

WILDERNESS AND TRAVEL MEDICINE

A COMPLETE WILDERNESS MEDICINE
AND TRAVEL MEDICINE HANDBOOK



WILDERNESS AND TRAVEL MEDICINE
A COMPLETE WILDERNESS MEDICINE AND TRAVEL MEDICINE
HANDBOOK

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Always seek professional medical help when faced with a medical issue.

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Introduction

Thank you for purchasing this book.

I hope you do not need to refer to this book too often, but in the cases that you do, I hope it proves to be a useful reference.

Sam Fury

The authors at Survive Travel are always creating new publications, and you can get all the latest ones **FREE** at SurviveTravel.com/Free.

Enhanced Learning

Although this book is jam packed with information covering a wide variety of field-treatable ailments, no amount of reading can compare to a practical based medical course with a professional medical trainer. A standard first aid course is better than nothing, but preferably a Wilderness First Aid Course or higher is ideal.

How to Use This Book

The information in this book is very much intertwined, so a lot of chapters are referred to each other throughout the book.

When you see something in italics it is an indicator of where you can find additional information about that subject.

This book is two parts:

Part I: Must Read Information

The first part is all the background knowledge needed to effectively use the information in this book. It covers the following:

Anatomy

A basic rundown of how the body's systems work individually and as a whole.

Prevention Medicine

How to avoid getting sick and/or injured in the first place.

First Aid Kit

An inventory and simple explanation of a suggested minimalist first aid kit for travelers.

Medications Guide

Important information on the safe use of the medications referred to in this book.

Immediate First Aid

Contains the information needed on what to do medically in immediate, life threatening situations.

Secondary Exam

A secondary exam will help you to make an accurate medical diagnosis.

Moving a Patient

Learn a variety of methods to safely move a patient.

Part II: Diagnoses and Treatments

This section of the book is all the information you need to diagnose and treat specific medical problems that have not been covered in the Immediate First Aid chapter.

Information for each condition contains:

A brief description about the condition

A brief description about the condition.

Symptoms that may be experienced as a result of the condition.

Appropriate treatment(s) for the condition depending on the situation.

Other supplementary information may also be included where applicable, e.g., causes, prevention, alternative/natural remedies, possible complications.

Note: depending on your situation, many of the treatments may not be viable. Innovate and do the best with what you have.

PART I
MUST READ INFORMATION

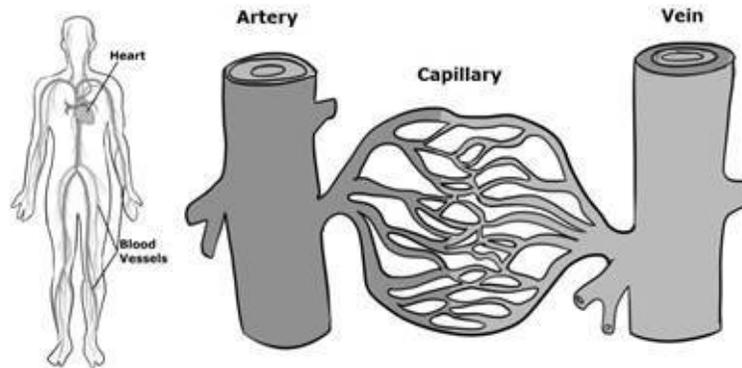
Basic Human Anatomy

The human body is truly amazing, but it does have its vulnerabilities. Everyone should take the time to learn about the human body in general as well as what it can and can't do.

A general overview of the body's main systems and how they work together will help with correct diagnoses and treatments. They are also used in categorizing specific diagnoses and treatments within this book.

Circulatory System

The circulatory system (the cardiovascular system) is made up of the heart and blood vessels (arteries, veins and capillaries). The heart is like a pump which circulates blood to all the different parts of the body via the blood vessels. Blood carries oxygen, nutrients, hormones, waste products *etc.*



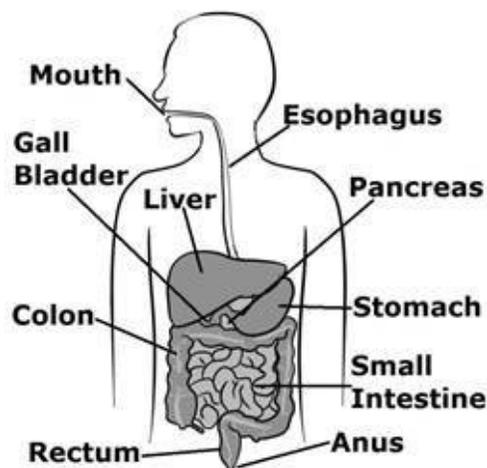
Digestive System

The main job of the digestive system is to break down food and convert it into nutritional molecules. These molecules are distributed to the body via the circulatory system. The digestive system also gets rid of everything that is unused in the form of excrement.

When a bite of food is taken, it marks the beginning of the digestive process. Via chewing and the mixture of saliva, the food begins to be broken down into easily digested pieces. The food is then passed through the throat (larynx) and is swallowed down the esophagus into the stomach.

The stomach adds acid and enzymes to the food while mixing and grinding it into a paste-like. Next is the small intestine, which uses enzymes from the pancreas and bile from the liver as well as some help from the gallbladder (the gallbladder concentrates the bile from the liver, mainly by removing the water) to further break down the food and absorb nutrients into the blood stream.

Whatever is leftover is then passed to the colon (large intestine). Water is removed, leaving mostly food-debris and bacteria, i.e., feces. The feces (stool) are stored in a part of the colon called the sigmoid colon. When the sigmoid colon is full it is emptied into the rectum. The feces stay in the rectum until it is told by the brain that it is okay to empty it. When it is time, the anal sphincters are relaxed and the feces is expelled.



Endocrine System

The endocrine system is the main system that co-ordinates the chemicals within the body. Hormones are what carry the body's chemical messages around the body. A gland is a group of cells that produces and secretes the chemicals.

Although nearly all organs and tissues also produce their systems' endocrine hormones, the principal endocrine glands are the adrenal, gonads, pancreas, parathyroids, pituitary and thyroid.

The hypothalamus is a bunch of cells in the lower brain. The brain uses the hypothalamus to communicate to the pituitary gland.

At the base of the brain, just below the hypothalamus, is the pituitary gland. The pituitary gland is made up of two parts: the anterior lobe and the posterior lobe. The anterior lobe produces corticotrophin (stimulates the adrenal gland), growth hormones, prolactin (milk production in mothers) and thyrotropin (stimulates the thyroid gland). It also releases endorphins to the nervous system which decrease feelings of pain, releases the hormones which tell the sexual organs to produce sexual hormones and controls ovulation and menstruation in females.

The posterior lobe releases anti-diuretic hormones which help with the balance of water in the body as well as producing oxytocin which triggers uterus contractions during childbirth.

The two adrenal glands also have two parts. The outer part is the adrenal cortex; it produces corticosteroid hormones. The corticosteroid hormones regulate the immune system, metabolism, stress response, sexual development, sexual function and salt and water balance.

The inner part of the adrenal gland is the adrenal medulla; it produces adrenaline (epinephrine). Epinephrine increases blood pressure and heart rate when the body experiences stress.

The gonads are the main source of sexual hormones. In men they are the testes which release androgens such as testosterone. Testosterone regulates puberty in adolescent males, and helps to communicate to the body when to produce more sperm. In females they are the ovaries which produce eggs and release estrogen and progesterone. Estrogen regulates puberty and they both regulate the menstrual cycle and help in pregnancy.

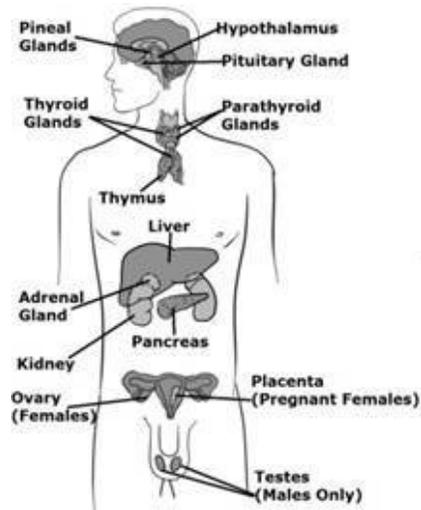
The pancreas produces insulin and glucagon which work together to maintain a

The pancreas produces insulin and glucagon which work together to maintain a steady level of glucose in the blood and to keep the body supplied with fuel for creating and storing energy.

The pineal gland is in the brain; it secretes melatonin which is believed to regulate sleeping patterns.

The thyroid produces the hormones that control the rate at which cells burn fuel from food to produce energy. The more of these hormones there are, the faster chemical reactions are in the body occur.

Attached to the thyroid are the parathyroids, which release the parathyroid hormone. The parathyroid hormone helps to regulate calcium in the blood.

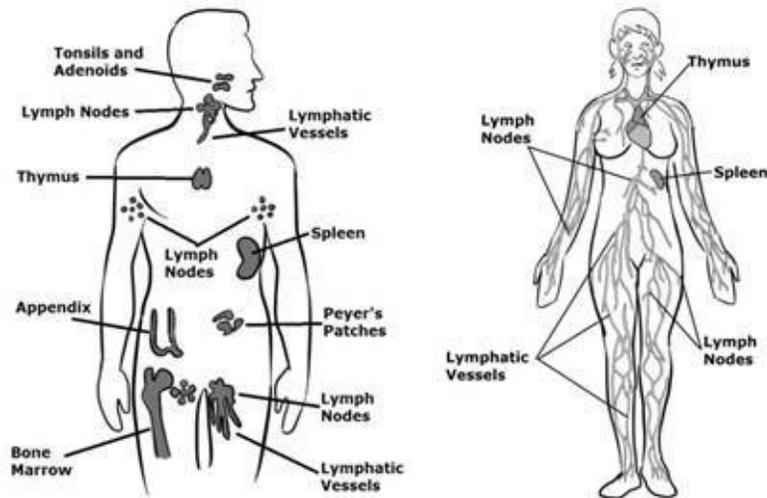


Immune System

The immune system helps to protect the body from disease. It identifies pathogens (e.g., viruses) distinguishes them from healthy tissue and then fights them.

It uses white blood cells (leukocytes) to combat the invaders. These white blood cells are produced and stored in the lymphoid organs such as bone marrow, the spleen and the thymus. They are also stored around the body in the lymph nodes and other lymphoid tissue.

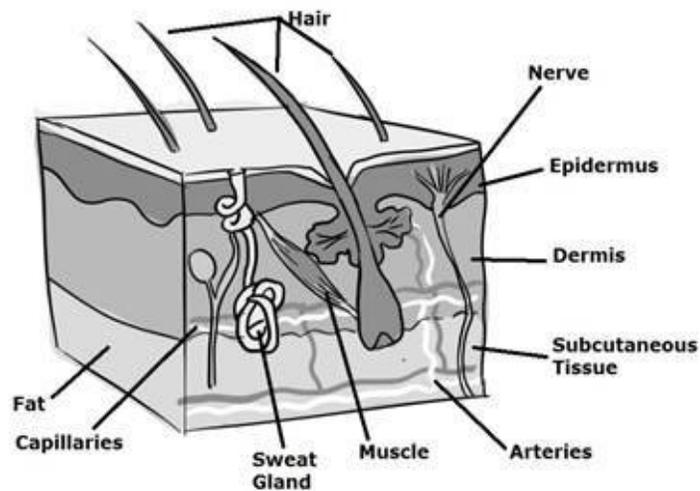
The leukocytes are transported around the body via the lymphatic vessels and blood vessels.



Integumentary System

This is everything that covers the outside of the body including hair, nails, skin, sweat glands *etc.*

It protects the body from the outside world (e.g., infections, temperature) collects information via the skin (e.g., pain, temperature) helps regulate body temperature (e.g., capillary contraction, sweating) and stores water and fat.



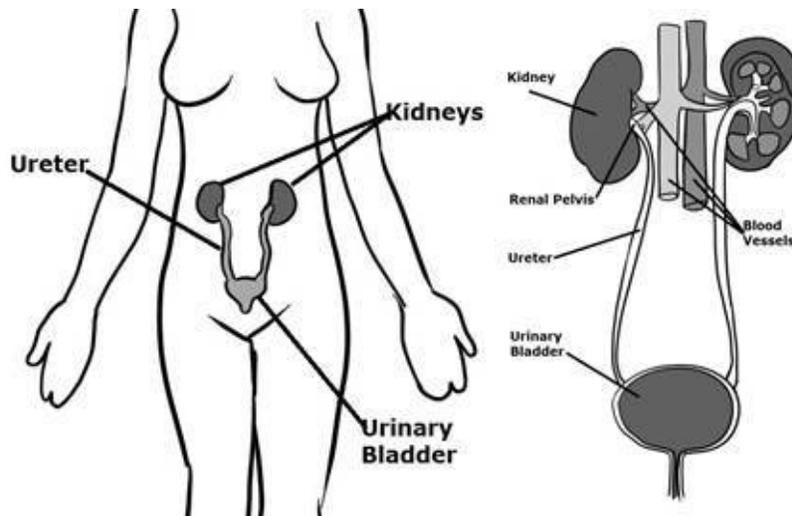
Genitourinary System

The genitourinary system includes the reproductive and the urinary systems.

Urinary System

The main function of the urinary system (renal system) is to expel excess ions, waste molecules and water from the blood, i.e., urine. It also regulates blood pressure, blood volume, blood PH, electrolyte levels and metabolite levels.

Blood is carried into the kidneys. The kidneys filter the waste (urine) and pass it to the bladder via the ureters. The urine is stored in the bladder until the time of urination. At that time it passes through the urethra to the outside of the body.



Reproductive System

The reproductive system enables us to reproduce. It makes sperm in males and eggs in females. It also gives a way for the eggs and sperm to unite in order to create a new organism, and it provides a place for the new organism to be grown.

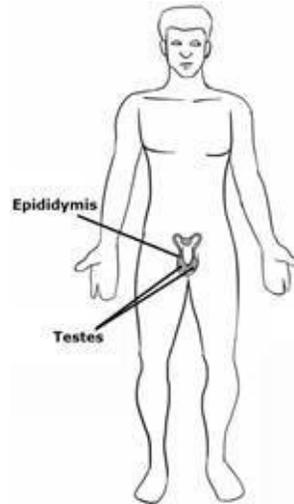
Male Reproductive System

The scrotum acts like a climate control-house for the testes. The testes, which are inside the scrotum, create testosterone and sperm. Once the sperm is made it is stored in the epididymis where it is matured so it is capable of fertilization.

When a man is sexually aroused, the sperm is passed into the vas deferens which transports the mature sperm to the urethra via the ejaculatory ducts. During this time of erection, urine is blocked from the urethra.

Throughout this process the sperm is combined with other fluids to make up

Throughout this process the sperm is combined with other fluids to make up semen, neutralize traces of urine and add fructose. This is done with the help of the seminal vesicles, the prostate gland and the bulb-urethral glands. At the time of orgasm, the semen is passed out through the penis.

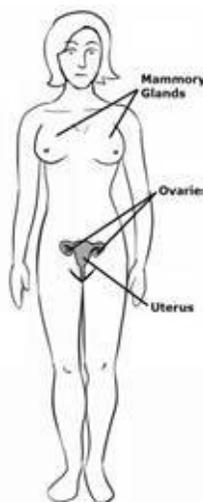


Female Reproductive System

The ova (eggs) are produced in the ovaries. These ova are transported to the fallopian tube where they may be fertilized by the sperm. Once fertilized, the egg moves in the uterus and sticks to the uterine lining so it can mature.

If there is no fertilization, the uterine lining is discarded (menstrual flow).

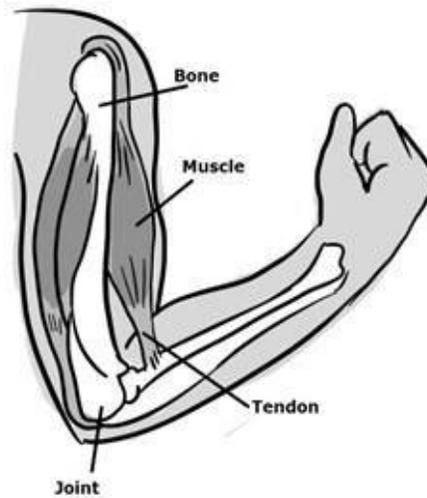
As women get older the female reproduction system stops making the female hormones needed for the reproduction system to work. This is menopause.



Musculoskeletal System

The musculoskeletal system is made up of the muscular system and the skeletal system. It includes all bones, cartilage, tendons, muscles and ligaments. It gives us the ability to move as well as our basic body structure.

The larger bones also produce blood cells (in the bone marrow) and all bones store phosphate and calcium.

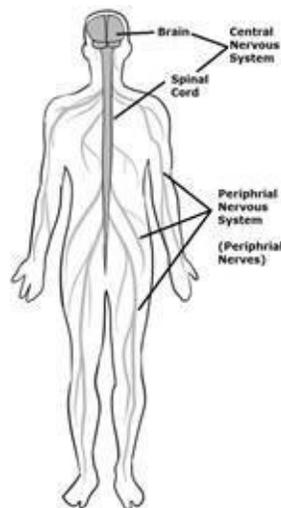


Nervous System

The nervous system is made up of the central nervous system and the peripheral nervous system. Together they use about 100 billion neurons which communicate with each other via electrical signals.

The central nervous system is the brain and spinal cord. The peripheral nervous system is all the nerves and neuron clusters (ganglia) in the rest of the body.

The peripheral nervous system collects information from all areas of the body (the joints, muscles, skin etc.,) and sends it to the brain via the spinal cord. The brain collects information from the ears, eyes, mouth and nose. It analyses all this information, performs all the important functions of the brain (e.g., memory, thinking, planning) and then sends out the instructions to the body, via the nervous system.

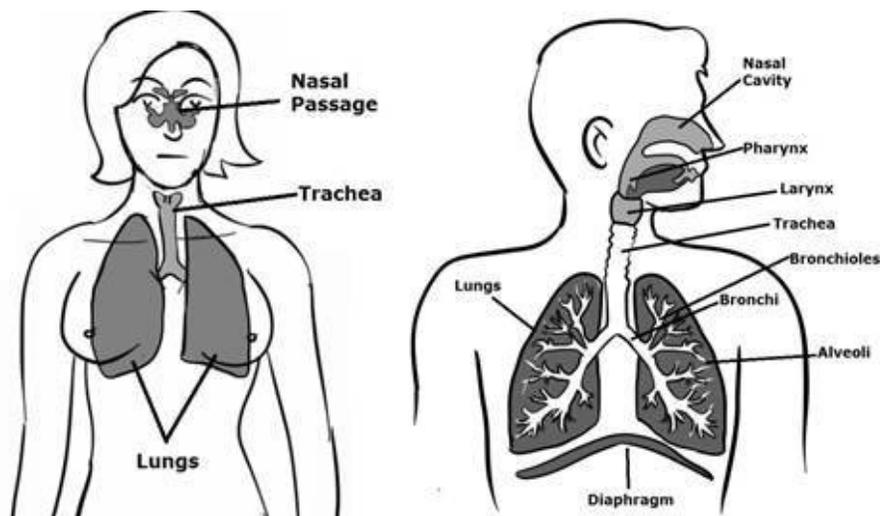


Respiratory System

This is the system that enables us to breathe. It takes oxygen from the air and expels water and carbon dioxide from the body.

Air gets breathed in and out via the mouth or nose. When being breathed in it passes through the pharynx (throat) to the larynx (voice-box) and then to the trachea (windpipe). The air then gets passed to the bronchi which split like tree branches into the lungs. These bronchi continue to split and get smaller and smaller, turning into bronchioles and then finally into tiny sacs called the alveoli. From the alveoli the gases which make up the air are exchanged to/from the blood cells in the capillaries. The main gases exchanged are oxygen into the body and carbon dioxide out.

The lungs are surrounded by muscles, including the diaphragm and intercostals muscles, which work together like a pump to expand and compress the lungs, i.e., allowing air to be inhaled and exhaled.



To learn more about the human body visit SurviveTravel.com/Human-Body.

Prevention

The best cure is always prevention.

Many injuries are easily avoided, e.g., not playing with animals, using sunscreen, warming up before exercise, watching where you are going, wearing protective clothing.

Preventing illness is a matter of keeping in good health, and good health is basically comprised of four things: nutrition, exercise, recharging and hygiene.

Nutrition

Nutrition is everything that you put into your body. Here are some guidelines to follow: Ø Avoid unnecessary drugs (including alcohol, cigarettes and overuse of pharmaceuticals) and excess fat, salt and sugar.

- Ø Eat a diet high in fruits, vegetables and legumes.
- Ø Detoxify your body every month or two. A simple way to do this is to consume nothing but water for 24 hours.
- Ø Drink at least one liter of water a day, preferably two and even more when exercising. Even better than water is green tea (it's packed with anti-oxidants).
- Ø Eat a varied diet.
- Ø Everything in moderation.
- Ø Consider taking an immune system boosting supplement and/or other multivitamin every other day, especially when traveling.
- Ø In everyday life, use more garlic, ginger, chili and raw honey in your cooking: apart from adding flavor, between them they are jam packed with anti-everything properties.

In a survival situation, a common plant filled with vitamins and minerals is plantain. Make a tea out of it. Also, do not avoid sugar, salts and fats. These are the things that keep the body running, and you need all the nutrition you can get. It is just in modern life we get far too much of them - everything in moderation.

Exercise

Exercise is any physical activity you do which results in an increased heart rate. Here are some guidelines to follow: Ø Exercise regularly. As little as twenty minutes of focused exercise a day is enough.

Ø Stretch every day.

If you are in a survival situation you may want to conserve energy. Survival activities will probably prove to be enough to keep fit, e.g., hunting.

Yoga is highly recommended and is referred to in some of the treatments in this book.

To learn more about healthy living visit SurviveTravel.com/Healthy-Living.



Recharging

Recharging refers to allowing your body and mind to recuperate.

Get enough rest, i.e., sleep at least 6 hours a day, preferably 7 to 9.

Lower stress levels. Things like aromatherapy, massages, meditation and relaxing baths can all help to lower stress.

Personal Hygiene

Good nutrition, exercise and recharging work together to keep your body strong to fight infections and injury. Good personal hygiene will help to stop infections entering your body in the first place.

When traveling to unfamiliar places you will be exposed to things your body has probably not encountered before. Your immune system will not be built up enough to combat these things, so personal hygiene becomes even more important than it already is.

Everything your mother told you as a child (e.g., wash your hands after using the bathroom, cleaning eating utensils after each use) do it religiously when in an unfamiliar environment, especially if your travels lead you into a survival and/or wilderness situation. Even seemingly small things can turn disastrously bad.

