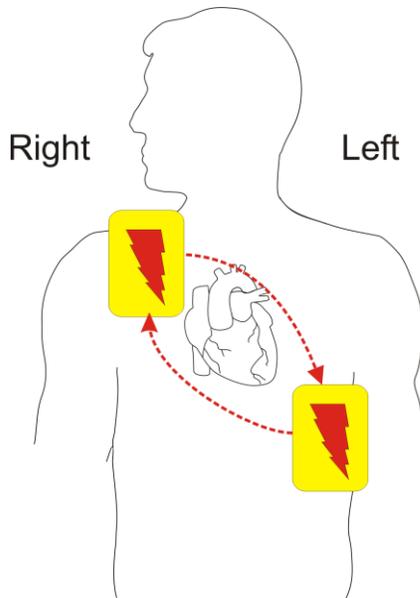
That's why for CPR you have to choose a leader, and the leader is the one who has performed CPR at least once in his life, when the rest haven't. And he will clearly tell someone to call an ambulance and will tell the aids what to do.

Automated External Defibrillator (AED) Support



It is a portable electronic device that automatically diagnoses the life-threatening cardiac fibrillation, and is able to apply electrical therapy, helping the heart to regain an effective rhythm.

It automatically diagnoses the heart rhythm and administers the shock when needed. The user has to place the pads on patient's chest as follows:



AED are designed to be used by people who have received minimal training on AED.

Some models of AED are approved for pediatric use (children under 55 lbs or under age 8), and they require more appropriate pads.

There is basic life support and advanced life support. Basic life support can and should be known by everyone. It's what we've been talking about; rescue breathing, chest compressions, and basic first aid. Advanced life support cannot be performed by anyone.

Where does one stop and the other start? Advanced life support including injecting adrenaline and other medications performing surgical procedures and diagnosing and treating internal injuries can't be performed by anyone; these tasks require a medical professional.

The first step of advanced life support - electroshock - may in theory be administered by someone untrained for it. However, don't start administering shocks just because that person is unconscious.

After you've determined that there's a problem with the heartbeat, you may decide to administer a shock. You do this using a machine called a defibrillator. First you apply gel to the areas where the paddles will go so that you don't burn the chest. Alternatively, you can apply it to the paddles.

Place the paddles - one up on the right side of the right breast/ribcage (the heart is on the left), and one down on the left side of the chest, over the heart.

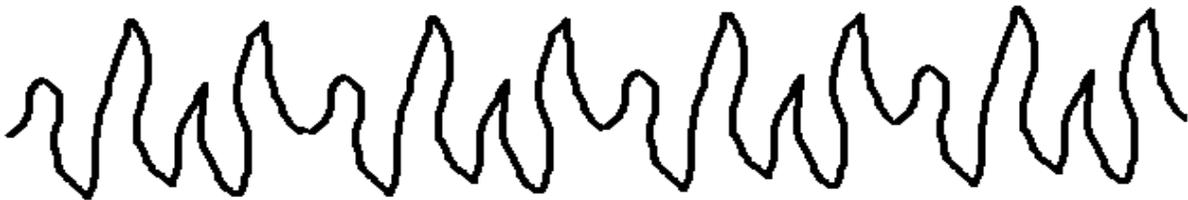
By definition, a defibrillator is used to shock the heart back into a normal rhythm even if it's still beating. An EKG can determine if this is necessary by reflecting an abnormal rhythm. If you see that the heartbeat is regular - the EKG line has normal ranges - you don't start defibrillating him. You see the heart signal on the EKG, and depending on the signal power transmitted to the heart, the heart contracts in response to the defibrillator. If the rhythm is normal and you shock it anyway, you can kill the patient.

ELECTROCARDIOGRAM SHOWING...

A Normal pulse:



B Fibrillation (defibrillation is required)



C Asystole (do not defibrilate) :



Figure A is normal, when one or the other disappears and **Figure B** appears - fibrillation occurs, and then you have to defibrillate. Defibrillation means to get that heart out of fibrillation (rapid, irregular heartbeats), not out of asystole (no heartbeat) - **figure C**, because if the heart does not beat it's pointless to shock it, it doesn't make any sense.

Administering adrenaline pertains to basic life support, which marks the passage to advanced life support. You usually find adrenaline in standard ampoules; there is no 10 ml ampoule of adrenaline or a 5 ml ampoule or a 3 ml ampoule, the ampoule of adrenaline. The ampoule must always have 1 ml everywhere. It's a global protocol.

Adrenaline causes vasoconstriction, it's dangerous, if you put it in the muscle, it causes vasoconstriction there and then it's difficult for it to be absorbed into that vessel. That's why it's recommended that you administer it through the vein and dilute it 1 in 10. Take 1 ml in a 10 ml

syringe (the standard syringes they take with them) and then using the needle, load another 9 ml of saline. Put 1 ml in the vein every 3 minutes, you have enough.

Think of the Acronym ABC

CAB stands for circulation, airway, and breathing and represents how CPR is currently done.

To clear the airway:

- Do this only if you are trained in CPR. Do thirty chest compressions and then do the head tilt, chin-lift maneuver. Tilt the head back with the palm of your hand and open the airway with the other hand.
- Check to see if the patient is breathing at all on his or her own. Take 5 to 10 seconds to do this.
- If the person isn't breathing normally, do mouth to mouth resuscitation. If you believe a heart attack is the cause of this person's unconsciousness, just do chest compressions and skip the mouth-to-mouth breathing.



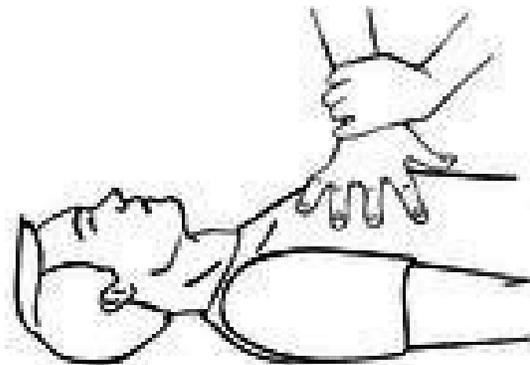
For rescue breathing:

- You can do mouth to mouth breathing or mouth to nose breathing if the mouth has been damaged and can't be used in the breathing process.
- Give two rescue breaths to see if the chest rises. Give the first one second breath to check for chest rising and give the second breath if the first one was successful. If the chest doesn't rise the first time, reposition the mouth, nose and head, and try again.
- One cycle of CPR is two rescue breaths combined with thirty chest compressions. Do cycles of this over and over again until help arrives.
- If an automatic external defibrillator is available, do five cycles of CPR and then apply the AED, following its directions. Shock once and then do another five cycles of CPR.
- Shock again with the AED. AED can be modified for kids aged 1-8 but it is not recommended for babies younger than a year of age.
- If at any point there is movement, discontinue CPR and aid the patient in other ways.



For **circulation**, you provide chest compressions:

- Put the person on his or her back and place them on a firm surface.
- Kneel next to the patient's chest and shoulders.
- Put the heel of your hand on the center of the chest between the nipples and put your other hand on top of the first hand.



Straighten your elbows and lean forward so your shoulders are the same vertical level as your hands.

- Compress the chest two inches using your whole body weight. Push at a rate of about 100 beats per minute. How often do you press? As often as “**A, A, A, A**” from Bee Gees’ song “Staying Alive” (“A, A, A, A... / Staying alive / Staying alive...”)
- Just do this if you aren’t trained in airway management until the patient looks better or until someone comes to help.

State of Shock

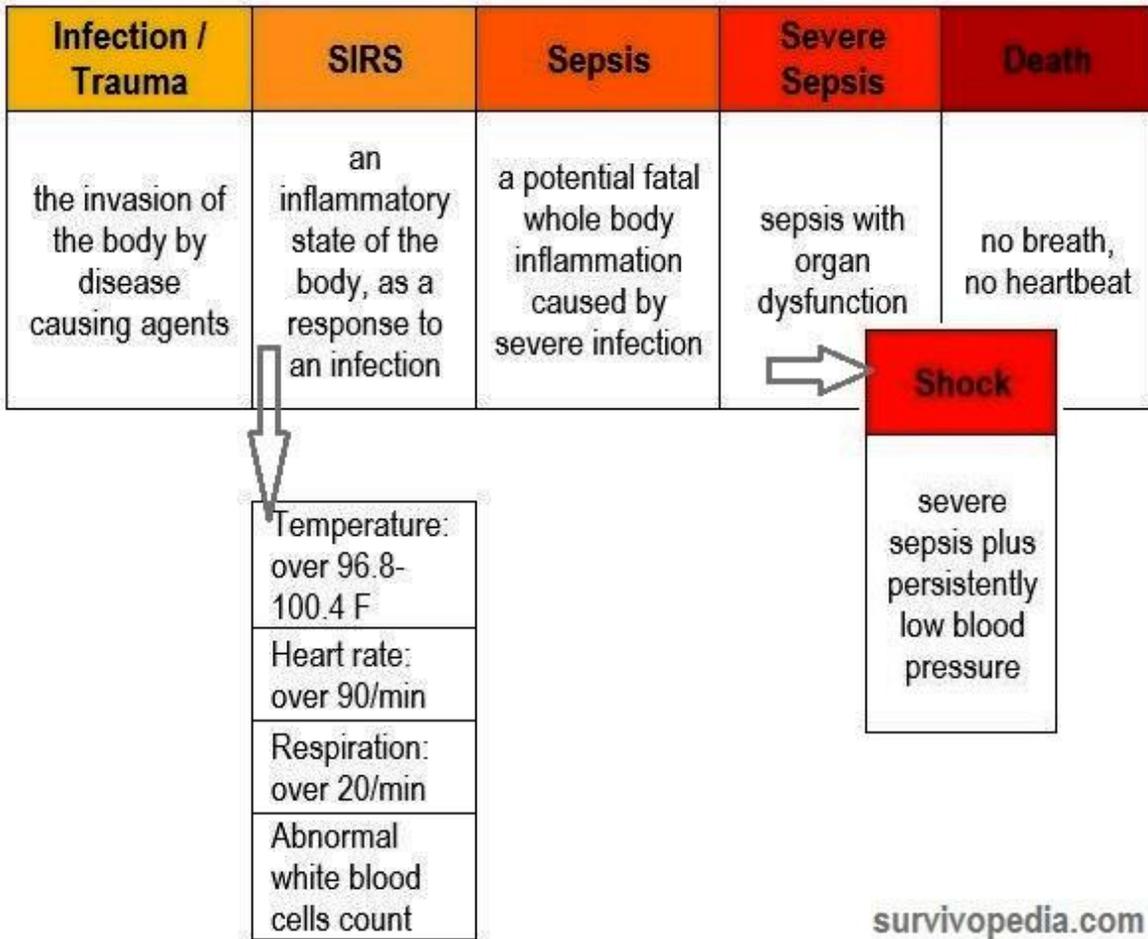
You have developed an allergic reaction because you've eaten something wrong or you got stung by a bee or you have an allergic response to something else.

Let’s start the explanation from the allergy, which is triggered when the body comes into contact with a specific allergen. At that time it releases from certain cells a substance called histamine, which causes vasodilation. In other words, it makes your vessels dilate in response to the allergen.

You have your heart, blood vessels, arteries, veins, and the capacity of all your blood vessels is huge. They are in a toned state, and the blood is recirculated through the heart. Once the vasodilation occurs, the blood vessels enlarge their diameter so that more blood fits in them. But blood is the same, because its amount has not increased. It’s the same amount.

You have 4.5 to 5.5 liters, and it must now fit into a larger volume. And if the blood vessels expand so that they almost drain your circulatory system of blood, you enter into shock and die.

In short, shock means you have too little blood in your circulatory system, whether it's too little blood because your vessels have expanded, or you lost it because you have been cut and bled. How can you tell if you’re in shock? From the blood pressure and the pulse. That's why it's very important to know how to measure blood pressure and find the pulse.



A healthy man's blood pressure must be somewhere around 125 over 80, the top number, or systolic pressure, should be around 110-130, and the lower number, or the diastolic pressure, should be between 60 and 90, though there are exceptions to the norm.

The normal pulse rate is somewhere between 50 and 90. If it's below 50 then that's bradycardia (slow heart beat), and if it's over 90, it's tachycardia (fast heart beat).

If the blood pressure drops and the pulse stays the same you can't really think it's a shock; logically, these two both react in the case of shock. It's logical because if there is less blood then the blood pressure lowers, and the heart is moving faster in an attempt to make it circulate.

If it's septic shock (caused by bacteria), you will be feeling unwell and have fever. If it's a hemorrhagic shock caused by external bleeding, you can see how blood flows everywhere on the outside. But what if you don't see it?

Remember: *blood on the floor and four more*. What does it mean? When you know that a person is bleeding, you either see it externally or have to look for it internally by searching for other signs in four other primary areas. "Blood on the floor, or four more" is a common phrase to describe internal or external bleeding. Spots with hidden wounds that can cause problems include the head, abdomen, thorax, and inside the legs. And then you follow the indirect signs. Go back to the Glasgow Coma Score and to all that I have already talked about.

What other signs are there of shock? Not only the pulse and the blood pressure are affected, but also the patient's overall condition. He begins to lose it because his head is not receiving enough blood, ergo not enough oxygen either. Neurons can't live without oxygen. Other symptoms include paleness. The blood disappears from the skin, so he'll no longer be rosy-cheeked. A feeling of malaise, nausea, coolness or coldness may also be present.

If your patient exhibits both low blood pressure and high pulse, he may lose consciousness. At that point, he's critical and you've got to get him stabilized.

The same shock described above can be caused by a large, systemic infection, which starts from anywhere, but as long as you know the signs of inflammation and stay sharp, you might figure out where to look.

Or maybe it's an allergic reaction or a reaction to drugs, because it may be possible that in that situation you don't know that the patient is allergic.

However, most people know what they are allergic to. Many allergies do not necessarily go together with shock, but with redness, pimples, blushing, etc.; they become splotchy in one way or another.

If the reaction is indeed systemic and the blood pressure drops and you can see that the person is suffocating and is getting no air from the swelling caused by the allergic reaction, you must

administer 10 ml of cortisone intravenously, or use epinephrine, which can be administered IM. Introduce the cortisone into his veins, increase the blood pressure if you can using liquids, stand him on his head to oxygenate his brain, place his feet up and wait. After you've done all that, there's not much else you can do.

The shock is pretty much the last stop: when blood pressure starts to drop, the pulse increases and that state occurs, it's critical.

Shock, at least shock caused by blood loss or infections, is reached by passing through many stops, whether you lose blood, from an inflammation in the abdomen, for example. Everything can lead there unless you have a body able to fight to return to where it started from.

CPR on Children

The way you do CPR on children aged 1 through 8 is basically the same way it is done in adults with the exception that the compressions aren't as deep.

This means:

- You do compressions with one hand
- You breathe a lot more gently with a child
- You do five cycles of 30 compressions and 2 respirations before calling 911 if you are alone.
- If you have done five cycles of CPR and there is no response, use the AED if it is available. If pediatric pads are available, use them but, if not, use adult pads on the AED.
- Keep going until advanced help arrives or until you are exhausted.



Performing CPR on a Baby

You need to know that most cardiac arrests in babies are related to having a lack of oxygen such as is seen in choking or drowning.

If you know the baby has choked, treat the baby for choking first and remove the airway obstruction. If it isn't clear why the baby has arrested, start CPR on the baby.

- Begin by stroking the baby, seeing if there is a response. Never shake a baby.
- If you are the only person available, do CPR for two minutes (five cycles) and then call 911.
- If there is another responsible person around, have them call 911 while you work on the baby.
- Place the baby on a firm surface such as the ground or a table.
- Place two fingers just below a line drawn between the baby's nipples.
- Compress the chest about one and a half inches.
- Pump the chest at a rate of about 100 beats per minute.
- After thirty compressions, tip the baby's head back with the palm of your hand and listen for breathing sounds. Check this for no more than 10 seconds, feeling for breath sounds with your cheek or ear. Look for chest motions.
- Breathing is done by putting your mouth over the baby's entire nose and mouth.
- Give two gentle puffs and see if the chest rises. Give one breath and if the chest rises, give a second breath. Reposition the neck and head if you don't get that first breath.
- If you suspect a foreign body, look in the mouth and if you see something, sweep it out and reassess breathing.
- Always give two breaths for every 30 chest compressions.
- Continue chest compressions until help arrives or until you are exhausted.

Heimlich Maneuver

In the lung, no matter how hard you exhale, there is always about 500ml of residual air reserve that you can't remove.

When doing the Heimlich maneuver to clear the airway, you have to act in such a way as to press on the lung like it's a balloon in order for the remaining air in the lung to push out the obstruction blocking the airway.

HOW TO PERFORM THE HEIMLICH MANEUVER ON...



... an adult



... an infant

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How do you do this? Pressing on the ribs hard enough to break them so you can reach the lung to squeeze it doesn't seem like a very good idea to me. Stand behind the person and place your arms around in front of him.

Make a fist and place it below the sternum, not on the sternum. Why there? Because the diaphragm is located between the ribcage and the abdomen. It's just inside the ribcage and by pushing the diaphragm in and upwards, you press on the lung and it can push the air out.

Place your other hand over your fist and push quickly and sharply in and up, in sort of a "J" motion.

Common Illnesses in a Crisis

How People Are Hurt During Crisis

After the disaster, trauma will account for 70-80% in the acute phase. After that, during the next phase in the second part of survival, the proportion will probably reverse, 70-80% of chronic diseases will gain importance, and 20% will be trauma-related.

Traumatic injuries are more likely to happen in a disaster situation because there are things like building crushing or debris falling, which harm a lot of people at the same time, causing them serious injuries.

Depending on the nature of your disaster, there can be injuries from each type the disaster. Burn injuries are more common due to having to burn trash and possibly using more candles indoors. Fortunately, most injuries can be tended to by your medical stockpile and laceration kits.

Top Five Causes of Injury during a Crisis or Disaster

1. There can be injuries secondary to the disaster itself. If there is a tornado or flood or tsunami, there is debris that cause injuries at the time of the disaster, and afterward, during cleanup.
2. Cleanup following a disaster. When this is attempted, many people can sustain minor lacerations or puncture wounds.
3. Increased use of fire. You may need to use a fire pit to keep warm or a fire pit to burn trash. If there is no electricity, you may need to use candles or a fire pit to cook your meals in. Remember there is no microwave and possibly no stove or oven.
4. Injuries in building things. You may have to build an outhouse, which can cause injuries. You may also have to put together fire pits and can get crushed fingers with rock moving.
5. Children in a disaster. Kids can get injured on a variety of things in a disaster—from debris to candles. Watch your children extra carefully in a disaster situation.

Top Five Injuries during a Crisis

1. Lacerations.

Lacerations can occur with building things like the outhouse or with debris from a disaster like a tornado, flood or tsunami. If you can wear gloves during building or cleanup of a disaster, you can avoid many lacerations. These need to be cleaned carefully and if they need to be sutured, use your laceration pack, including lidocaine for local anesthesia.

2. Abrasions

These are broad losses of superficial skin layers from scraping against something or from falling and abrading the skin. These need to be cleaned very carefully and covered with bacitracin or Neosporin and gauze.

3. Puncture wounds

These can happen as a result of exposed nails and staples used in construction. You can get a puncture wound as a result of debris or when building something. In the aftermath of disaster, these wounds could be caused by animal bites while surviving in the wild, or they could be shotgun wounds. Take care to watch these injuries for infection.

4. Burns

Burns can happen due to explosions and fires started after the disaster, but also from candles or from fire in fire pits while surviving off-grid. The wound will need to be treated and it could take months to heal.

6. Fractures

These can happen if the disaster involved trauma to the house or the person to a degree that bones break. Bones can break in a fall as well, or in cases of electrical shock due to contraction of muscles during the shock.

Types of Injuries You'll Find

Injuries can be classified into several different types:

- Superficial wounds. These are scrapes and scratches that involve only the epidermis of the skin. They barely bleed and need only a cleansing and an application of a Band Aid.
- Lacerations. These usually involve full thickness injuries to the skin. There is a variable amount of bleeding. They need cleaning and suturing with your laceration repair kit.
- Open wounds. These can involve chunks of missing skin and take weeks or more to heal. Clean the wound with soap and water or a commercial product, careful to remove any debris. Pack the wound with dry gauze and cover the packed gauze with a layer of gauze. Tape with paper tape and change the dressing daily.
- Burns can be treated with gentle soap and water. Use cool compresses on first and second degree burns with clean cloths and clean water. Then cover with a dry or bacitracin dressing and tape. Third degree burns aren't really treated until several days after the injury so they really just need a soap and water wash to remove debris and covering with a dry gauze dressing.
- Bites. Bite can be from animal bites or human bites. Hopefully, you've had your tetanus shot and just need routine cleaning of the wound with wound cleanser or a mild soap. Watch carefully for signs of infection. If they are deep puncture wounds, treat it with an antibiotic like Keflex or Cipro so it doesn't get infected.
- Bruises. Minor bruises need no specific treatment other than pain relief. Deep bruises can be dissipated faster with the application of heat, which breaks down the clot inside the skin.