Daily Hygiene Routine for Survival/Collapse Situations

Start from the top of your body and work your way down, i.e., from head to toes. This is an example routine aimed at the worst possible scenario, i.e., a survival/collapsed society situation. You may not have to be so strict.

Keep as dry and clean as possible.

Wash every part of your body, preferably with soap. Drinking water is always the priority, so make the best with what you have.

Head

Shorter hair is always easier to keep clean.

Teeth

If the water is available, rinse your mouth out first thing in the morning and after every meal.

- Ø **Dental Floss:** thin string-like substances can be used as dental floss, e.g., para-cord inner core, fishing line, plant fiber (as long as the plant is safe). Tie an overhand knot in it to remove any difficult objects.
- Ø **Mouthwash:** a solution made of water and 1 to 3 % of hydrogen peroxide or clove oil will make a good mouthwash alternative. Beware that too much hydrogen peroxide or clove oil can burn your mouth.
- Ø If clove oil or hydrogen peroxide is not available, simple salt water is

better than nothing. These alternative mouthwashes are also good to use as toothpaste if there is nothing else.

Ø **Toothbrush:** a hardwood twig (live wood) that you have frayed by chewing can be used as a makeshift toothbrush. A piece of cloth could also be used. Even just your finger is better than nothing. It is also important to brush your gums. If your toothbrush is too harsh, use your finger.

Ø **Toothpaste:** baking soda makes good alternative toothpaste.

Body

Wash your entire body and check for parasites (lice, fleas, ticks etc.), especially in hairy and moist areas, e.g., groin, armpits. Be careful not to crush any that you find. Pick them off; *Diagnoses and Treatments – Environmentally Induced – Animals, Terrestrial*

Hands

Wash your hands before handling food or water that you are going to consume. If no disinfectant is available, just using running water is much better than nothing - the stronger the water pressure the better.

Whether you have soap, hand sanitizer or just water, make sure you wash your hands properly. It should take about a minute to clean and dry them. Get into all the nooks and crannies, e.g., between fingers, under finger nails.

Nails

Do your best to keep your nails clean, especially if you get a cut underneath them. Cut them if possible, but be careful not to overcut them as that may lead to ingrown nails and/or infection.

Feet

Your feet are extremely important. You must keep them protected from injury. Wash, dry and massage them regularly. Likewise, change and wash your socks regularly.

When hiking, check your feet often for blisters and/or hot spots. Take preventative measures; *Diagnoses and Treatments - Integumentary System – Blisters*.

Clothing

Keeping covered will protect you from the elements and insects.

Wash your clothes regularly for hygiene, as well as to make them last longer.

If no insect repellents are available, you can use smoke to fumigate them.

Minimize your exposure to mosquitoes; *Diagnoses and Treatments – Animals, Terrestrial – Mosquitoes*.

Waste Management

Defecate in a designated spot at least 50 m away from your water and also away (preferably downwind) from camp. Make it out of the way, but not inconvenient. You want to be able to get to it at night if needed.

After defecating, cover the feces with earth.

Drinking Water

Establish a drinking water collection-point and ensure no-one washes upstream from it. Downstream from the drinking water, choose a point for washing your body and clothes, and downstream from that, wash dishes.

All water from natural and other questionable sources should be purified. Boiling it for 5 minutes is best, but bleach, iodine, UV light (e.g., Steripens) also work.

Caring for the Sick

When caring for, or in the presence of, a sick person:

Wash hands before and after contact.

Wear a mask.

Wear gloves.

Wash down all possibly contaminated surfaces with disinfectant, e.g., diluted bleach.

The sick person should:

Cover their mouth and nose with tissues when coughing, sneezing *etc.*

Dispose of tissues correctly, e.g., in the trash.

Keep their distance from others, at least 150 cm.

Be quarantined if a high fever is present.

Soap Making

White ashes, sand, loamy soil (a mixture of sand, clay, silt, and organic matter) and even some plants can be used as alternative soaps.

You can make soap by mixing animal fat or vegetable oil with alkali, and alkali can be produced from wood or seaweed ash:

Ø Wash the ash with water.

Ø Strain then boil it with the oil or animal fat.

Ø Once it is boiling, bring it down to a simmer to burn off all the liquid.

Ø Adding pine resin, clove oil *etc.* will give it antiseptic properties.

Ø Let it cool before using.

Note: too much alkali will dry your skin.

Vaccinations

The following vaccinations are recommended for world travelers by the World Health Organization. They are accurate at the time of writing.

It is a good idea to have all your vaccinations recorded in the World Health Organization (WHO) International Certificate of Vaccination.

Who.int/ihr/IVC200_06_26.pdf?ua=1

Routine Vaccinations

These are vaccinations that everyone should have: Diphtheria, tetanus, and pertussis.

Hepatitis B (Hep B).

Haemophilus influenzae type b.

Human papillomavirus.

Influenza.

Measles, mumps, and rubella.

Pneumococcal.

Polio.

Rotavirus.

Tuberculosis (BCG).

Varicella.

Selective Vaccinations

These are vaccines that you should have if intending to go to high-risk areas:

Hepatitis A.

Cholera.

Japanese encephalitis.

Meningococcal.

Rabies.

Tick-borne encephalitis.

Typhoid fever.

Yellow fever.

Required Vaccinations

These are vaccines that some countries require you to have if entering certain countries: Yellow fever.

Meningococcal.

Polio.

Check for latest information on required vaccines at [WHO.int/wer](https://www.who.int/wer).

First Aid Kit

A basic first aid kit is something every traveler should carry. Exactly what you carry in it is dependent on your skills. Also consider if you will want to take it on board a plane since there are things that will not be allowed.

Here is a sample first aid kit which is safe to have as carry-on luggage, as long as the liquids do not exceed the 100 ml limit.

Since most travelers prefer to limit the amount of luggage they have, this sample kit is very minimalist which means many things will have to be improvised if needed.

Further information about specific items and their use can be found in later chapters.

Minimalist First Aid Kit Contents

Adhesive Bandages: an assortment of sizes.

Amoxicillin/Clavulanate, e.g., Augmentin (antibiotic).

Anti Diarrheal, e.g., Imodium.

Aspirin (analgesic, anti-inflammatory).

Ciprofloxacin, e.g., Cipro (antibiotic).

Cloth tape.

Clove Oil (alternative/natural medication).

Doxycycline, e.g., Vibramycin (antibiotic).

Diphenhydramine, e.g., Benadryl (antihistamine).

Gauze pads: preferably sterile.

Gloves: preferably non-latex.

Haemostatic, e.g., QuikClot (blood clotting agent).

Hydrocodene (analgesic, strong).

Laxative: preferably natural, e.g., Metamucil.

Lip Balm.

Soap Notes and pencil; *Must Read – Secondary Exam.*

Scissors: may not be able to take on board the plane, but if they are small enough they should pass.

Sunscreen: SPF 30 at a minimum.

Tick/Splinter Kit: it should include small tweezers and mini magnifying glass.

Medications pertinent to your travels, e.g., altitude, scuba.

Personal Medications, e.g., allergy, asthma, contact lenses, epinephrine.

Also Consider:

Albuterol: even if non-asthmatic.

Alternate antibiotics in case of allergy or other complication, e.g., pregnant.

Blister band aids.

Epinephrine Auto-Injector, e.g., EpiPen: even if no known history of anaphylaxis.

Eye wash, eye drops and/or antibiotic eye drops.

Oral thermometer.

Roller bandage.

Small LED flashlight.

Triangular bandage(s).

Vet wrap.

Paperwork, e.g., notes from doctor for prescription drugs, first aid notes, inventory *etc.*

If you do not trust natural remedies for certain (or all) things, then consider also including:

Acetaminophen (Analgesic).

Antacids.

Antifungal.

Antiseptic.

Burn gel.

Decongestant.

Dramamine (motion sickness).

Hand sanitizer.

Ibuprofen (analgesic, anti-inflammatory).

Itch relief.

Insect repellent: DEET 30% maximum or Picaridin.

Triple antibiotic ointment.

Important Notes:

Check your first aid kit regularly for expiration dates and refill any supplies that have been used.

Please read the medications guide chapter before considering the use of any type of medication; *Must Read – Medications Guide*.

Doctor notes for prescription drugs are recommended.

Medications Guide

This chapter lists most of the medications referred to in this book, both natural and pharmaceutical. It includes common names (in parenthesis), important notes and their veterinary substitutes if applicable.

Veterinary substitutes are given because they are available without a prescription, and they also may be the only option available in certain circumstances. Only use veterinary substitutes as a very last resort.

Using the Medications Recommended in this Book

Brand names for drugs are given in parenthesis, but that does not mean that there are no other brands available.

Information presented here is by no means thorough, e.g., there are many unmentioned cautions and side effects.

Just because medications are not listed in the treatments does not mean they cannot be used, e.g., analgesics for general pain relief.

Just because there are medications listed in the treatments doesn't mean you have to take them. They are there if needed. In fact, medications should be considered the last resort.

Mostly, the only medications mentioned in the diagnoses and treatments in this book are ones that have been listed here, but that does not mean they are the only options. Often there are many alternatives.

Self-medication can be dangerous, especially with prescription medication. If you have the option, always see a doctor before taking any medications.

Specific dosages are (mostly) only mentioned for those recommended in the first aid kit, and are only for healthy adults. Unless otherwise specified, they are for oral intake of instant release drugs, as opposed to IV, extended release *etc.* If you plan to keep other medications in your first aid kit, and/or for pediatric doses or other complications (e.g., pregnancy, compromised immune systems) research must be done.

The specific use for each type of medication (e.g., when to use it, dosage) is given under the relevant sections in the Diagnoses and Treatments.

IMPORTANT: recommendations often change when new research is done. If a medical professional is not available, it is best to consult the [Physician's Desk Reference](#) or Drugs.com for the latest information on which drugs to use and correct dosages. Dosages given in this book are mainly from [Drugs.com](#) and are accurate at the time of publishing.

Alternative/Natural Remedies Vs Pharmaceuticals

In general, pharmaceutical companies do not make money off alternative/natural remedies. This means that they do not spend money researching them; therefore many alternative/natural remedies have not been scientifically proven to be effective. It does not mean that they do not work. Actually, even proven pharmaceuticals may not solve the problem. This is because we are all different, and therefore all medicines affect people differently.

One of the biggest pros for using alternative/natural remedies is that they usually have far less side effects than pharmaceuticals. This means that unless you are totally against the use of alternative/natural medicines, there is usually no harm in trying them first. If it does not work, you can always try the pharmaceutical afterwards.

Scientifically proven medications are recommended in emergency situations

General Safe Use Information for all Medications

The following applies to all medications, unless specifically stated otherwise:

Check for allergies: when unsure if a medication may cause an adverse reaction, test it first with a small dose in the manner that you would use it, e.g., oral, topical. Allergies may manifest as diarrhea, rash, respiratory problems *etc.*

Expiration dates: in most cases, using out-of-date medication will not have a negative effect. They probably just won't be as potent as they would be if used within the expiration date. Research has shown that many medicines are still acceptable for use 10 to 15 years after the expiration date (liquid forms lose potency much more quickly, e.g., insulin). However, if you can update your medications, do so.

Follow instructions and warnings: instruction and warning/caution labels on medications are there for a reason. Follow them strictly. If a doctor gives you advice about the medication, e.g., dosage, follow it.

For people that are unable to swallow pills, e.g., small children: the pill can be crushed or emptied (if a capsule) into a cup of water and swallowed that way. It is best to use a smaller cup, and then refill it to get all the residue particles. Flavoring can also be added if needed. Do not chew or make a liquid out of time-released capsules.

Know the possible side effects: an allergic reaction may not be an allergic reaction at all. It may be a known side effect that you just have to deal with while taking the medication. Also, if you know what the side effects may be, you can adjust your life around them, e.g., if drowsiness is a side effect, don't drive.

Mark all medications well: if you take medications out of the packet (e.g., to save space) ensure you correctly label them along with dosage and any other pertinent information.

Medication may mask underlying problem(s): treating symptoms without knowing the cause is dangerous, and will usually result in slower healing and/or re-occurring problems. Treat the cause first, and then treat the symptoms.

Stick to the recommended dosages: overmedication is extremely dangerous and will often result in a worse problem, perhaps even death. On the other hand, if you do not take enough (e.g., not completing a course of antibiotics) it may not

completely eradicate the problem. [The Physician's Desk Reference](#) or [Drugs.com](#) can give you exact dosages for many ailments.

Store medications properly: most medications keep best in cool, dry, dark places, and preferably in a smoky container, as opposed to a clear one.

Analgesics, Anti-inflammatory and Fever Reducers

General Cautions

Check for allergies.

Don't take if neurologically impaired.

Use the least potent medicine to do the job.

NSAIDs are non-steroidal anti-inflammatory drugs and are useful in injuries associated with swelling or other signs of inflammation.

Acetaminophen (Tylenol)

Pain relief and fever reducer in the case of infection, good for children.

Adult dose: 1000 mg every 6 to 8 hours.

Aspirin

NSAID, pain-reliever, fever reducer in case of infection and anti-inflammatory.

Cautions: do not give aspirin to anyone under 20 years, unless specifically prescribed by a doctor.

Side effects: blood thinning, upset stomach.

Adult dose: 325 to 650 mg every 4 hours as needed, not to exceed 4 g/day.

Corticosteroids (Prednisone, Cortisone)

Strong anti-inflammatory and analgesic.

Side effects: acne, appetite loss, heartburn, increased sweating, insomnia, nausea, vomiting.

Adult dose: 5 to 60 mg per day in evenly divided doses 1 to 4 times/day.

Also available as a topical cream.

Cyclobenzaprine (Flexeril)

Muscle relaxant and sedative.

Cautions: do not use for persons under 15 years.

Side effects: constipation, dizziness, drowsiness.

Adult dose: 5 to 10 mg 3 times/day (start at 5 mg and increase if needed).

Hydrocodone (Vicodin)

Strong pain relief, cough suppressant.

Side effects: anxiety, blurred vision, constipation, dizziness, drowsiness, dry mouth, headache, nausea, ringing in ears, upset stomach, vomiting.

Adult dose: 5 mg every 4 to 6 hours.

Ibuprofen (Motrin, Advil)

NSAID, pain reliever, fever reducer in the case of infection and anti-inflammatory.

Considered the weakest of the NSAIDs, but still very effective and with less severity of side effects; doses greater than 400 mg do not enhance effectiveness.

Side effects: blood thinning, stomach upset.

Adult dose: 200 to 400 mg every 4 to 6 hours as needed.

Lidocaine

Topical gel.

Cautions: do not cover more than 5 % total body surface area, do not repeat use.

Usually takes 5 to 10 minutes to take effect.

Naproxen (Aleve)

NSAID, pain reliever, fever reducer in the case of infection and anti-inflammatory.

Stronger than other NSAIDs but takes longer to work.

Cautions: take in fewer doses (as compared to other NSAIDs) with lots of water, not recommended for children under 15 years.

Side effects: blood thinning, upset stomach (more so than aspirin).

Adult dose: naproxen sodium 220 mg every 8 hours as needed.

Oxycodone (Percodan)

Extreme pain relief.

Cautions: high potential for addiction (opioid).

Side effects: constipation, diarrhea, dizziness, drowsiness, dry mouth, gas.

headache, heartburn.

Adult dose: 5 to 15 mg every 4 to 6 hours.

Alternative/Natural Analgesics, Anti-inflammatory and Fever Reducers

Clove oil: apply topically as an anti-inflammatory and analgesic.

Ginger: ginger root tea may decrease inflammation and provide pain relief.

Herbal Teas: chamomile, mint and rosemary teas (amongst others) are mild muscle relaxants.

Ice: apply topically to numb the skin.

Oatmeal: reduces healing related itching.

Ø Add 1 to 2 cups of raw oats to a lukewarm bath as it is filling.

Ø Soak in the bath for 15 to 20 minutes.

Ø Air dry so a thin coating remains on your skin.

Ø Repeat as needed.

Salicin: analgesic, anti-inflammatory and fever reducer. Salicin is what aspirin is made from; *Must Read – Medications Guide – Medicinal Plants – Salicin.*

Tannin: tannin will soothe itching and promote healing; *Must Read – Medications Guide – Medicinal Plants – Salicin.*

Ø Wash the area with black or green tea.

Ø Use as a compress or poultice and apply topically.

Antibiotics

There are many different types of antibiotics, and each of them is used at specific dosages for specific illnesses. Some can also be used as a preventative measure (prophylactics).

The antibiotics referred to in this book were specifically chosen because they are multi-purpose and/or commonly accessible in the world and/or can be substituted with veterinary equivalents. Only consider veterinary equivalents that have the antibiotic as the sole ingredient, and only use them as a very last resort.

Note the following: Alcohol consumption is not advised while taking antibiotics and for 3 days afterwards.

Antibiotics help your body to fight bacteria, but they do not work with viral infections. Respiratory infections are more likely to be viral.

Do not self-medicate/administer antibiotics unless there is no other option and you are 100% sure it is the right medication for the illness.

Over-use of antibiotics can create resistant bacteria and may cause severe allergic reactions. Only use them as a last resort.

There may be multiple antibiotics suggested in the treatments but, unless specifically directed, only use one.

In Diagnoses and Treatments, dosage recommendations are only given for the first three of the antibiotics listed here because they are the ones recommended in the first aid kit.

Amoxicillin/Clavulanate (Augmentin)

Cautions: do not use if allergic to penicillin.

Side effects: diarrhea, gas, headache, nausea or vomiting, skin rash or itching.

Ciprofloxacin (Cipro)

Cautions: do not use for children under 8 or pregnant women.

Side effects: diarrhea, headache, nausea, trouble sleeping.

Veterinary substitute: Fish Flox.

Doxycycline (Vibramycin)

Cautions: do not use for children under 8 or pregnant women.

Side effects: diarrhea, nausea, skin rash, vaginal itching or discharge.

Dose for general bacterial infection: 200 mg on the first day, given in 2 divided doses, then 100 mg/24 hours or 100 mg/12 hours for severe cases.

Amoxicillin (Amoxil)

Cautions: do not use if allergic to penicillin.

Side effects: diarrhea, nausea, stomach pain, swollen tongue.

Veterinary substitutes: Fish-Mox (250 mg), Fish-Mox Forte (500 mg).

Ampicillin (Pricipen)

Cautions: do not use if allergic to penicillin.

Side effects: headache, nausea, stomach pain, swollen tongue, thrush, vaginal itching or discharge.

Veterinary substitute: Fish-Cillin.

Azithromycin (Zithromax)

Side effects: constipation, decreased senses (e.g., hearing, smell, taste), diarrhea, dizziness, insomnia, nausea and vomiting, rash, stomach pain, tiredness.

Cephalexin (Keflex)

Cautions: do not use if allergic to penicillin.

Side effects: diarrhea, dizziness, joint pain, nausea, tiredness, vaginal itchiness or discharge, vomiting
Veterinary substitute: Fish-Flex (250 mg), Fish-Flex Forte (500 mg)

Cortisporin

Otic Drops for external ear infections or ointment for topical use.

Erythromycin Ophthalmic Ointment (Romycin)

Eye ointment for corneal abrasion, eye infections and snow blindness.

Side effects: blurred vision, eye stinging.

Levofloxacin (Levaquin)

Cautions: stop use if tendon pain develops.

Side effects: dizziness, headache, gastrointestinal problems, insomnia, vaginal itching or discharge.

Metronidazole (Flagyl)

Cautions: do not use for children under 8 or pregnant women.

Side effects: abdominal pain, cold symptoms (e.g., cough, sneezing), diarrhea, loss of balance, nausea and vomiting (especially if consuming alcohol), sore tongue, vaginal itching or discharge.

Veterinary substitute: Fish-Zole

Sulfamethoxazole / Trimethoprim (Bactrim)

Cautions: do not use for children under 8 or pregnant women, do not use if allergic to sulfa drugs.

Side effects: dizziness, insomnia, painful tongue, ringing in ears, vomiting.

Veterinary substitute: Bird Sulfa.

Tetracycline (Sumycin)

Cautions: do not use for children under 8 or pregnant women.

Side effects. diarrhea, genital or rectal sores/swelling, nausea, oral sores, swollen tongue, trouble swallowing, vaginal itching or discharge, vomiting.

Veterinary substitute: Fish-Cycline.

Antifungals

Clotrimazole (Lotrimin)

Clotrimazole is available as a cream, lozenges, lotion, powder and vaginal suppository.

Side effects: foul smelling discharge (vaginal cream), skin irritation, stomach pain, vomiting (lozenges).

Fluconazole (Diflucan)

Cautions: do not use if allergic to fluconazole, do not use if you take cisapride, erythromycin, pimozide, or quinidine. Do not take more than one dose if pregnant.

Side effects: altered sense of taste, diarrhea, dizziness, headache, stomach pain.

Ketoconazole (Nizoral)

Cautions: do not mix with other medications, do not take if you have liver problems.

Side effects: breast swelling, decreased libido, dizziness, headache, nausea, stomach pain, skin rash, vomiting.

Veterinary substitute: Fish-Fungus.

Miconazole (Monistat)

Miconazole is available as a cream, lotion, powder, spray-able liquid and suppository.

Side effects: foul smelling discharge (vaginal cream), skin irritation, stomach pain.

Alternative/Natural Antifungals

Clove oil.

Garlic.

Tannin.

Antihistamines

Diphenhydramine (Benadryl)

Side effects: depleted co-ordination, difficulty urinating, dizziness, dry mouth, drowsiness, headache.

Standard adult dosages: Ø **Allergic Reaction: 25 mg to 50 mg (1 to 2 Benadryl capsules).**

- Ø Cough: 25 mg every 4 hours as needed, not to exceed 150 mg per day.
- Ø Cold Symptoms: 25 to 50 mg every 4 to 6 hours as needed, not to exceed 300 mg/24 hours.
- Ø Extrapyrimaldal Reaction (drug-induced movement disorders): 25 to 50 mg every 6 to 8 hours.
- Ø Insomnia: 25 to 50 mg at bedtime.
- Ø Motion Sickness: 25 to 50 mg every 6 to 8 hours. Administer first dose 30 minutes before exposure to motion and repeat before meals and upon retiring for the duration of the journey.

Also available as a topical cream.

Loratadine (Claritin)

Loratadine is used for relief of allergic rhinitis (hay-fever).

Side effects: dry mouth, fatigue, headache.

Adult dose: 10 mg once a day.

Antiseptics

Povidone Iodine (Betadine)

Cautions: do not drink, do not freeze or heat.

Use 10% for topical use, dilute to 1% for wound cleaning.

Dakin's Solution

For disinfecting skin wounds.

Cautions: do not drink, do not freeze or heat, store at room temperature, shelf life is only 3 to 4 days.

Side effects: skin irritation may occur.