New Wounds Versus Old Wounds

You need to differentiate between a new and an old wound. In the first 8 hours, the wound is new and you have many treatment options. Everything over 8 hours is considered old. Old wounds are no longer stitched and are no longer closed, no matter how big they are. The body

heals without the stitches or closing, but it takes more time, perhaps even months. Still, they will close, with the only condition that they remain clean.

Why don't you close an old wound? Because it's considered contaminated. Enough time has passed for many bad bacteria to enter the wound from the outside environment. Some of these include Golden Staphylococcus, Streptococcus, and MRSA, (which stands for Methicillin-resistant Staphylococcus aureus really bad strain of Golden Staphylococcus that developed a resistance against antibiotics).

You can get these from the hospital and from environments that you usually come in contact with, especially through fecal-oral or fecal contamination, namely from your own stool. Germs are everywhere so the takeaway lesson here is that if you get a wound, get it treated immediately in order to have the best treatment options and prognosis.

How To...

... Stop Bleeding

You need to know the difference between venous and arterial bleeding. **Arterial bleeding** has red, purple blood, it's a strikingly clear blood, because it oxygenated, and the oxygen content lightens the color. **Venous bleeding** has a black, dark blood because it contains carbon dioxide, it's usually dark and it doesn't leak, usually it gushes or pulses from the arteries as high as 6 to 9 feet. That's because it's being pumped by the heart.

The bleeding may be large, medium or small, but in the vast majority of cases, (in 80% of them) the bleeding stops through compression. You must have patience and time. Press down on it for 3 to 5 minutes and it will stop eventually. Blood in contact with air and in contact with interrupted tissue normally coagulates naturally.

If blood doesn't coagulate, that means the patient is suffering from liver problems and you can't expect that bleeding to stop, it will continue forever or until the patient bleeds out. If you suffer from liver problems, if you have clotting problems, or if you're a patient on

anticoagulation medication, you should wear some sort of medical ID that will let first responders know that; it could mean the difference between living and dying.

How to stop a large vessel that bleeds? You clamp it, you put a thread behind it, and then you tie it up. After you perform the surgical knot, you release the clamp. If more blood flows, that means that you didn't do it right. If no blood flows, that means that you've done it properly, but you should still tie another one as backup.

Double-tie or even triple-tie the knot so that there's less chance of it coming loose. You'll need scissors with which to cut above the knot, but not too high up.

Very important: when you tie a knot, when pulling thread to the left and to the right, the thread must form a straight line, with the vessel exactly in the middle, it mustn't form a triangle or a crooked line.

It's a good idea to practice these things in advance, on a leg of pork for example. The surgical clamp is necessary because it makes it possible to grab the tissue and move it aside, because you always have to see everything. You need bandages, because the flowing blood obliterates your field of vision.

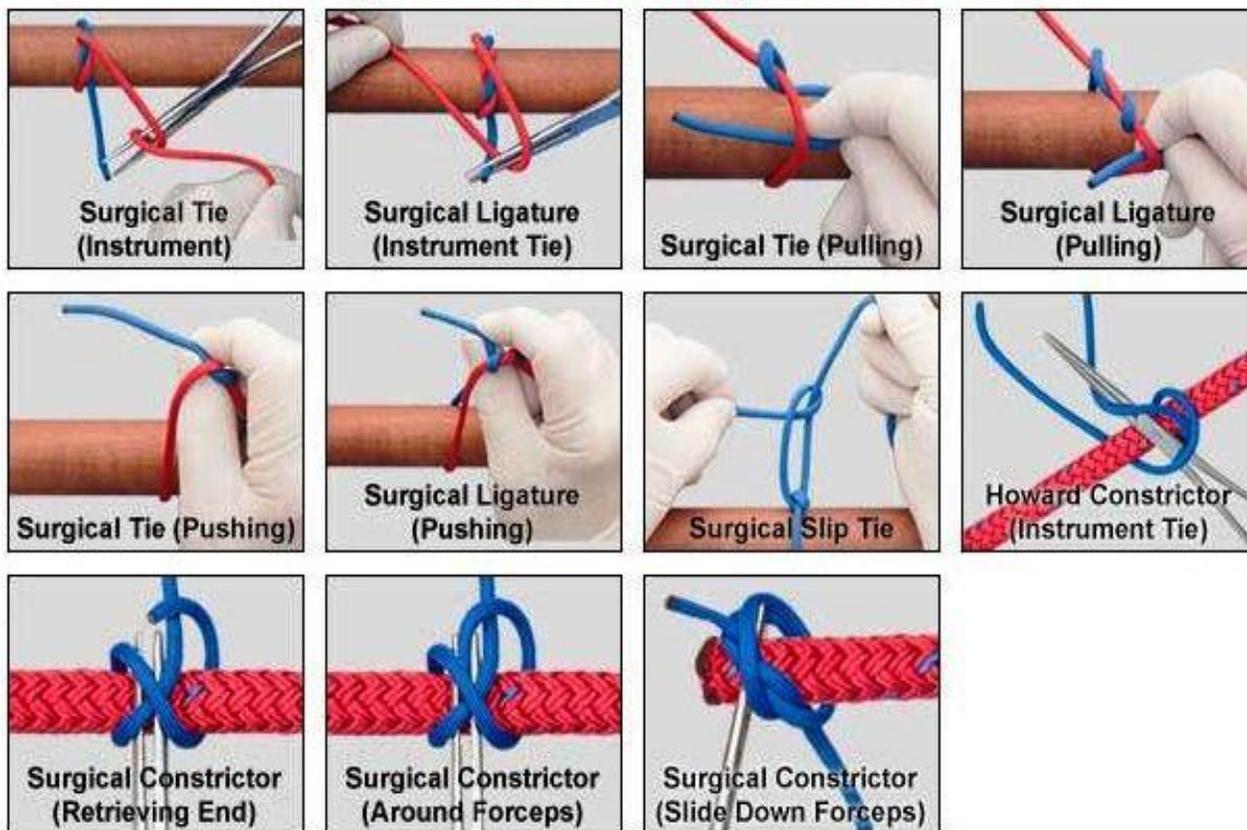
When you can't see where the blood comes from you move the tissue with the bandage to help absorb the blood so that you can see. Once you can see where it comes from, that's where you attach the clamp.

For those who are not clearly informed and can't do this, the simplest thing is to place bandages on the area and apply pressure for 5 minutes. During this time, don't release the pressure even a little bit, even to see if it's still bleeding. Hold down for 5 minutes and if it hasn't stopped by then, apply pressure another 5 minutes, and it usually stops.



You can also apply a pressure bandage. Tie it tight, but not so tightly that blood can no longer flow from that point down, and it should stop. Once you get the bleeding under control, the wound - no matter how large it is - can be treated.

Grog's Index of Surgical Knots



www.animatedknots.com

... Clean an Injury

Burns are cleansed with a commercial wound cleaner that comes in a spray bottle and should be in your stockpile. The idea is to get off any debris or ash from the burn and to prepare it for covering with bacitracin and gauze.

Lacerations, abrasions, and puncture wounds can be cleaned with commercial wound cleanser. In the absence of that, use betadine swabs to gently clean the wound, getting off debris.

If you have none of the above, just use a mild soap and water, wiping the wound with gauze to clean off any debris. Then rinse with clean water so you can suture the wound or cover it, depending on its nature.

... Suture the Skin

Suturing the skin can be tricky because it involves a curved suture. Technically, in a bind, you could suture someone with a sewing needle and sewing thread but they aren't sterile and you can't be sure it won't get infected. Sterile curved needles work the best.

Use the lidocaine and fill the syringe to about 3 cc or more if necessary. Inject the lidocaine all around the wound, entering the tissue beneath the skin as you inject. This hurts less than injecting the lidocaine by puncturing the skin.

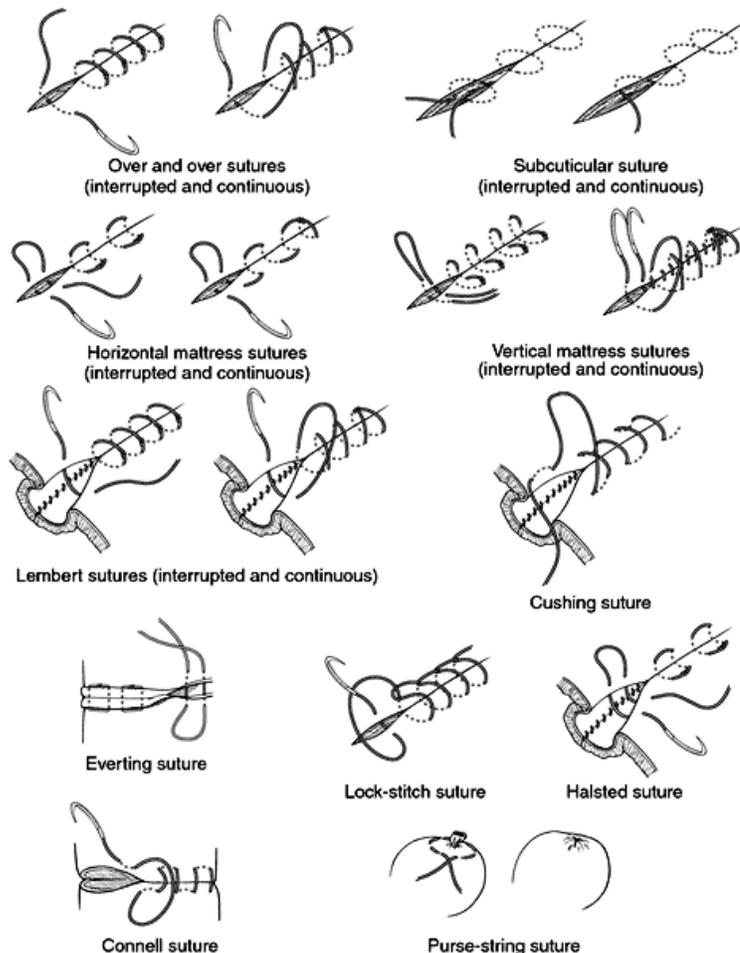
Save the excess in case you missed a spot. Be generous with your lidocaine.

Take the suture holder in hand. It looks like a scissors but has a pointed device for clamping the needle in its jaws.

Hold the handle in your hand like a scissors but don't put your fingers in the holes. Clamp the curved needle in the holder about halfway along the curve.

Use the curve to your advantage as you connect one side of the wound to the other. When you've made one stitch, tie it in a knot, sparing as much suture as possible.

TYPES OF SKIN SUTURES



medical-dictionary.thefreedictionary.com

Then cut the suture so the sutured knot is about an eighth of an inch long above the knot.

Continue every quarter inch or so, making individual knots until the wound edges are approximated. Do your best when it comes to flap lacerations, curved or jagged cuts. There is only so much you can do.

Using a Stapler: You can purchase a surgical stapler on the internet. It comes as a device that you staple much like a real stapler.

You must first sterilize the wound with betadine and you should have a staple remover, which is a small device that allows for rapid removal of the staple after it has been in the skin for around ten days.

For the field, a stapler can be faster than using sutures and the cosmetic result isn't bad, either.

Using Steri strips: Instead of having to stitch the wound, you can place Steri strips on the edge of the wound. On one of the edges, it sticks by itself, and you push the other edge of the wound until the edges adapt to each other, and then pull the Steri strip over to the other side and attach it. Steri strips are as good as stitches, they last for 5 days, you don't have to replace them, (just change the dressing on top) and they stay in place.

You can place Steri strips half a centimeter apart or you can lay them side by side. The scar looks nice and you don't have any stitch holes to scar. You can stock up on as many steri strips as you want because they're not expensive (*less than \$2*) and you can clean on top of them afterwards.

... Keep a Wound Clean & Important DON'Ts

Don't ever use a wet dressing, because bad bacteria love having a hot and humid environment and nourishment. If the bacteria have these 3 things, they multiply like hell and then infect the wound. That's why you stop the bleeding, because blood is their development medium; it has all the goodies that bacteria need to feed on.

Don't apply a wet dressing and don't leave a dressing on for days or weeks. Don't keep the dressing on long enough for enough nutrients to accumulate for the bacteria, because in a

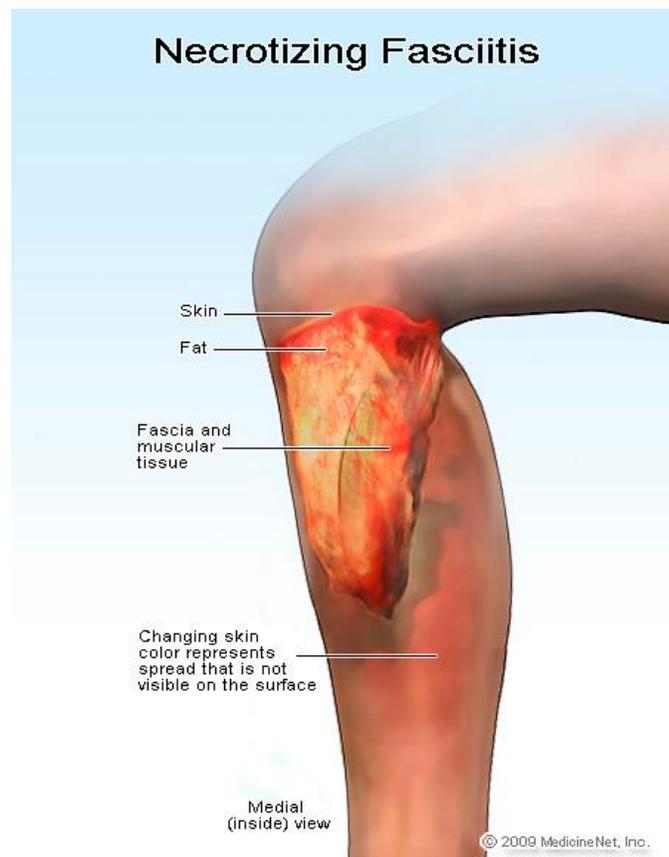
wound you don't just get blood, you also get lymph and secretions. That's why you have to change the dressing.

Do not cover it with a bag, with plastic or with whatever you find. You think that you protect it so that nothing can enter, that you seal it. False! It must be as aerated as possible. You must bandage it so that you prevent any loose debris from entering, so you don't bruise it, so that it doesn't leak a lot and so it doesn't get dirty, but you need air without the 3 conditions that bacteria need to multiply.

The biggest danger of a wound is to reach the **necrotizing fasciitis phase** (*fascial necrosis*). Bacteria that is commonly anaerobic (it doesn't need oxygen to feed) enters and finds a patient who has a poor immune system. This could happen for several reasons: liver issues, obesity, diabetes AIDS, alcoholism, or maybe the patient is old and no longer has as much immunoglobulin.

Bacteria find a perfect environment to develop and in a few hours they eat almost everything above the muscle and beneath the skin. It turns everything into necrosis, so it's dead tissue. The bacterium works so fast that you can't stop them. You need a doctor.

How can you recognize this? You get those general symptoms of malaise, listlessness, fever. It doesn't hurt, but you can touch and it feels like snow or crepitation. It is the most dreaded infection, but it doesn't happen to everyone.



You're also partly to blame because you have no immune system, because you didn't go to the doctor to take care of yourself and see what other problems you have. Also, if you overeat, drink too much, or otherwise treat your body poorly, you're setting yourself up for infection if you get hurt.

In conclusion, keep the amputation wound clean. You don't have to build a German Panzer on top of it; you don't need a tank of a dressing. Keep it aerated and clean, and as long as it's clean, it heals on its own.

Look at the wound the next day and check to see if it's okay before you wash it and remove all the dead or black tissue. It shouldn't hurt, nor bleed. If it bleeds and it hurts that means it's alive, so you don't have to cut it off.

... Apply Cast for Fractures

To begin applying the cast, apply the bandage, then place a layer of cotton wool under the area that's to be casted to protect the skin. Then you open the plaster tape - it's a kind of bandage roll that has some sort of calcium/chalk in its pores - and you need to measure it and check it for proper length. You need enough to immobilize one joint above and one below the spot.

To measure it, you lay the bandage on a table or some other flat and solid surface, and you pass it over an area the size of the area to be casted from 7 to 12 times, depending on how hard you want the cast to be. If it's on the arm, it shouldn't be very hard. If it's on the leg it will need to be harder; the thicker the location, the harder the cast must be.

To simplify, you're just folding the casting bandage over on itself in an approximate size of the body part that you're casting in order to get about the right amount of bandage prepared.

After you have the cast bandage measured out, place it in a basin of warm water then lift it out and gently squeeze the water out between two fingers. Next, place it on the arm or whatever area you're casting.

First, you lay the cast on the injury, (don't wrap it around, and just lay it over the area to be immobilized!) and after that you wrap the roll over it and on the other side as well; it shouldn't be very tight. Then you wait for it to harden. You can feel it getting warmer and harder. It slowly turns from really soft paste to putty, then into some kind of harder plastic, and then it becomes hard as wood.

It takes 10 minutes at most. The neat part is that you can take it off as often as you want; it's not like in our grandparents' time when they used a circular cast that you had to take off with a hacksaw.

You can immobilize any part of the body by using a plaster splint. It takes a quarter of an hour and you can take it off and tend to yourself afterwards.

Types of Trauma

What do you do and what does the patient do when there is a trauma? The first thing that you should do is perform a [body check](#). As we have already stated, start at the patient's head and work down to the feet. Evaluate everything systematically, one body part at a time. You must check two aspects as you're going down the body: morphological and functional.

First of all, **morphological** means "the structure and form of an organism, or part of an organism." In other words, you look at the structure to see if it's intact. Check to see if it's broken, bent at an odd angle or crooked. Look to see if something abnormal is leaking out of it such as blood, clear fluids or, saliva. This is the first part of your exam. Look for obvious injuries first.

From the morphological exam, you can *see* that it's a gunshot, a cut, a stab wound; you can see that and you can assess it. You can't assess the depth and you can't assess 100% the destruction caused by the lesion itself, but you can estimate it. A lot of the things that you can't see are

injuries such as concussions: you fell on your head and you don't know exactly what the injury is, but you can make an estimate by assessing the function.

The **functional** aspect of your exam involves feeling for injuries that you may not be able to see. It's also how you determine how severe an injury is that you discovered visually. Physically assess the head, neck, torso, arms, and legs. While you're also looking: is there bruising, are there wounds, is there a cut, and is there a depression in the head that shouldn't be there?

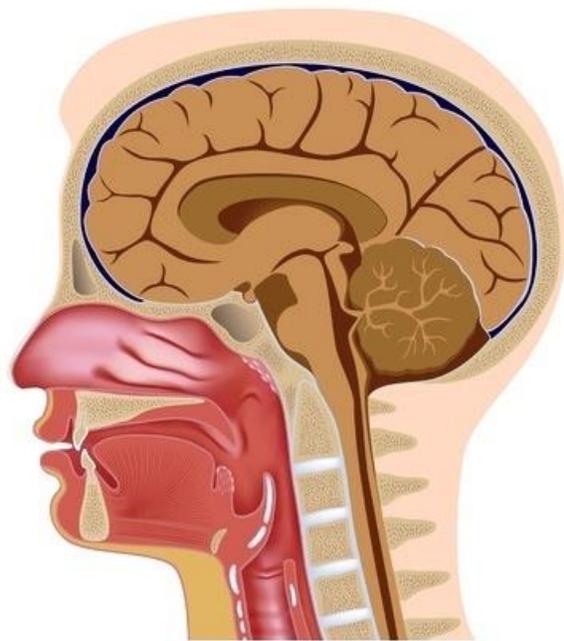
If you put your hand on a body part and press, do you feel that the bone is hard and shaped normally, or does your hand go in and you feel that the bone goes in? Does the patient express signs of pain when you touch it? Is there feeling in it, and can the patient move it normally? If everything's okay visually and functionally you always move on to the next point.

In short, the critical points in trauma are the vessels (which must be closed), the nerves (which must be protected), and the tendons (which can be stitched). Muscles are not as important as one might think unless they are completely severed, in which case you have to readapt and sew them together.

Head Trauma

The head and neck bleed very heavily, even from superficial injuries. Don't be scared until you know for sure what the problem is. All bleeding stops, apart from very large vessels.

When examining the head, if you feel deep depressions, fractures or mushiness, something's extremely wrong and it's really bad. There's most likely pressure caused by swelling or bleeding, and the patient is



probably no longer conscious and he may no longer be able to breathe on his own. Stop the assessment; there's nothing you can do on your own.

You must go to a hospital ASAP where they can intervene surgically because what happened is very dangerous; it could even be a brain lesion. This can't be solved in the field; this is taken care of by a neurosurgeon in an operating room, using a procedure called trepanation. It involves cutting a hole in the skull to relieve the pressure so that the brain can heal. It's true that the Egyptians used to do it, but it's not advisable to drill a hole in the person's head out in the middle of nowhere, right?