Making Dakin's Solution Add half a teaspoon (t) of baking soda to 4 cups of boiled/sterilized water.

Add bleach to reach desired strength.

3 teaspoons for wound cleaning.

3 Tablespoons for infected wounds.

100 milliliters for bad infections.

Alternative/Natural Antiseptics

Alcohol: high percentage drinking-alcohols can be used if nothing else is available, preferably 50% or more, e.g., whisky or vodka. Do not use beer or wine. Lemon juice can also work for minor cuts.

Clove oil.

Garlic.

Honey: especially good for burns.

Ø Liberally and completely cover affected area with honey so no air can get to it.

Ø Cover with cling wrap or waterproof dressings.

Ø Change dressing as needed, minimum of 3 times a day, do not wash off honey.

Ø Repeat until healed.

Ø Do not wash off the honey, up to 20 days (or earlier if healing is complete).

Antiviral Drugs

Acyclovir (Zovirax)

Side effects: agitation, diarrhea, dizziness, hair loss, joint pain, lethargy, rash, upset stomach, vomiting.

Famciclovir (Famvir)

Side effects: diarrhea, gastrointestinal problems, headache, lethargy, nausea, rash, skin irritation, vomiting.

Oseltamivir (Tamiflu)

Cautions: Tamiflu should not be used as a replacement for your annual flu immunization, only works if used within 2 days of symptoms appearing.

Side effects: diarrhea, dizziness, eye redness, headache, insomnia, nausea, nosebleed, respiratory problems, vomiting.

Alternative/Natural Antivirals

Clove oil.

Garlic.

Haemostatic's

General Cautions:

Only use if well-aimed, direct pressure does not work.

Zeolite (QuikClot)

Styptic

In pencil or powder form.

Alternative/Natural Haemostatic's

Cayenne pepper powder.

Cinnamon powder.

High-Altitude Medications

Acetazolamide (Diamox)

Acetazolamide is preferable as a preventative drug to be used before/during ascent.

Cautions: do not use if allergic to sulfa or penicillin, e.g., if a rash starts to develop a few days after ingestion.

Side effects: bitter taste of carbonated beverages, decreased blood clotting ability, decreased immune system, drowsiness, impotence, increased urine output, nausea, near-sightedness (myopia), tingling in hands and feet.

Adult dose for AMS (Altitude Sickness): 125 to 250 mg every 6 to 12 hours, maximum dose of 1 gram per day.

Dexamethasone (Decadron)

Dexamethasone is better for treatment, take in conjunction to descent.

Side effects: dizziness, headache, insomnia, skin problems (acne, dryness etc.)

Adult dose for AMS: 0.75 to 9 mg per day in divided doses every 6 to 12 hours.

Alternative/Natural High-Altitude Remedies

Coca leaves (tea or chewed) may help with altitude sickness.

Motion Sickness, Nausea and Vomiting

Dimenhydrinate (Dramamine)

Dimenhydrinate is an antihistamine.

Side effects: blurred vision (rare), drowsiness, dry mouth (rare), headache (rare), loss of coordination (rare).

Adult dose: 50 to 100 mg every 4 to 6 hours, maximum of 400 mg in 24 hours. The first dose should be taken 30 to 60 minutes before starting activity.

Benadryl

Must Read – Medications Guide – Antihistamines.

Alternative/Natural Remedies for Motion Sickness, Nausea and Vomiting

Ginger is well known for relief of motion sickness.

Clove Essential Oil

There are many, many different essential oils, but this book focuses only on one, clove oil. It has been chosen for 3 main reasons:

- 1. It has a wide range of medicinal uses relevant to the traveler**, e.g., digestive issues, disinfectant, insect repellent, fungus, nausea, pain relief, wound healing.
- 2. It is common and inexpensive.** There are some 'cure-all' type blends which have a great many uses but they are brand named blends which you have to buy from specific distributors. Clove oil is available from anyone that stocks essential oils. Also, clove oil is the main ingredient in many of these blends anyway, so it does almost everything they do.
- 3. It is powerful.** You get a lot of bang for your buck.

Safety and Precautions for Essential Oils

These precautions are for all essential oils, unless specifically stated.

Allergies: test for allergies before using therapeutically. To test topically, place two drops of diluted mixture on the inner side of the upper arm and cover it with a bandage so nothing else can contaminate it. If there are no adverse reactions after 36 hours you should be fine to use it.

If you ever use any essential oil topically and your skin gets irritated, add vegetable oil to it. Water will make it worse.

Note: if your skin is extra sensitive and/or you find you have a bad reaction to clove oil, you can try lavender oil instead. It can be used in pretty much the same way as clove oil, but is not as strong. Contrary to popular belief, lavender oil must also be diluted before use.

Anti-coagulant: clove oil has blood thinning properties so avoid it if you are taking other anti-coagulants.

Children: dilute more for children and do not use at all if under 2 years old.

Diabetics: clove oil can cause blood sugar to drop.

Dilution: always dilute appropriately. Besides not damaging yourself, you will save money and will not build up a resistance to its positive effects.

Eyes: do not get it into the eyes and be careful about touching your eyes after handling. If you do get it in your eye, irrigate immediately and copiously. Permanent damage is unlikely.

Flammability: some oils are flammable, so be careful around open flame.

Pregnant: pregnant and breastfeeding women should be cautious.

Therapeutic grade: only use therapeutic grade oils.

Touching: it takes about 20 minutes for essential oils to be absorbed into the skin, so be careful what you touch during this time after handling it.

Storage and Shelf Life

When stored properly, pure clove oil will last about 18 months. If mixed with a carrier oil (what you dilute it with) that has a shorter shelf life, it will last only as long as the carrier oil.

To get the most life out of essential oils, store them in dark bottles (not plastic) in a cool, dark place. Keep bottles tightly sealed when not in use.

An oil has gone rancid if:

Aroma has drastically changed

Oil has become cloudy

Oil has thickened

Note: non-therapeutic-grade essential oils will go rancid much quicker.

Dilution

Clove oil is very potent and should always be diluted in a carrier solution, e.g., vegetable/carrier oils, milk, salt, vodka. Do not apply directly onto the skin and do not dilute with water unless specifically directed.

Recommended Dilution Quantities

100 drops = 5ml = 1 teaspoon (t)

0.25 %: 1 drop / 4 t of carrier

Sick children between 2 to 6 years.

1 %: 1 drop / 1 t of carrier

Children over age 6.

Elderly adults.

Massaging over a large area of the body.

People with poor immune systems, sensitive skin or other chronic health issues.

Pregnant women.

2%: 2 drops / 1 t of carrier

Normal use, i.e., healthy adults and most situations.

3%: 3 drops / 1 t of carrier

Local area application, i.e., specific body part/area of the body.

Specific treatments, e.g., muscle injury, respiratory congestion.

25%: 25 drops / 1 t of carrier

Anything between 3 to 25% may be warranted for severe pain, depending on health concern, age *etc.*

Carrier Oils

Carrier oils are the preferred carrier solution for most treatments. For best results use proper carrier oils, which you can buy wherever you buy essential oils.

Since purchasing carrier oils might not be practical while traveling it is good to know that any of the vegetable, nut or seed oils that are used for cooking can also be used. If doing so, use unprocessed oils such as those marked “organic” or “cold-pressed”, as refined oils will contain substances that may be harmful to the skin.

Worst case scenario, even regular old cooking-grade canola oil is better than nothing.

There are many different carrier oils with a variety of properties and scents. The following have been chosen for either their properties or because they will be commonly found whilst traveling.

Black Cumin Seed Oil: anti-inflammatory, anti-bacterial and anti-fungal properties, absorbs quickly into the skin and only leaves a slight residue, shelf life of 2 years.

Jobba Oil: anti-inflammatory properties, absorbs well, shelf life of 2 to 3 years.

Olive Oil: thick and oily, but is very common and has about an 18 month shelf life, cold pressed virgin oil is best.

Sunflower Oil: commonly found, all purpose and affordable carrier oil, absorbs well into the skin and has a 12 month shelf life, unrefined is best.

Using Clove Oil

Due to the wide variety of uses, instead of putting it in every diagnosis and treatment, the many uses are presented here in a general manner with a general method of use.

Any use of clove oil that strays from these general methods, or deserves a special mention, will be addressed in the appropriate sections of this book.

There are four basic ways to use essential oils: diffusing, inhalation, internal consumption and topical application.

Diffusing

A diffuser is a machine that disperses the oil into the air. Travel diffusers are available.

If you do not have a diffuser you could put a few drops onto a cotton ball (or similar, e.g., gauze) and put it on the air ducts, or perhaps put it in a spray bottle and spray it around the room. These methods won't be as effective as a proper diffuser, but are still good.

Diffusing is also a great way to disinfect a room and neutralize odors with a pleasant, spicy aroma, as well as getting the many general benefits of clove oil such as (but not limited to):

Aphrodisiac.

Boost the immune system.

Bring courage.

Improve memory.

Mental stimulant.

Reduce fever.

Relaxing.

Relieve gastrointestinal problems, headaches, nausea, respiratory problems *etc.*

Sleep-inducing.

Stimulates dreams

stimulates dreams.

Inhalation

There are 2 basic ways to inhale clove oil. Both methods should only be used for specific reasons, e.g., when you are sick.

Direct Inhalation:

You can inhale oils directly from the bottle, or rub a few drops into your hands then cup your hands over your nose and breathe in.

This is not a preferred method but is very easy to employ when traveling. Be sure only to do it with diluted oil and go easy because clove oil is strong.

Steam Inhalation:

When steam and essential oils are combined they form a very potent way to help treat some ailments, especially anything to do with the respiratory system.

Caution: this type of treatment should not be used by anybody suffering from asthma.

- Ø Pour hot water into a bowl and then add 3 drops of the diluted oil. Shut your eyes and place your head about 30 cm (12 inches) above the bowl and cover your head with a towel to form a tent over the bowl. The sides should be totally closed.
- Ø Breathe deeply through your nose for a couple of minutes.
- Ø When you need to, raise the towel to let fresh air in and breath through your mouth. Resume the treatment when you are ready.
- Ø Anytime you feel it is too much, stop the treatment.

Internal Consumption

Diluted clove oil is safe to ingest in small amounts. It can be done for general well-being (e.g., boosting the immune system), or for a specific reason, e.g., aid digestion issues.

Adding a drop or two to a glass of water or in tea every other day will take care of the need for any other general multivitamin.

Add 1 to 2 drops to 50 ml of water and use as you would normal mouthwash.

Topical Application

There are a number of ways clove oil can be used in topical application.

• • •

Bathing:

Adding clove oil to a bath is a good way to get all the general benefits from diffusing, as well as being a fantastically relaxing and soothing experience.

For a healthy adult, use 3 to 4 drops of diluted clove oil. Put it in after the bath tub has been completely filled.

The oil must be diluted before adding it to the bath tub. Just adding 1 drop of clove oil directly to the water is not a good idea. Oil does not mix with water, so it will just float to the top and may irritate the skin. Use any of the normal dilution carriers, bath salts (preferred) or a cap of shampoo.

Direct Application:

Applying clove oil directly onto an affected area up to 3 times a day will prevent infections and also treat existing infections. It can also ease pain or discomfort and promote healing.

This includes, but is not limited to:

Aches and pains. Use a compress or massage it in if appropriate.

Dental pain, e.g., toothache.

Fungal infections, e.g., athlete's foot, ringworm, cold sores.

Skin irritations, e.g., acne, eczema, rashes, dry skin.

Wounds, e.g., cuts, burns, insect bites and stings.

Compresses:

Hot compresses can be used to treat boils, menstrual cramps, muscle pain, old injuries, rheumatic pain (joints and/or connective tissue) and toothache.

Ø Soak a piece of material, e.g., folded small towel, in water as hot as you can stand without burning yourself.

Ø Wring it out.

Ø On the side that will be placed on the skin, put 3 or 4 drops of diluted clove oil.

Ø Place the compress on the affected area and cover it with plastic, e.g., cling wrap or a plastic bag.

Ø Place another towel on top to keep it in place.

Ø Once it cools to body temperature, replace it.

Cold compresses can be used for bruising, headaches, inflammation, fever, recent sprains and swelling. Make it in the same way as the hot compress but use cold water instead of hot.

Massage:

Clove oil can be used as a massage oil for general massage (maximum concentration of 1 % dilution) or for specific problems. It can also be useful for sore muscles (where massage is appropriate) as well as internal organs.

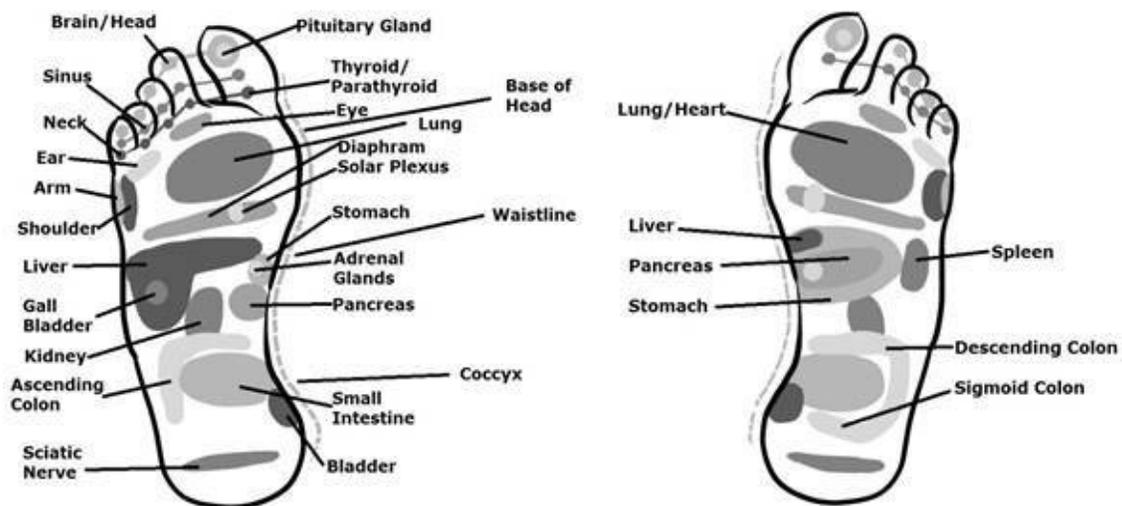
For internal organs, massage it over the area of the affected organ, e.g., rub on the stomach for digestive issues.

If massaging is not appropriate, the clove oil can still be placed with either direct application or a compress.

Reflexology:

The safest place to apply clove oil topically is to the bottom of the feet. In addition, you can place the oil on reflexology points which allows fast distribution to the corresponding internal organs via the blood stream. This can be helpful for systemic infections.

Except where specifically indicated, the right foot's reflexology points are the same and a mirror the left's.



Reflexology in itself can be a great alternative treatment for many things. It is not covered in detail in this book because it is a skill that must be studied in length. To learn more about reflexology please visit

SurviveTravel.com/Reflexology.

Other Uses of Clove Oil

Clove oil is not only useful for medical needs. Some other uses include:

Cleaning product: cleans metals and gives them a nice shine, is a natural disinfectant, and can also be used as hand sanitizer.

Insecticide: diffuse, make a spray, or add 1 undiluted drop to a cotton ball and place it in problem areas.

Insect repellent: dab or spray on clothing when outdoors.

Weed killer: make a spray, non-toxic to most domestic animals.

Medicinal Plants

There are many medicinal plants, but this book only refers to a few of the more commonly found ones. Others are mentioned, but the main ones are garlic, ginger and tannin.

There are a few different ways to which this book refers when preparing plants:

Direct Consumption

Depending on the plant, you can eat it, or just chew on it for the juice and spit the pulp out.

Poultice

Mash up the under-bark and shape it into a flat, pulpy mass. Add water if it is too dry. Apply it to the affected area, cover it (e.g., material, big leaf) and bind it in place.

Tea (Infusion)

Cut and crush the plant and put in a cup. Pour boiling water over it, give it a stir and then cover it. When cool enough, drink it. Depending on the plant, eat the ingredients after you finish drinking the tea.

If you cannot boil water, use cold water (half the amount) and leave it in the sun.

Salicin

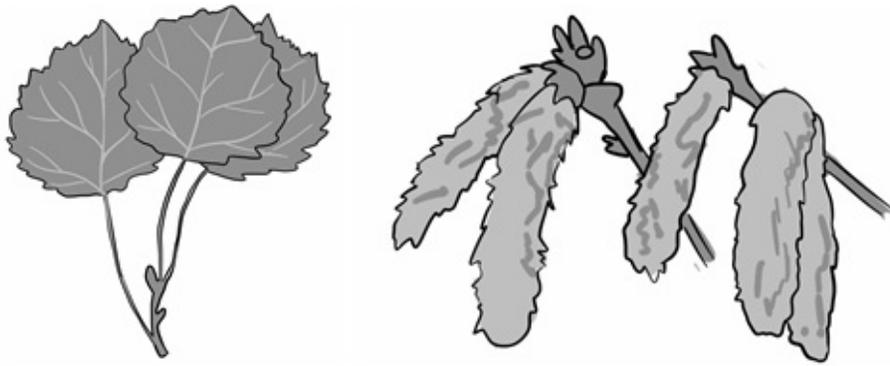
Aspirin is made from salicin. It has analgesic and anti-inflammatory properties.

Find an aspen, poplar or willow tree. There are various kinds of each, so the pictures may not match.

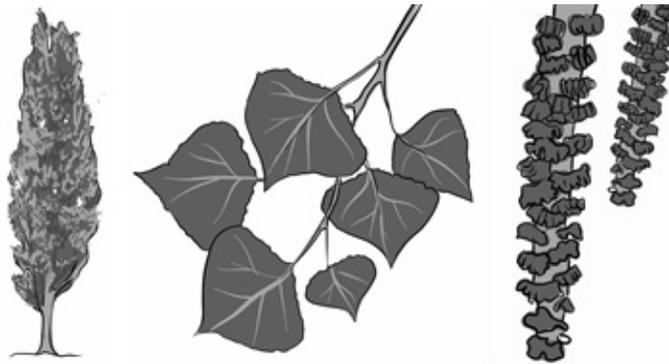
Chew on strips or make a tea from the green under-bark, the outer-bark is not effective.

A poultice can be used topically.

Aspen tree, leaves and fruit



Poplar tree, leaves and fruit



Willow tree and leaves



Tannin

Tannin has medicinal properties (e.g., analgesic, cure dysentery, promote healing) and can also be used to cure animal hides. Oak trees are best but any tree will work.

Boil tree bark (off the tree, not dead) for at least 12 hours and up to 3 days.

Add more water as it evaporates.

Garlic, Ginger, Honey and Lemon Tea

This tea gets a special mention because the ingredients are very common and it is a good natural remedy for when you have a cough, sore throat, feel a cold coming on *etc.* When you do not have all the ingredients, or even if you just have one, it can still help.

Garlic

Eating 2 to 3 cloves of garlic a day (e.g., in cooking) is great for your immune system.

Cautions: may increase bleeding, use with caution if you have stomach or digestion problems.

Garlic is known to help with the following: Bacterial infections and symptoms.

Blood pressure.

Blood sugar.

Fungal infections and symptoms.

Gastrointestinal infection and symptoms.

Hay-fever.

Immune system.

Liver function.

Respiratory infections and symptoms.

Stress and fatigue.

Tick bites (prevention).

Ginger

Ginger has anti-inflammatory properties and is widely used as an anti-nausea remedy.

Cautions: excess use may be harmful during pregnancy.

Ginger is known to help with the following: Gastrointestinal infection and symptoms.

Nausea/Motion sickness/Morning Sickness.

Pain relief.

Respiratory infections and symptoms.

Honey

Honey has antibacterial, anti-inflammatory and antioxidant properties.

Honey (Raw/Unprocessed) is known to help with the following:

Asthma.

Cough.

Diabetic foot ulcers.

Diarrhea.

Hay-fever.

Lethargy.

Stomach ulcers.

Wound healing, including burns.

Lemon

Lemon has anti-inflammatory and diuretic properties, i.e., increases urine output.

Lemon is known to help with the following: Cold and flu.

Digestion.

Kidney stones.

Pain.

Scurvy (vitamin C deficiency).

Tinnitus (ringing in the ears).

Garlic, Ginger, Honey and Lemon Tea Sample Recipe

How much of each ingredient you put into the tea is up to how sick you are vs. how much you can stand. Here is a sample recipe for a single cup. Eating the ingredients after you finish the tea is a good idea.

Ø 4 cloves of crushed garlic (peeled).

Ø Half a teaspoon of grated garlic.

Ø A few tablespoons of lemon juice.

Ø Raw honey to taste.

Hot Water and Rest

As a general rule, for any illness, unless instructed otherwise, rest and drink lots of water (preferably hot water) to flush your body of toxins and recharge your body.

If able, soak the affected part in hot water. An alternative for parts you cannot soak is to put something hot on it, e.g., brick, hot water bottle, rock.

Placebo

Placebo's can be very powerful. Never tell a patient there is nothing that can be done. Doing something that has no proven benefit (and has no harmful effect) is better than doing nothing.

The Will to Live

No matter how dire a situation, you must keep up the will to survive. Don't just lie down to die. Keep going, do the best with what you have, find the humor in the situation and keep up faith!

The moment you give up is the moment you have died.

Patient Care

Most of the treatments in this book are described as self-aid, but they can also be used to treat others.

It is important to remember that although you are trying to help someone it is ultimately up to them, or an advocate on their behalf, if and how you can treat them. If they refuse or object to your help you should respect their request.

It is also important to give patients the full range of options and to let them choose which course of action to take. You can give them your recommendation, but it is up to them to make the final choice.

If a patient is incompetent/unable to give consent and there is no advocate, whether to help them is a decision you will have to make.

Immediate First Aid

This section only covers what to do medically in an immediate life threatening situation. The main objective is to keep the patient alive until advanced medical care can be given.

Everyone should take a Wilderness First Responder course or, at the very least, a Basic First Aid course. Under no circumstances should this information replace a live first aid course conducted by a professional and qualified first aid instructor.

If possible, the first thing to do in all situations that require immediate first aid is to call emergency medical services. Know what the emergency services number is in whatever country you visit.

Something to think about:

The idea of first aid is to keep the patient alive until advanced medical care can be administered. In a survival situation, advanced care may not be available. Nursing a patient takes valuable time and resources. If there is no possibility of advanced medical care, you may only be delaying an inevitable death, and in the process may be taking away resources from other survivors. Is it worth risking everybody? This is a choice you may have to make.

Critical First Aid

This section will explain what to do when you first come across someone in need of first aid. It will allow you to determine urgent problems in the body's critical systems, i.e., circulatory, nervous and respiratory.

Stop and fix problems as you find them. Some may be obvious, others will need further investigation.