What you can do you to figure out if there's something wrong with his brain is to look at his pupils. Open his eyes and, with a light source, subject the pupil to a dark-light sequence, dark-light. The pupil expands in the dark and contracts due to light. These reactions should be the same in both eyes.

If the patient's pupils contract equally on the left and on the right, this means that there's a good chance that there is no brain injury. If there is a lesion on the left side of the skull, the right eye no longer reacts and vice versa.

These signs are seen on the patient, and that's why the GCS - Glasgow Coma Score was invented: it quantifies the patient's condition based on his ability to speak, his eye movements and his body movements.

If everything works on demand – that is, you talk to the guy and he opens his eyes, if you tell him to move his hand or leg and he can, if he speaks to you and makes himself understood and answers your questions clearly – that is the maximum score: 15. That means the patient is neurologically free of problems, and that you don't have to think that something necessarily has to be done, and it gives you time. A GCS score of 3 is the lowest score, and that means it's severe. If you were to give the patient a color code, it would be black.

The GCS is how you figure out if there are any brain lesions. If the patient scores well, you don't have to worry about the injury immediately and you can deal with someone else who needs you

more. When you hit your head, you need to be observed for 24 hours: that's the critical period during which brain swelling may occur. During this time the patient may descend on a downward slope if there's swelling or internal bleeding, but not necessarily, he could also be ok.

GLASGOW COMA SCORE (GCS)

TEST	RESPONSE	SCORE
Eye	Does not open the eyes	1
	Opens eyes in response to painful stimuli	2
	Opens eyes in response to voice	3
	Opens eyes spontaneously	4
Verbal	Makes no sounds	1
	Incomprehensible sounds	2
	Utters inappropriate words	3
	Confused	4
	Oriented, converses normally	5
Motor	Makes no movement	1
	Extension to painful stimuli	2
	Abnormal flexion to painful stimuli	3
	Flexion / withdrawal to painful stimuli	4
	Localizes painful stimuli	5
	Obeys commands	6

TOTAL GCS = Eye + Verbal + Motor

Severe condition - GCS below 8-9

Moderate condition - GCS 8 or 9 to 12

Minor - GCS 13 to 15

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If you are regularly asking the patient, "Are you ok? Open your eyes.", and he does, then he's passed the first step. Check regularly to make sure that his pupils are still equal, too. If, however, you see that he no longer responds well, that means that something is no longer functioning as it should and it's almost 100% that the brain is either bleeding or swelling. Everything has a logic: the blood accumulates, the pressure increases, which then puts pressure on the nerves. The nerves no longer receive oxygen, so they no longer work and the functions are lost.

You may never see anything morphologically. What can you do to give you more time to get him to a hospital, or to give his body time to heal it on his own if you can't get to a hospital, is to somehow lower the pressure in the skull. The patient requires fluids and needs to stay at rest, so that his blood pressure doesn't rise until he can reach a doctor.

Eyes and Ears

First, you must remove the foreign agent from the eye, whatever it is - dust, sheet metal, a knife. If you have eye drops - there are ones with antibiotics, gentamicin with an anti-inflammatory, with all sorts of stuff - those can be put into the eye, but the antibiotic ones are administered only if it's infected, red and runny.

If you see that the eye secretes pus or a cloudy, dirty liquid then it's infected. Until then, what's really important is washing with plenty of pure water or saline, not with soap, or anything irritating. Regardless of what's in the eye - whether it's a chemical, a toxic substance, smoke - regardless of what it is, wash it with water.

You need to clean the eye, then keep it clean and dry. Avoid moisture or further irritation, keep it at rest. You may want to use an occlusive dressing made from gauze. Put it over the eyelid because if you blink often, you'll irritate it even more.

Ears are a very complicated thing: if blood flows from the ear, for the most part you should think of only one thing; fracture at the base of the skull. This is most likely a bone fracture, which is very serious, and you better not do anything or you kill him. It is associated with the so-called binoculars - a large hematoma around the eyes - both eyes are black all around as if you took

punches to both eyes, they'll be swollen, and red, and there's nothing you can really do. It's the same as with the trauma with bleeding in the head.

In 80% of cases in which you can't hear out of just one ear, the reason is the accumulation of ear wax, ear wax. You can remove it yourself, so you don't have to go to the doctor. Keep your ear upwards and drip oil into the ear because the oil softens the ear wax so that it doesn't come out in the form of a clog. Turn your head so that the ear is horizontal and drip the oil in. Put a cotton ball in there to keep the oil in and, leave it to act at least 6-8 hours, usually overnight.

The oil needs to be a little warm, not hot nor cold, to prevent the sensation of vertigo, aka dizziness, because hot or cold irritates the cochlea behind the eardrum, which is the center of balance, After that, after you let it work, take out the cotton ball and, using a large syringe, fill it with plain, slightly warm tap water.

At the end of the syringe, fit a cannula without the needle so that you can direct the stream of water towards a point on the upper wall of the ear, and then pour all that water into the ear and wash it. It causes a turbulent current so that the water doesn't push the wax plug deeper, but rather goes along the wall and gets behind the plug to flush it out. You usually need to do that twice, but introduce the water lightly.

Only 20% of cases of ear pain are a ruptured ear drum, or inner ear injury. If so, rest and wait for it to heal. It can be caused by blood pressure, so measure the blood pressure and see that it's not too high. High blood pressure is usually associated with headache and with many other symptoms. Ringing in the ears is not the only symptom.

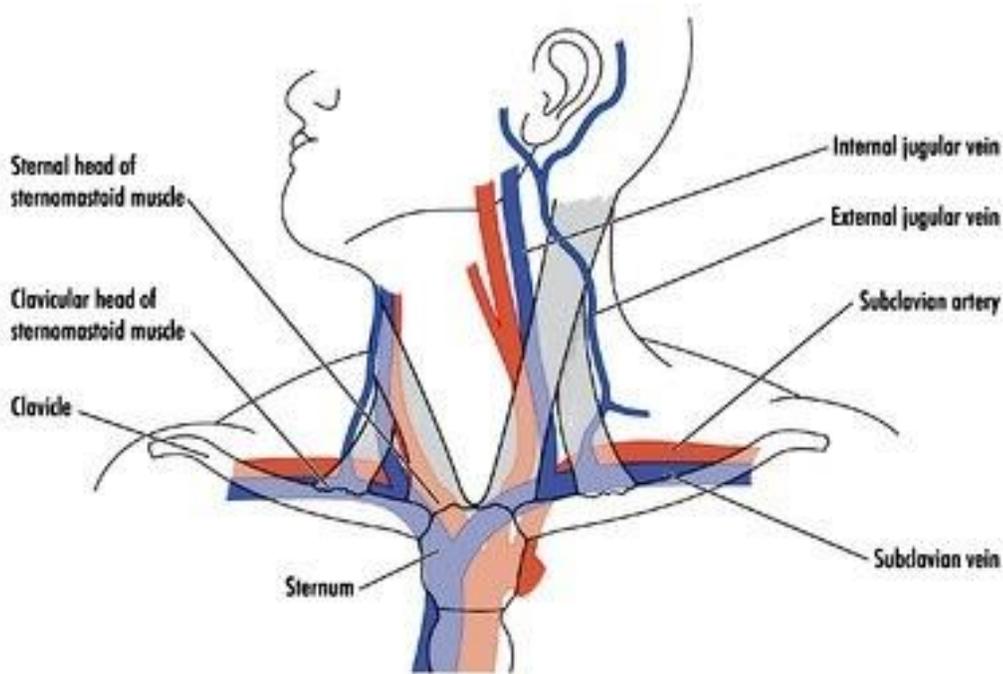
Otitis, or ear infection, hurts very badly. If it leaks then we go back to the same treatment already described. If you see a festering secretion, in other words it is whitish, yellowish and messy, like pus, you give him an antibiotic such as Augmentin which I prescribe, if there is no secretion but simply pain, rest and don't insert anything cold. You can insert something warm to alleviate it such as warm water or medicinal oils.

Neck Trauma

First of all, the neck includes the spine: it also involves all the nerves from the brain that travel into the spine. The spine spreads them to the limbs, or they go into viscera. When the vertebrae are moved and interrupted in the spine, which can also interrupt the nerve endings. If it happens high enough in the spine, or in the neck, the patient becomes a paraplegic. The higher the injury occurs on the spine, the higher on the body the paralysis appears.

If the injury occurs where the neck meets the head, the person is dead instantly. It's what we see in the movies when Arnold Schwarzenegger breaks somebody's neck. What actually happens? The first vertebra enters the brain and severs everything there, at the origin: that's where the respiratory and circulatory centers are, so if the heart and respiration are no longer autonomous, if they are attacked at the first level, then death occurs instantly.

Another type of neck injury that you'll possibly encounter deals with muscles and tendons, not nerves.



A lot of people come to the hospital stating, "I hit my head on the steering wheel and my neck hurts now," and they can't move it, but it doesn't necessarily have to do with the spine. If neurological damage didn't occur instantly, it's very unlikely to occur later.

The vast majority of people have no fractures, and even if there are any, they are merely displaced and the fracture fuses over time. The real problem arises if somebody tries to reposition the head before assessing injury. If there is no fracture, then nothing happens; however if there *is* a fracture, movement could displace it, which could sever the marrow and kill him instead of helping him.

What you need to do in the case of neck muscle or tissue damage is just give the injury time. Give the patient anti-inflammatories and medication to reduce the pain. Tell him not to make any sudden movements but to move gently. On the first day it hurts a lot, usually the next day the pain is even more intense, and on the third day it begins to subside. It's just a kind of muscular contraction. JUST WAIT AND SEE...

The second fatally dangerous thing injuring the neck involves the carotid artery. If you feel the large muscle that runs down either side of your neck, that's the sternocleidomastoid, and under it you can feel the carotid artery, right? Look for it until you find it: start at the rear point of your jaw bone and follow the muscle down and inch or so. You'll feel your heartbeat. You need to find it on yourself first in order to make it easier to find on somebody else. There's one on either side of your neck so it doesn't matter which side you start on, but find them both.

This is where you usually check the pulse to see if somebody's heart is beating. There are a couple of other points but that's the easiest, quickest one.

The idea is this: almost any bleeding can be stop by compressing the carotid artery, but you can't stop the blood flow through the carotid through compression. You can only save that patient if you have a Kocher or a Pena clamp with you.

It's difficult to describe how to use the clamp if you don't have one so buy the clamp and play with it. See how it closes and how it opens, because if you've never done this before, you won't

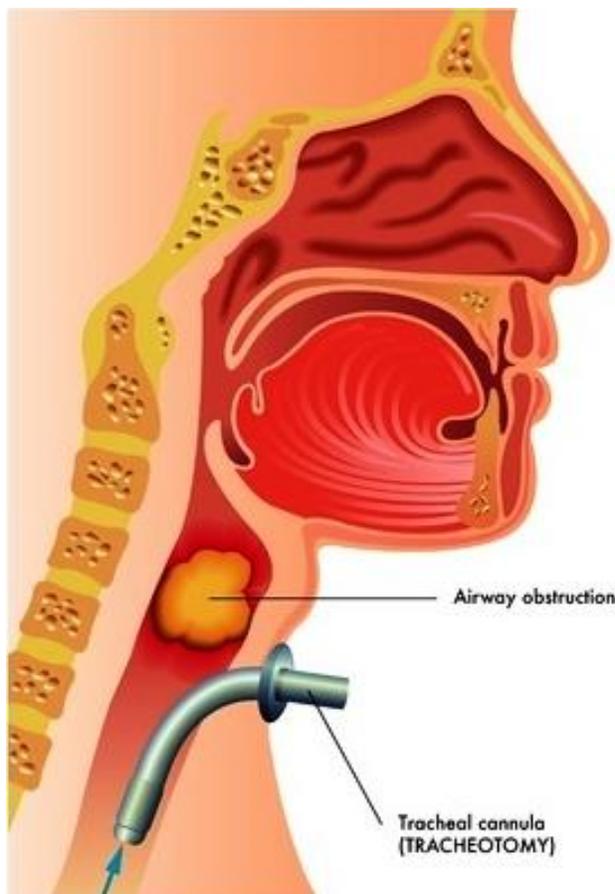
know how to open it. How do you close it? You squeeze it. How do you open it? Don't try to open it. Squeeze it again and lift up from one side.

You need to clamp the carotid, to close it: pick up the clamp, pull down on the skin to see where the cut is - usually the cut must be big - and squeeze it with the clamp, afterwards tie the cut over the clamp.

Tracheal Trauma

When the trachea is damaged, you compress it so as not to press down on it. If you press down on it you can no longer breathe and you'll suffocate.

The idea is to apply enough compression so as to not choke on the blood that enters the trachea, but not so much compression that you can't get enough air to breathe.



When the person can't breathe because the upper airway is blocked, your first priority is to clear the airway or find another way to get him air so that he doesn't suffocate.

First try the Heimlich. If that doesn't work, follow standard rescue breathing techniques and do a finger sweep of his mouth and throat, being careful not to get bitten. Repeat Heimlich if airway is still blocked.

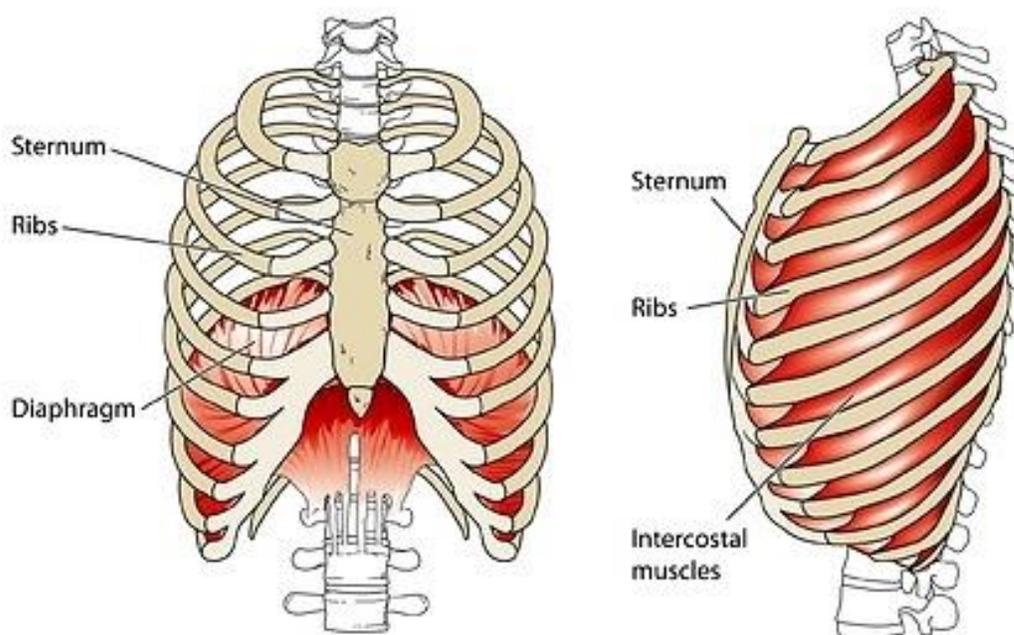
Tracheotomy is another way to help the patient breathe when his or her airways are blocked, but the procedure is too complicated to be done by a person with no medical experience.

Note: The thyroid is located right in front of the trachea, and it's the most vascularized organ in the body.

If you injure something in there, you can't stop the bleeding easily. This will cause a huge problem so you need to make sure that you tread carefully when trying to treat a throat injury or clear an airway.

Thorax Trauma

The most important vital structures in the thorax are the heart and the lungs.



Puncture - Pneumothorax and hemothorax are two things that is a good idea to be able to identify, but for that you need a stethoscope.

Between the lungs and the chest cavity there is a membrane called the pleura, a very fine layer covering the lungs and the viscera. When you breathe, they simply slide one over the other, and between them there is an area in which there is no fluid; there is nothing. If air or blood accumulates between the membranes, then you have a pneumothorax or hemothorax.

A pneumothorax is caused by air and a hemothorax is caused by blood. This is a common occurrence with chest trauma; once air or blood enters the pleura, that space keeps filling up at the expense of the lung, which no longer has room to inflate, so that the victim can no longer breathe. The lung eventually collapses. Hold your breath for five minutes and you will feel what he feels.

As long as all else is well, a collapsed lung isn't immediately fatal; if the other lung is ok, it will keep functioning and the patient can breathe. Still, the collapsed lung does not provide sufficient oxygen, so it should be treated.

How do you diagnose a collapsed lung, though? Put the stethoscope on the chest or back and listen to the lungs. You go to 3 spots on the back, from top to bottom, so on your upper back, a little lower, middle, and at the base, where the ribcage ends, and you do the same for the other side.

Listen to how one lung sounds compared to how the other lung sounds: when a person breathes in and out, if you can hear it on one side, and you can barely hear it on the other, that means there is a problem. But you have to see at what level it is, considering that air rises, and liquid descends, in order to determine whether there's a pneumothorax or a hemothorax.

When there is air in the thorax, the problem is high; you can't hear air entering the lung. Liquid (blood) flows down, so it accumulates from the bottom, and that's where you can't hear it. You can also have both situations.

If there is liquid, it should be removed. Usually the liquid is reabsorbed, while air accumulates.

SUCH INTERVENTIONS CAN BE VERY RISKY UNLESS YOU KNOW EXACTLY WHAT YOU ARE DOING AND SHOULD ONLY BE CARRIED OUT IF NOTHING ELSE WORKS. Remember the principle of "primo non nocere" before doing anything.

Reinflating a Lung

Learn to count ribs, because in order to remove the air, you usually put the needle in the intercostal space between ribs 2 and 3 (the nipples on a man are at the level of intercostal space 4 and 5). The needle must be thick enough, and you can hear a puff when you make the incision - that will be the air going out.

Putting in a drain tube to remove air from the thorax is more complicated. In order to prepare for the insertion of the drain tube, you can anesthetize using xylocaine if you have it. Xylocaine is the most effective anesthetic, the one with the lightest side effects and the one that can be used everywhere.

After you use the anesthetic, use a scalpel to make an incision of 1.5 cm, then put your finger in the incision as far as the rib. Once you feel the rib you need to go in with scissors and carefully cut deeper until you get into the pleura. Open the scissors up wide to make a hole.

Next, insert the tube, (which is a special tube made specifically for draining the pleural cavity) into the incision about 6-8 inches deep. Put it in there with the special holes inside, leaving one end out. Afterwards, sew the skin around the tube, leaving a long tail of thread. Loop the long end of thread around the tube to secure it in place.

After you place the tube, you need to clamp it; because you take the air out through it, you don't want to let any more air get sucked inside the chest cavity. To prevent this, you need to put the other end of the tube into a jar of water placed lower than the patient: the water does not rise towards the patient but the air can come out of the thorax. You'll notice bubbling in the jar as the air escapes.

Things like that should not be done unless you are sure you know what you're doing, because otherwise you are doing more harm than good to the patient.

Rib Fracture

How do you recognize a fractured rib? It hurts like hell and if you press on the rib you can feel the so-called crepitation. You can hear the ribs grinding against each other and you can most assuredly feel it, too.

What do you do about a fractured rib? Nothing, other than wrapping the ribs in an Ace bandage, assuming the broken rib didn't puncture a lung. Other than wrapping them, you wait, because there is no other treatment. You can give the patient pain medication every few hours to ease the pain and keep a close eye on his breathing for several hours after the injury. And, of course, with patience, about 2-3 weeks of healing.

The Abdomen

The belly is what we call a "Surprise Kinder" because is just full of surprises; you never know what will come out of there when the area is traumatized. The trauma may be a concussion; you've received a strong blow and that's it. After that it hurts but you don't know what's hurting exactly, because there many things in there.