Although this is presented in a “do this, then this” form, it is unlikely that you can follow it smoothly in a medical emergency. You have to be flexible.

Whoever is the most qualified ‘medic’ on the scene is the one in charge; if someone comes along that is more qualified, that new person takes charge.

Assess the Situation

When you come across any situation, it is important to not rush in. To ensure the safety of you and everyone around, you must first assess the entire situation. Ensure the surroundings are safe for you, your rescue partners, the public, and then the patient(s), in that order.

Next you will try to determine what may have caused the situation and if there may be spinal damage. Knowing the cause will help you to determine likely injuries, predict further complications and help you avoid getting injured by the same thing.

Finally, assess the number of patients, the need of additional rescuers and what resources you have or need.

This may seem overwhelming, but your brain is awesome. With some practice, and depending on the complexity of the situation, all this information can be gathered within seconds.

Mental Status

AVPU

Approach the victim and check his mental status using **AVPU**.

Gently shake the individual and ask loudly “Hello, can you hear me? Are you okay?”

Alert: patient is **alert**.

Verbal: patient responds to **verbal stimulus**.

Pain: patient responds to **pain stimulus**.

Unresponsive: patient is **unresponsive**.

Anything below “Alert” may be the result of other critical system injuries, or could also give rise to them. Assess with the secondary exam after critical first aid has been completed; *Must Read – Secondary Exam*.

If you need to and are able, put on gloves and call for help.

Use the emergency roll to get the patient on his/her back and check his/her critical systems at the same time.

Emergency Roll

Vice lock the patients spine.

- Ø Support the head and spinal column.
- Ø Grasp the jaw and the back of the head and squeeze the center line of the torso between your forearms.

Roll the patient onto his/her back.

For larger patients, use the heel of your foot to nudge his/her pelvis into rolling along with the upper body.



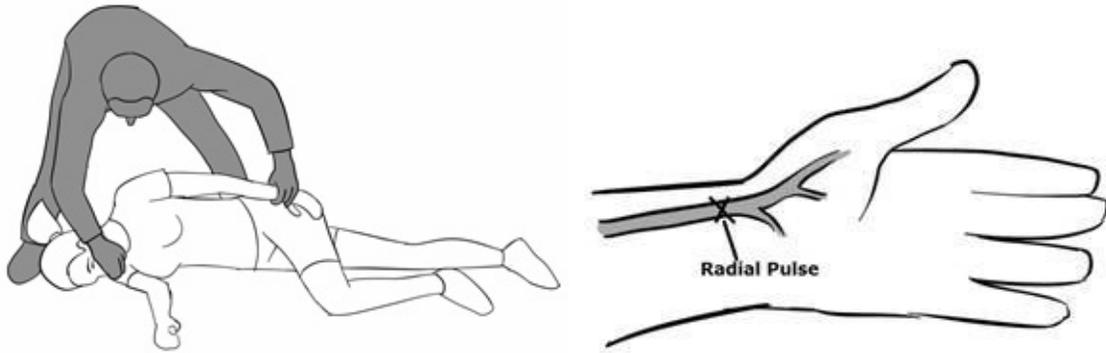
Move to the back of the patient.

Hover your closer hand over the mouth to check for breath.

At the same time, with your other hand, check the radial pulse which is located just below the wrist at the base of the thumb.

Note: do not use your thumb to check pulse, as the thumb has a light pulse of its

own.



Also check/treat severe bleeding; *Must Read – Critical First Aid – Circulation.*

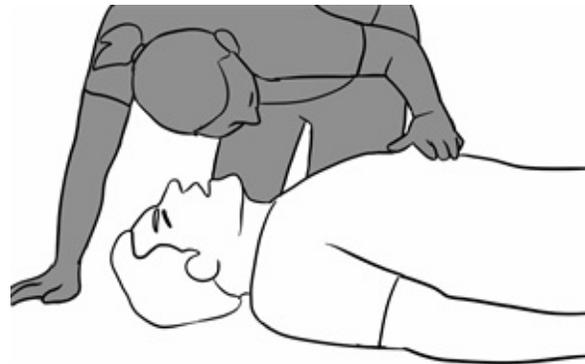
Airway

Check if air is moving in and out.

If the patient is breathing, air is moving.

If you didn't notice it during the emergency role, put your ear close to the patients face so that you are looking down the torso.

Place your hand on the abdomen and look, listen and feel for signs of breathing.



Chin Lift

If the airway is not open, use the chin lift:

Lift up the chin gently with one hand while pushing down on the forehead with the other to tilt the head back.



If you suspect a neck injury, open the airway using the chinlift without tilting the head back.

If the airway remains blocked, tilt the head slowly and gently until the airway is open.

With infants (under 1 year old), be careful not to tilt the head back too far or it may block the breathing passage instead of opening it.

Finger Sweep

If the airway is still not open, check for a blockage:

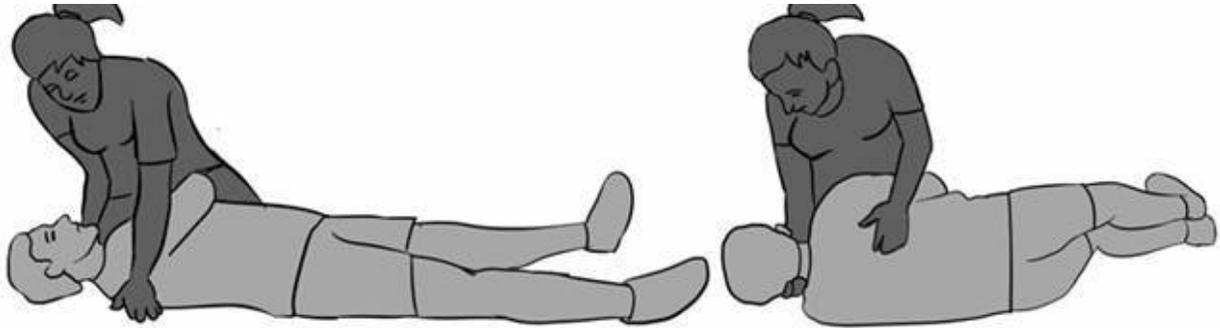
If there is one, sweep your finger in his/her mouth to remove it. Be careful of teeth.



If there is any fluid, e.g., blood, water and vomit, use gravity to help drain it.

Support the patient's head and neck with one hand and reach around to the center of his/her back with the other.

Roll the patient onto your thighs and clear the airway using the finger sweep if needed.



If the airway is being blocked due to swelling, e.g., trauma, burns, anaphylaxis treat the cause (if possible).

Rescue Breathing

Next, give 2 rescue breaths:

Transmission of infection between rescuer and patient is extremely rare. As far as we know, HIV or AIDS has never been transmitted via rescue breathing. If you are worried, a barrier can be improvised by slitting a small hole in some sort of material, e.g., glove, plastic bag.

Pinch the person's nose shut using your thumb and forefinger.

Your hand stays on the patient's forehead, maintaining the head tilt.

Your other hand also remains lifting up under his/her chin.

Inhale normally first (not deeply), and then form a tight seal between yours and the patient's mouths.



With your mouth tightly sealed on the patient's, slowly breathe into him/her for one second.

If the patient's chest does not rise it means the air is not going in.

Do two of these breaths.

If the patient's chest does not rise after the first breath you will need to do the head tilt again before attempting the second breath.

For small children: the breath into the child lasts for 1.5 seconds, and chest compressions are performed with these two rescue breaths; *Must Read - Immediate First Aid - Critical First Aid – Circulation – Chest Compressions.*

Be careful with your force of breathe. Only use enough to make the chest rise.

For infants: cover the nose and mouth with your mouth.

The breath into the infant lasts for 1.5 seconds.

Be careful with your force of breathe. Only use enough to make the chest rise.

Abdominal Compressions

If the rescue breaths do not go in, there is still a blockage - use abdominal compressions:

Straddle the patient at the legs.

Place a fist between the breastbone and belly button.

Thrust upwards up to five times to dislodge the obstruction.

Attempt the rescue breaths again.

Do 5 more abdominal compressions if needed, then 2 more rescue breaths.



Repeat the 5 abdominal compressions and 2 rescue breaths until your breaths go in.

Breathing

If breathing is not adequate, treat the underlying cause (if possible).

PROP

Position: put the patient in a **position of comfort**

Reassurance: reassure the patient.

Oxygen: provide 100% **oxygen** if available.

Positive Pressure Ventilation is artificial respiration by mechanical means. The non-mechanical equivalent is rescue breathing. Use one breath every 6 to 8 seconds, which is about 8 to 10 breaths a minute; *Must Read - Immediate First Aid - Critical First Aid – Airway – Rescue Breathing.*

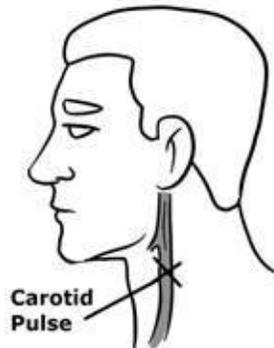
If there is no pulse, you will do CPR instead of just rescue breathing; *Must Read - Immediate First Aid - Critical First Aid – Circulation - Cardiopulmonary Resuscitation.*

Circulation

Pulse

If you didn't check pulse with an emergency role, do so now. Lightly press the pads of your index and middle fingers on either the radial or carotid pulse. Do not use your thumb to check pulse since your thumb has a light pulse of its own.

The carotid pulse is located on the neck in the hollow between the windpipe and the large muscle.



Cardiopulmonary Resuscitation

If there is no pulse, start CPR (Cardiopulmonary resuscitation).

Don't waste time. If you are unsure about whether the heart is beating and you can't find a pulse within a few seconds, just start CPR.

CPR is the combination of chest compressions and rescue breathing.

During CPR, consider three things: airway, breathing and circulation.

Open the airway with the chin lift; *Must Read - Immediate First Aid - Critical First Aid – Airway – Chin Lift.*

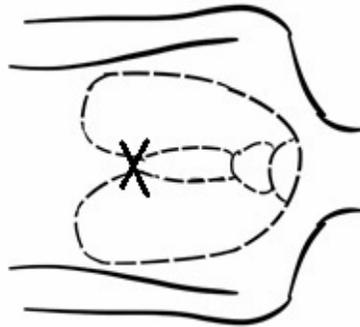
Give two rescue breaths; *Must Read - Immediate First Aid - Critical First Aid – Airway – Rescue Breathing.*

Give 30 chest compressions at the rate of 100 compressions per minute.

Chest Compressions

Kneel at the patient's side, near his or her chest.

Place the heel of your hand on the breastbone (sternum) between the nipples at the bottom of the ribcage, i.e., where there is a little notch.



Place your other hand on top of the one that is in position.

Lock your fingers together pulling them up slightly so they are off the chest wall.

Bring your shoulders directly over the person's sternum.



A chest compression is two parts: compression (pushing down) and relaxation (releasing the chest back up).

Compression and relaxation should go for an equal length of time.

With your hands in position, press downward, keeping your arms straight.

Push down to about a third of the chest depth, then relax to let it return to the normal position.

Push hard and fast.

A cracking sound may be due to the ribs or cartilage cracking; don't worry about it (for now), just keep doing the compressions.

Do 30 compressions for every 2 breaths at an overall rate of about 100 compressions per minute.

For an infant: encircle your hands around the chest and use just your thumbs to compress the chest.



For children aged 1 to 8: compress at about the nipple line.

If there are two rescuers: the person pumping the chest stops while the other gives rescue breaths.

If the victim starts to vomit: turn the patient's head to the side and try to sweep out or wipe off the vomit, then continue with CPR.

When not to do CPR:

If advanced medical care is not readily available (e.g., more than 1 to 2 hours away), you need to make a decision whether to even start CPR or not.

To make a tough decision a little easier, you can follow these points as a standard. Do not start CPR if one or more of the following:

- Ø The patient's core temperature is below 32 °C (90 °F).
- Ø The patient has been underwater without air for more than 1 hour.

Ø The patient has an obvious lethal injury, e.g., massive hemorrhaging (severe bleeding must be blocked before giving compressions).

Also, any time that you do start CPR, you need to decide for how long you will continue. If advanced help is likely, continuing until it arrives is reasonable. If you are unsure whether help will arrive, for how long should you continue? 1 hour? 2 hours? These are decisions you have to make depending on the situation.

Perfusion

If CPR is not needed, check perfusion:

Perfusion is the flow of fluid, e.g., blood, through a certain area of the body. Signs of inadequate perfusion include cold/clammy skin, low mental status, slow capillary refill, weak pulse in extremities, e.g., radial pulse.

If there is inadequate perfusion, treat the cause (if possible) and use PROP; *Must Read - Immediate First Aid - Critical First Aid - Breathing – PROP.*

Testing Capillary Refill

Apply pressure to the skin and then wait to see how long it takes for blood to flow back into the site. A slow capillary refill means a slow return of blood which indicates decreased perfusion. Returning from white to pink in less than 2 seconds is normal. 3 or more seconds and something is probably wrong.

Good places to check capillary refill for general whole body perfusion are the fingers and/or toes.

Severe Bleeding

Well-Aimed, Direct Pressure

Apply well-aimed, direct pressure to the wound.

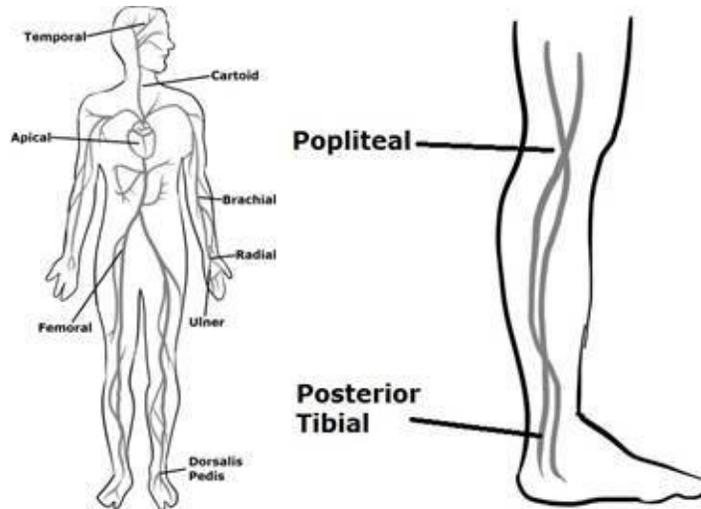
Elevate the wounded area above his/her heart (if possible).

Wait ten minutes then check if bleeding has stopped.

If it is spurting, stick your finger down on the wound and hold it there.

Pressure Point Constriction

If the patient continues to bleed after some time of well-aimed, direct pressure, use pressure point constriction at an arterial pressure point between the injury and the heart; the closer to the bleeding site the better.



Do not perform pressure point constriction for more than 10 minutes as it can result in necrosis (death of body tissue). Be extra careful of the carotid artery, as it hinders oxygen to the brain.

Tourniquet

If the patient is still bleeding, consider carefully whether to apply a tourniquet.

Note: this is a last resort. Only use a tourniquet if there is severe, uncontrolled bleeding that will cause loss of life and no other option is available and/or working.

Long-term use of a tourniquet may cause loss of limb.

To apply an improvised tourniquet:

Find a length of strong, pliable cloth, preferably no less than 5cm wide (2 inches), e.g., backpack strap, clothing, long sock.

Apply it on the limb, preferably with padding underneath, e.g., rolled up clothing. It should be placed between the wound and the heart, approximately 5 to 10 cm (approximately 2 to 4 inches) from the wound.

If possible, wrap it around the limb several times, keeping the material as flat as possible.

Tie a simple overhand knot.

Place a torsion device, e.g., a strong stick on top of the knot, then secure it in place with two overhand knots.

Twist the torsion device just enough to stop arterial bleeding (bright red

bleeding). Continued dark bleeding for a short while is normal in cases of amputation; *Diagnoses and Treatments – Musculoskeletal System – Amputation.*

Once tightened, secure the torsion device in place, e.g., loop the ends of the tourniquet over the ends of the stick and tie them together under the limb.

Note what time you applied it.

Do not cover it.



After 20 minutes of applying the tourniquet, ensure a pressure dressing is in place and bleeding has stopped.

Very slowly, loosen the tourniquet to restore circulation.

Leave the loosened tourniquet in position in case the bleeding resumes.

If transferring the patient to other caregivers, e.g., paramedics, write down the time at which you applied the tourniquet and the letters TK on the patient's forehead.

Nervous System

The nervous system includes the brain and spine.

Checking mental status is the first things you should do after you assess the situation; *Must Read – Immediate First Aid - Critical First Aid – Assess the Situation.*

Spinal Injury

If you suspect a spine injury, or are unsure, do not move the patient unless absolutely necessary; *Must Read - Secondary Exam - Physical Exam - Spinal Assessment.*

Protect and stabilize the spine; *Must Read - Secondary Exam - Physical Exam -*

Spinal Stabilization.

After critical systems have been assessed and all critical problems have been treated (including the ones below), move onto the secondary exam; *Must Read - Secondary Exam.*

Anaphylaxis

Anaphylaxis is a life threatening allergic reaction.

A history of mild allergic reaction does not mean you will never have a severe allergic reaction to the same thing. Often, the first time someone is exposed to an allergen, very little happens, but the second (or third etc.) time there is a major reaction.

Symptoms usually show within minutes of exposure. The faster you treat it the better. Recurrent reactions can occur within 24 hours of the original episode. Treat these in the same way as the initial reaction.

Possible causes of anaphylaxis

Drugs: more common ones are anesthetics, antibiotics like penicillin, dyes injected during x-rays, heart and blood pressure medicines and NSAIDs.

Exercise: often after eating.

Foods: nuts, fruit, seafood *etc.*

Insect stings: bees, wasps *etc.*

Latex: rubber gloves, condoms *etc.*

There are also many unknown causes.

Symptoms of anaphylaxis

Abdominal Pain.

Decreased mental state.

Diarrhea.

Dizziness.

Hives.

Itching.

Nausea.

Respiratory problems.

Shock (Rapid heart rate, low blood pressure *etc.*).

Skin-redness.

Swelling of the mouth and face.

Paresthesias (tingling).

Vomiting.

Weakness.

Treatment for anaphylaxis

Diphenhydramine, e.g., Benadryl: 1 mg/kg of body weight, maximum of 50 mg, every 4 to 6 hours. Chewing the pill will make it work faster.

Rescue Breathing or CPR as needed.

Administer epinephrine if:

There is an obvious major reaction, e.g., difficulty breathing, unconsciousness.

A reaction worsens over a few minutes.

Dosage of epinephrine: 0.01 ml/kg of body weight, maximum of 0.3 ml.

Injections can be repeated every 5 minutes if needed.

Administer diphenhydramine as soon as able.

Consider a corticosteroid, e.g., prednisone Dosage of prednisone: 1 mg/kg of body weight, maximum of 60 mg, once a day.

Observe for at least 24 hours in case of secondary reaction.

If in doubt, administer the epinephrine.

Administering Epinephrine

The easiest way to do this is with a commercial injector, e.g., EpiPen. Patients that have a history of anaphylaxis will probably carry these with them. It is a good idea to have one in your first aid kit just in case, and they are usually allowed on planes.

These injectors have clear instructions written on them. Exact usage varies but basically you remove the cap, hold it firmly in your fist and press it firmly into the patient's thigh.

There is no need to stab the patient with it. That will just cause unnecessary bruising and pain.

Do not put your finger or thumb on the top of the device just in case you inject

Do not put your finger or thumb on the top of the device just in case you inject yourself.

Epinephrine can also be given with a normal syringe.

Heart Attack

A heart attack occurs when the heart is unable to get oxygen due to a blockage of blood flow. Aging people that do not keep in good health are most likely to suffer heart attacks.

Symptoms of Heart Attack

Symptoms vary from person to person and from case to case, i.e., you may not get the same symptoms as a previous heart attack.

Chest pain, tightness or pressure.

Heartburn.

Indigestion.

Nausea.

Pain radiating to the jaw and right arm.

Shortness of breath.

Sweating.

Vomiting.

Weakness, dizziness and light headedness.

Treatment for Heart Attack

Seek advanced medical care as soon as symptoms of heart attack are suspected. If in doubt, seek treatment.

Aspirin: chew in event of heart attack.

Nitroglycerin: a patient with a history of heart attack may have this prescribed. Use as directed.

Oxygen.

Rest.

Pressure Immobilization Technique

The pressure immobilization technique is used for only the most life threatening venomous bites and stings. The idea is to slow the venom's movement into the circulatory system. This buys time until advanced medical care can be given.

The patient must be kept as still as possible, especially the site of the wound. Do not elevate the wound.

In general, only use for:

Australian snakes, all species.

Blue-ringed octopus.

Conus.

Funnel-web spiders.

Applying the Pressure Immobilization Technique

Ideally, use an elastic roller bandage.

Bandage upwards from the lower portion of the bitten or stung limb, and continue up as high as possible.

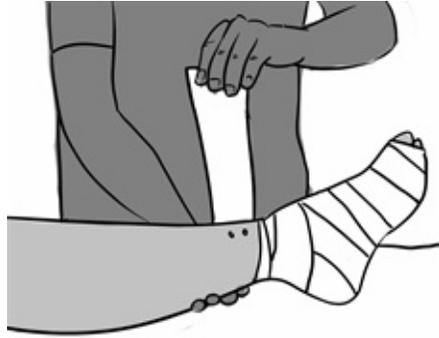
Each wrap should overlap the last.

Ensure the bandage does not impair perfusion; *Must Read – Critical First Aid – Circulation – Perfusion.*

Mark the location of the bite on the bandage.

Immobilize the limb; *Diagnoses and Treatments – Musculoskeletal System – Immobilization.*

Check perfusion frequently as continued swelling may impair it.



Note: do not bandage bites/stings to the head or torso. Keep patient still and seek medical care ASAP.

Sucking Chest Wound

Assume any penetrating wound to the chest is a sucking chest wound.

Symptoms of a Sucking Chest Wound

Bloody froth.

Patient gasping for breath.

Sucking sound.

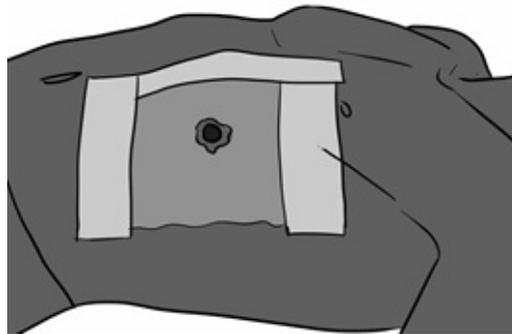
Treatment for a Sucking Chest Wound

Seal the wound with airtight material, taping only three sides so air can escape but not enter.

If no airtight material is available, use your hand.

Monitor the patient's breathing and check the dressing regularly.