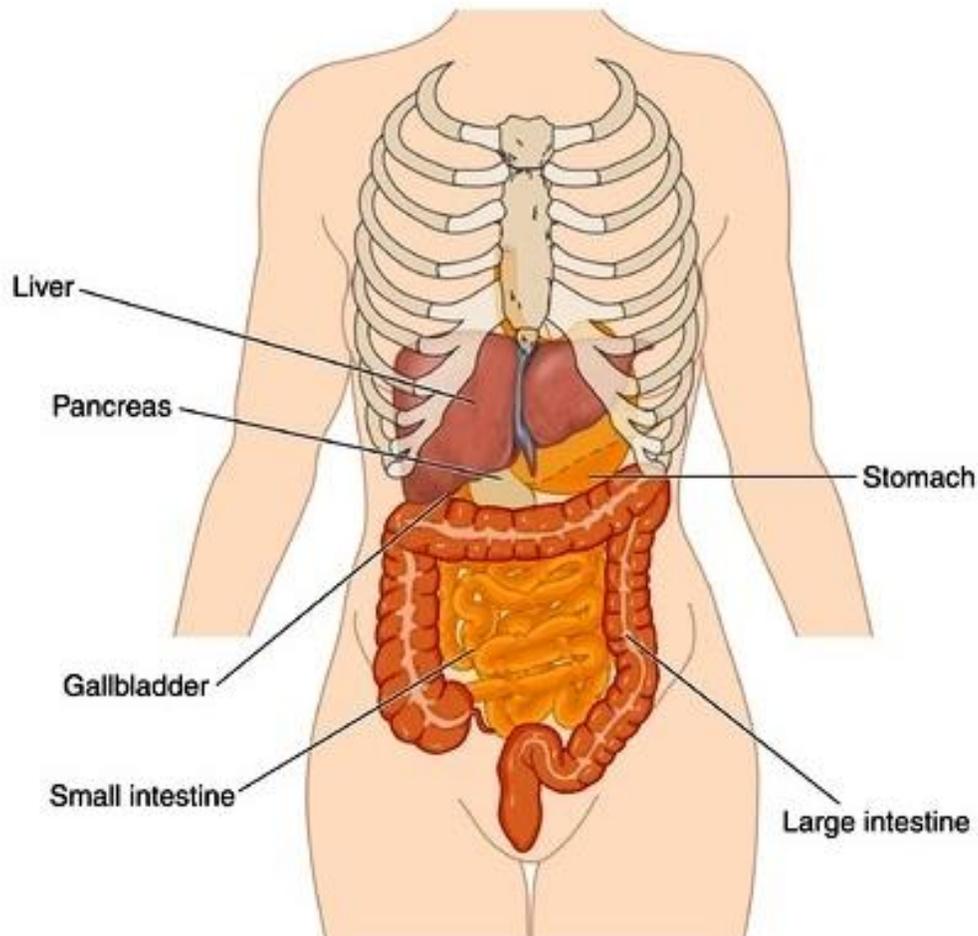
To narrow things down, there are only 2 types of organs in the stomach:

- Empty, hollow organs (starting from the last part of the esophagus which continues into the stomach, duodenum, small intestine, large intestine, and anus. In other words the digestive tract, then from the kidneys to the bladder)
- Full, fleshy organ (liver, spleen, pancreas, kidneys).

Full organs are the one that bleed most readily. Those are the most commonly affected in abdominal concussion injuries.

Most often when you take punches, when you're kicked, when you take a bull's head to the belly, when you're hit with a piece of wood, or when you fell from a height but nothing penetrated the belly, the first thing that tears is the full organ.

These usually bleed profusely and usually there's nothing you can do without a hospital. There is nothing to do but wait. Waiting can result in two outcomes: either you die, or you live. If the tear is not too large, the bleeding stops by itself.



If you live, you must keep your body at rest, do not move and do not walk because you may have a rupture of the liver or spleen which fused temporarily with a blood clot that can cause a host of other problems.

After trauma, you need to give it time – at least a week. Don't move, don't run, and don't do anything. A lot of people have died this way: they rupture the spleen but nothing happened for 2-3 days. Everything was perfect because they didn't do a lot. After that, they went cycling again or they tripped and fell, and the spleen ruptured in exactly the same spot again and they died.

How can you tell that you have an internal abdominal bleed? You'll be pale - the blood drains and can make you anemic. You'll likely be in pain - the spleen usually hurts in the left shoulder and the liver hurts in right shoulder. This will be a stabbing pain, because it irritates the diaphragm and the pain reflects in the shoulders.

The second thing that can rupture from a concussion is the aorta, which goes up from the chest to the cervical spine. When you fall, the aorta is very resilient, but if the impact is really strong, it can tear. If that happens, you die almost instantly, and you don't even realize it. You'll feel ill, you'll feel an intense pain in your back, you fall down and you don't get up again.

Other vessels that can also tear are the vessels between the intestines – the mesenterial vessels. You must recognize when it's bad and you have to go see a doctor really fast. It's just like a perforated ulcer. The stomach contains hydrochloric acid, the small intestine has bile and pancreatic juice, and the colon has a lot of bacteria. You don't want any of those just floating around your abdominal cavity!

What's the difference? Hydrochloric acid is bad. It burns quickly, you feel the pain immediately after it happened just like you do with a perforated ulcer. You'll have severe, extensive pain, the abdomen hardens and you get the "wooden belly."

This is how you realize that it's serious: you can no longer push into the abdomen's resistance, and if you ask the patient to relax his abdomen, the muscles are so contracted that they're like wood. You can't press down on them anymore. Your belly is soft normally when you press down on it. Wooden belly happens very quickly.

When the intestine is damaged or when it perforates, it takes some time, and the colon takes much more time, but the result is the same because bacteria multiply. They exit into the cavity, they irritate it and they stimulate the inflammatory system and cause peritonitis, which again leads to the same wooden belly.

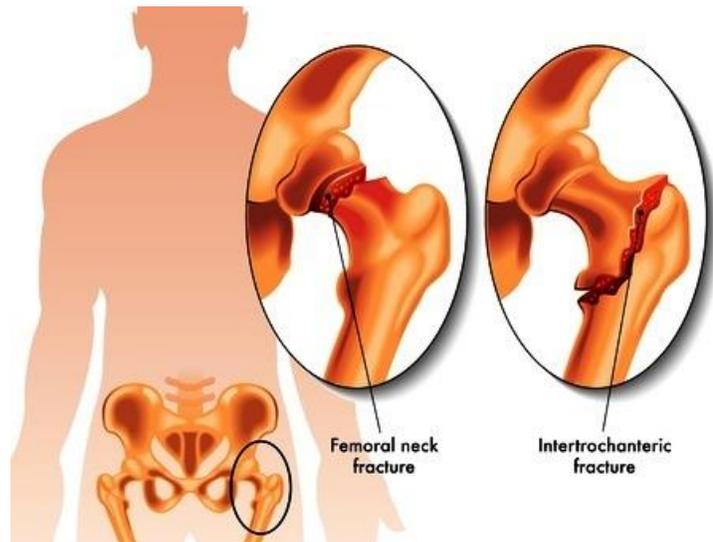
Conclusion: when the patient exhibits a wooden belly, it means he needs surgery.

Pelvic Fracture

The pelvis can also break. Bones lose a lot of blood - a man can lose 2 liters of blood due only to a pelvic fracture. The pelvis can be stabilized too. How? Improve a very wide belt, pass it at the back and tie up the pelvis very securely. Tighten it until you can't tighten it any further in its anatomical position.

When you perform the body check and you get to the pelvis and you press down, see if there is any pain and press to see if it's stable.

It must be fixed and hard. If it's not and it moves in your hands, it's broken, and then you have to fix it, to immobilize it, as with any fracture that I have mentioned so far.



Typically injuries that are accompanied by severe instability of the pelvis mean that the person doesn't have a high chance of survival, but if you see that it hurts, then you know what it is.

The Arms

Arms are one of the most important things that man has; they are divided into 3 levels, arm, forearm and hand. You need to know the route of the two large arteries (the brachial and the ulnar) and of the tendons, because injuring them can cause you to lose the arm. If you cut either of the two arteries you will get a lot of bleeding, but if you compress the artery long enough and keep your arm up, it should stop. Be patient and don't move the arm afterwards so that you don't displace the clot or scab. If you do that, you'll start bleeding again.

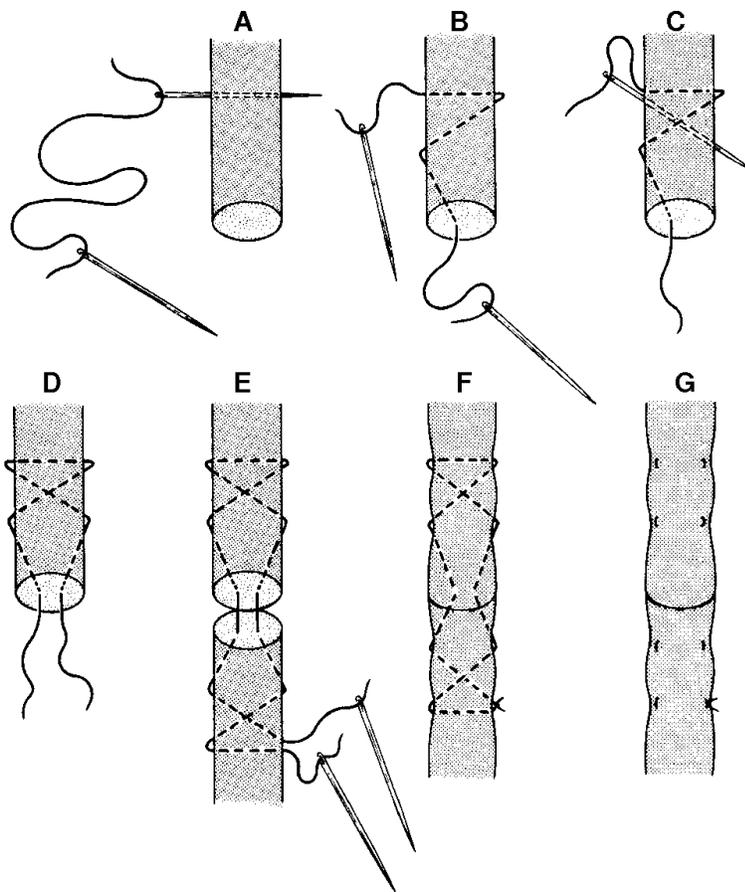
Be very careful in winter because if you cut one of the arteries, your arms can develop frostbite quicker because less blood than normal enters the arm. That means that your arm isn't as

oxygenated and warmed, so you are more exposed to the cold than normal and you risk frostbite.

Everything travels down the medial side (the inside) of the arm: the nerve, the vein accompanying the artery, and from the middle of the forearm downwards you also have tendons.

How can you tell that **the tendon** is affected? Your finger stops working. You either can't flex it,

SUTURING A TENDON



can't extend it, or both. At the hand, two fingers are the most important: the index finger and the thumb, which creates opposition and helps you grasp things.

If you cut your tendons, you are no longer able to do anything with the index finger; you can no longer flex it, so you need to stitch it.

Either a doctor does that, or you do it in an extreme case, anesthetizing the spot first if possible.

Fill the syringe with 10 ml of Lidocaine. Don't inject it through the skin but rather straight into the tissue in the wound.

You can sew a tendon once it's completely severed but first you have to find it, and to find it you have to cut the skin. You never cut across the skin; it's never cut transversely at the level of the arm, but only along the arm.

The idea is that you have to go in with the needle from the lower part along the tendon. Go in along it and then come out its side with the thread. After that, you go in again but you go through the tendon at a distance of nearly half a centimeter from where it was severed. There must not be any blood while you're sewing. To prevent blood from seeping down into your workspace, you can place a tourniquet higher on the arm. Don't keep the tourniquet on for longer than an hour and a half or else you risk tissue damage. That's all the time it gains you to work so be efficient.

After you stitch the tendon, the limb must be immobilized in the same position that you sewed it using a cast, which you make out of 3 plaster rolls and a roll of cotton wool. It's not a good idea to place the plaster directly on your arm; the skin must be protected and it mustn't perspire.

Apply the cast, clean the wound 2-3 times per day. It must be washed with water and soap, then replace the dressing over it and keep it in the cast for about 2 weeks.

The Legs

Vessels and nerves go together, mainly on the inside. In fractures, sprains, and dislocations, the idea is to return the leg along the axis and immobilize it. It will swell, but you put it back into place. You can tie it with a bandage to immobilize it, then administer a local anti-inflammatory. If you can no longer step on it because of the pain, you can consider it a fracture and so you immobilize it in its anatomic position, then put on a cast.

Different tears can occur - of the meniscus or cross ligaments, but they require an arthroscopy or surgery or a hospital, which you do not have in the field. What you can do is to immobilize the limb, take medication for pain and inflammation and wait, because there is no other solution.

If there are no more hospitals, you immobilize it to give the body time to recover to some extent, because after you've sewn the tendons, they will still fuse. Possibly if the tendons are not

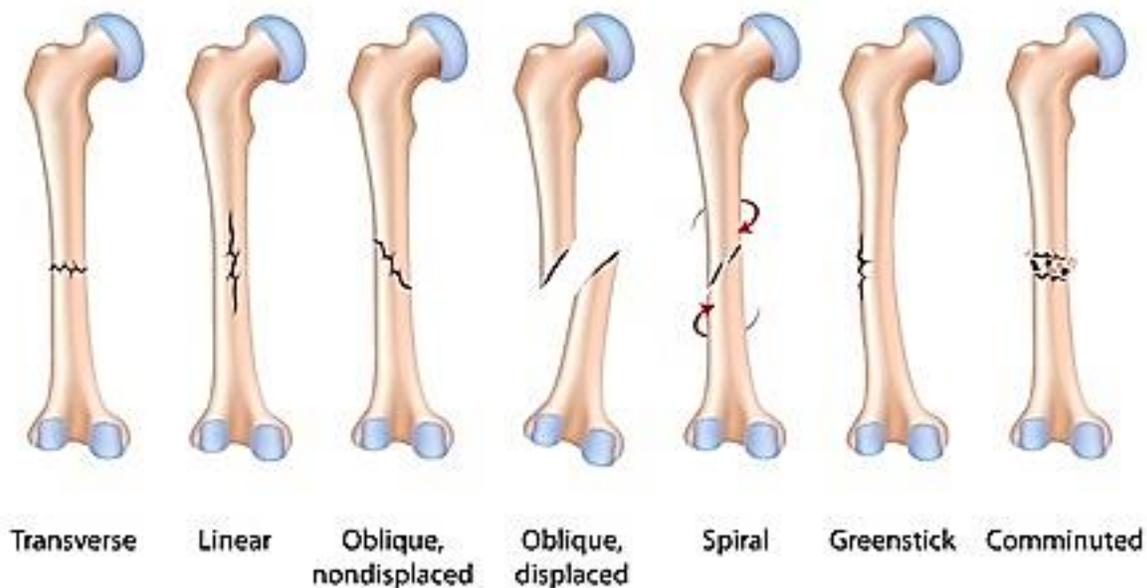
totally severed, they could still fuse and recover somewhat even without stitching. The meniscus is the cartilage between two bones, and when it breaks it doesn't recover.

Fracture, Dislocation, Sprain

Fractures

The bone never breaks straight, a fracture's path looks very disorderly. If for example it's an impact fracture, then it breaks and shatters into pieces like crystal at that location. It's very important for the person to figure that out, because readapting the bone isn't that easy.

Types of Bone Fractures



On the other hand, in the vast majority of cases, the bone may break but it remains adapted, so it remains exactly in that position and then you can secure that thing with a splint from the start, with a plaster cast bandage, and give it the rest required to heal - the entire process of reforming the bone takes up to about 4 weeks.

How can you tell if the bone is fractured?

1 - You need to follow the bone and you determine if there is any deformation or not using your hand, and when you press down on that area it hurts like hell,, so this is an important criterion.

2 - The bone bleeds when it breaks completely apart so, especially if it's somewhere superficial, you can see a hematoma, like an impact bruise under the skin. What can help a lot when you put the bone back – and also if you need to stitch the area up because the bone broke through the skin – is local anesthesia with Lidocaine. You can insert the needle, find exactly where that area is and insert it with great care, making sure that you never inject it in the red area.

What's important is that everything is avascular, meaning it travels exactly on the opposite side of where the vessels are. Never push the needle in, cut, stitch, or do anything in an area where there are large vessels or nerves (which always go alongside vessels). You can insert the needle with 10 ml or 5 ml of Lidocaine, depending upon how much you need to anesthetize.

This is something that anybody can do to a certain extent. Lidocaine can be used as a local anesthetic in the field, but you are not allowed to use more than 40 ml because it's dangerous. Lidocaine is an arrhythmic drug, which means that it affects your heart's rhythm.

It is always absorbed in a certain amount, and if you get too much in your system, to the heart, it causes rhythm disorders. That's why it's important to make sure that you inject it directly into the tissue rather than into a vessel. To check, just pull back a bit on the syringe bulb before injecting the Lidocaine. If you get blood, you may be in a vessel and need to pull back a bit.

How Nerves Suffer in Fractures

Anywhere - from the neck as well as the spine to the place where the nerve ends there can be a disorder starting at the location where the nerve was interrupted (i.e., where the fracture is).

There are 2 types of disorders, sensitive and motor. Sensitive is when you feel almost nothing from that point downward. The hand is the most developed in anatomical and functional terms; it has more nerve endings and you can still perform movements, but sensitivity is lost. Sensitivity

also has a safety role in addition to allowing you to experience pleasant sensations: it keeps you away from the dangers of burns, punctures, and all kinds of dangerous things.

If the nerve is just hit or concussed, meaning only traumatized and the fibers are not interrupted, then there is a sensation of tingling. It is a feeling of numbness but feeling is still retained. If it's completely severed, then you no longer feel anything - nothing at all - and the hand is no longer functional.

If the nerve is completely severed, you need to see a doctor. If you only feel numbness and similar sensations then you can wait, take pain medications if necessary, keep the hand at rest, and hope that it heals with time. The nerve takes longer to regenerate and to recover, than any other anatomical structure of the body, so this any type of nerve injury takes the longest time to heal.

Most fractures occur at the ankle and the tibia, which is the large bone that most people call their shin. Everyone can feel the tibia beneath the skin. The fibula is the other bone that nobody feels. It's the one that runs behind your tibia and you can't see it or touch it. The cool part about this whole thing is that you may think that because you can't feel it and you don't have any X-rays to see it, you don't need to treat it a break in the fibula, you can leave it broken.

Unfortunately, the fibula doesn't typically break unless the tibia does. Since the tibia is the main pylon you need to treat it, and you treat the fibula to the same extent. When you're in the field and you break your leg it hurts like hell; you can't stand on that leg anymore, you are no longer able to put weight on it and you can no longer run. You can't do anything anymore.

Dislocation & Sprain

Dislocation means that a bone pops out of a joint. In a fracture the bone moves out of place when it breaks, but the joint isn't typically involved. Before placing the cast on either a dislocation or a fracture, you need to replace the bone into its original position.

The most common dislocation occurs at the shoulder: when you fall down, your shoulder pops out, you can no longer use your arm at all, it hurts like hell, and you can no longer use your arm.

If you don't replace it within one day, or most preferably within a few hours, it looks like that and you need to go in surgically.

Any effort made to put the bone back into the joint must not be made with brutality, because you have to fight against the muscle when you pull. You don't reset a joint like in the movies where you see them slamming their arm against a wall to straighten their shoulder, because you can turn a dislocation into a fracture.

To put it back, the person can lie in bed while someone gently lifts their arm and starts pulling on it with a leg braced on the joint. Stretch it out slowly, and all they need to do is move the hand around slowly, gently, then the muscle relaxes completely. The arm goes back into place by itself, because the muscle is no longer resisting. It's like a spring, it pops back into place by itself. No matter what happens you mustn't force the muscle. You need to wait for it to relax and stretch so that it doesn't resist, and you need for the arm to be able to return to its natural position almost by itself.

If you are alone and there is nobody to help you, hold your arm along its axis and gently lay on your torso, be patient for the muscle to relax and then you will feel a grinding and you will feel your arm pop back into place, like a spring.

How do you know whether it's a dislocation or a fracture? If you touch the joint in question, it should be symmetric with the other side. If it's not symmetric and there's a gap somewhere near the joint where there shouldn't be, it's a dislocation. Also, there are no signs of swelling, edema, or blood beneath a dislocation, which usually happens if it's a fracture. If it's symmetrical and you feel that there's no gap, it's more than likely a fracture, and then the treatment is different.

Before you immobilize a displaced fracture you need to reset it, the same as for a dislocation. You pull on the limb to straighten the bone with the fracture only if it's out of line whereas you need to pull on a dislocation in order to be able to save the limb's capability.

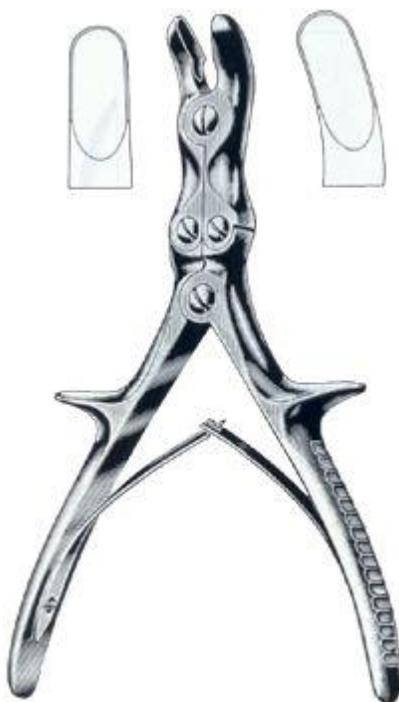
If a fracture is displaced, either someone needs to pull on it, or you hold part of it and use your own weight and let it fall or possibly you could pull on it a little to straighten it, as much as the

pain allows,, until it returns to an almost natural position. Ideally someone should help you try to reset it. You (or they) need to feel the bone and check it out visually, to see that the bone is continuous, and put back into its physiological position.

It's similar for a leg. You see that it's not symmetrical and that the leg is rotated from its natural position. You need to gradually get the leg to have the same shape as the other one, to return it into position. Fractures occur either at the hip or the ankle. The leg swells around the area concerned and hurts, and the difference between a sprain and a fracture or a dislocation is that if it's a fracture or a dislocation, you can no longer walk at all.