You can aid breathing by lifting the untapped side of the dressing as the patient exhales.



Secondary Exam

Once all the critical issues have been addressed, you can move onto the secondary exam.

Unlike critical first aid where you treat the problems as you find them, with the secondary exam you complete the full assessment and then treat them in order of priority.

The assessment is comprised of three areas, physical exam, SAMPLE history and vital signs. The order in which you do them is dependent on the situation.

While doing your exam let the patient know what you are doing and record your findings.

Recording Your Findings

Use the acronym **SOAAP** to record your findings.

Subjective information: history, scene, story and symptoms.

Objective information: exam findings, vital signs.

Assessment: all the problems you found.

Anticipated Problems: any problems that may arise.

Plan: what you are going to do.

Write the patient's personal details at the top, including name, age, sex, birth date, weight, phone number *etc.*

There are many SOAAP (SOAP) Note templates that can be downloaded from the internet, but a pencil and paper is really all that is needed.

Physical Exam

Examine the areas about which the patient has a specific complaint about.

Compare any outer physical complaints to the patient's non-injured side.

Check range of motion, circulation, motor skills, sensation *etc.* Be very careful about forcing something to move or perform an action that is beyond its capability.

Full Body Exam

Depending on the circumstances, a full body physical exam may be needed to discover problems of which the patient may not be aware.

Do this in a systematic manner, from head to toe. Use only as much physical pressure as is necessary to discover injury, or lack thereof. Check the whole body for obvious signs of injury, e.g., bumps, bruises, bleeding.

A stethoscope, pen light, gloves and tongue depressor will be useful.

Head: bumps, bruises, bleeding from orifices *etc.*

Eyes: redness, whether the pupils respond equally to light.

Mouth (inside and outside): redness, sores, dental issues.

Neck: all around neck and back of the head, neck bones (vertebrae).

Chest: use a stethoscope if available and check lungs for abnormal sounds, e.g., wheezing, gurgles, crackles.

Heart: rhythm of heart beat, e.g., fast, slow regular, irregular.

Ribs: possible fracture.

Armpits: injury, parasites (lice, ticks *etc.*), tenderness.

Breast: move your fingers in a circular motion over the breast tissue, starting from where the arm connects to the shoulder and ending at the nipple.

Abdomen: press on the abdomen with your open hand checking for pain, tenderness, swelling, abnormal masses *etc.*

Listen for bowel sounds and note if there is too much or too little.

Check percussion by placing your open hand on the different quadrants of the

Check percussion by placing your open hand on the different quadrants of the abdomen and tap on your middle finger. It should sound hollow.

Liver and spleen: press down on the patient's right side below the rib cage to determine if the liver is enlarged (you won't feel it if it isn't).

An enlarged spleen will appear as a mass on the left side under the bottom of the rib cage.

Spine: check along the patient's spine for evidence of pain or injury. Never press directly on the vertebrae.

Kidneys: pound lightly with a closed hand on each side of the back below the last rib. An injury or infection of the kidneys will result in pain.

Extremities: check each extremity by feeling the muscle groups for pain or decreased range of motion.

Check perfusion; *Must Read - Immediate First Aid - Critical First Aid - Circulation – Perfusion.*

Check for sensation by lightly tapping with sharp and dull sensations on all four extremities (hands and feet), e.g., by using a safety pin.

General strength: place your hands on their thighs and ask them to lift up.

Ask them to grasp your fingers with each hand then try to pull your hand away; if you can't, that's good.

Strength should be about equal on both sides of the body.

Spinal Assessment

If you suspect a spinal injury, e.g., a large fall, and the situation allows, you can perform a spinal test. In a survival situation, this can help you determine whether you need to stabilize the person's spine before moving.

To rule out a spinal injury, the patient should meet the following criteria:

Reliable: cooperative, sober, alert and free of distracting injuries.

No spinal pain.

No numbness or tingling.

No spinal tenderness: using slight pressure, press down the patients back to the sides of the vertebrae; never press directly on the vertebrae.

Normal motor/sensory function in all four extremities done during the

Normal motor/sensory function in all four extremities, done during the extremities test in the physical exam. This does not apply if the extremity has a specific injury that would affect the outcome, e.g., broken wrist.

Spine Stabilization

If the spinal test cannot be passed, stabilize the spine.

Keep the neck and back as stable as possible.

Note: a collar alone does not stabilize the spine.

Consider stabilizing the patient's spine while he/she is on his/her side, especially if patient is already like that, or you have to leave him/her.

Aligning the Body

Before you stabilize the spine, you may have to bring the body back into its correct anatomic position, i.e., standing straight with legs together and arms down his/her sides, but with the patient lying down, preferably on his/her back.

Be very careful.

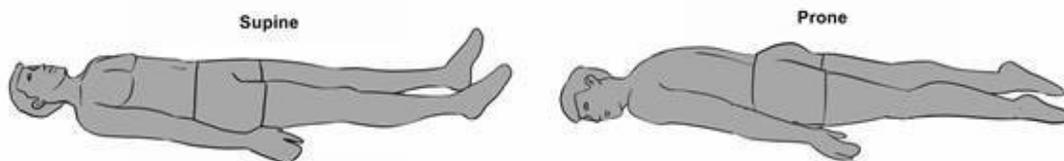
Move only one body part at a time.

Undo kinks.

Straighten joints.

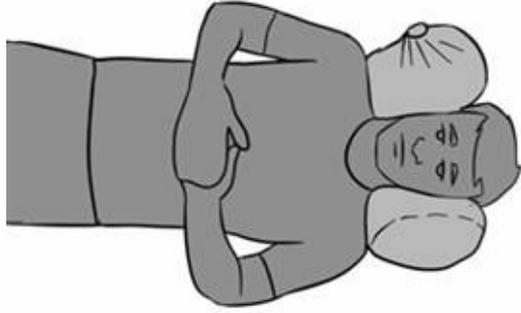
Move arms and legs close to the body.

Stop if increased pain or resistance is met.



If moving the patient, it is preferably to secure him/her well to a rigid litter; *Must Read – Moving a Patient – Improvised Litters – Rigid Litters.*

A rolled up blanket, a sleeping mat or a stuff-sack filled with sand (or similar) are just a few ways you can improvise head stabilization.



History

Talk to the patient. Use the acronym SAMPLE:

Symptoms: what are the patient's **symptoms**?

Allergies: does the patient have any known **allergies** (including medication)?

Medications: is the patient on any **medication**?

Past History: is the problem reoccurring, or does the patient or the patient's family have a **history** of a suspected ailment?

Last: a history of the **last** things that went in and out of the person's body.

Events: a detailed description of the **events** that led up to the problem.

Vital Signs

Pulse

Count the pulse for 15 seconds and multiply it by 4; *Must Read - Immediate First Aid - Critical First Aid - Circulation – Pulse.*

60 to 100 beats per minute is normal.

Respiration

Evaluate for an entire minute.

Normal rate of breaths per minute (BPM) for an adult at rest is 12-18 breaths per minute. Over 20 is a sign of distress.

The younger a child, the faster their respiratory rate, e.g., an infant may have between 30 to 60 breaths per minute whereas a school age child (6 to 12 years) may have 18 to 30.

Note any unusual noises, e.g., wheezing or gurgling.

Blood Pressure

Check blood pressure if the equipment is available.

Blood pressure measures the amount of work the heart has to do to pump blood through the body.

A reading less than 140/90 at rest is normal. It may be high after extreme physical exertion but goes back down after a short while.

High blood pressure may be a medical condition and low blood pressure may mean hemorrhage or shock.

Skin

Check color (red, pale), temperature (hot, cold) and moisture (clammy, dry, moist etc.).

Body Temperature

A normal temperature ranges between 36.1 °C (97 °F) and 37.2 °C (99 °F).

Above 38 °C (100.4 °F) or below 35 °C (95 °F) and there is something wrong. Hyper or hypothermia may be an issue; *Diagnoses and Treatments – Environmentally Induced.*

Mental Status

Gauge with **AVPU**: *Must Read - Immediate First Aid - Critical First Aid - Mental Status – AVPU.*

If there is a problem with the patient's mental status, use the acronym **STOPEATS** to discover the cause:

Sugar: hypo or hyperglycemia; *Diagnoses and Treatments – Circulatory System – Diabetes.*

Temperature: hypo or hyperthermia; *Diagnoses and Treatments – Environmentally Induced.*

Oxygen: abnormal levels of oxygen.

Pressure: increasing ICP; *Diagnoses and Treatments – Head – Brain – Increasing Intracranial Pressure.*

Electricity: trauma from electric shock or problems in the brain.

Altitude: high altitudes can result in various altitude related illnesses; *Diagnoses and Treatments – Environmentally Induced – Altitude Induced*, or very low altitudes (i.e., underwater) can result in various diving related illnesses; *Diagnoses and Treatments – Environmentally Induced – Cold and/or Water Induced - Diving Induced.*

Toxins: drugs, alcohol, poisons *etc.*

Salts: low sodium or potassium levels.

Mass Casualty

In the case of disaster there is a good chance of mass casualty.

A mass casualty is defined as any event where your medical resources are inadequate for the number and severity of injuries incurred.

If you choose to help, your goal is to do the greatest amount of good for the greatest number of people whilst keeping rescuers safe.

Assess the situation as per normal; *Must Read - Immediate First Aid – Critical First Aid – Assess the Situation* Mass Casualty Critical Assessment

Quickly assess and ‘tag’ each patient. You can tag with numbers or colors. There is no international standard, but the following are well recognized (US Standard):

1 or Red: highest priority. Probable loss of life or limb if immediate medical care is not given.

2 or Yellow: needs medical care but can wait 2 to 4 hours. Patient may enter Red over time.

3 or Green: minor injuries. Referred to as the “walking wounded”. Can help with other patients.

4 or Black: no chance of saving. Do not initiate CPR unless the cause is lightning.

Depending on your situation and/or resources, tags that would otherwise be red or yellow may become black. Lack of advanced medical care is a big factor here.

Fix critical problems quickly if possible, but do not spend very much time on any one patient, preferably under 30 seconds.

Tell each patient who you are and that you are there to help. Stay calm and reassure them.

Mass Casualty Primary Assessment Flow Chart

Open airway if necessary:

If victim begins breathing once the airway is restored, tag red.

If patient’s respirations are too slow or fast, tag red.

If airway is open but they are not breathing, tag black.

If breathing is normal, check pulse and perfusion:

If there is no pulse or capillary refill takes longer than 2 seconds, tag red.

If pulse is present and capillary refill is normal, move to mental status:

If patient is unconscious or disorientated, tag red (explosions may cause temporary hearing loss, which is different from disorientation).

If they can follow commands but are unable to get up, tag yellow.

If they follow commands and can get up, tag green.

While doing the above, consider the following:

Elevate legs if there are signs of shock.

If there is any doubt as to the category, always tag the highest priority triage level, e.g., not sure between yellow and red? Tag red.

Once you have identified someone as level 1/red, tag them and move immediately to the next patient unless you have major bleeding to stop.

Only administer CPR if you have sufficient resources.

Protect the spine only if resources are available.

Stop severe bleeding, (use a bystander if available). If bleeding doesn't stop, tag Red.

Once critical assessment and tagging has been completed, move patients in order of priority to a safe area for further treatment and secondary exams;

Must Read - Secondary Exam.

Open Wounds, Skin Infections and Sepsis

Proper wound care is very important in the treatment of many things. Wounds that are not cared for properly can lead to cellulitis (bacterial skin infection), which can then lead to sepsis, which is life threatening.

Open Wounds

An open wound is anything that breaks the skin, e.g., cuts, scrapes, abrasions, punctures.

Treatment for Open Wounds

Control bleeding with well-aimed, direct pressure.

Clean.

Cover with a sterile dressing.

Immobilize high-risk wounds if possible.

Change the bandage and clean the wound regularly.

Monitor for infection and treat as needed.

Open Wound Care

Any open wound must be cleaned in order to minimize the chance of infection.

Use a combination of the following depending on the situation:

Remove all foreign materials as best as you can.

Wash the wound and the surrounding skin with soap and water. Lightly scrub.

Irrigate the wound with at least 100 ml (ideally 1000 ml) of the cleanest water available, and make a final wash with water of drinking quality. Hot water (not scolding) is best.

If there is foreign material that cannot be irrigated, or there isn't enough water, rinse the wound out with antiseptic, e.g., Betadine.

If clean water or antiseptics are not available, consider: Ø Maggots: they will keep a wound open and clean until better treatment can be given. Make sure they do not devour good tissues.

Ø Urine: assuming you do not have a UTI, your urine will be relatively sterile and can be used to clean a wound, but is not an antiseptic.

Cover the wound with a sterile dressing. Any adhesive should not actually touch the wound.

If needed/possible, close it with sutures/staples *etc.*

If in the wilderness and/or a survival situation, it is best not to close a wound. The scar will be bigger, but there is less chance of infection.

Change dressings at least twice a day. If bandage is saturated, additional changes may be required.

Clean the wound with clean drinking water (preferably with no chemicals) every time you change the dressing.

If you see bleeding while changing the dressing, just apply pressure until it stops.

Wet to Dry Dressing

A wet to dry dressing may not be needed for minor wounds, but can be very beneficial for larger ones.

Soak a bandage in sterilized (boiled) water and wring the water out.

Apply it directly onto the wound.

On top of that, place a dry bandage.

Secure it in place.

Debridement

During the healing process you may see blackish material on the edge of the wound. Remove it.

You can scrub it out, or you may need to trim it off.

Impaling Objects

An impaling object is when an item punctures the skin and is still inside, protruding from the patient, e.g., a knife.

Treatment for Impaling Objects

Remove all impaling objects unless doing so would cause further harm.

Exceptions include impaling objects in the globe of the eye or when removal would result in severe pain or bleeding.

After removal, clean and treat as an open wound; *Must Read - Open Wounds, Skin Infections and Sepsis - Open Wounds.*

Skin Infection and Sepsis

Any wound is susceptible to infection, especially if not cared for properly.

If an infected wound is not treated, it can lead to sepsis and, consequently, death.

Symptoms of Local Skin Infection

These symptoms are present at the site of the infection: Bad odor.

Discomfort/pain.

Heat on touch.

Pus and/or a cloudy fluid.

Redness.

Swelling.

Tenderness.

Treatment for a Local Skin Infection

Rest and elevate the infected limb.

Drain the puss, incise if needed; *Diagnoses and Treatments – Integumentary System – Abscesses.*

Irrigate.

Warm water soaks can be soothing.

Consider immobilization of limb.

Pharmaceuticals:

Note: the body can sometimes resolve the infection on its own, even more so if it is cleaned well.

Antibiotic: amoxicillin/clavulanate 500 mg every 12 hours for 7 days, or for 3 days following resolution of acute inflammation or 875 mg every 12 hours for 7 days or until 3 days following resolution for severe cases.

Antibiotic: ciprofloxacin 500 mg every 12 hours for 7 days or until 3 days following resolution or 750 mg every 12 hours for 7 days or until 3 days following resolution for serious cases.

Antibiotics, other: amoxicillin, ampicillin, cephalexin, levofloxacin, metronidazole.

Alternative/Natural Remedies: Plantain leaves: poultice.

Tannin: compresses or direct application.

Honey: topical application.

Symptoms of Systemic Infection (Sepsis)

Blistering.

Fatigue.

Fever and Chills.

Malaise (general sick feeling).

Muscle ache.

Pain.

Red streak.

Treatment for Systemic Infection (Sepsis)

Same treatment as local skin infection.

Consider surgical draining. Advanced medical care will be needed.

Pharmaceuticals:

Antibiotic: ampicillin.

Moving a Patient

Moving a patient should only be done if absolutely necessary, especially if they are not in a stable condition.

When moving, your aim is to cause the least amount of trauma to the patient and yourself.

If there is a suspected spinal injury, it is always better to move the patient along the long axis of the body.

Correct Lifting Technique

To prevent injury to yourself when lifting a patient (or anything), keep your back straight and lift with your legs.

Avoid twisting and keep the weight close to your body.

Move in smooth motions, i.e., avoid jerking.

Drags

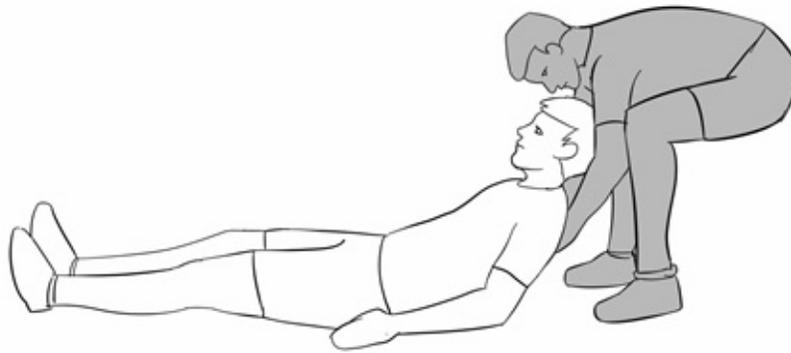
Drags are best used over a short distance and fairly smooth terrain. They are useful if the situation is time sensitive and/or the patient is too heavy to carry.

Be careful if walking backwards.

Basic Drag

Pull the patient by his/her clothes or from under his/her arms.

The patient's head rests on your forearms.



Blanket Drag

Roll the patient onto a blanket or something similar (raincoat, tent etc.).

Pull the blanket with the patient on it to safety.



Carries

Backpack Carry

Essentially, the patient is placed into a backpack.

You put the patient on your back, just like you would a backpack.

Cut leg holes in the base of the pack if needed.

Chair Carry

At least two rescuers are needed for a chair carry.

The patient is carried whilst sitting in a chair.

One rescuer lifts the back of the chair whilst the other lifts the front legs.



Fireman's Carry

This can be difficult if the patient is larger than you.

Crouch down and grab the patient's right wrist with your left hand and position it over your shoulder.

Wrap your arm around the patient's legs (or between them) to grab around the patients' right thigh.

Stand up (using leg muscles) and adjust the patient's weight to a balanced and comfortable position.

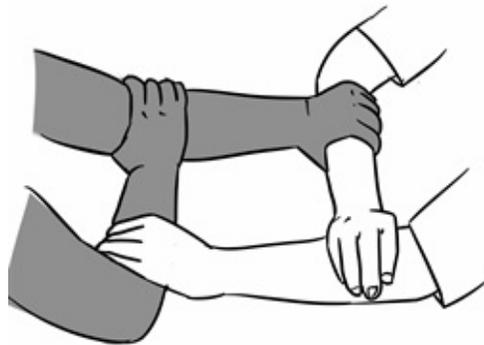


Four-Hand Seat

Two rescuers use their arms to create a 'seat' on which the patient can sit and be carried to safety. The patient must be able to support himself/herself by holding around the rescuers' backs.

Each rescuer holds his/her own left forearm with the right hand, palm facing down.

The two rescuers then use their free hands to grab each other's respective forearms in order to make a square for the patient to sit on.



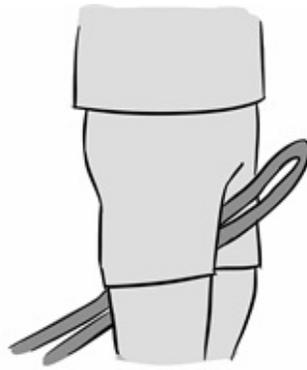
Improved Harness Carry

The improvised harness carry is a secure way to carry a patient on your back. Place padding in-between the harness and body for comfort, especially around the shoulder straps.

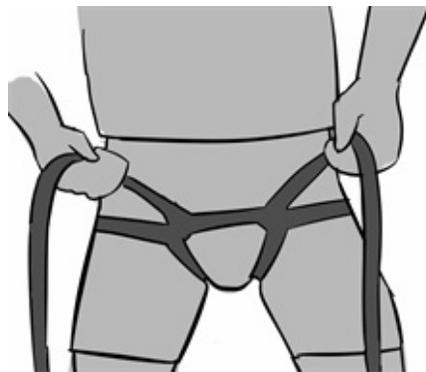
Find some type of rope about 50cm (20in) long. The wider the better (within reason). Thick webbing is ideal.

Make a bight (loop) in the center of the webbing.

Put this loop through the patient's legs, from back to front.

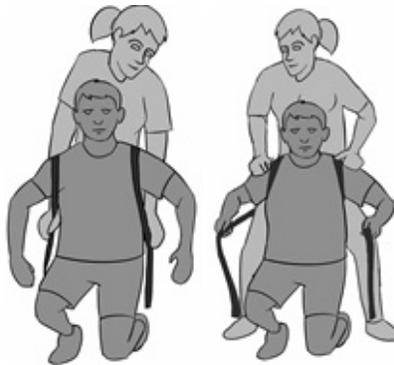


The ends wrap behind each leg respectively and then pass through the loop at the front.



Kneel down in front of the patient with your back towards him/her.

Bring the two ends over your shoulders and then back through the patient's legs.



Loop to the outside of the patient's legs and tie the ends together just below your chest so it is tight but comfortable.

Pass the ends through their respective shoulder straps and then tie them off.

Papoose Sling

The papoose sling is useful for carrying infants and small children.

Tie a rectangular piece of material around your waist and neck to form a pouch at either your front or back.

Place the child inside.



Piggy Back

The patient climbs on your back and holds on.

If the patient is unconscious, you can grab the patient's arms and cross them around your chest.

Whilst keeping a straight back, lean forward slightly to help lift the patient off the ground.



Supported Piggyback

A length of rope (approximately 5 m in length) or likewise material can be used to support a patient that you piggy back. A wider material will add comfort as will padding.

Place the center of the rope behind the patient and bring the end forward under each armpit.

The ends come over your shoulders and then wrap around the patient's thighs before being secured around your waist.



Two Person Carry

One rescuer hugs the patient from behind at his/her chest.

The second rescuer is in front of the patient and faces away from him/her, lifting the patient's legs.



Wheelbarrow Carry

The wheelbarrow carry requires 3 rescuers. It is good for long distances.

Two rescuers stand next to each other, facing the direction of travel.

The patient places his/her arms over these two rescuers' shoulders.

A third rescuer is in front of the patient, also facing the direction of travel, and carries the patient's legs over his/her shoulders.



Improvised Litters

There are two basic types of litters, non-rigid and rigid.

Non-rigid litters are faster to improvise but are not good for those with potentially critical injuries.

The improvised rigid litter is used when all other methods of transporting the patient are unsuitable.

It is never good practice to move a patient with a suspected spinal injury in any improvised litter, but if there is no way around it, a rigid litter is preferable.

Should there be a doubt about what to use, use a rigid litter.

Ensure spine stabilization; *Must Read - Secondary Exam - Spine Stabilization.*

When moving the patient, move in small increments, preferably using axial movement as opposed to sideways movement.

The person at the head calls the movement.

Extra care must be taken when making a stretcher for a person with a possible spinal injury. Pad it well. The patient must be very well secured, i.e., unable to slide. You can achieve this by crossing straps and padding any gaps.

Patient Packing

When transporting patients in an improvised litter:

Elevate the injured limb.

Elevate the head slightly.

Keep legs elevated if in shock.

Lay unconscious patients on their side.

Give them something to hold.

When securing the patient you can use padding (blankets, sleeping bags, clothes etc.) to increase comfort, stability and insulation. When doing so: Allow them to see what is happening around them.

Construct a diaper if needed.

Ensure the litter is easily moved.

Ensure the patient is still accessible for assessment.

Place some padding under the knees to prevent full extension.

Protect the patient from the environment, e.g., falling debris.

Non-Rigid Litters

Many different non-rigid litters can be made depending on what you have available, e.g.:

Branches and heavy duty parkas.

Paddles with life jackets.

Poles and packs.

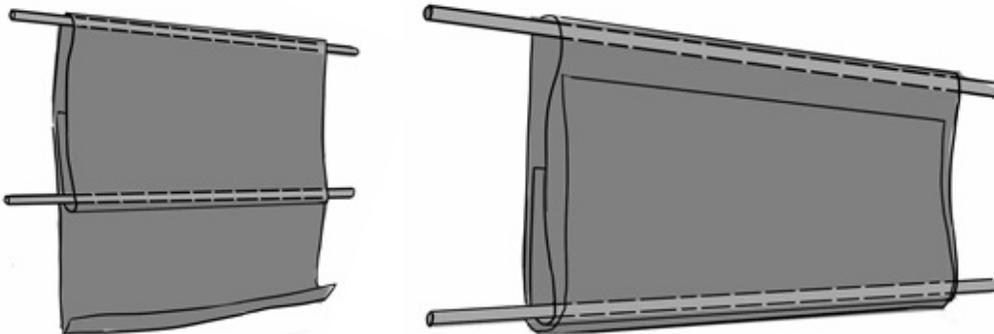
Poles with rope.

Blanket Litter

Items needed are 2 fairly straight pole-like objects, e.g., branches and a large blanket or similar, e.g., tent, tarp.

Wrap the blanket around the poles as many times as possible. The more times you wrap it, the more secure it will be.

The patient's weight holds it all together.



Rope Litter

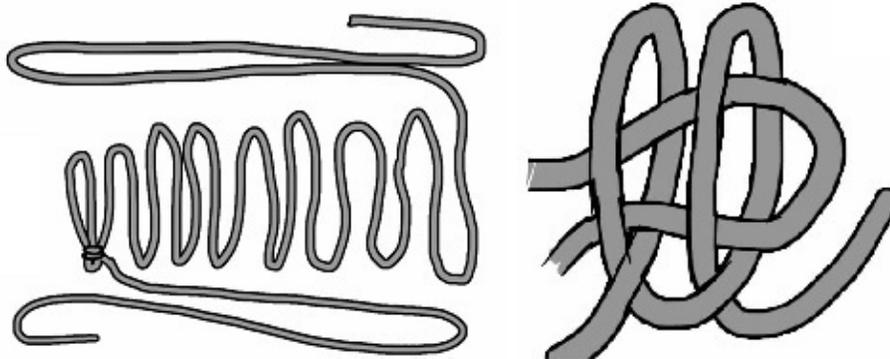
An entire litter can be made of rope if needed.

Lay the rope on the ground in a zigzag type formation, forming approximately 8 loops on the left and 8 loops on the right.

The total length should be about the same size as the finished litter.

Ensure you have enough rope leftover on either end to tie off each loop.

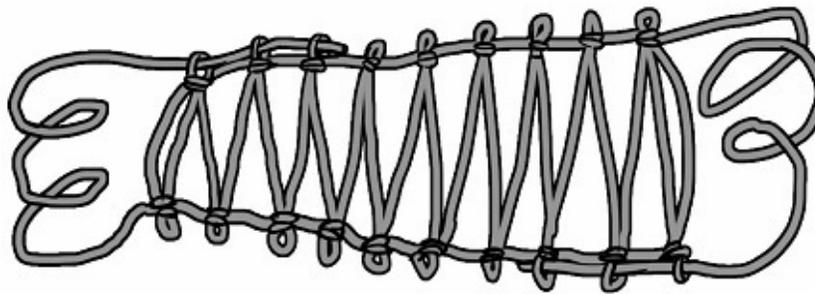
Make sure the loops won't slip through these tie off knots. A clove hitch works well.



Thread the leftover rope through the ends of the loops. This ensures the knots won't slip off the bends.

Tie the ends off.

Improvements can be made by using poles and adding lots of padding.



Rigid Litters

Kayak Litter

A kayak can create a great rigid litter but requires destroying the kayak if it is not an open deck.

Remove the seat, flotation materials and the upper deck if needed.

Mummy Litter

This type of litter is sturdier than most improvised litters and adding more insulation, e.g., a sleeping bag, can help if the patient is suffering hypothermia or similar.

The downside is that the patient is severely restricted and enclosed which may have a claustrophobic effect.

The following equipment is needed:

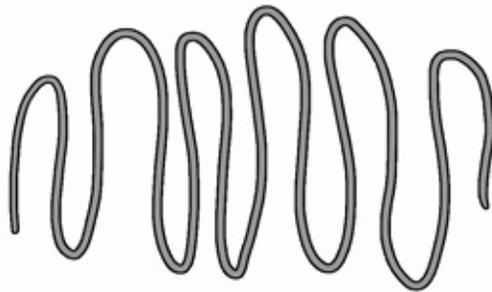
Ø Padding (sleeping pads, clothing etc.).

Ø Poles (skis, paddles, branches etc.).

Ø Rope.

Ø Tarp (blanket etc.).

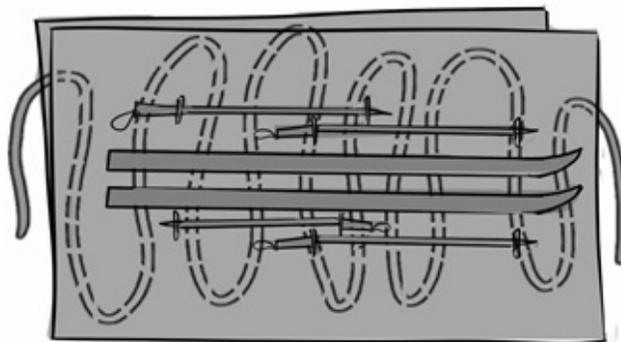
Lay the rope out in U-shaped loops that taper off at the ends.



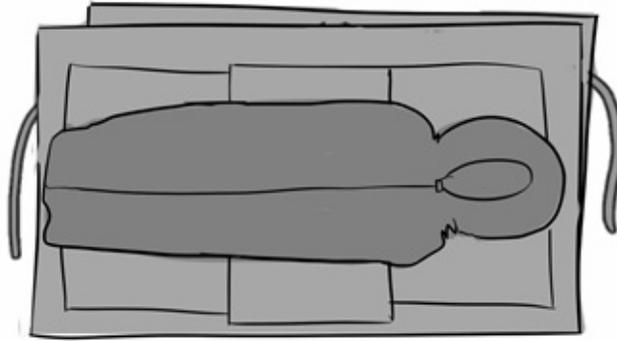
Tie a loop at the front end of the rope.

Put the tarp on top of the rope.

Next place the pads down; then lay the poles out as the patient would lie.

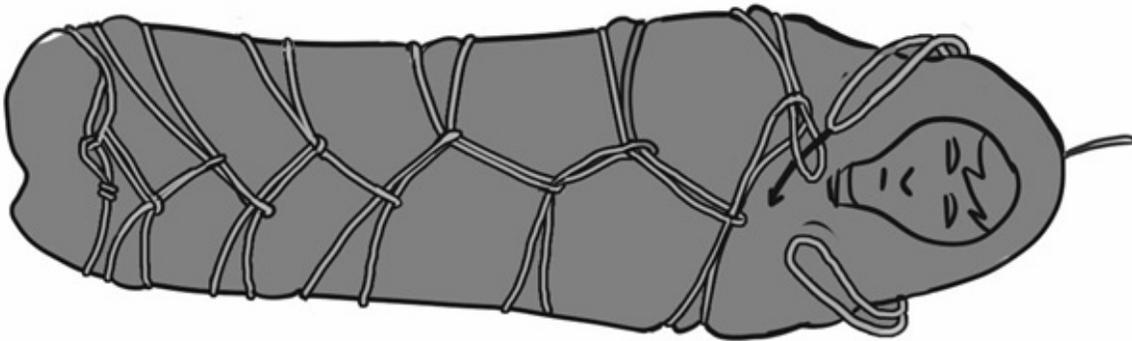


Put lots of padding on top of the poles, and then the patient goes on top of the pads.



Close the daisy chain by bringing one loop through the pre-tied loop, then continuing to 'thread' these loops together to enclose the patient.

Once you reach the patient's armpits, bring a loop over each shoulder and tie it off.



Pack ShortBoard

This method will work with either an external or internal framed backpack.

Turn the pack 'face' down.

The patient lies on the pack with his/her head on the padded hip belt.

Secure the patient to the pack.

The hip belt can be used to strap down the patient's head. Put lots of padding between the hip belt and the patient's head if possible.



Carrying a Litter

The more people you have to carry the litter the better.

Ideally, you will have 4 to 6 people actually carrying the litter, as well as 2 people clearing the path.

Extra people are useful to rotate the carriers. It can be done without stopping (carefully) with the fresh people coming in from the back. Everyone then moves up, which allows the two people at the front to have a rest. These two people then move to the back. This can be done continuously so everyone gets a periodic rest from carrying the litter.

The patient is usually carried with his/her feet first in the direction of travel. One exception might be when going uphill, in which case the head should be higher.

Frequently check vital signs.

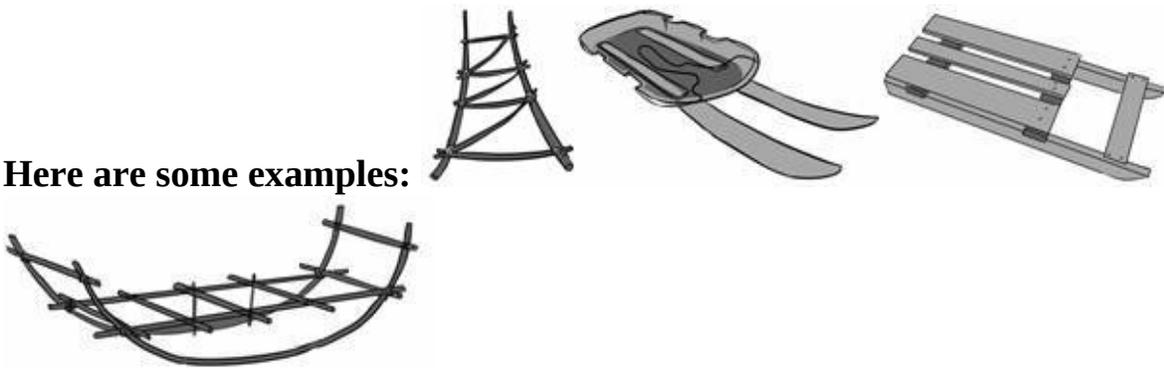
For high angled elevation, i.e., if ropes are needed, ensure the patient is secured to the litter well.

Improvised Sled/Sledge/Toboggan

Constructing an improvised sled-type vehicle may be useful if moving the patient over long distances, depending on the terrain. Also, if you have something to drag it other than manpower, it saves a lot of energy, e.g., dog, motor sled.

There are many ways they can be constructed. If you have a pair of skis, they come in very handy. Ensure the patient is very well secured and attach a way to drag it, e.g., rope.

Here are some examples:



PART II
DIAGNOSES AND TREATMENTS

ENVIRONMENTALLY INDUCED

Allergic Reactions and Hay-fever

An allergic reaction is actually a defense of the body. It is an over-reaction of the immune system to an otherwise harmless substance.

Although knowledge of a previous history of allergic reaction can help identify the cause, it is not set in stone. Allergic reactions can happen even without precedent, and previous allergies may go away. Also, the severity of reactions is not always the same. What might be eye irritation one time may result in anaphylaxis the next; *Must Read - Immediate First Aid – Anaphylaxis*.

Almost anything can cause an allergic reaction. It is dependent on the person. Some common examples are animals, dust, foods (usually within 30 minutes), insects (allergic reaction from stings usually occur within 5 minutes), medications (usually within 30 minutes) and plants.

Symptoms of Allergic Reactions

Symptoms are varied. Some common ones are: Eye irritation and/or redness. The big difference from an eye infection is the lack of milky discharge.

Gastrointestinal problems, e.g., diarrhea.

Hives.

Rash.

Sneezing.

Stuffy nose.

Swelling.

Wheezing.

Treatment for Allergic Reactions

Treat symptoms.

Clean, dry and ventilate area well.

Remove cause.

Monitor for signs of anaphylaxis; *Must Read - Immediate First Aid – Anaphylaxis*.

Pharmaceuticals: Antihistamine.

Alternative/Natural Remedies: For hives or rashes, make a poultice out of fresh cilantro and apply it topically.

Prevention of Allergic Reactions

Avoid contact with known irritants.

Long clothing.

Topical creams as barriers.

Post-exposure washes.

Hay-fever

Hay-fever is a common allergic reaction specifically to do with something that has been breathed in, e.g., dust, fungi, pollens.

Symptoms of Hay-fever

Irritated eyes.

Itchy skin.

Itchy throat.

Nasal congestion.

Red eyes.

Sneezing.

Tearing.

Treatment for Hay-fever

Treat symptoms.

Clean, dry and ventilate area well.

Remove cause.

Pharmaceuticals: Antihistamine.

Altitude Induced

There are a variety of conditions that can occur when going into high altitudes and, as with most things, prevention is the best option.

Only a few of the more severe and/or more common conditions are detailed here. As a 'cure-all', if someone gets sick and you can't figure it out, you should descend.

General Prevention of Altitude Induced Illnesses

Do not consume alcohol.

Maintain adequate hydration and nutrition (a 70% carbohydrate diet may help).

Take the time to acclimatize.

Train for endurance and strength before going to high elevations.

Acclimatizing to Altitude

Make day trips to a higher altitude with a return to lower altitude for sleep.

Mild exercise may be helpful, but extreme exercise may have the opposite effect.

Above 3000 m (10 000 ft.) ascend no more than 1000 m (3000 ft.) in a 24 hour period, and have a rest day. Rest every 2 to 3 days.

Acetazolamide can be taken 24 hours before the ascent and during until acclimatization has occurred, which is usually after 48 hours at the maximum altitude.

Dexamethasone is another option for those that can't take acetazolamide, but it has a greater chance of causing side effects.

Ibuprofen may help. Administer until the highest altitude is attained for 48 hours.

Acute Mountain Sickness (AMS)

Rapid change in elevation may cause a condition known as altitude sickness or acute mountain sickness (AMS).

AMS occurs most commonly when approaching 2400m (8000 feet) above sea level although there are many cases of AMS occurring at lower altitudes. It is usually aggravated by exertion.

Symptoms of AMS

Mild AMS most commonly occurs at altitudes over 2500 m (8000 ft.)

Symptoms are similar to being hung-over and include: Dizziness.

Headache (often precluding AMS).

Increased heart rate.

Insomnia.

Fatigue.

Lack of appetite.

Nausea.

Pins and Needles/tingling.

Shortness of breath.

Vomiting.

Symptoms of Severe AMS

Chest congestion.

Confusion.

Cough that may produce blood and/or phlegm.

Cyanosis (blue, gray or purple discoloration of the skin).

Dehydration.

Indifferent behavior.

Loss of coordination.

Unconsciousness.

Treatment for AMS

Avoid narcotics.

Maintain hydration and nutrition.

Stop ascending.

Descend if symptoms do not dissipate after 24 hours.

Pharmaceuticals: Acetazolamide: 200 mg orally every 8 hours, maximum 1 gram/day.

Dexamethasone: 3 mg/8 hours.

Nausea medications.

HAPE and HACE

High-altitude pulmonary edema (HAPE) and high-altitude cerebral edema (HACE) occur when the high-altitude causes edema in the lungs (pulmonary) or brain (cerebral).

Edema is basically an accumulation of fluid resulting in swelling.

Both HAPE and HACE can be life threatening, and they can occur together. Treatment for both is the same.

Symptoms of HAPE

Cough: mild and dry to begin, becoming more productive in later stages.

Cyanosis (blue, gray or purple discoloration of the skin).

Increased pulse and respiratory rate.

Fatigue.

Fluid in lungs resulting in a gurgling sound (rales).

Mild fever.

Shortness of breath.

Weakness.

Symptoms of HACE

Confusion.

Decreased consciousness.

Hallucinations (rare).

Lethargy.

Seizures (rare); *Diagnoses and Treatments – Head – Brain – Seizures.*

Severe headache.

Vomiting.

Treatment for HAPE and HACE

Descend as much as possible, at least 500m.

PROP; Must Read - Immediate First Aid - Primary Assessment Detailed – Breathing.

Consider hyperbaric bag, preferably after descent.

Pharmaceuticals:

Acetazolamide: every 8 to 12 hours and reduce dosage as symptoms decline.

Dexamethasone: 4 mg every 6 hours until at safe elevation.

Nifedipine (Procardia): for HAPE. 20 mg every 6 to 8 hours. **Note:** will lower blood pressure.

Sildenafil (Viagra): helps to treat HAPE.

Inhaled beta-agonists, e.g., Salmetero: helps to treat HAPE.

Prevention of HAPE and HACE

Acetazolamide: start a couple of days before the planned ascent.

Dexamethasone: HAPE preventative, 4 mg every 12 hours.

Nifedipine (Procardia): HAPE preventative, 20 mg every 6 to 8 hours, **Note:** will lower blood pressure.

Sildenafil (Viagra): HAPE preventative.

Inhaled beta-agonists, e.g., Salmetero: HAPE preventative.

Alternative/Natural Remedies: Ginkgo Biloba.

HAFE

High -altitude flatus expulsion (HAFE) is the occurrence of flatulence as a result of high-altitude. It is an inconvenience but generally harmless.

Treatment for HAFE

Carbohydrate diet.

Descent.

Pharmaceuticals:

Simethicone: 80 mg.

High-Altitude Pharyngitis and Bronchitis

High-altitude pharyngitis and bronchitis usually occurs at over 2400 m (8000 ft.).

Symptoms of High-Altitude Pharyngitis and Bronchitis

Chronic cough which can be either dry or productive.

Dry or cracking nasal passages.

Reddened and painful throat.

Treatment for High-Altitude Pharyngitis and Bronchitis

Hydration.

Lozenges or hard candies.

Nasal saline spray.

Steam inhalation.

Pharmaceuticals: Albuterol (common asthma medication).

Peripheral Edema

Peripheral edema is swelling of the soft tissues, usually in hands, face and ankles.

Treatment for Peripheral Edema

Will self-resolve when patient is acclimatized.

Examine for AMS, HAPE, or HACE; *Diagnoses and Treatments – Environmentally Induced – Altitude Induced.*

Pharmaceuticals:

Acetazolamide: 125 to 250 mg.

Animals: Marine

General Diagnoses and Treatments

Specifics depending on the creature are given, but for ease of memory and in case the cause is unknown, here are some general diagnoses and treatments.

Marine Toxins

These include stings from jellyfish, corals and anemones.

General Symptoms of Marine Toxins

Local pain.

Swelling.

Tenderness.

General Treatment for Marine Toxins

Do not rub/scrape.

Topical decontaminant, e.g., vinegar.

If decontaminant is more than 2 minutes away, rinse wound with seawater then apply decontaminant when available.

If seawater is not available, use freshwater very forcefully.

Remove nematocysts.

Shave site. Be sure to use shaving cream or similar.

Treat wound; *Must Read - Open Wounds, Skin Infections and Sepsis - Open Wounds.*

Spiny Injuries

These come from marine life such as stingrays, cat fish, stone fish *etc.*

General Symptoms of Marine Spiny Injuries

Puncture wounds.

Severe pain.

Tenderness.

May have systemic symptoms.

General Treatment for Marine Spiny Injuries

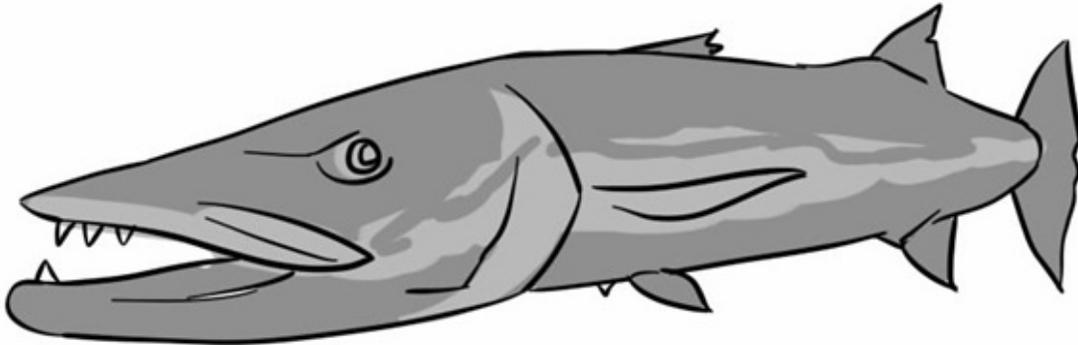
Soak in water as hot as you can tolerate for about an hour or until relief.

Remove any spine fragments during soak.

Treat wound; *Must Read - Open Wounds, Skin Infections and Sepsis - Open Wounds.*

Barracuda

Barracuda are large saltwater fish that can grow up to 2 m long. They are found in tropical and subtropical oceans all around the world, especially near coral reefs and near the top of the water. They are not usually dangerous to humans, but if bitten they can cause a nasty wound.



Treatment for a Barracuda Bite

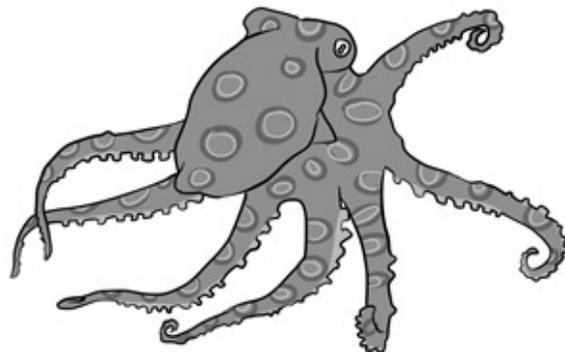
Treat wound; *Must Read - Open Wounds, Skin Infections and Sepsis - Open Wounds.*

BlueRinged Octopus

The blueringed octopus is a relatively small octopus characterized with yellowish skin and blue and black rings. When agitated, the brown patches will darken and pulsating, blue rings or clumps will appear.