How to Treat a Non-Displaced Leg Fracture

What do you do when you know your leg is broken? First, you immobilize it so you can get out of the critical situation. You do this to become mobile, so you can gain some time; immobilize it as soon as you can. This doesn't mean that if you've immobilized it you can use it, but you can move to a certain extent. You can drag it behind you, you can make crutches, and you can use your other limbs to help yourself, but if you immobilize it, then it doesn't hurt anymore.



When you're to a safe spot, you need to [cast your leg](#) if you can. If not, make a more permanent splint so that the bone can mend without pressure on it and don't use the leg at all for about 4 weeks.

Amputation

Amputation is the most complex trauma, in which everything is damaged and the limb has been completely (or nearly completely) severed. To properly treat an amputation, you need something called a **bone rongeur** in your kit.

First of all, you perform hemostasis - all you do is tie some sort of tourniquet above so that blood stops flowing when you amputate. Very quickly look for the source of the bleeding in the stump, using your clamps. You clamp the vessel and you tie behind the clamp.

Once you've stopped the bleeding from the wound, you wash it. You need to clean it of all dirt, wood, stones; you'll find all kinds of debris.

You don't have to worry about bacteria in the first 8 hours so you can just wash it with water if that's all that you have. Water does contain all sorts of bacteria; therefore, do not use stale or pond or lake water. Instead use running water: you can even put the stump in river water and it washes itself.

Once you've stopped the bleeding and cleaned the wound, after a few hours or the next day you have to cut the end of the bone using the bone rongeur, because there are a lot of chips poking out that need to be cut. You do this because you will see that some stuff grows over the crushed location: you won't grow a hand or a leg, but a new tissue that covers the stump will grow over it. If it's kept clean and it doesn't become infected, it's like bleeding red meat, it looks very red and healthy.

If you can, preserve as much of the muscle as possible; it should not be cut. You can even cut the bone a bit more, cut off more of it, so you can cover over what is left. You cut off everything that is not vital - shreds, skin, chunks of damaged muscles, tendons - but keep as much living tissue as you can. How can you tell that the tissue is alive? It's colorful because it gets blood.

What should you view the treatment of an amputation? Just view it as a large wound, which you treat it as you would any wound. You keep it clean. Under medical, hygienic conditions, you wash it with water, but with the water in physiological serum, or from saline IVs, which is also water, but with salts. You fill a very large syringe from the IV - 50-60-80 up to 100 ml, and you can wash it using the syringe. Or you can use a cannula: fit a big cannula, but remove the needle and only fill the cannula, which you then use to wash the wound just as with a syringe.

Next you have to bandage the site. For the amputation stumps, the stumps are bandaged the same as you bandage a head, forming a capelin: wrap the bandage from front to back several times and then wrap it circularly, and then you wrap it front to back again, then circularly again.

A lot of people say to use a betadine solution, because it's the most powerful antiseptic because it contains iodine and it kills everything. Yes, it kills everything, including muscle and the immunoglobulin which helps restore the wound and the granulation tissue, so it postpones healing. Therefore, use betadine ONLY when the site is infected. Use it when you need to, not from the very beginning. In addition, you can dilute it. Make it half and half or less with saline, which keeps the antibacterial properties and decreases its cytotoxic properties, i.e. it won't kill your wound.

That's why you always just have to keep the wound clean and the body will do the rest. This is what people do not understand sometimes and they don't understand that we, doctors only help. We never heal, because we have no paranormal powers through our substances or clamps. We only stop the bleeding, clean the site and we make sure it stays clean. That's all you need, because doctors don't heal, they just help the body fight and heal itself.

As long as the wound looks healthy, you don't need to change the bandages often. In the beginning, just change them once a day. After that, change them every second or third day. If you see signs of infection, begin washing more often, therefore helping your body heal more often.

Puncture Wounds and Infection

If you have a stab or bite wound which is more deep than wide, the rules of the game change.

If the skin isn't broken over a large area it heals very quickly; it knits back in a few days. But underneath the skin a cavity is left that fills with the fluid secreted by the edges of the wound. The knife or other weapon or tool had bacteria on it, and animal teeth are always full of bacteria, especially cat ones.

These bacteria were introduced when the wound occurred. And what does the bacterium find? Moisture, heat and food and that's how everything turns into a large collection of pus, which causes problems and means an infection in an enclosed space. When pus accumulates, it must always be drained, whether you keep the wound open, or use a scalpel to reopen it. If you use a scalpel, it's best to get a Lidocaine injection first so that it doesn't hurt.

How do you recognize pus and infection? You need to know the five cardinal signs of inflammation. Always when there is an infection or injury, the signs of inflammation are there: i.e. swelling, discoloration, heat. (Place your hand over the area and it'll feel warmer than surrounding healthy tissue). It will have red streaks coming from it and it will hurt like hell. The affected organ or part also won't function properly. The inflammatory response is the only ability the body has to fight disease. Inflammation is a kind of storm that the body creates. It brings together all its defensive forces and sends them to that location to fight bacteria and viruses.

Pus is not stationary, it grows, it digs further into the wound and it pushes on surrounding tissue until it finds a way to come out. If it's an external exit, then the problem is solved and the wound can drain and be treated. Unfortunately, that's not always what happens. Sometimes it falls into a viscera somewhere inside. If it gets between the abdominal wall and the intestines, you get an infection called peritonitis that can actually kill you.

So how long since you noticed inflammation must you intervene to remove the pus? You must see the direction in which the patient evolves, but in the vast majority of cases you have time, because the health status doesn't degrade sharply in a normal person, it's progressive. However, infection is never something that you should ignore. Treat it as soon as you notice it.

For infections that accumulate on the surface you don't necessarily need to administer an antibiotic. It's enough to clean or cut out the pus and infected tissue, after anesthesia with Lidocaine. For example, for fingers or limbs: insert the needle on the side and on the medial side and inject the Lidocaine into the tissue, After pulling on the syringe's plunger to be sure no blood comes out, inject 1 ml of Lidocaine on one side then on the other another 1 ml, because

you want to numb the finger completely. Then cut with a scalpel to release the pus and remove it.

You administer antibiotics when the response is systemic - when fever occurs, when you sweat, when you feel malaise, because it means that bacteria or their toxic byproducts have entered into the body, into the blood and started to disperse.

At that point, you need to add a little something extra to help. If you are chronically ill, things can go south quickly and, you can develop a general inflammation - Systemic Inflammatory Response Syndrome (SIRS). That leads to sepsis, then to shock and in turn to death.

Knife Wounds

Knife wounds can be superficial or deep; they can be localized to vital areas or areas that are not so crucial. Knife wounds ideally shouldn't involve removing the knife if it is still present but if there is no access to medical care, you may as well remove the knife.

Stop bleeding with direct pressure if possible and then clean around the wound with wound cleanser or soap and water, depending on what you have. Cover the wound with a thick pad of gauze pieces and tape. If you apply the tape firmly, you will be able to have a sort of pressure dressing on the wound so the bleeding is lessened. Change the dressing daily or whenever it becomes saturated with blood or secretions. Try to get medical/surgical support as soon as possible.

One day, a person came in to my hospital in Germany with a stab wound. The knife was in place and the patient was still stable. We needed to book an operating room, because he needed to be rushed to the operating room for exploration and surgery. I went down to see the guy, I don't know how he'd done it and I snorted with laughter, I honestly don't know how he left the knife in there. The knife was a big knife and it had penetrated very, very little. So the emergency guys struggled to bring him in the ambulance, and keep just the tip of the knife in him, because if you let go of it, it would have fallen out by itself.

That's the joke behind the problem. But if it's in all the way, you leave it there and go to the hospital for surgery. Maybe the tip is lodged in a vessel somewhere, and the tissue has folded over it and it somehow provided a so-called temporary hemostasis. When you remove it, you leave behind an empty space, and that can cause him to bleed to death.

But when you don't have a hospital or anything else, you can't leave the knife in yourself for months, so you remove it, and what do you do then? You perform hemostasis, i.e. you press to stop the bleeding or, if it's a severed vessel, you find it and clamp it and then you do what you have to.

When this happens in your abdomen, you can't really do anything without a hospital. We, the doctors, open the abdomen from top to bottom in these cases, but you can't do that in the field or among debris, so don't ever do that. Just press and compress, you can't do anything else.

Bullet Wounds

The same for a bullet wound or for any other wound... Apply pressure. You can apply pressure to the liver as well; you can press on anything. We, doctors do the same: when you open an abdomen and the liver is busted and there's nowhere for you to stop the bleeding, you pack it with bandages over and under it and you wrap it in bandages and you tighten everything and you wait for 24-48 hours and it stops by itself.

Why am I telling you this? Because it's important to know that the time factor is a very important factor. Apply pressure and wait. The body is able to fight, the body is able to regenerate, to heal, and to fuse. And again I'm starting from the premise that the body is healthy.

Bullet wounds are easily fatal, even if they aren't in a vital area. If the bullet exited and didn't cause a lot of damage, it's ok, but if the bullet entered the shoulder and stayed there, you need to remove it because it harbors infection. If it entered and exited there's not much to do except do the same thing I told you, hemostasis. Treat the wound, stop the blood and then wash and dress it daily to prevent infection. If something bad occurs such as severe infection, you'll need to follow that protocol: debridement, necrectomy (remove the necrosis), remove the debris from

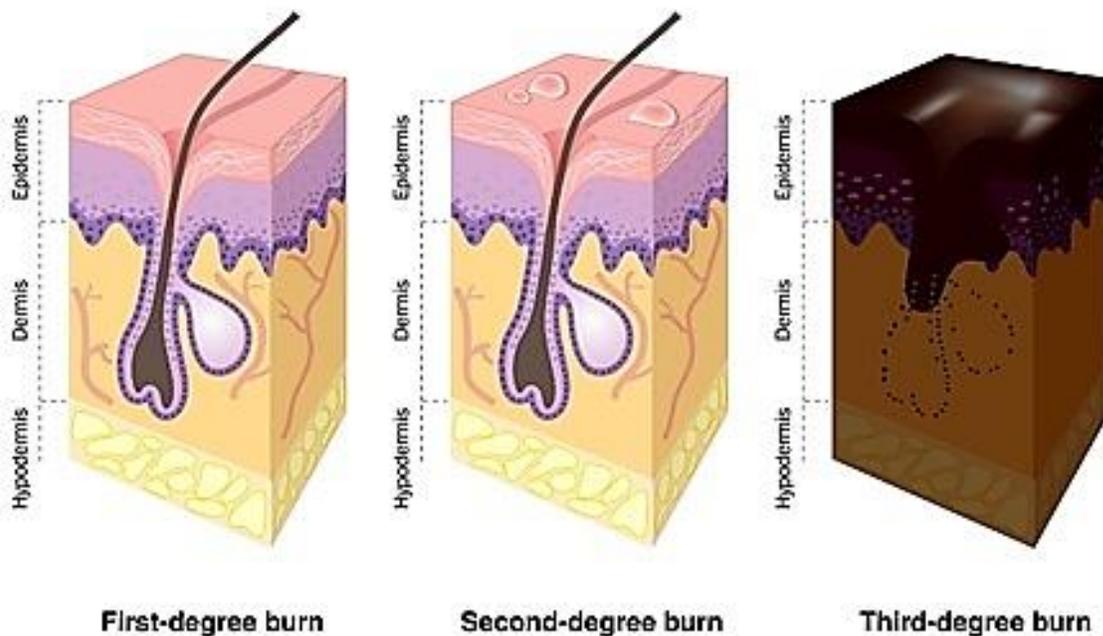
it, and wash it. Then, allow the body to heal. Change the dressing daily. If the wound is through and through, clean and dress both wounds. Seek surgical intervention if available.

Sometimes you don't have to remove the bullet right away or even at all. You must prioritize the wound's local situation. You stop the bleeding first and remove the bullet afterwards.

Bullet wounds are different if the bullet stays in the body. You can't get the bullet out in the field. For example, my wife's grandfather fought in World War II. A bomb exploded and he had shrapnel in his heart and lungs, but the pieces were so small that in the end they didn't cause a large infection and eventually he lived with them until he was 93.

Burns

Burns are assessed through 2 things: degree and surface area. Burns can be of several types; they can be caused by liquid, fire, chemical or they can be thermal. I will get to the other one, but the result is the same.



A burn destroys your skin layers. Skin requires blood to live; the blood vessels enter it, but only come halfway through the dermis. From there the blood diffuses upward, so there are no

vessels. When you take off those layers - that's what a burn does, it starts to take of layers - nothing happens only if it's extremely superficial. The degree - there are 4 burn degrees:

- The first is one is superficial. The first degree burn only affects the epidermis. How it manifests: redness, pain, it's no big deal.
- The second degree burn is the top layer, creating blisters which fill with a clear fluid. Because there are no blood vessels, they can't fill with blood. What do you do? You poke it, remove the fluid and leave the skin in place, you don't remove it the way a lot of people do because doing that turns it into an open wound. The best dressing is that skin on top of it. Second degree burns are extremely painful.
- Third degree burns are blisters filled with blood, which means that it reached a deep layer of skin, where the vessels are ruptured. The treatment is the same, break open the blister and keep the skin on, at the blister stage. There will be little to no pain because the nerves are damaged and you're treating deep tissue.

With a fourth degree burn, the burn passed through all layers of the skin so it burned everything; there's no more skin and the underlying tissues are most likely damaged as well. Treatment for fourth degree burns is difficult, assuming the person survives. Excision of the burned tissue is usually required, and amputation isn't uncommon either. Fourth degree burns are painless because the nerves are dead in the affected area.

More important than the degree is the surface, because a small but deep burn may be of the 4th degree, and that means you treat it like a wound. There are special dressings for burns - (Grassolind, for example), but you can improvise one using oil that you boil.

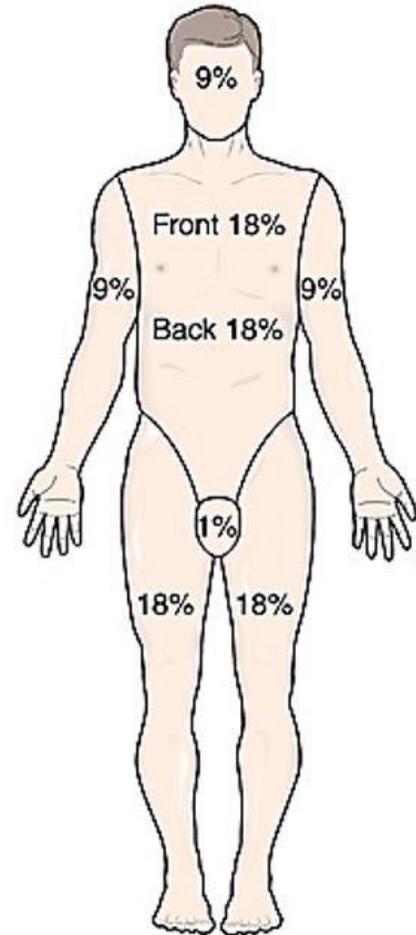
Then you soak a sterile bandage with that oil, you open it up completely, and you place it on the burn. It won't stick, and you can remove the dressing to wash the area. It won't pull off all the new skin and it won't stick in the blood that is secreted. You can improvise this and then tie it loosely, because all wounds have to breathe.

RULE OF NINES

The body surface is divided into areas representing 9% or multiples of 9%.

The patient's palm represents 1% of his / her body.

Body parts		Adult	Child
Head & Neck	1. Front	4.5%	9%
	2. Back	4.5%	9%
Trunk	1. Front		
	a. Upper	9%	18% (whole front)
	b. Lower	9%	
	2. Back		
Arms	c. Upper	9%	18% (whole front)
	a. Lower	9%	
	1. Front	4.5% each	4.5% each
	2. Back	4.5% each	4.5% each
Feet	1. Front	4.5% each	13.5%
		4.5% each	each foot
	2. Back		
Genitalia		1%	1%
TOTAL		100%	100%



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Why is the body surface important? With burns on over 45% of their body, even under current treatment conditions, patients die, because they lose a lot of fluids due to the deficit of skin. That's why the bigger the burn area, the better they need to be hydrated. It's not enough for them to drink. They need to be helped through IVs, because drinking works at first but then, due to pain and lack of fluids in their tissues, they lose a lot of weight and run out of resources.

A simple rule of thumb to figure out how large the surface is, is to compare it to the hand of the burn victim, because his entire palm along with the fingers represents 1% of his body surface. You can measure it using his hand and check how many palms it covers; that's the burn percentage. More than 40% is almost incompatible with survival.

Burns become infected, which is why they should be washed and treated, and in severe stages the only treatment is in the hospital, through a skin transplant.

It is important that the burn and its degree are recognized, and also whether the skin needs replacing via a transplant or not.

How effective is it to use alternative treatments for healing burns, various natural substances or herbs? I don't recommend it. Keep the burn clean, and the body will find the ability to heal it.

The skin, if it is not burned clear to the muscle, grows back from the bottom towards the surface, from the dermis.

If all of the skin is gone, it can't grow from the muscle, but it will grow from the edges, and eventually it will close. It tightens until it heals, but it takes a very long time. Only under those conditions, must you replace the skin.

Conclusions

In conclusion, in case of trauma, **the muscles and tissues regenerate**. It takes a little time and they hurt, but in the vast majority of cases there are muscles on the other side that compensate. A broken bone never completely serves the muscle; it never takes all the function away. Instead it can serve the nerve because it's small and as soon as it loses its function, that's it. Typically, **nerves don't regenerate**. If a large vessel is perforated and bleeding, you can die of it so you need to **treat that before** you treat anything else.

Usually these multiple injuries in which bones, muscles, vessels, and nerves are affected are large traumas such as car crashes, industrial accidents or falls from buildings. The order of priority is bone, vein, artery, nerve, tendons, muscles, then skin, so that's the order.

Think about what's **more important**, what can wait and what you need to give priority to. If you are bleeding you need to perform **hemostasis**. Hemostasis means to stop the bleeding, either through compression, or by using instruments to get to the source of the bleeding and stop it.

One of my teachers, during a surgery, cut a vein - the renal vein - and he put his finger on it and began to tell us that the vast majority of vessels stop, even the larger caliber ones, and he talked about it for about 5 minutes. And after he talked about it he took his finger off and showed us that it had stopped bleeding, so bleeding usually stops by itself if you press down on it properly.

Non-traumatic Illnesses

Other than traumatic illnesses, there can be scores of non-traumatic illnesses that can afflict your loved ones. Many are infectious diseases caused by close quarters and a lack of adequate hygiene. It's important to recognize what illnesses are infections and which are not.

What Are You Dealing With

The common illnesses in a crisis are basically the same as illnesses you'll find in a non-crisis situation with a few new ones that happen as part of a crisis. Other happen because your body lost his balance, and your internal organs start crying for help.

- The common cold, spread by droplets and surfaces. It spreads easily in groups.
- Ear infections. These are bacterial infections common after colds in kids.
- Influenza. It spreads easily during certain times of the year, Oct. to Apr. in the US.
- Diarrheal illnesses from parasites, bacteria or viruses. Spread from poor hand washing.
- Gastritis. This leads to nausea and vomiting and can be bacterial or viral.
- Skin rashes. This can be from bacteria or contact with chemical agents.
- Hyperthermia and hypothermia.
- Acute bronchitis. This can be viral or bacterial and spread by coughing.
- Mental illnesses. Common under stresses like a crisis illness. Includes depression, anxiety and exacerbation of previous illnesses like bipolar disease or psychotic illness.
- Ulcer, gastritis, infarction and cerebrovascular accident.
- Radiation sickness. Happens only in the event of a nuclear disaster.

Identification

Infections can be caused by bacteria, viruses, or parasites. The most common infections are viral infections, caused by viral particles that must be transferred from one living organism to another. Viruses have the ability to live outside the body in a dormant state but need a living thing in order to replicate.

Common symptoms of viral infections of the body include fever, nasal and sinus congestion, sore throat and cough. There are viral gastrointestinal infections that have diarrhea as their main symptom along with nausea and vomiting in some cases.

Bacterial infections have the propensity to be more serious than viral infections. Bacterial infections can be similar to viral infections but the nasal congestion is thick, yellow or green, the cough is productive of thick sputum and there is a prolonged fever.

In bacterial gastrointestinal infections, the diarrhea can be bloody but is just as severe as viral infections. Skin infections are almost always bacterial and involve increased redness and warmth of the affected area along with purulent (pus-like) drainage of an open wound.

Parasitic infections are of three types. These include protozoa, ectoparasites, and helminths.

- The protozoa include Giardia, which can lead to diarrhea in people who drink tainted water.
- Helminths are also called worms and they can infect the gastrointestinal tract and other body tissues with no symptoms at all or symptoms of weight loss and muscle aches, depending on the organism.
- Ectoparasites represent things like mosquitos, ticks, fleas and mites.

They can simply be annoying or they can cause diseases like tick fever, malaria, and Lyme disease. What you get depends on where in the world you live and what is prominent in your area.

Prevention

Prevention of viral infections include keeping surfaces clean with antiseptic towelettes or spray and rags. People with respiratory infections need to be reminded to cough in their sleeve and use a tissue when sneezing or blowing their nose.

Hand washing is a must. Wash after using the toilet and before working with food or eating food.

Prevention of bacterial infections is similar to that for viral infections with the exception that there are things that you can do to prevent bacterial infections of open wounds. Be sure to cleanse

every wound with as much water as you can spare and use betadine swabs on especially dirty wounds or on wounds you are planning to suture.

Be aware of the signs of infection and treat as soon as possible.

Prevention of most common parasitic infections depends on where you live. In temperate climates, you can prevent Lyme disease by wearing insect repellent.

You also need to boil water before using because of the possible contamination with Giardia.

In addition, if you live in subtropical or tropical areas, you need to protect yourself with insect spray and possibly sleeping nets so that you don't contract malaria.

Treatment

There is little in the way of treatment for viral infections. Most of the treatment is supportive: drinking plenty of fluids, managing fever and taking other medications for symptoms.

It takes your body about 7 days to make antibodies against a virus that you haven't been exposed to before so expect things to begin to turn around after about a week. If things get worse instead of better, be suspicious that a bacterial superinfection has taken hold and consider antibiotics.

Not all bacterial infections need antibiotics. Local heat to a wound can take care of an infection of the skin without using antibiotics. Lancing a boil can clear up an infection without having to use antibiotics.

Antibiotics are primarily used for ear infections, sinus infections, strep throat, bacterial bronchitis, pneumonia, severe skin infections, bladder infections, and some bacterial gastrointestinal infections.

Refer to the section on [antibiotics](#) on dosage and indications but here are some basics:

- Ear infections, Suprax for kids and Keflex for adults
- Sinus infections, Keflex for adults and Suprax for kids
- Strep throat, Suprax for kids and Keflex for adults

- Bacterial bronchitis, erythromycin or azithromycin
- Skin infections, Keflex or Cipro
- Bladder infections, Bactrim or Cipro
- Gastrointestinal infections, Flagyl

Parasitic infections can be treated with different things, depending on where you live. Giardia infections can be treated with Flagyl and malaria can be treated with Plaquenil or chloroquine.

Take extra steps if you live in a tropical or subtropical area so you have these medications on hand. Chloroquine can be used as a preventative medication against malaria.

Lyme disease is treated with antibiotics but, as it is difficult to diagnose Lyme disease, you should see a doctor to make that kind of diagnosis and to get recommendations as to treatment.

Hypothermia and Hyperthermia

Hypothermia

Hypothermia appears when the body temperature decreases below its normal range. Normally the body's temperature is somewhere between 97.5-98.8 Fahrenheit, or 99. There are people who are not considered to have a fever at 99. It's a good idea to have a thermometer in your survival kit because a change in body temperature either direction can have serious consequences.

If your temperature falls somewhere below 96.8 degrees Fahrenheit, the more it decreases, the number you will feel. Somewhere around 93.2 degrees you'll lose consciousness, you are in a coma. What you need to do in case of hypothermia is to warm the body, but you don't warm it suddenly. You need to warm it gradually.

First, you start with blankets. Avoid moisture, because moisture evaporates and it robs you of heat, so you must be dry. Avoid drinking alcohol in this case because it doesn't help. As a

matter of fact, it leads to dilation, and when the body dilates, it loses heat. You're causing vascular dilation and you lose heat instead of retaining it. Because of that, you get a flush to your skin and, your veins dilate as well. You feel warmth because it does emanate heat, but you are actually losing it.

One effective method that you can use to increase body temperature is IV therapy. You can use a saline IV and warm it by putting it in warm water. The idea is that you can give him warm fluids intravenously, and that warms him up quickly.

You can also have someone next to him to warm him using the heat of another body, as we have seen in the movies. Why? The blanket does not heat you – it simply preserves your own heat. You generate that heat, and if there is another heat source, meaning another body, you have an additional heat input and yes, you warm up.

Hyperthermia

Hyperthermia or fever means that the temperature increases to over 100 degrees Fahrenheit. At that point, the person can enter into hyperthermal shock. It happens in the desert, in the cases of heat exhaustion, and in cases of infections so severe that the body reacts by inflammation that raises the temperature and then you must lower the temperature.

What you need to do from the medical point of view

1. **Lower the fever** by using cold compresses. Wrap him in cool water-soaked fabric, and/or undress him. The idea is to physically lower the temperature somehow. You cool him slowly just as you would if he were freezing, you don't stick him in a refrigerator.
2. You have to **drink a lot of liquids**. You lose urine through sweat, through urine, which can lead to kidney failure. Your body no longer works as it should. The heart declines, and you lose that state of balance that helps you recover. If the person can't drink because he has collapsed, you administer it into the vein, you give him 3 liters of saline or liquid with salts - the infusion. The water requirement is estimated at roughly 2 liters per day for a healthy body, and for every extra degree of fever you add one liter.

3. You can **treat the cause** if you know that it's an infection. In the first 3 days do not administer any kind of antibiotic. After that, you administer antibiotic if you think it's an infection but first, give them a pill that lowers fever - paracetamol, which you take 4 times a day, is a great option.
4. It's **not advisable to take an antibiotic in the first 3 days** of contracting a fever because the body is still trying to fight the disease and the infection, if it is an infection, becomes resistant. This also applies to children and even animals. Only for children or small animals, you have to administer smaller doses.

When Your Internal Organs Cry For Help...

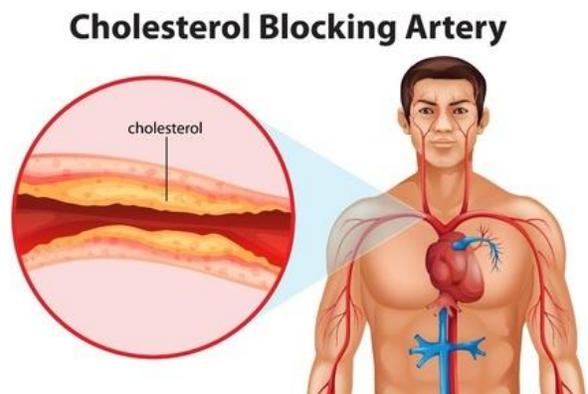
Infarction and Cerebrovascular Accident

You live as long as your blood vessels last, starting from the premise that a cancer doesn't kill you, that a car doesn't run you over, that an airplane doesn't go down or unless you were hit with a rocket blast. You live as long as your blood vessels last, because the blood vessels irrigate everything including the heart, brain, lungs, legs, limbs, internal organs, liver, and pancreas.

The blood vessels bring your life and oxygen; they sustain you. Once you destroy them or they are destroyed, you die, whether through a heart attack, or a stroke.

Heart attack and stroke are associated with chronic diseases like arteriosclerosis - when fat accumulates on the vessel walls.

The fat on the wall of the vessel can calcify over time. It begins to grow and push and eventually it shrinks the size of the inside of the vessel so much that nothing can circulate through it anymore. Just like any other part of the body, if there is no oxygen, it dies, or at least suffers.



The same with thing goes for the heart, which is nourished with oxygen circulating through three big vessels. The heart's blood vessel can constrict up to 90% of its volume and you don't have any symptoms; nothing hurts. But you can have indirect signs that you have heart problems (that the heart needs more oxygen), when you exert yourself more. If you exert yourself and you get heart pain - effort angina, technically speaking), this indicates that the vessel has narrowed before a heart attack happens.

When does the *infarction* occur? Infarction, or tissue death, occurs when the vessel closes up more than 95% to 98% because fat keeps accumulating in it. You have at least 2 hours after the infarction occurs.

The heart doesn't die entirely as long as only one vessel is blocked because there are 3 separate blood vessels; they cannot all cause an infarction at once. In apocalyptic conditions, there is no one on this earth to do what needs done to save a patient who has infarcted: a coronarography and a cardiac stent, to dilate the veins, or open heart surgery with triple bypass. These treatments are no more.

Since you can't treat an infarction, you are left with prevention and preparation for the treatment after infarction. Treatment is very simple and logical, it's called MONA:

- M comes from morphine, to calm the pain
- O comes from oxygen,
- N comes from nitrate, which dilates vessels
- A comes from aspirin, which prevents the hardening of the walls of blood vessels.

How do you know that you have an infarction? You feel ill, you sweat, you become pale all over, and you break out in a cold sweat. The pain is characteristic to the heart, but you don't particularly FEEL it in your heart. Instead, a cardiac infarction feels like pressure; it always squeezes like a claw, deep inside. Typical of this is that pain radiates to the right shoulder and goes down to the fingers, to the last 2 fingers.

Stroke is similar to heart attack except for the blockage occurs in the vessels in the brain: the brain needs oxygen and suffers very quickly compared to the heart. The blocked blood vessel bursts, allowing the brain to fill with blood, presses on the area of the brain, and everything that is controlled by the brain begins to fail, like when a computer gets a virus, and you start to lose all sorts of functions.

If the lesion is on the left, the manifestations are usually on the right and vice versa. First you will notice an effect at the level of the face: the mouth becomes slack on one side, you can no longer talk, your eye closes, your face falls, the mouth deforms. After that you can no longer move the arm on that side, you can't get up, then that leg fails and then paralysis occurs. This occurs when smaller vessels burst. Maybe it's a vessel that is so large that it stops the respiratory center or other vital functions nearly immediately and the person dies. Prevention by adopting healthful living habits is your best path because even if you catch a stroke and treat it, you're still likely to suffer life-altering damage.

Lungs

What are the usual signs and symptoms of lung damage? The lack of air. For most people, especially if they're basically healthy, difficulty breathing is simple anxiety that will pass once the person calms down. You identify what's really going on and separate symptoms by applying the [TeCaMoLo](#) principle discussed above.

We always say that there are 3 very severe lung issues:

Pulmonary edema is always characterized by your lungs filling with fluid, more precisely a kind of airy foam colored with blood, and the person doesn't get air and he snorts because he is drowning in his own liquid, and this happens usually when the heart fails.

Pulmonary embolism - A thrombus (a blood clot in a vessel) comes from another part of the body, clogs a vessel and you can no longer breathe. It usually happens in the lower limbs, in the legs, because it has larger vessels. Usually when the blood is slowed down enough, when there

is an irregularity on the wall, such as varicose veins, the blood begins to clot. Usually those who have had varicose veins and were treated for them know this.

In this case, the blood no longer enters the lung because there's a plug there, and the patient dies with a heart that theoretically works but the exchange between the heart and the lungs can't take place anymore. Cause of death is asphyxiation, because he dies without oxygen.

When a pulmonary embolism happens, usually you're pale, anxious, you don't get air, and it happens suddenly. In the hospital, when you're bedridden, you receive injections of an anticoagulant such as Flacmin, Clexane or Heparin, which thins the blood, but that only happens in the hospital. What you can do at home is to take pills with the same effect.

Pneumonia is an infection that causes inflammation in a particular part of the lung. Symptoms include: irritation, cough, it stings because the inflamed area hurts. It's a somewhat localized pain, associated with coughing. If you wait, it gets worse and you end up in a state of malaise, you become bedridden, and you can't move.

Though possibly contagious, pneumonia isn't transferred by simple air exchange (that contains microscopic contaminants) like tuberculosis. With TB, it's enough to talk and the contagious bacillus comes out, and you've picked it up. A body that has no defense factors contracts it and is contaminated and develops the disease. But in an environment like the one after the disaster when you have problems with hygiene, with water, with crowdedness, big problems may occur. That's why we see the Japanese wearing medical face masks after earthquakes; it's not only because of the dust - it's the easiest method of preventing contraction of disease.

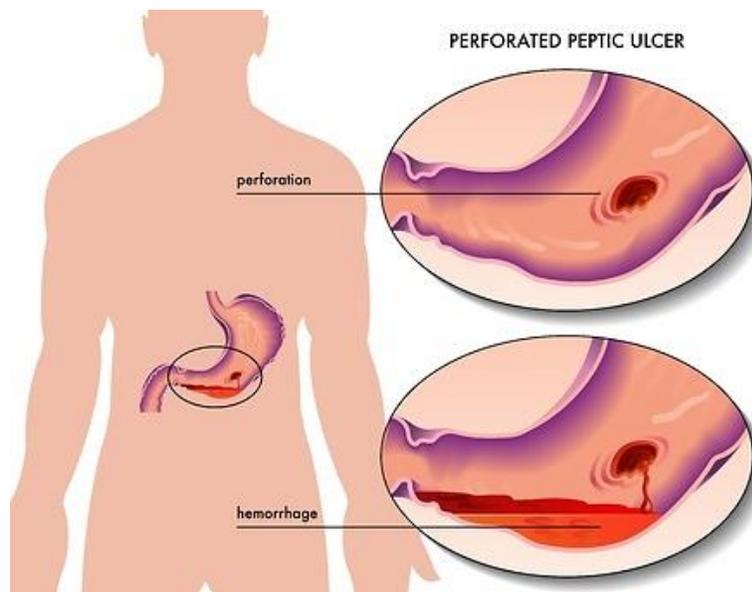
Pneumonia is a disease of the lungs. You can hear a noise and that helps you realize it's pneumonia. You examine the patient by palpation. You touch his back and tell him to speak. When speaking, his back vibrates. You feel the lungs on both sides, but if you feel one of them less that means that there is a problem there, that is palpation.

You can also tell by tapping one side of his back with your finger and if it sounds hollow, on both sides, it's normal. If you have pneumonia on one side, it sounds clogged because the area

affected by pneumonia fills with water and no longer resonates the way a lung distended with air does.

If you find an area that doesn't sound the same as the rest of the lung, usually what you hear in that lung is crepitation - like when you walk on snow and it crunches.

Ulcer



This is not a transmittable disease. You can't catch an ulcer from someone, but if you've had gastritis before, you will definitely be at risk.

I recommend a single drug, which is available over the counter. It's a proton pump inhibitor called omeprazole, known by the brand name Omeran.

If you have gastritis, it worsens with stress. If you no longer eat healthfully and regularly you can actually exacerbate your gastritis and turn it into an ulcer. Once that happens, then you only take Omeran; a dose of 40mg once a day is sufficient, or 20mg twice a day.

If your ulcer is severe you can take Omeran up to 3 times a day, but no more. You can take it 3 times a day until the pain subsides, and afterwards take it once a day, ideally for a month but you need to take it for a minimum of 2 weeks. After that time period, in 70% of the cases the ulcer healed.

This is a great example of why you need to have a variety of meds stored back. You need to have a cabinet full of reserves, because calcium sucralfate (an oral antacid, aka Mylanta) is simply

like a dressing that neutralizes acid locally. Ranitidine (brand name Zantac) has half, if not a quarter of the effect of the proton pump inhibitor.

Peritonitis / Intestinal Occlusion

Peritonitis is a medical-surgical emergency and needs surgery. Occlusion means that, somewhere, from the esophagus to the anus, an obstruction occurred. Either the tube has twisted and nothing more can flow, like a water hose, or something clogged the tube inside. How can you tell it's an occlusion? Easy: Nothing can get past the spot where the obstruction occurred.

The side effects of the occlusion travel upwards, it swells up in reverse because nothing can travel down after there's a blockage yet you still keep eating. The pressure increases until it reaches the mouth and you have three signs:

- Your belly is swollen
- You no longer pass stool,
- You vomit. At first you vomit foodstuffs, but later you vomit intestinal juice, which is mostly green because it's colored with bile. In the late stage, you vomit fecal material if the occlusion is large and low.

If this happens you need surgery, but you can gain time: first off the person is not allowed to eat and he's not allowed to drink. He gets everything through the vein and what is important are the liquids that you administer: up to 3 liters a day, and you insert a nasopharyngeal gastric catheter. Once you've inserted that tube completely, insert air using a large syringe and listen with the stethoscope. When you hear a gurgling, then you can be sure it's in the stomach.

The first way that you tell if there's an occlusion is his abdomen is swollen. Second, when you tap it, it actually sounds like a drum. Also, when you touch the abdomen, it hurts and, depending on where it hurts, you can figure out what part is affected.

You need to treat it with antibiotic: standard protocol is actually a combination of two antibiotics – ciprofloxacin and metronidazole - or clont. Possibly laxatives will be necessary, and you can use an enema. An improvised enema means that you use water with soap introduced in the anus with a small hose. Pour under pressure to introduce the water with the liquid in the digestive tract and in the colon, and that thing will emulsify the fecal matter.

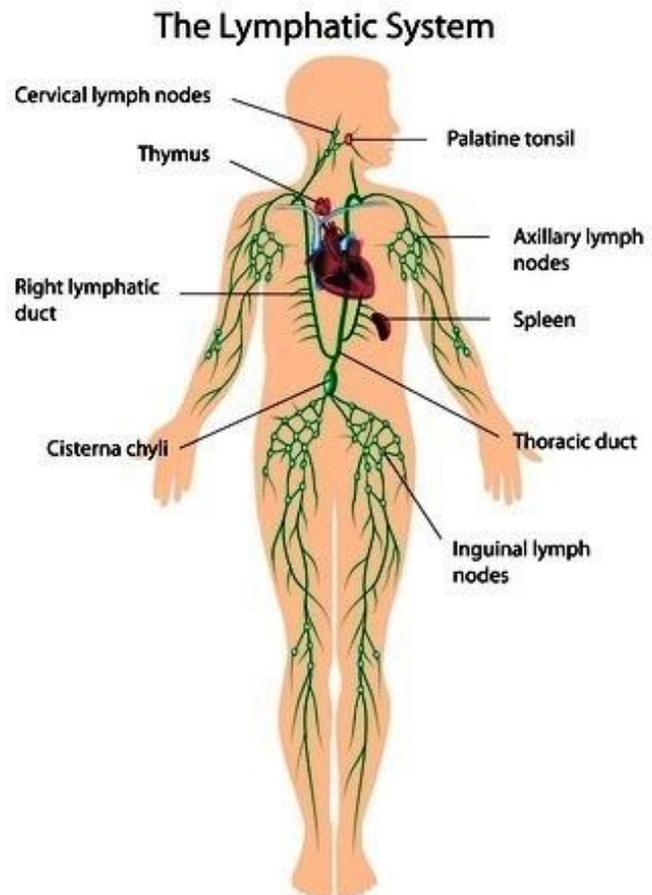
How fast symptoms occur depends on the location of the occlusion. A high occlusion means that the higher you climb up the digestive tract, the sooner the sensation of nausea appears after you eat especially if the person is still eating and drinking.

The lower it is, the longer it takes for all that tension to add up towards the top, and it takes a few days for fecaloid to come out, two-three days to be exact, but it's very important to fit the nasopharyngeal gastric probe before that happens, because if he keeps vomiting and vomiting, and his abdomen is distended, he can aspirate.

The Lymphatic System

In addition to the arterial system and the venous system, there is the lymphatic system. It's present everywhere in the body: in the armpit, in the inguinal canal, below the mandible, above the collarbone, and behind the ears.

On the lymphatic path there are ganglions. These ganglions are sort of like sentinels: when there is an inflammation in an area close to them, they signal this stuff, inflammation or infection, they react by swelling.



Why do they swell? Because their function increases, i.e. their capacity to produce lymphocyte "soldiers" or **natural killers** - cells that are able to fight an infection. That inflammation is an indirect sign that somewhere nearby there is a hotbed of infection, maybe from a tooth, an ear infection, an inflamed pimple, or the tonsils.

Maybe, for example, if the ganglion in the armpit swells, it may be from a wound to the hand. How do you determine the difference between infection, inflammation and a serious illness like a tumor or metastasis? If you press on the ganglion and it hurts and is swollen and it's mobile, in the vast majority of cases it's inflammation, and it subsides when the infection has passed.

You must know not to attack the ganglion. You need to find the problem, and now you know that the infection occurs first, and then the ganglion swells. The body doesn't fight back instantly and the ganglion doesn't grow instantly. This occurs on the second or the third day. That's why I said to administer the antibiotic after two or three days instead of immediately. However, as soon as something hurts you, take an antibiotic.

Radiation Sickness

Stay away, way FAR away. There is no perfect treatment for radiation exposure. If you can avoid it, that's good, if you can't, tough luck!

What's important here, what you can look for and see is what the symptoms are. During the radiation period, you exhibit some symptoms such as malaise, nausea, and perspiration, followed by a period of calm, followed by a severe period during which your organs fail one at a time and you die.

The idea is how to recognize radiation threats very quickly and leave. The secret is to have a device to measure radiation, because you can't see it, feel it, or smell it. It's hard to figure out when and where radiation will come from, and in what form. You won't always necessarily die from radiation exposure, either. It just depends upon how much you're exposed to and how much your body can tolerate.

In some cases, it can take weeks or months to develop signs of radiation exposure. Those most affected are children, infants, and fetuses still in the womb.