Although they are most commonly found in northern parts of Western Australia, New South Wales and South Australia, they are also present in the eastern Indo-Pacific up to Japan. They enjoy tide pools and coral reefs in shallow coastal waters.

The blue ringed octopus injects its victims with a cocktail of venoms, one of which is the paralytic tetrodotoxin; it is thought that it may be possible to feel minor effects of the envenomation even without being bitten, i.e., just by being near it.



Symptoms of BlueRinged Octopus Envenomation

Initial:

Painless or minimal discomfort.

Small laceration with very minimal blood.

Little or no discoloration.

Within 10 minutes: Difficulty breathing.

Difficulty speaking.

Difficulty swallowing.

Nausea and vomiting.

Numbness.

Paresthesia (tingling)

Paralysis (tingling).

Progressive muscular weakness.

Visual disturbances.

In severe cases:

Cerebral anoxia (deficiency of oxygen in the brain tissue).

Paralysis.

Respiratory failure.

Treatment for BlueRinged Octopus Envenomation

Apply Pressure Immobilization bandaging; *Must Read - Immediate First Aid - Pressure Immobilization Technique.*

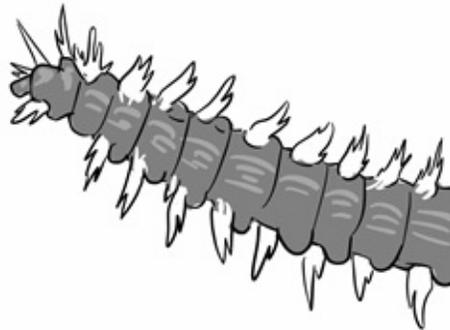
Rescue breathing; *Must Read - Immediate First Aid - Critical First Aid – Airway – Rescue Breathing.*

The patient will go into respiratory failure, but the effects of the venom will subside after some hours. Rescue breathing must be continued until the patient regains the ability to breathe on his/her own.

Bristle-Worm

Bristleworms are segmented worms with an elongated body. They can be as small as 3 cm, or as large 60+ cm. They come in a variety of colors with the larger ones usually being brown or gray.

There are many types of bristle-worms, some of which have spines that, when handled, may dislodge into the skin.



Symptoms of a Bristle-Worm Injury

Burning sensation.

Flaking of the skin.

Itching.

Raised red rash.

Swelling in the soft tissue.

Treatment for a Bristle-Worm Injury

Remove large bristles with forceps.

Dry the skin gently.

Apply sticky adhesive tape and then peel off to remove embedded spines.

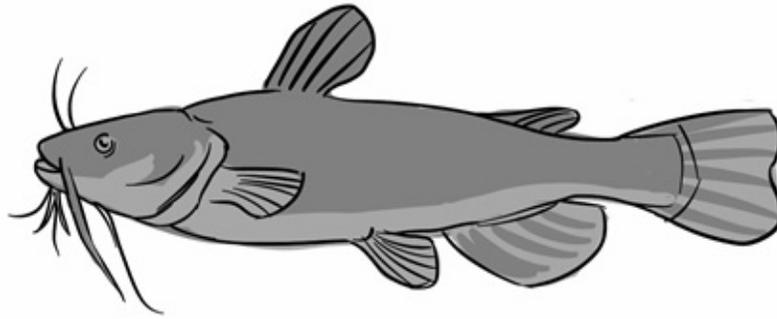
Vinegar for 15 minutes will help soothe the pain.

Topical corticosteroid: apply a light layer.

Systemic corticosteroid for severe cases, e.g., prednisone.

Catfish

Catfish are found all over the world, and the venom is located in their fin-spines. Some even secrete toxin through their skin. The ones that are most likely to sting humans are freshwater catfish and, to a lesser extent, those found amongst coral.



Symptoms of a Catfish Sting

Cyanosis at sting site (blue, gray or purple discoloration of the skin).

Fainting.

General weakness.

Increased perspiration.

Involuntary muscle movement.

Low blood pressure.

Respiratory distress.

Scalding, stinging or throbbing pain which can last up to 48 hours, but generally dissipates within 60 minutes.

Swelling.

Treatment for a Catfish Sting

Soak in water as hot as you can tolerate for about an hour or until relief.

Remove spine fragments during the soak.

Treat wound; *Must Read - Open Wounds, Skin Infections and Sepsis - Open Wounds.*

Conus

Conus creatures encompass a range of predatory sea snails of various sizes found mainly in the tropics, e.g., cone shells, cone snails.

All conus snails are venomous and use this venom to paralyze their prey by shooting dart-like teeth from their mouths.

Symptoms of Conus Envenomation

Initial: Cyanosis (blue, gray or purple discoloration of the skin).

Local numbness.

Mild sting.

Advanced: Altered vision.

Difficulty swallowing.

Fainting.

Itching, tingling, tickling, pricking or burning of skin.

Loss of neurologic reflexes, e.g., knee jerk reaction.

Nausea.

Voice loss.

Weakness.

Muscular paralysis.

Respiratory failure.

Cardiac failure.

Coma.

Treatment for Conus Envenomation

Pressure immobilization technique; *Must Read - Immediate First Aid - Pressure Immobilization Technique.*

Coral

Cuts and abrasions from corals may be nothing but a cut, but sometimes there may be toxins present.

Symptoms of Coral Toxin Contact

Initial reaction: Itching.

Redness.

Stinging pain.

Followed by: General sick feeling.

Low-grade fever.

Red, raised welts.

Progressing to: Skin Infection.

Tissue sloughing (shedding of dead tissue).

Ulceration.

Treatment for Coral Toxin Contact

Subside stinging with diluted vinegar (half-strength) followed by copious water irrigation.

Treat as an open wound with aggressive cleaning and wet to dry dressings; *Must Read - Open Wounds, Skin Infections and Sepsis - Open Wounds.*

Jellyfish

Jellyfish sting with a nematocyst, usually triggered by physical contact. Contact with a tentacle can fire many stinging cells.

Anemones, fire coral and hydroids work in a similar way and are treated as such.

Due to the large variety of jellyfish, knowing which ones are poisonous often requires local knowledge. The best thing to do is to stay away from all jellyfish.

Jellyfish-safe sun-block and stinger-suits are also available in cases where entering infested waters is unavoidable.

Symptoms of Jellyfish Stings

There is a massive range of symptoms depending on the specific creature, and they span over most of the body's functions.

Seeing the creature and/or recognizing it by the site of attack is the best indicator. Local knowledge is needed.

Treatment for Jellyfish Stings

Do not rub/scrape.

Topical decontaminant, e.g., vinegar.

If decontaminant is more than 2 minutes away, rinse wound with seawater then apply decontaminant when available.

If seawater is not available, use freshwater very forcefully.

Remove nematocysts.

Shave site. Be sure to use shaving cream or similar.

Pharmaceuticals:

Corticosteroids.

Treatment for Serious Reactions of Jellyfish Sting: Seek advanced medical care.

Maintain the airway and administer oxygen.

Treat anaphylaxis if needed; *Must Read - Immediate First Aid – Anaphylaxis.*

Try to identify species.

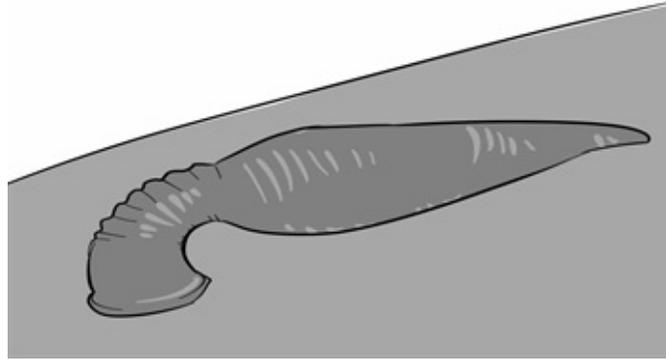
If eye damage:

Irrigate with saline.

Seek medical help.

Leeches

Leeches suck the blood of their hosts until they are full, then they fall off. It is usually painless and can go unnoticed.



Symptoms of a Leech Bite

Slow-healing, freely bleeding wound.

Possible allergic reaction, e.g., rash.

Treatment for a Leech Bite

Removal:

Do not rip off.

Apply a few drops of alcohol or vinegar.

Holding a flame near site may also help.

After removal:

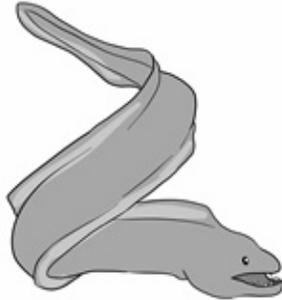
Inspect for retained mouthparts.

Treat wound; *Must Read - Open Wounds, Skin Infections and Sepsis-Open Wounds.*

Pharmaceuticals: Hemostatic.

Moray Eel

Morays have an extremely forceful bite which can cause severe puncture wounds. There are many different species, but the basic appearance is similar.



Treatment for Moray Eel Bite

Treat as open wound; *Must Read - Open Wounds, Skin Infections and Sepsis - Open Wounds.*

Sea Cucumber

Sea Cucumbers are found all over the world. They have an elongated body with leathery skin and produce a toxin in their tentacles.



Symptoms of Sea Cucumber Toxin Contact

Dermatitis.

Eye irritation.

Severe illness and possible death if toxin is ingested.

Treatment for Sea Cucumber Toxin Contact

Wash with soap and water.

Topical detoxification, e.g., vinegar.

If eye damage: Anesthetize.

Irrigate.

Seek advanced medical help.

Sea Lion

A bite from a seal or sea lion will result in an infection known as seal finger. It can also result from any contact of an open wound (even very minor) with the animal's mouth, bones or coat.

Symptoms of Seal Finger

Pain.

Swelling of digits.

Taut, shiny skin.

Treatment for Seal Finger

Treat wound; *Must Read - Open Wounds and Skin Infections and Sepsis - Open Wounds.*

Pharmaceuticals: Antibiotic: tetracycline 1500 mg initially, then 500 mg every 6 hours for 4 to 6 weeks.

Sea Snake

Sea snakes are usually found in warm coastal waters from the Indian Ocean to the Pacific. They are closely related to venomous Australian snakes, and, as such, many of them are very venomous. Fortunately, most bites do not result in envenomation.

Most sea snakes are completely aquatic, but some of them can come on land.

Symptoms of Sea Snake Envenomation

Initial symptoms may not show for up to 8 hours.

Initial:

Anxiety.

Euphoria.

Malaise (general unease).

After 30 to 60 minutes: Muscle aching and stiffness.

Dysarthria (difficult in using speaking muscles).

Sialorrhea (excessive salivation).

After 3 to 6 hours:

Cyanosis (blue, gray or purple discoloration of the skin).

Dilated pupils.

Moderate to severe pain.

Muscle spasms, starting from the bottom and moving up.

Loss of vision (severe cases).

Nausea.

Vomiting.

Treatment for Sea Snake Envenomation Pressure immobilization technique; *Must Read - Immediate First Aid - Pressure Immobilization Technique.*

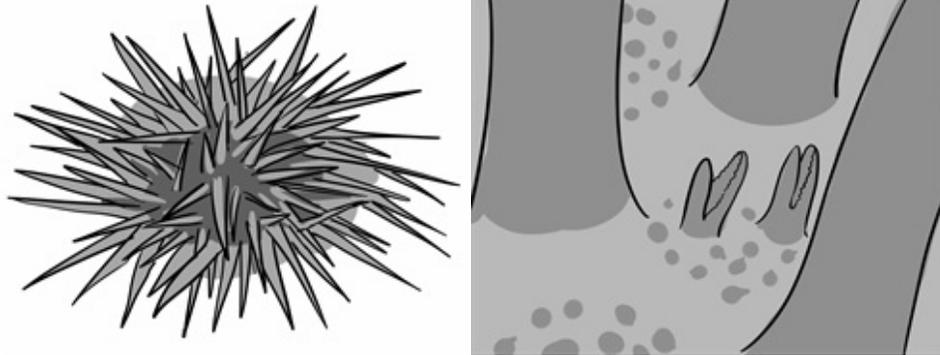
PROP; *Must Read - Immediate First Aid - Critical First Aid - Breathing – PROP.*

Pharmaceuticals:

Antivenin (anticipate anaphylaxis); *Must Read - Immediate First Aid – Anaphylaxis*).

Sea Urchin

Sea urchins are found in all oceans and come in a variety of colors. They can envenom their victims either via their spine or their pedicellariae (pincer type organs).



Symptoms of Sea Urchin Envenomation

Aphonia (inability to produce voice).

Black or purple markings.

Burning.

Dizziness.

Fainting.

Hypotension.

Joint pain.

Malaise (general unease).

Muscle aching.

Muscular paralysis.

Pain (intense).

Redness.

Respiratory distress.

Swelling.

Weakness

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Treatment for Sea Urchin Envenomation

Soak in water as hot as you can tolerate for about an hour or until relief.

Remove spines.

Splint if spines remain near a joint.

If pedicellariae are attached, apply shaving foam and scrape them away with a razor.

Sharks

Sharks are found in all oceans and come in a range of shapes, sizes and aggressiveness.

Treatment for a Shark Bite

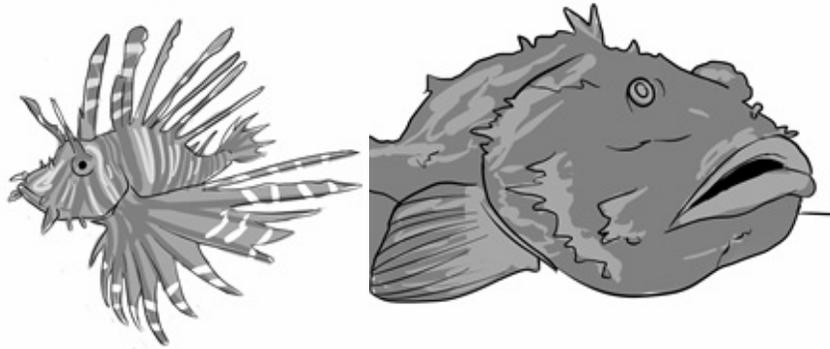
Treat wound; *Must Read - Open Wounds, Skin Infections and Sepsis-Open Wounds.*

Abrasions from contact with the shark's skin should be treated as burns; *Diagnoses and Treatments - Environmentally Induced - Heat and/or Sun Induced – Burns.*

Spine Fish

This covers all fish that envenom via spines, e.g., leatherbacks, lionfish (left picture), ratfish, toadfish, scorpion fish, stonefish (right picture).

Different fish give different levels of envenomation. Stone fish are generally considered the worst, causing the most pain which can be excruciating.



Symptoms of Spine Fish Envenomation

Immediate, intense pain, peaking at about 1 to 2 hours and lasting for up to 12 hours.

Blisters.

Bruising.

Numbness.

Redness.

Swelling.

Tissue shedding.

Many other symptoms may occur depending on the exact species including gastrointestinal problems, paralysis, respiratory and/or cardiovascular failure *etc.*

Treatment for Spine Fish Envenomation

Soak in water as hot as you can tolerate for about an hour or until relief.

Remove any spine fragments during soak.

Pharmaceuticals: Antivenin (anticipate anaphylaxis; *Must Read - Immediate First Aid – Anaphylaxis*).

Sponges

Sponges come in many different shapes, sizes and colors. They are attached to the sea floor or coral beds and are full of pores which allow water to circulate through them. They also contain chemical toxins which can affect humans if touched. Even dry sponges may remain toxic, so do not handle them without gloves.



Symptoms of Sponge Toxin Contact

Minor:

Blistering.

Burning sensation.

Itching.

Swelling at joints.

Stiffness at joints.

Minor reactions usually subside within 7 days, faster if treated.

Severe:

Chills.

Dizziness.

General sick feeling.

Feeling like an insect is crawling on or under skin.

Fever.

Muscle cramps.

Nausea.

Skin peeling after 10 days.

Treatment for Sponge Toxin Contact

Gently dry the skin.

Apply and remove sticky adhesive tape to remove adherent spicules.

Soak in vinegar for 10 to 30 minutes, three or four times a day.

Pharmaceuticals: Hydrocortisone or triamcinolone only after at least 2 vinegar soaks.

Corticosteroid: topical for minor reactions and/or oral for severe reactions.

Stingray

Stingrays are cartilaginous fish related to sharks and come in a variety of colors and sizes. If injured by a stingray sting, the patient may suffer a puncture/laceration as well as envenomation.



Symptoms of Stingray Envenomation

Local:

Dusky discoloration.

Intense pain.

Redness of skin.

Swelling.

Other:

Death of body tissue.

Fat and muscle hemorrhage.

Fainting.

Malaise (general sick feeling).

Muscle Cramps.

Paralysis.

Vertigo (perception of motion, usually spinning).

Treatment for Sting Ray Envenomation

Soak in water as hot as you can tolerate for about an hour or until relief.

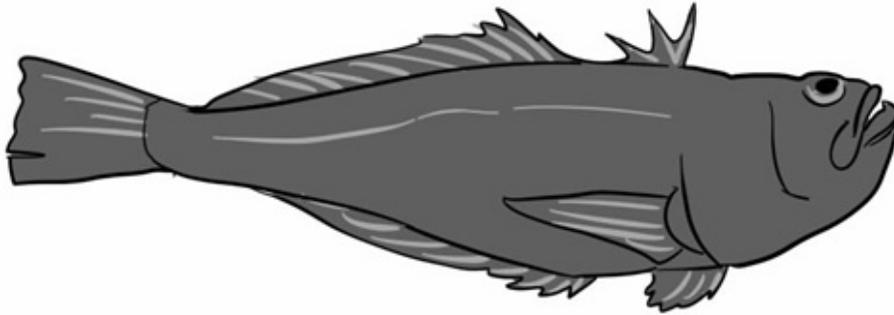
Remove spine fragments. which can be done while soaking.

Remove spine fragments, when can be done with caution.

Note: if spine is deep, manage as impaling object; *Must Read - Open Wounds, Skin Infections and Sepsis – Impaling Objects*, otherwise, treat as open wound; *Must Read - Open Wounds, Skin Infections and Sepsis - Open Wounds*

Weever Fish

The weever fish is found in the Eastern Atlantic Ocean, European coastal areas and Mediterranean Sea. They are brown and have venomous spines on their first dorsal fins and gills.



Symptoms of Weever Fish Envenomation

Immediate intense pain (burning, crushing or scolding) peaking at 30 minutes and lasting up to 72 hours.

Delirium.

Fainting.

Fever and chills.

Headache.

Irregular heart rate

Nausea and/or vomiting.

Pale wound site, becoming red and warm after 8-ish hours.

Seizures.

Swelling, increasing for up to 10 days.

Treatment for Weever Fish Envenomation

Soak in water as hot as you can tolerate for about an hour or until relief.

Remove any fragments, which can be done while soaking.

Treat wound; *Must Read - Open Wounds, Skin Infections and Sepsis - Open*

Wounds.

Animals: Terrestrial

General Prevention of Animal Attack

Leave animals alone.

Do not feed, antagonize or surprise them.

Don't put your hands or feet in places you can't see; use sticks to turn over logs, rocks *etc.*

Don't try to take their food, block their escape or get in between a mother and child.

Most are afraid of fire, loud noises and humans in general.

They are most dangerous when threatened, wounded, hungry, dehydrated, bearing young *etc.*

If you encounter large animals: Keep calm, freeze, then slowly back away.

Do not make any sudden movements.

If it charges, move out of the way.

If you need to run, zigzag.

Shouting and making a commotion may put off a predator.

Climbing a tree is a last resort as they may wait for you.

Ant Bites

Fire ants often attack in mass if their nest is disturbed.

Treatment for Ant Bites

Brush them away with your hand.

Move away from the nest.

Strip your clothes to ensure there are none inside them.

Elevate the bitten extremity.

Place a cool compress on the affected area.

If a blister develops, don't pop it.

If a blister pops, wash it with soap and water then dress.

Pharmaceuticals:

Antihistamine.

Anti-inflammatory.

Bed Bugs

Bed Bugs feed on your blood while you sleep and are most active at night. The bites are usually painless, but the after effects vary.

Symptoms of Bed Bug Bites

Resemble mosquito bites, but often are multiple bites in a straight line.

Treatment for Bed Bug Bites

Eradication (see below).

Pharmaceuticals: Antihistamine.

Anti-inflammatory.

Eradication of Bed Bugs

Find the nest; check mattress seams, linens, backpacks, wooden joints *etc.* Look for brown fecal markings and dried blood.

Once the nest has been found, there are a number of methods which can be used to eradicate bed bugs: Ø Bedding covers to starve them out, although adult bed bugs can live for more than a year without a blood meal.

- Ø Diatomaceous earth is a natural pesticide found at most organic gardening supply stores. Dust the seams of the mattress with it. It won't kill the eggs.
- Ø Extreme cold: 5 days of temperatures -15 °C (about 0 °F).
- Ø Pesticides: cover all areas and repeat at least once 10 days after the initial treatment.
- Ø Placing all bedding and clothes in a hot dryer (as hot as possible) for 90 minutes.
- Ø Rubbing alcohol: apply and repeat for a week.
- Ø Vacuum the flooring and upholstery: a stiff brush is helpful to scrub mattress seams before vacuuming.
- Ø Washing in hot, soapy water over 50 °C (125 °F).

Bee/Wasp Sting

The sooner you treat a sting the better, but you should first leave the area to prevent further attack.

Treatment for Bee/Wasp Stings

Remove the bee stinger with tweezers or by scraping it with a credit card or your fingernail. Be careful not to squeeze the venom from the sack into your body.

Treat as Open Wound; *Must Read - Open Wounds, Skin Infections and Sepsis - Open Wounds.*

Pharmaceuticals: Antihistamine.

Alternative/Natural Remedies: Clove oil topically.

Ice topically to soothe.

Mix baking soda with a small amount of water to form a paste and apply topically.

Mud applied topically may soothe if nothing else is available.

Caterpillars

Caterpillars are all over the world and come in a large variety of sizes and colors. Some caterpillars have spines containing toxin.

Symptoms of Caterpillar Toxin Contact

From caterpillars with hollow spines and venom glands: Instant pain.

Redness.

Swelling.

Systemic symptoms are rare but may occur, including: Fever.

Headache.

Nausea and vomiting.

Swollen lymph nodes.

Impaired blood clotting (rare).

From caterpillars or moths: Conjunctivitis.

Itching.

Popular Rash (an area of abnormal skin tissue that is less than 1 centimeter around).

Redness.

Upper respiratory irritation.

Treatment for Caterpillar Toxin Contact

Apply and remove adhesive tape to remove spines.

Pharmaceuticals: Antihistamine.

Anti-inflammatory.

Corticosteroid.