Signs and symptoms of radiation sickness include:

- Blood coming from the gums, nose and rectum
- Easy bruisability
- Blood in the stool
- Dehydration
- Confusion
- Diarrhea
- Fatigue
- Fainting
- Hair loss
- Fever
- Inflammation of the skin with redness, soreness, bleeding, and swelling
- Mouth ulcers
- Open skin sores
- Nausea
- Vomiting
- Skin sloughing off
- Esophageal, stomach or intestinal ulcers
- Weakness
- Vomiting of blood

The level of radiation tolerated by each person is different. There were survivors after the explosion at the Chernobyl nuclear power plant in 1986, and there were others who have died from the same dose. You can survive but are left with diseases — cancer, for example — which kill you in a few years.

First Aid for Victims of Radiation:

- Check for breathing and pulse and start CPR if needed.
- Take off the patient's clothing and seal them in a container.
- Scrub the entire body with soap and water to remove further contamination.
- Dry the body with a soft towel and wrap in a blanket.
- Go to an emergency facility if possible.
- Don't apply ointments to burned areas as this holds the contamination in.
- Stay away from contaminated area and contaminated clothing.

Effects of Radiation Levels on the Human Body	
Dose (rem)	Effect
5 – 20	Possible late effects; possible chromosomal damage.
20-100	Temporary reduction in white blood cells.
100-200	Mild radiation sickness within a few hours: vomiting, diarrhea, fatigue; reduction in resistance to infection.
200-300	Serious radiation sickness effects as in 100-200 rem and hemorrhage; exposure is a Lethal Dose to 10-35% of the population after 30 days (LD 10-35/30).
300-400	Serious radiation sickness; also marrow and intestine destruction; LD 50-70/30
400-1000	Acute illness, early death; LD 60-95/30.
1000-5000	Acute illness, early death in days; LD 100/10.

Medical Treatment for Radiation Exposure

Doctors will use filgrastim (Neupogen) or pegfilgrastim (Neulasta) by IV to increase the white blood cell count coming from the bone marrow. These are protein-based medications that help

prevent infection by having more infection-fighting cells around. Transfusions may also be needed if the bone marrow is severely affected or there is active bleeding.

Other treatments include potassium iodide, which replaces iodine in the thyroid gland. It prevents radioactive iodine from attacking the thyroid gland. The radioactive iodine is eventually cleared in the urine.

Prussian blue is a dye that binds to radioactive cesium and thallium. It allows these radioactive elements to be excreted in the stool. Some people need DTPA, which is diethalenetriamine pentaacetic acid. It binds to radioactive metals like plutonium, americium and curium. Once bound, the radioactive substances pass through the urine. This reduces the total radiation exposure.

You can use supportive treatment for things like infections, fever, headache, diarrhea, nausea and vomiting, burns and dehydration. You should have things to treat these complications of radiation in your medical kit.

If a person has received a lethal dose of radiation and is destined to die within a week or so, go ahead and treat with pain medications and other supportive drugs for nausea, vomiting and diarrhea.

Psychological and pastoral care are good choices as well.

Infectious Diseases

Foodborne, Waterborne and Airborne Infections and Diseases

Infections are common illnesses in crises situations. Stress affects the ability to fight off infections and people become infection-prone.

These may occur because when you're hungry you don't exactly have access to fresh foods, proper refrigeration or sanitary cooking conditions. Look at people who eat out of the trash, because many of us will be scavengers after SHTF – when there's no "quality" food available, you eat what you can get. You can even eat a mouse if you're hungry. You just cook it and eat it. There are going to be problems with infectious diseases, first and foremost food-related. You contract all kinds of **parasites** such as lamblia, giardia, intestinal worms, and pinworms.

If you have diarrhea caused by dietary issues such as parasites, you can die. If you go to the bathroom every 5 minutes and you lose half a liter each time, you dehydrate fast and a body, especially a weak body, declines quickly. If you have severe diarrhea, you can be gone in 2-3 days. First, you slip into a coma and then you die.

That doesn't happen immediately, though. Before you fall into a coma you pass through intermediate stages. First you will stop thinking normally, then you will no longer be able to speak and have hallucinations. That's why it would be good to have someone with you who can realize this stuff, because once you are no longer able to think you can no longer decide.

On the other side of the coin, it's necessary that you void in order to survive. Constipation can kill you, too. Rice is going to be a common staple in a post-SHTF scenario and it's extremely constipating. Though the glucose in it stimulates "the go," it's not enough. You still need to drink lots of water in order to keep things moving. The lesson here is that you need water to live and to keep your digestive tract moving properly.

Hepatitis, there is hepatitis A which transmitted orally, often from dirty hands, and hepatitis B and C which are transmitted through blood, sexual intercourse, transfusion, or injections from

dirty needles. Drug addicts that pass needles from one to the other often get hepatitis B or C. All types can spread quickly in an environment where hygiene isn't top priority.

All types will spread through blood if you don't have enough instruments, don't use thorough sterilization methods, or because you borrow or reuse needles on different people.

Top 5 Infections in a Disaster or Crisis

Infections of any kind can set back recovery efforts in a disaster or crisis situation because people don't function at their fullest and some people can't function at all. This can mean that evacuation efforts must be slowed down or halted if sick people are unable to be moved.

Common infections in a disaster situation can be said to be divided into respiratory, gastrointestinal, urinary tract and skin infections. Sometimes it can be hard to know if the symptoms you're having are infectious or related to some toxin or allergy. In an infection, there can be a fever but this is absent in many cases of early infection. Each type of infection has its own cardinal symptoms. These include the following:

- Respiratory infections: Nasal congestion and cough along with a sore throat.
- Gastrointestinal symptoms: Nausea, abdominal cramps, and diarrhea
- Urinary tract infections: Frequency of urination, urgency and burning on urination
- Skin infections: Redness around the wound, increased pain and purulent drainage.

The top five infections you might see in a disaster situation include:

- **Airborne and Surface Infections** - This includes upper respiratory infections that are spread by droplets in sneezes and coughing. They are also spread by droplets drying on surfaces. In a disaster situation, people often live in close quarters so that airborne infections run rampant. The major symptoms of these types of infections include fever, nasal congestion, sore throat, congested sinuses and cough, which may be or may not be productive of sputum. Fortunately, the symptoms are usually self-limited and you cannot get the same infection again.

The treatment of upper respiratory infections includes the use of decongestants and cough medicine. Tylenol, Advil or Aleve can be used for fever and sore throat. Keep hydrated with water and try some warm, clear soup to open up the nasal passages. Prevention of airborne and surface infections involve covering your mouth with your arm when you sneeze or cough and being meticulous about cleaning surfaces and door knobs with antiseptic wipes and spray soft surfaces with antiseptic spray. It does little good to isolate the sick as a person is most infectious before they actually get symptoms.

- **Influenza** - This is a common everyday infection that can bring a person to their knees. An influenza outbreak in a disaster setting comes as a result of close quarters and leads to many people being unable to participate in activities of daily living as well as evacuation efforts. Influenza is most common between the months of October and April in the Northern Hemisphere. The only people that are relatively immune are those that have been immunized against the most common strains of the influenza virus. Symptoms include a high fever, body aches, malaise, loss of appetite, cough and congestion, and fatigue. People with influenza usually feel awful and cannot function normally for several days.
A person with a case of the flu usually needs bed rest and cannot really eat regular food. Clear liquids, boiled or from a clean container can keep the person hydrated as they recover from the illness in 7 to 10 days. Prevention of influenza includes getting immunized against the influenza virus. In addition, clean all surfaces people touch with antiseptic wipes and spray soft surfaces with antiseptic spray. Those with a cough should cough into their sleeve if at all possible.
- **Wound Infections** - People tend to get injured in disasters or crises, especially when there are injuries as a result of the disaster or injuries from clean up following a disaster. Infections are especially common on the extremities, particularly on the hands and feet.

Signs and symptoms of a wound infection are increased pain in the area of a puncture wound, abrasion, or laceration, associated with purulent discharge (pus), redness in and around the wound and warmth when touching the wound. It may also be associated with red streaks coming from the wound and extending toward the center of the body. When this happens, it is called lymphangitis and it is very serious, requiring local heat and antibiotics.

Treatment of skin infections involves cleaning the wound out completely and removing any foreign bodies. The application of heat helps heal the infection as well as the use of an antibiotic like Keflex or a quinolone antibiotic.

Prevention of wound infections includes careful cleansing of any puncture wound, abrasion or laceration with as much water as you can spare, being careful to remove any foreign bodies. Once the wound is very clean, keep it covered with a Band Aid or gauze dressing, changing the dressing whenever it becomes wet or dirty. Keeping a wound clean can do a great deal when it comes to infection prevention.

- **Foodborne Infections** - These include gastrointestinal infections by Salmonella, Campylobacter, Shigella, and Staphylococcus aureus. They are spread by eating contaminated food. In a disaster situation, these types of infection are made more common by the fact that storage of food in a cold environment is almost always impossible. Meat and eggs should be eaten as soon as possible as long as there is a means to cook them; if not, do not eat them.

Symptoms of a gastrointestinal infection from contaminated food include diarrhea, vomiting, cramping, malaise, and sometimes blood in the stool. In most cases, the diseases are self-limited and last from 3-7 days without antibiotics. Antibiotics can sometimes make things worse because antibiotics can cause diarrhea in susceptible people.

The treatment of foodborne infections is to stay hydrated with clean water and rest. Antibiotics generally are ineffective in the management of these infections, which are generally self-limiting. Prevention of foodborne illnesses includes carefully preserving

meats and things with sauces in cold enough temperatures to prevent growth of pathogens. Food should be cooked thoroughly to kill pathogens. Remember, this does not work in those microorganisms that contain toxins, such as Staphylococcal food infections.

- **Waterborne Infections (like Giardia)** - Giardia infections are the most common waterborne infections, although infections with Shigella and other bacteria are common as well. In a disaster situation, pure water may be hard to come by and it is tempting to use any source of water available. Pond, stream or lake sources of water can be contaminated with parasites like Giardia or bacteria like Shigella. These infections occur because of water contamination with animal or human feces. Symptoms of waterborne infections primarily involve abdominal cramping and diarrhea. Symptoms can last for as long as the person is taking in the contaminated water or for several days. People can shed the Giardia parasite for several weeks or months after an infection with the parasite. Treatment of Giardia involves the use of metronidazole (Flagyl) taken twice daily and good hydration with clean water.

Prevention of waterborne infections involves not drinking suspicious sources of water and boiling water before drinking it. Large quantities of water can be boiled, cooled and stored in airtight containers.

Some of these infections only get better with antibiotics. In order to cover for as many types of infection as possible, you should have certain antibiotics in your stockpile. These should be antibiotics that cover as many infections as possible. These include Keflex (cephalexin), Bactrim (trimethoprim/sulfamethoxazole) and erythromycin or azithromycin (Zithromax). All are inexpensive antibiotics with a broad coverage for many different infections. For severe and life-threatening infections, try having a quinolone antibiotic like Cipro or Levaquin. These are more

expensive but have great coverage in many severe antibiotics. Save it for infections that seem serious or are deteriorating despite the use of one of the first three antibiotics.

Flagyl (metronidazole) works well for gastrointestinal infections like Giardia. This is a cheap antibiotic that is a good addition to your medical stockpile.

All of the above antibiotics are available in easy-to-store pill form and have a reasonably long shelf life. Side effects include abdominal distress, especially with erythromycin. The others can cause diarrhea but this is usually only with long term use. If you can't get your doctor to prescribe them for your medical stockpile, try going through an overseas pharmacy.

They often come labeled in a foreign language but you can usually make out the generic name of the antibiotic and can write the directions on the bottle in permanent ink. Keflex is usually 500 mg twice a day. Bactrim is one pill twice a day. Erythromycin is usually 3-4 times a day and azithromycin is twice a day. Cipro and Levaquin are twice a day. Flagyl is twice daily.

Infections in disaster or crisis situations can have particular significance due to a lack of antibiotics and lack of ability to maintain adequate hygiene during the crisis. People live in a chronically dehydrated state and this can result in urinary tract infections and in a diminished state that can't fight off infections as in a normal state of being.

Many illnesses in disaster situations come from a lack of clean food and water. Airborne diseases can come from being in close quarters with others. Airborne diseases can also include situations like nuclear fallout causing breathing problems.

Let's take a look at these vectors of illness to see what can be done to prevent them and treat them if necessary.

Foodborne Illnesses

Foodborne illnesses can be common in cases of a disaster or crisis because we have become used to refrigeration and freezing food—things that might not be available to you. There are things you need to know in order to prevent foodborne illnesses.

Top 5 Causes of Food-Related Infections in a Crisis

- **Lack of hand washing:** You need to wash your hands after using the restroom, especially in the bathroom conditions you will need to use in a disaster situation. Also wash your hands before preparing food and before eating. Germs can be spread at any time so you can't be cavalier about washing your hands.
- **Unsanitary surfaces.** If you do not clean your cooking surfaces carefully, there will be bacterial growth and foodborne infections. Don't cut meat on wooden surfaces because it is difficult to sterilize these surfaces. Have a separate non-wood surface for cutting meats and cut everything else on any other surface you have. Wash the surfaces in hot, soapy water.
- **A lack of electricity:** This means that you can't refrigerate or freeze things. You need to eat these foods first and keep the refrigerator and freezer door closed as much as possible. After about three days, you will no longer be able to trust the food in the refrigerator and after about four days you can't trust the food in the freezer. Cook these foods up if you can and eat them. Use the rest to make a compost pile in the back yard. More on making a compost pile within the chapter [Emergency Sanitation](#).
- **Not cooking meats all the way through.** If you are cooking over a fire or even with a stove, it is easy to cook meats thoroughly on the outside but not on the inside. Especially when cooking pork, you must cook it all the way through because pork can contain, trichonomae, parasites that can infect your gastrointestinal tract and can infiltrate your muscles. This is a condition called trichomoniasis. It is only present in uncooked pork but you need to be careful to cook all meats thoroughly because they won't be as protected by refrigeration and freezing as they used to. Meat that smells bad should be thrown away.

If you have a meat thermometer, cook raw meats to the following temperature to insure that they can't infect you:
 - Raw ground meats like sausage and ground beef — cook to 155 degrees Fahrenheit

- Raw poultry — cook to 165 degrees Fahrenheit
- Raw pork, lamb and whole pieces of beef — cook to 145 degrees Fahrenheit
- Fish — cook to 145 degrees Fahrenheit
- Fruits and vegetables — cook to 135 degrees Fahrenheit
- **Use of condiments.** While ketchup will stay at room temperature for days, things like mayonnaise and tartar sauce must be kept cold. They can easily grow *Staphylococcus aureus* and this will make you easily sick if you leave them out too long at room temperature.

Top Causes of Foodborne Infection

In a crisis or disaster situation, it is a temptation to eat food that has expired or food that no longer is refrigeratable because of power outages. Sometimes you can make food in a makeshift kitchen, where food hygiene is less important than trying to prepare food under trying circumstances. This can lead to the preparation of food that had grown a pathogenic organism.

If thoroughly cooked, one can still avoid a foodborne illness but if the food is not cooked at all, such as a salad or mayonnaise, or if it is inappropriately cooked (as in meat that is undercooked), one can get one of several foodborne infections. Almost all of these infections have diarrhea and/or diarrhea as primary symptoms.

A few of these infections include:

- **Staphylococcus aureus.** *Staphylococcus aureus* is a ubiquitous organism found in the noses of 25 percent of people who have no symptoms. *Staph aureus* is a bacterium that has the ability to make up to seven different types of toxins that are responsible for people getting food poisoning. Food poisoning is caused by eating a food, usually a raw food or a creamed food like mayonnaise, cheese or milk that has been contaminated with the toxin. It is the toxin that causes the illness. It is not killed by salt curing so you can get it by eating contaminated ham, for example. If you work with food and haven't practiced stringent hand washing, you can infect food that will grow the toxin and cause a *Staphylococcus*

aureus infection. The toxins are not killed by heat so you can become ill, even with adequate cooking.

Symptoms can occur as soon as 30 minutes after eating the contaminated food but usually occur 1-6 hours after ingestion and last for up to a day. The toxin can be found in the stool or in identified food items. Testing is usually done only in cases of an epidemic of the disease. Interestingly, *Staphylococcus aureus* can be aerosolized and used in bioterrorism so it can infect many or all members of your family. Fortunately, the disease is usually self-limited and does not require antibiotics. The elderly and the young may have severe fluid loss, requiring IV antibiotics.

- **Salmonella Infections.** Salmonella is a common foodborne illness found in raw eggs and chicken primarily, although it can occur in any food. It is so ubiquitous that it is the reason that it is recommended to cook eggs and chicken thoroughly. Even so, it causes more than a million cases of infection in the US per year with 23,000 people hospitalized and 450 people dead. The main symptoms begin 12-72 after ingestion of the contaminated food and include fever, diarrhea and stomach cramps. The disease lasts about 4-7 days and recovery occurs without the use of antibiotics in the majority of cases. People can use Compazine for nausea but anti-diarrheals should be avoided. For a natural treatment of nausea, try ginger root. Parts of peeled and sliced ginger root can control the nausea without resorting to any medication. Keep hydrated with electrolyte replacement fluid until you recover.
- **Campylobacter Infections.** Campylobacter infections are called Campylobacteriosis and are a common foodborne bacterial infection. It causes a diarrheal illness 2-5 days after eating the contaminated food. The diarrhea can be bloody and there can be vomiting besides the diarrhea. The illness usually lasts about 7 days and is self-limiting unless the infected individual is immunocompromised and in that case, a bloodstream infection can occur that is life-threatening. Make electrolyte replacement fluid to block dehydration by mixing a pint of water with a 10:1 ratio of sugar and salt to taste. You can also use

natural sugar like honey in the water to make electrolyte replacement fluid.

Campylobacter is the most common reason people have diarrheal infections in the US.

The cases usually involve small numbers of people at a time and rarely do large outbreaks occur. Many cases are not reported to CDC officials who believe that 14 individuals are diagnosed for every 100,000 people who actually get the infection but don't have it diagnosed. It is estimated that about 75 people a year die from the infection; these are usually the immunosuppressed, the elderly and the very young. Prevention can include freezing the meat completely and cooking food thoroughly. Frequent hand washing is a must in this and all cases of foodborne illnesses.

- **Toxoplasmosis.** This disease causes more than 300 deaths per year in the US. It is particularly dangerous to pregnant women who can have stillbirths or are at risk of having a baby with birth defects. The foods you need to be aware of include beef and pork that are not cooked to the proper temperatures. It is also found in cat litter boxes, which is why pregnant women shouldn't change the litter box. The treatment of toxoplasmosis is Pyrimethamine (Daraprim). This is a medication normally used in malaria that also works for toxoplasmosis. It's important to get a lot of folic acid in the diet when taking the drug as it is a folic acid antagonist.
- **Listeria.** This organism causes 255 deaths per year in the US. It is dangerous to pregnant women in the third trimester and can cause fetal death. The foods to avoid include deli meats and soft cheeses, such as brie cheese and soft mozzarella. Use a separate cutting board when dealing with the above foods and, if you are pregnant, avoid eating these foods. Keep sliced meats cold for no longer than 2 days. Most cases of listeria require no treatment. Only in severe cases are antibiotics employed.
- **Norovirus.** This is a common foodborne illness causing diarrhea. There are almost 3 million cases per year and around 70 deaths per year in the US. It is commonly found in salads and sandwiches purchased in the store. It is easily spread from person to person so

if you have nausea, vomiting, or diarrhea, you should forego cooking the food for the family until you are well. Treatment involves staying hydrated and nothing more. If there is nausea, you could take Compazine or ginger root.

Treating Food Poisoning and Other Food Infection Disease

In the vast majority of cases, there is no antibiotic that will shorten the course of foodborne illnesses very much so it probably isn't worth wasting valuable antibiotics on these diseases.

If the infection is severe, you can treat them with Flagyl 500 mg twice a day for 7-10 days. It may not work. Make sure you are well hydrated with as much clean water as you can. Wash your hands every time you use the restroom and don't be involved in cooking until you are well. Do not use Imodium (loperamide) for the diarrhea as this can make your condition worse. Stick with rest and fluids.

Waterborne Illnesses

The water situation in a crisis or disaster tends to be dire. You cannot trust that the water treatment plant is working so even if there is running water, it cannot be trusted.

Waterborne Causes of Disease

The disaster will likely disrupt the normal water supply, leaving the water exposed to pathogens from a disruption in the water treatment plant or a disruption in any one of the pipes that lead to the family water supply. There may be no water so that the family must get water from streams, rivers or lakes.

Top Waterborne Infections

Pathogens can get into the water quite easily and can get into the water even when proper cleansing techniques have been employed. Common waterborne infections include:

- **Giardia** is an intestinal parasite found in water, soil, or surfaces that have been infected with human feces. The parasite causes a diarrheal illness in humans called Giardiasis. It

can also infect dogs, cats, cattle and wild animals like beavers and deer. It is killed by chlorinating the water but this might not be possible if the disaster affected the water treatment plant or if the water comes from a stream, river or lake.

Giardiasis is the most common intestinal parasitic infection affecting people. It affects up to 2 percent of adults and 8 percent of children in developed countries like the US. In developing countries with poor sources of water, the disease affects up to 33 percent of the population. The infection is caused by the swallowing of hard Giardia cysts containing the parasite. An infected individual can shed up to ten billion cysts every day in their feces. Even when clinically well, the individual can shed cysts for several months in their feces. This means that washing or using antiseptic wipes to clean the hands after having a bowel movement is crucial in a disaster situation and water must be boiled and cooled before eating or preparing food.

The treatment of Giardia involves staying hydrated and treating with Flagyl 500 mg twice daily for ten days. This can quickly become an epidemic in a disaster situation if strict hand washing technique isn't followed.

- **Shigella** is a bacterium that is shed in stool and can be gotten from contaminated water or food that contains the Shigella bacterium. Symptoms include fever, cramps, and diarrhea with the potential for bloody diarrhea. The condition resolves in about 5-7 days and is responsive to antibiotics. Children can get a high fever and seizures if they come down with the illness.

The diagnosis of shigellosis comes from stool samples that are positive for the bacterium. If the infection is detected early enough, antibiotics can be provided in order to shorten the course of the disease. Antibiotics can also help prevent the spread of the disease due to contact with those who have the infection and have poor hand washing techniques.

Most people recover from Shigella infections without adverse sequelae, however around 2 percent of people who are infected with Shigella flexneri, a strain of the bacterium, will develop joint pain, pain on urination and eye irritation. This can last for years or become

chronic. Treatment includes staying hydrated, treating high fever, and taking antibiotics such as Cipro 500 mg twice daily for ten days.

- **Amebiasis.** This is a parasitic infection caused by the protozoan *Entamoeba histolytica*. Common symptoms include diarrhea, fatigue, abdominal pain, weight loss, and flatulence. About 90 percent of those infected have no symptoms but can be passed on to someone else. Throughout the world, it causes approximately 70,000 deaths per year. In some cases, there is amoebic dysentery and amoebic colitis, which are more severe. There is blood in the stool and invasion of the intestinal lining with passage of the amoeba into the bloodstream, where it can cause liver abscesses. Good sanitation can prevent epidemics. Treatment involves taking Flagyl 500 mg twice daily for ten days followed by paromomycin for ten days. Like most of these diarrheal illnesses, no antidiarrheal is recommended as they can make the symptoms worse.
- **Campylobacter.** This was discussed under foodborne infections. It is a bacterium that can be carried in tainted food and water and can cause abdominal cramps, diarrhea and sometimes nausea and vomiting. Boiling water and then cooling it can help prevent an infection from Campylobacter. The disease caused by this bacterium is called Campylobacteriosis. The treatment of Campylobacter is controversial. Some studies indicate that treating with erythromycin clears Campylobacter quickly from the bowels but doesn't change the course of the disease. Others state that erythromycin should be reserved for severe cases of the disease.
- **Viral gastroenteritis.** There will be several kinds of bacteria that cause viral gastroenteritis. These will cause watery diarrhea and generally do not cause bloody diarrhea. There can be nausea, vomiting and abdominal cramps. The symptoms are completely self-limited and last about a week. Treatment is rehydration with as many fluids as you can safely drink.

There are many other bacteria, viruses, and protozoa that are carried in water contaminated by human or animal feces. Most are preventable by boiling the water before drinking. Many resolve spontaneously without treatment.

Even so, the diarrhea and other symptoms are very difficult to manage when you are already in a crisis situation. Hand washing is of paramount importance in preventing waterborne infections along with the boiling of all water consumed by the family.

Airborne Illnesses

You have no idea what the air quality will be like after a disaster. It can be very dusty in cases of tornados.

There can be mold in the air due to debris and destruction of buildings. There can easily be asbestos in the air when there is damage to the larger buildings. There can be other airborne illnesses depending on the type of disaster you have had.

Top 5 Causes of Airborne Illnesses

- **Close Quarters.** A disaster situation often leads to many people living together in close quarters. Hygiene is treated as a secondary priority and people living in close quarters often spread disease from one person to the next. The most common infection brought on by close quarters is an upper respiratory infection. This can happen because the infection is spread due to droplets in sneezing and coughing as well as contact with surfaces. People with upper respiratory infections spread their illness quickly among the population.

Depending on the time of year, influenza can be spread from contact with others in close quarters. Influenza season in the upper hemisphere, including the US, is between October and April. Many people with influenza in the same place can quickly use up many of the resources of the group.

- **Destruction of Buildings.** Destruction of buildings can lead to mold floating around in the air. Molds live behind walls and in basements. If you're stuck in a basement for a

period of time in a crisis or disaster, you can be exposed to airborne mold infections, which primarily affect the lungs.

- **Asbestos in the Air.** Cleanup of damaged areas, especially tall buildings or older homes can unleash asbestos in the air. Asbestos is a building product used primarily in things like insulation. The insulation is made up of tiny, microscopic needles that easily enter the lungs. Once there, they cause coughing but do not easily come back up. After many years, up to 40 years later, the asbestos can cause a type of cancer called mesothelioma, which is often fatal. If doing clean-up of disaster-damaged areas, cover your mouth and nose with a moist rag. You can also buy surgical masks on the internet to prepare yourself with cleanup chores.
- **Nuclear Fallout.** This is also called Black Rain and is the result of a nuclear blast. The blast can happen anywhere in the world with the dust-like particles scattering over the world. Researchers have found that the Northern Hemisphere will suffer more than the Southern Hemisphere. This dust is radioactive and can be breathed in and deposited on your skin. If you live near an area of a nuclear blast, the fallout will be great and the chance of cancer or radiation sickness is much higher than if the blast happened far from your home. Dust from a radioactive cloud can also irreparably taint the drinking water.
- **Exposure to Someone with Active Tuberculosis.** Tuberculosis is becoming increasingly common in the US, in part due to the increase in immigrants with the disease. Living in close quarters with a person who has the respiratory form of tuberculosis means that you'll have a greater than average of contracting this airborne disease. It can be transmitted by droplets or by tuberculosis particles travelling on dust that you breathe in. It currently affects 10 out of every 100,000 people in the US. The exact cause for the disease is called Mycobacterium tuberculosis. Those who are very young or are very old have the highest risk of the disease due to their relatively poor immune systems.

Top 5 Airborne Illnesses in a Disaster or Crisis

Airborne illnesses can be infectious or non-infectious. There are a lot of sicknesses you can get simply by breathing in the same air as another person. These include the common cold, influenza, chicken pox, pneumonia, whooping cough, tuberculosis, polio and the measles virus.

In a disaster situation, the disaster could be from an airborne terrorist attack such as from anthrax, polio or small pox. Damaged buildings can release asbestos or mold in small quarters, leading to infectious or non-infectious diseases.

The top airborne illnesses in a disaster or crisis include:

- 1. Common Cold.** These are rapidly transmissible conditions caused by any number of cold viruses. Cold viruses are transmissible through coughing, sneezing or touching a surface that has had the cold virus on it. Cold viruses can last for several hours on a surface with the same ability to transmit the organism than it was in the beginning.
Common cold symptoms are a slightly elevated temperature, nasal and sinus congestion, ears being plugged, sore throat and a cough. The symptoms usually last at least seven days, after which your body develops an antibody response to the organism and you begin to feel better. The best way to avoid passing on a cold is to cough or sneeze into your sleeve, throw away tissues yourself and wash your hands afterward. You should wash your hands frequently, including after you use the restroom and before preparing food.
The treatment of the common cold is purely symptomatic. The treatments include those for congestion and cough plus common measures like warm soup and eucalyptus to open the breathing passages.
- 2. Influenza.** Influenza is also extremely contagious by airborne particles. There are a number of strains of influenza virus but usually just a few strains are active in any given year. Influenza travels around the globe and is prevalent during the summer months in the Southern Hemisphere and the winter months in the Northern Hemisphere. This means that you can contract influenza in about October through April in the US.

The main symptoms are a high fever, cough and congestion along with malaise and sometimes stomach upset. The symptoms can last for up to ten days with the main complication being secondary pneumonia from a bacterial superinfection. As with most of these respiratory-based infections, good hygiene including hand washing is a must in order to reduce the incidence of transmission.

Influenza is treated symptomatically, such as having warm soup for lunch and dinner warm teas, and medication to control fever, congestion and cough.

- 3. Mold.** There are believed to be tens of thousands of different molds in the world that grow best in warm, damp, or humid conditions. Common indoor molds are Cladosporium, Penicillium, Alternaria, and Aspergillus. They begin to be a problem in flooding conditions where there is a lot of wet building supplies and furniture to move or if you end up in a wet basement for a prolonged period of time.

Some people simply have a sensitivity to molds so it doesn't take much of an exposure to get symptoms. The main symptoms include eye irritation, nasal congestion, skin irritation, or wheezing. The main treatments are symptomatic, including the use of a respiratory inhaler for wheezing.

People who have chronic obstructive pulmonary disease can get mold infections in the lungs which are difficult to treat. Asthmatic individuals have immune-mediated mold disease that responds somewhat to inhalers. Kids exposed early in life to mold conditions are at a higher risk of getting asthma later in life. There really is no way to prevent mold inhalation in certain disaster settings other than wearing a surgical mask at all times.

The treatment of mold sensitivity is basically to get rid of the source of the mold so the mold count will be lower and people will have fewer symptoms.

- 4. Asbestosis.** Asbestosis involves cough, shortness of breath and wheezing. It stems from having an exposure to the asbestos particle, often many years after exposure. Asbestos was once a common component of building insulation but it has since been banned from most areas. It may still exist in older buildings or homes so if cleanup is expected as part of a disaster, there is the possibility of getting asbestosis from exposure to the needle-like fibers. These needle-like fibers can imbed themselves in the lungs, causing

the risk of mesothelioma, a deadly lung cancer, and many years down the road. It is best to protect yourself with a construction mask or surgical mask when doing building cleanup.

- 5. Radiation Pneumonitis.** There are a number of things that happen to the body as a result of exposure to radiation fallout and the nearer you were to the blast, the greater is the effect on the body. At about 6-8 weeks out, provided you have survived that long, the lungs become the most radiosensitive part of the body and you get radiation pneumonitis. This leads to pulmonary failure and death a hundred percent of the time within a few months if you have been exposed to 50 gray of radiation.

There is no treatment for radiation pneumonitis except to reduce exposure to radiation. Pneumonitis include loss of epithelial cells, inflammation of the lungs, edema, blockage of airways, and fibrosis of the lungs. If you stay in your house for 80 days following a nuclear blast as opposed to going about your business, your chances of survival increase greatly.

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Climate Specific Diseases

There are several major climate zones in the US. There is the continental zone, which is generally humid with moderately warm summers and cool or cold winters. This includes most of the Midwest.

Then there are the subtropical and tropical areas that are humid and have hot summers and relatively warm winters. Only the tip of the base of Florida is actually considered tropical. The subtropical and tropical areas encompass much of the Southeast portion of the US. Much of the West is in the arid or semi-arid zone except California, which is considered to be in the Mediterranean zone. The areas of Washington and Oregon are considered to be in the Marine West Coast climate.

Each of these areas has their own issues and risks for emergencies. For example, the area around the Gulf of Mexico can send hurricanes from the Northeast portion of the US down to Florida and over to Texas. These hurricanes can be devastating with a loss of life, and much flooding and damage to structures. The devastation can extend many miles inland and can last for weeks and months before there is some semblance of normality.

Northern and Northwestern areas of the country will have serious problems surviving the winter without warm clothing and fires to keep them warm. You'll need an axe or chain saw to chop down available trees in order to have wood to keep warm with. You'll need to find ways to keep warm even if you don't have a working fireplace.

Arid and semi-arid parts of the country will have problems finding enough potable water to live on. They will have to go long distances to find and bring water to the home. There will be no air conditioning so you'll have to find ways to stay cool in very hot summers.

California, Oregon and Washington State will have to worry about the possibility of tsunamis. In addition, these tend to be very populated areas of the country so resources will be difficult to find in an emergency.

Diseases

Diseases will be different, depending on where you live. In the North and Northeast, for example, people are at risk for cold-related illnesses, such as hypothermia and frostbite. These are just during the winter months. Another risk in these areas is Lyme disease, a parasitic disease that is contracted when one is bitten by an infected deer tick. It leads to muscle aches, fevers, chills, headache, joint pain and stiff neck. The symptoms are preceded in many cases by a bull's eye rash at the site of the bite. Of the antibiotics you have, azithromycin may be used for ten to thirty days.

People who live in tropical or subtropical areas need to be worried most about mosquito-borne diseases. In Texas and in the subtropical/tropical areas, you need to be concerned about West Nile Virus, caused by a mosquito bite from a mosquito contaminated with the West Nile Virus.

There is eastern equine encephalitis that causes severe encephalitis in both humans and horses in the tropical and subtropical areas. The disease is kept alive throughout the winter in hibernating snakes.

St. Louis encephalitis is less common in subtropical and tropical areas now that West Nile Virus has become epidemic. Symptoms happen 4-21 days after being bit by an infected mosquito. It can lead to meningitis, encephalitis and coma in rare cases. It is more common in those over the age of 50.

In the arid parts of the US, particularly the Southwest, you can get "desert fever" or "valley fever". It is also called coccidioidomycosis, the result of a fungus. About forty percent of infected people get muscle aches, fever, cough, headaches, and flu-like symptoms. A few patients develop considerable lung disease from the fungus and others have a body-wide infection. The infection comes from inhaling dust that has the fungus in it.

Hanta virus comes from being exposed to the feces in the dusty air from a particular species of deer mouse found in the canyons and caves of the Colorado Plateaus. It is fatal in 50 percent of

those who contract the virus and in others, it gives flu-like symptoms. Symptoms take as long as 2 weeks to develop. It has been found in the Grand Canyon area.

There are various diseases from ticks and mosquitos as well as from breathing in the air in certain parts of the country that you need to be aware of. There will be no "mosquito control" after a disaster and if there are things like flooding, mosquitos will procreate and become a bigger problem. Don't forget your stockpile of bug repellent; it may be your greatest asset.

Regardless of where you live, you need to be aware of the risks of insect-borne illnesses and other infectious diseases specific to your climate. The climate varies widely across the US and you may be needing completely different survival tactics, depending on the time of year that the disaster strikes.

How to Survive Without Prescription

In a disaster or crisis, you may not have had the time to get extra prescriptions from your doctor or buy prescriptions online. This may leave you and your family with a few bottles of over-the-counter medications and the prescriptions you have on hand. It may be daunting to think of living life without a prescription medication.

How do you do it?

The first thing you need to think of is how you will get off your medications. To be safe, consider these recommendations:

- You can stop birth control pills when you are at the end of the cycle and have no more.
- You should gradually taper off any medications for anxiety or depression.
- You should gradually taper off medications for high blood pressure.
- Gradually taper off prednisone over the course of 2-3 weeks.
- You can stop medications for allergies when they run out.
- Medications for diabetes can just be stopped when they run out.
- Medications for high cholesterol or triglycerides can simply be stopped when they run out.
- Pain medications should be tapered off gradually. Use Tylenol or an over the counter anti-inflammatory medication instead, if you have them.
- Blood thinners can be stopped when done.
- Chemotherapy drugs can be stopped when you have no more without tapering.
- With miscellaneous drugs, let your body be the guide. Skip a day or two while you still have some left. If you have symptoms after the trial of stopping it, you need to taper off the medication. If you feel nothing, you can probably finish the prescription and stop it cold turkey.

What Next?

People lived for thousands of years without prescription medication and many of them lived long lives. Most, on the other hand, ate much healthier than we do, had plenty of exercise, and knew which herbs there existed in the fields and forests of the time.

Now, books on herbal medicine refer to herbs you really can't find unless you are an experienced herbalist. A book on plants and herbs in the Americas might or might not be helpful to you. If you happen to be experienced in herbal medicine, utilize your knowledge to find herbs that treat different things.

In the absence of herbs and prescription medications, you'll need to follow the following rules:

- Keep your weight so that your Body Mass Index is between 18 and 25. You calculate your BMI as your weight in pounds divided by your height in inches squared times 703. Non-obese people have lesser rates of high blood pressure, diabetes, cancer and cholesterol problems.
- Eat a low fat, low cholesterol diet, especially if you have high cholesterol problems and/or are obese.
- Eat very little sugar if you are diabetic.
- Get daily exercise for at least a half hour a day.

Some of these things can't reverse blood vessel disease or diabetes but it can prevent further complications of chronic diseases. When you are thinner and fit, you will contract fewer chronic diseases and will live longer without prescription medications.

True, not everyone will survive well without prescription medications. People with chronic pain will still have chronic pain without pain medication but they can feel better with a good massage. People with depression and anxiety may have to learn tai chi and meditation to control their symptoms.

People who refuse to lose weight or eat healthy will likely suffer increased rates of diabetic complications and heart disease.

Over time, people will develop herbal remedies that they can barter with you so people in your family can have some relief from their various symptoms. In a society without prescriptions, people will find their way using alternative medicine sources and society won't be so bad.

Addictions

What do you think is the most powerful drug on the market from the point of view of addiction? Heroin is one of the most powerful. It's addictive from almost the first dose, but alcohol is much more powerful because it's socially acceptable. Once you're an alcoholic, it's hard not to relapse, and as a percentage, the rate of alcoholics that have recovered is very small compared to those that have recovered from heroin.

What do you do after a disaster, when the addict goes into withdrawal, and the substance is no longer available? You can give them benzodiazepines but you will only calm them temporarily. You need to re-establish their balance. The mental one is very hard to re-establish - you can use dormicum or diazepam, and you can put them on infusions with vitamin B12, B6, and all kinds of other stuff, but at this level of addiction it helps little.

Restraining them works in the acute stage of withdrawal but only in relation to others, because for the addict it's brutal. You can combine methods - sedate and tie him, but basically if you have anything to give him, you give him a drink. For example, in Germany, there is beer and wine in the room of patients who are known alcoholics.

What you DON'T want to do is get them to drink something else believing that it's alcohol, because you can very easily kill them, especially with methyl alcohol. It has a similar taste, similar smell, but it blinds and blocks the liver, the kidneys. So you must block their access to these substances. If you have an alcoholic in the family and the end of the world comes and he goes into withdrawal you must be careful that he doesn't drink gasoline in order to relieve it. Some drink medicinal alcohol - they filter it through bread and drink it. And if he's an alcoholic he

definitely has a risk of cirrhosis and clotting problems, and he's not going to last much longer after a major disaster if he can't get his addiction under control.

An addict's life expectancy when they no longer have the substance they need depends on the substance and on how strong their body is. The body is very strong and is able to withstand a lot of stuff, especially the lack of the toxic substance. It's just getting through the physical and emotional withdrawals that will be difficult.

For those with degenerative diseases, the disease evolves, it's progressive, and you can't stop it. Bottom line for this situation is that preparation consists of a stockpile of drugs, as much as you can stockpile and after that, psychological preparation for the moment when you run out, both for you as the patient and for the others.

Be aware that there will come a time when you will run out of meds and won't be able to slow the progression of the disease.

You have to be reconciled with yourself and with God. That time will come whether you want it or not, and somehow you have to prepare.

Prepper's Medical Reading List

In a crisis or emergency, there may be one thing you have a lot of time for — and that's reading. Why not read this Prepper's list of medical books that will help you when you're trying to survive in a world where you can't just go to the doctor when you want to. Here is the list:

Where There Is No Doctor. This is a manual by Hesperian that teaches you how to prevent common diseases through nutrition and better health. There is information on diagnosis and treatment of disease as well; it is one that works no matter where on the world you live.

Where There Is No Dentist. This is a book on caring for your gums and teeth in a time when dentists are scarce. The book reveals how to diagnose and treat straightforward dental problems and helps you learn how to place fillings, remove teeth and apply local anesthetics. There is a chapter on HIV/AIDS, which is more important in developing countries.

When There Is No Doctor: Preventative and Emergency Healthcare in Challenging Times. This focuses on home and family medicine, especially in rough economic times. There are many medical tips that can keep your family healthy without a doctor. It relates particularly to sustainable health over a long period of time in an era when the economic times near your home have fallen apart. The book gives simple tips everyone can understand and implement. The book is written by Gerard S. Doyle MD.

Ditch Medicine. This book teaches you medicine in a disaster area or war, where traumatic injuries are common and help can be scarce. It teaches wound repair, IV therapy, pain medications, and amputations, care of infected wounds, burn treatment, and airway procedures.

Emergency War Surgery. This is a great textbook of military medicine, reflecting lessons learned about medical care in war-torn Southwest Asia. It has been updated by the many surgeons doing trauma and war surgery in Iraq. It's not for the faint of heart but if you have a budding surgeon in your family, they may wish to study it to become the family surgeon.

Doom and Bloom Survival Medicine Handbook. This is a bestselling survival medicine handbook that is meant to help those in any disaster situation imaginable. There are medical strategies for you to follow for any health issue that can come your way. It is family oriented so you can learn to keep your family healthy even if the entire world has fallen apart.