Cat-Scratch Disease

Cat-scratch disease is not surprisingly most commonly caused by cat scratches, but dog and monkey bites can also pass on the disease, as can thorns and splinters.

Symptoms of Cat-Scratch Disease

Chills.

Insect bite -like papule (solid elevation of skin with no visible fluid; can be brown, purple, pink or red in color and varied in size).

Mild fever.

Nausea.

Painful and tender lymph nodes, usually of arm or leg.

Rashes.

Treatment for Cat-Scratch Disease

Will usually self-resolve within months.

Pharmaceuticals: Antibiotic: ciprofloxacin 500 mg twice a day.

Fleas

Fleas are tiny, wingless, blood-sucking, external parasites. They suck the blood of birds and mammals, including humans.

Common areas for flea bites are ankles, armpits, breast, groin, legs, underside of elbows, underside of knees and waist line.

Symptoms of Flea Bites

Hives.

Itchy.

Rash.

Red halo around bite.

Several small, red, bite-bumps in groups or straight lines.

Soreness around bite.

Treatment for Fleas Bites

Flea bites will dissipate in time.

Eradicate (see below).

Avoid scratching.

Pharmaceuticals: Antihistamine.

Eradication of Fleas

Botanical dust mixed with a borate powder or boric acid. Do not breathe in. Coat the area and then vacuum after 24 hours.

Insect Growth Regulator (IGR), e.g., Nylar.

Very fine salt: coat the area and then vacuum after 24 hours.

Insects: General

Due to the incredible number of different insects, it is useful to have a general diagnosis and treatment for those you cannot identify easily.

Prevention is the best way to avoid attack. There are many insect repellents out there. If no insect repellents are available, you can use smoke to fumigate them.

General Symptoms of Insect Bites or Stings

There are a wide range of symptoms depending on the species. Common general symptoms are:

Allergic reactions.

Pain.

Swelling.

Welts.

Multiple stings: Diarrhea.

Respiratory distress.

Vomiting.

Note: even a single sting may bring on anaphylaxis, which is life threatening;
Must Read - Immediate First Aid – Anaphylaxis.

General Treatment for Insect Bites or Stings

Treat critical systems as needed.

Charcoal: activated charcoal is preferable. If that is unavailable, mix tea and wood charcoal (not briquettes) and add milk of magnesia if available.

Use a specific antidote/treatment if available/known.

Lice

There are basically 3 types of lice: head, body and pubic. They are most commonly spread with close contact and the sharing of personal items such as pillows, combs, towels *etc.*

Lice can transmit disease (depending on the type), but they are species specific, i.e., a human cannot get lice from anything other than another human.

The best protection against all types of lice is good hygiene. When in unhygienic situations, check for them as part of your daily hygiene routine; *Must Read – Prevention – Personal Hygiene - Daily Hygiene Routine for Survival/Collapse Situation.*

Eradication of Lice

It is preferable to throw out or destroy (burn) anything that might be infested. If you cannot/do not want to destroy or throw it out you have a few other options:

Alcohol: soak the infected things in strong alcohol.

Hot water: wash the infected things in very hot water.

Suffocation: place the infected things in plastic bags to suffocate the lice, and then air outside. Suffocate for 2 weeks, or 5 weeks for body lice.

Head Lice

Head lice causes itching and sometimes a rash but they do not carry disease.

Symptoms of Head Lice

Itching.

Rash.

The nits (louse eggs) look like small bits of dandruff that stick to your hair. They are easily seen with a black light.

Treatment for Head Lice

Eradication.

Run a fine tooth comb through the hair.

Olive oil may be applied to the comb which may make the nits easier to remove.

Wash hair with medicated shampoo:

Start with dry hair.

If you use hair conditioners, stop for a few days before using the medicine.

Apply medicated shampoo to the hair and scalp.

Let sit for 10 minutes, then rinse.

Check with the comb after 8 and 12 hours.

Repeat the process in 7 days.

Change clothes daily if possible.

Medicated Shampoos:

Nix lotion (1% Permethrin) will kill both the lice and their eggs.

Rid shampoo (Pyrethrum) will kill the lice but not their eggs.

Kwell shampoo (Lindane) is much stronger and may cause neurological side effects in children.

Various natural shampoos are also available.

Pubic Lice

Pubic lice (crabs) may be either lice or mites. Although they usually start in the pubic hair, they can extend anywhere there is hair.

The infestation is usually passed by sexual contact and is not prevented with a condom.

Symptoms of Pubic Lice

Severe itching.

Treatment for Pubic Lice

Use same treatment as for head lice.

Body Lice

Body lice actually live on dirty clothes (especially the seams) as opposed to the body. They only go to the human body to feed and can live without a host for about a month.

Body lice carry infectious disease.

Treatment for Body Lice

Eradication

CAUTION.

Removal of the infested clothing. Destruction of the infested clothing is strongly advised.

Mammalian Bites

Apart from the obvious wound, other problems an animal bite can cause are the transfer of disease and a higher chance of infection than many other types of wounds. Rabies is a potentially fatal infection that can occur, as is tetanus;
Diagnoses and Treatments – Musculoskeletal System – Tetanus.

Keep your vaccinations up to date.

Treatment for Mammalian Bites

Different animals carry different diseases, e.g., plague is carried by rats and fleas, whereas tuberculosis is usually associated with deer, elk and bison. Regardless of what bites you, initial field treatment is the same, even if bitten by a human.

Remove any rings or bracelets that may get stuck if swelling occurs.

Treat wound, clean thoroughly; *Must Read - Open Wounds, Skin Infections and Sepsis - Open Wounds.*

The antiseptic of choice is benzalkonium chloride (BZK) as it has some effect against rabies; *Diagnoses and Treatments – Environmentally Induced – Animals, Terrestrial - Mammalian Bites – Rabies.*

If over the next few weeks after being bitten there are any of the following symptoms, seek advanced medical care: Diarrhea.

Fever.

Nausea.

Vomiting.

Rabies

Rabies is a fatal, viral disease which any mammal can contract. Bats, cats, cattle, dogs, foxes, monkeys, raccoons, skunks and wolves are the greatest risk to humans.

Vaccinations are available.

Symptoms of Rabies

Symptoms in rabies victims are usually delayed for about 30 days. After this symptom-free period, victims may experience: Fatigue.

Fever.

Headache.

Loss of appetite.

Increased symptoms are: Irritability.

Disorientation.

Hallucination.

Seizures.

Eventually the patient may enter paralysis, go into a coma or suffer cardiac or respiratory arrest.

Treatment for Rabies

Once symptoms start to show, chances of survival are slim.

Immediately treat wound after any possible exposure, e.g., when bitten.

Seek advanced medical care.

If animal saliva has come in contact with your eye, irrigate it well with water and seek advanced medical care.

Mosquitoes

Mosquitoes are all over the world. Usually their bite results in nothing more than itchiness and minor swelling. For some people the symptoms can be a bit worse, e.g., hives. Unfortunately, mosquitoes also transmit a number of potentially deadly diseases.

Prevention of Mosquito Bites

Avoid mosquito infested areas: they are attracted to standing water and moist areas, and, are most active at dusk and dawn.

Keep up to date on all relevant immunizations, especially if traveling to at-risk countries; *Must Read - Prevention – Vaccinations.*

Wear long clothing and insect repellent; if no insect repellents are available, you can use smoke to fumigate them.

Dengue Fever

Dengue Fever is a tropical disease.

Symptoms of Dengue Fever

Diarrhea.

Fever.

Headache.

Muscle and joint pains.

Skin rash akin to measles.

Vomiting.

Symptoms of Dengue Hemorrhagic Fever: Bruising and bleeding from the gums, mouth and nose.

Treatment for Dengue Fever

There is no specific antiviral drug for Dengue fever and complete recovery can take up to a month.

Treat dehydration; *Diagnoses and Treatments - Circulatory System - Dehydration and Volume Shock.*

Treat symptoms.

Japanese Encephalitis

Japanese encephalitis occurs all year round in tropical and subtropical areas, and during the warmer months in temperate climates.

Vaccinations are available and recommended if visiting high-risk countries, especially in rural areas; *Must Read - Prevention – Vaccinations*.

Symptoms of Japanese Encephalitis

Less than 1% of people infected will become ill. This means that in most cases, no symptoms will show.

Symptoms that may develop: Chills.

Fatigue.

Fever.

Headache.

Nausea.

Vomiting.

Severe:

Encephalitis (inflammation of the brain) develops in about 1 in 300 infections.

Coma.

Paralysis.

Seizures.

Treatment for Japanese Encephalitis

There is no specific treatment.

Treat dehydration; *Diagnoses and Treatments - Circulatory System - Dehydration and Volume Shock*.

Treat symptoms.

Malaria

Malaria prophylaxis (prevention) medications are available and recommended if visiting high-risk countries, especially in rural areas. There are many types to suit different needs, e.g., dosages per day, short/long term travel, various strains *etc.*

An antibiotic recommended in the First Aid Kit that can also double as a malaria prophylactic is doxycycline; *Must Read – First Aid Kit*.

Dosage for doxycycline as a malaria prophylactic: 100 mg once a day.

Start a couple of days before exposure (travel to endemic area).

Continue daily during exposure.

Continue for 4 weeks after exposure.

Do not exceed 4 months of medication, i.e., only stay in the exposed area for 3 months.

Symptoms of Malaria

Confusion.

Fever and chills that are recurring.

Flu-like symptoms that do not respond to normal treatments.

Headaches.

Jaundice (yellow coloring of the skin and eyes).

Muscle pain.

Nausea.

Respiratory difficulties.

Tiredness.

Vomiting.

Treatment for Malaria

Seek advanced medical care.

Keep well-hydrated.

Pharmaceuticals:

Avoid NSAIDs, acetaminophen may help.

Antibiotic: doxycycline 100 mg twice a day for 7 days.

Note: depending on the strain of malaria, doxycycline may need to be used in combination with other medications. If you suspect you have malaria, seek

advanced medical care for definite diagnosis and treatment.

West Nile Virus

West Nile virus is found in temperate and tropical regions of the world.

Symptoms of West Nile Virus

The majority of people will not have any symptoms. 20% of infected people may have the following:

Difficulty concentrating.

Fatigue.

Fever.

Headache.

Nausea and vomiting.

Rash.

Swollen lymph nodes.

Under 1% of infected people may develop Encephalitis or Meningitis;
Diagnoses and Treatments – Head – Brain – Meningitis.

Treatment for West Nile Virus

No specific treatment is available, but it will usually self-resolve within a few days.

Treat symptoms.

Seek advanced medical care if have altered mental state, severe headaches and/or stiff neck.

Yellow Fever

Yellow fever is most common in the areas of Africa and South America. It mostly affects the liver and can be deadly.

Vaccinations are available and recommended if visiting high-risk countries, especially in rural areas; *Must Read - Prevention – Vaccination.*

Symptoms of Yellow Fever

Mild symptoms usually dissipate within days.

Dizziness

Symptoms:

Fever.

Headache.

Loss of appetite.

Muscle aches, particularly in your back and knees.

Nausea and/or vomiting.

Red eyes, face or tongue.

Sensitivity to light.

Severe:

The mild symptoms may return and also bring other symptoms which may be fatal:

Abdominal pain.

Bleeding from your nose, mouth and eyes.

Brain dysfunction.

Decreased urination.

Jaundice (yellow coloring of the skin and eyes).

Liver and kidney failure.

Vomiting, sometimes of blood.

Treatment for Yellow Fever

There is no specific treatment for Yellow Fever.

Treat symptoms.

Seek advanced medical care.

Pharmaceuticals:

Avoid NSAIDs.

Cutaneous Myiasis

Cutaneous myiasis occurs when certain fly species lay an egg on the skin, which then hatches and enters the skin.

Symptoms of Cutaneous Myiasis

Feeling of something under the skin.

Fever (rare).

Pain.

Lesions.

Swollen lymph nodes (rare).

Treatment for Cutaneous Myiasis

Simple pressure may force it out.

Covering the breathing hole with animal fat or nail polish may cause the larva to emerge.

If that does not work, inject 2 ml of local anesthetic (if available) into the base of the lesion to force them out with pressure.

If that does not work or is unavailable, cut it out, ensuring the larva does not rupture.

Mites and Chiggers

Chiggers

Chiggers are a type of mite that are found all over the world and favor moist and/or green areas, e.g., gardens, forests, parks.

They are extremely small, red creatures that are best seen with a magnifying glass and/or when they are in groups.

Prevention is the same as for mosquitoes; *Diagnoses and Treatments - Environmentally Induced – Animals, Terrestrial – Mosquitoes.*

For other mite bites, see scabies (below).

Symptoms of Chigger Bites

Extreme itchiness.

Red and may be flat, raised or resemble a blister.

Usually occur in the folds of the skin, e.g., armpits, behind knees.

Treatment for Chigger Bites

Chiggers do not cause any diseases and will go away on their own.

Itching will last for several days, lesions up to 14 days.

Avoid hot water, e.g., baths and showers.

Do not scratch.

They do not burrow into the skin so there is no need to try to remove them.

Treat itching and inflammation.

Pharmaceuticals:

Antihistamine.

Calamine lotion.

Corticosteroid creams.

Scabies

Scabies is caused by mites that burrow into the skin. These mites cause an allergic reaction resulting in extreme itchiness. Scabies itself is not contagious,

but the passing of mites is via close skin contact, sharing of towels *etc.*

Symptoms of Scabies Bites

Bites are most common between the armpits, buttocks, fingers, genitals of men, navel, outside of elbow, waistline, wrist (palm side) and sides of breasts in women.

Rash with tiny blisters/sores.

Severe itching, worsening at night.

Treatment for Scabies Bites

Treat all people and clean at the same time to prevent re-occurrences.

Clean clothing and linen well as if bedbugs; *Diagnoses and Treatments - Environmentally Induced – Animals, Terrestrial – Bed Bugs.*

Pharmaceuticals:

Permethrin cream on bites and under the fingernails.

Porcupines

Porcupines are rodents with sharp quills. They are found in Africa, the Americas, Europe and Southern Asia.

Porcupine Quill Removal and Treatment

The sooner they are removed the easier it will be.

Do not cut them before removal.

Pull them straight out from the base, along the same line they entered.

Ensure there are no fragments left in the skin.

If in deep, a small nick in the skin can be made to allow the barb to be extracted.

Treat the wound; *Must Read - Open Wounds - Skin Infections and Sepsis - Open Wounds.*

Consider rabies vaccine; *Diagnoses and Treatments – Environmentally Induced – Animals, Terrestrial – Mammalian Bites – Rabies.*

Scorpions

Scorpions have pincers which can hurt, but only the tail injects venom. The venom usually affects the nervous system.

Symptoms of Scorpion Sting

Difficulty swallowing.

Increased saliva output.

Irritability.

Pain, numbness, and/or tingling in the area of the sting.

Rapid breathing and heart rate.

Restlessness or twitching.

Sweating.

Weakness.

Treatment for Scorpion Sting

Remove jewelry from the affected limb (swelling may occur).

Wash the area with soap and water.

Pharmaceuticals: Antihistamine.

Antivenin (anticipate anaphylaxis); *Must Read - Immediate First Aid – Anaphylaxis.*

Snakes

There are a lot of different kinds of snakes in the world. Some are harmless while others may be deadly. Best practice would be to steer clear of all snakes unless you have sufficient information about local subspecies.

Symptoms of Snake Bite

Exact symptoms are varied and depend on the species.

Pain at bite site.

Puncture wounds from fangs.

Treatment for Snake Bite

Snake bite treatment revolves around minimizing tissue damage, reducing effects of venom and preventing further complications, e.g., anaphylaxis, respiratory distress.

Be prepared for anaphylaxis, infection, respiratory distress and other complications; *Must Read – Immediate First Aid*.

Do not attempt to kill or capture the snake.

Remove any constrictive items from bitten limb in anticipation of swelling.

Immobilize bitten extremity with splinting.

The pressure immobilization technique is recommended only for Australian snakes, cobra snakes, coral snakes, mamba snakes and any other neuro-toxic snake envenomation; *Must Read - Immediate First Aid - Pressure Immobilization Technique*.

Avoid movement.

Do not elevate limb.

Hydrate.

Seek advanced medical care.

Pharmaceuticals: No NSAID's. Other analgesics may help.

Antibiotics if advanced medical care is more than 5 hours away.

Antibiotic: cephalexin 7 to 10 days.

Antibiotic: dicloxacillin 7 to 10 days.

Spider Bite

There are many different types of spiders, and many of their bites have no specific treatment.

Most cases will resolve themselves after a few days but some spiders are toxic and their bites may lead to death if untreated.

General Symptoms of Spider Bites

The effects from non-toxic spider bites usually don't last more than a few hours, but occasionally may last a few days.

Blisters.

Immediate pain.

Rash and/or redness.

Swelling.

Two small puncture wounds.

General Treatment for Spider Bites

Wash well.

Rest.

Treat symptoms.

Note: in the case of the Australian funnel-web spider, use the pressure immobilization technique; *Must Read - Immediate First Aid - Pressure Immobilization Technique.*

Seek advanced medical care if: Bitten by a known toxic species, e.g., brown recluse, black widow.

Intense pain.

Local symptoms last more than 24 hours.

Systemic symptoms emerge.

Alternative/Natural Remedies: Aspirin: mix with water to make a paste and apply it topically.

Baking soda: mix with water to make a paste and apply it topically.

Basil: crush dried basil to a fine dust and apply it topically.

Charcoal: use it as a poultice. Activated charcoal is preferable. If that is unavailable, mix tea and wood charcoal (not briquettes) and add milk of magnesia if available.

Ticks

Different breeds of ticks can transmit a number of different diseases, but prevention is basically the same, i.e., keep the ticks off you.

Ticks must be implanted on humans for at least 24 hours to transmit bacteria.

Tick Removal

Pulling ticks off with tweezers is the preferred method.

Grab the tick as close to your skin as you can.

Pull the tick straight up and try to get all of it.

Disinfect the area.

Other methods include:

Smothering it with petroleum jelly.

Lighting it on fire, although the patient may also get burnt.

Prevention of Ticks

Light colored clothing that covers whole body, e.g., long sleeves.

Regular checks, at least once a day.

Stay away from common tick infested areas, e.g., leaf litter, shaded woodpiles, shrubs along game trails.

Repellents, e.g., DEET (<35%), Picardin *etc.*

Plants that repel ticks: Eucalyptus, garlic, lavender, mint and sage.

Rub the leaves on your skin.

Lyme Disease

Lyme disease is spread by the black-legged tick (deer tick).

Symptoms of Lyme Disease

Initial:

Fatigue.

Fever.

Headache.

Joint pain.

Red rash around site.

After weeks or months patients may also experience: Arthritis.
Infection.

Meningitis; *Diagnoses and Treatments - Head - Brain – Meningitis.*

Neurological issues.

Rash.

Treatment for Lyme Disease

Pharmaceuticals:

Antibiotic: doxycycline 100 mg orally every 12 hours for 28 days.

Antibiotics, other: amoxicillin, azithromycin and tetracycline.

Rocky Mountain Spotted Fever

A tick transmitted disease spread by dog ticks.

Symptoms of Rocky Mountain Spotted Fever

Initial:

Fever.

Headache.

Light sensitivity.

After 3 to 4 days:

High fever.

Rash.

Treatment for Rocky Mountain Spotted Fever

Pharmaceuticals:

Antibiotic: doxycycline 100 mg every 12 hours until 3 days after the fever subsides, usually 7 to 14 days.

Tick Paralysis

Symptoms of tick paralysis become present within 2 to 7 days of the tick(s) being attached.

Symptoms of Tick Paralysis

Leg weakness.

Paralysis then travels up the trunk to the rest of the body.

Respiratory arrest can occur.

Treatment for Tick Paralysis

Removal of the tick(s) will stop the toxin from being transferred into the body and symptoms usually diminish quite quickly.

Pharmaceuticals:

Antibiotics can be used if you get a rash along with flu-like symptoms that are resistant to medicines.

Antibiotic: doxycycline 100 mg 2 times a day for 14 days.

Antibiotic: amoxicillin 500 mg 3 times a day for 14 days.

Muscle aches and fatigue can linger for a while after treatment.

Carbon Monoxide Poisoning

Carbon monoxide poisoning usually occurs when too much carbon monoxide accumulates in a confined space. It is produced by appliances that burn fuel or gas, e.g., automobiles, heaters, fireplaces *etc.* and also from fire in general, e.g., house or forest fires.

Breathing in too much carbon monoxide reduces the body's ability to absorb oxygen, which leads to tissue damage, brain damage and eventually death.

Unfortunately, carbon monoxide is difficult to detect as it is a colorless, odorless and tasteless gas. People who are intoxicated or sleeping often do not feel the effect before it is too late, meaning they are at greater risk.

Symptoms of Carbon Monoxide Poisoning

Altered mental state.

Blurred vision.

Dizziness.

Headache.

Lethargy.

Loss of consciousness.

Loss of coordination.

Nausea.

Shortness of breath.

Vomiting.

Treatment for Carbon Monoxide Poisoning

PROP; Must Read - Immediate First Aid - Critical First Aid - Breathing – PROP.

Seek advanced medical care.

Cold and/or Water-Induced

C.O.L.D. is an acronym you can use to help you remember the prevention techniques for cold illnesses.

Cover your extremities, i.e., head, hands (mittens work better than gloves) and feet.

Overexertion will cause you to sweat, which will make your clothes wet, which will make you colder.

Layering: layers of loose fitting, lightweight clothing is a really good way to insulate your body. Wool and silk for inner layers are better than cotton.

Dry: keep as dry as you can.

Cold-Water Immersion

Cold-water immersion does not lead to immediate hypothermia. In fact, there are four phases of cold water immersion.

1. Cold shock Response

This is the most common cause of drowning in cold water. It can cause a number of life threatening conditions:

a. Gasp Reflex: when cold water is first entered it causes an automatic gasp reflex. This reflex usually lasts about a minute, but if the head is under water at the time, it will lead to drowning.

b. Hyperventilation: panic can cause hyperventilation which can lead to fainting which can lead to drowning.

c. Cardiac Arrest: vasoconstriction (narrowing of the arteries) means the heart must work harder.

2. Cold Incapacitation

Prolonged vasoconstriction will cause the extremities to 'shut down' which means the limbs will not be able to help keep the body afloat. This happens after about 10 minutes in the water.

3. Hypothermia

Hypothermia will set in after about 30 minutes in ice water for most adults; *Environmentally Induced – Cold and/or Water Induced – Hypothermia.*

4. Circum-rescue Collapse When a patient knows they are being rescued, their mental state relaxes. Blood pressure drops, muscles fail and it may even cause cardiac arrest. It can happen just before, during or just after rescue.

Treatment for Cold-Water Immersion

Only enter water to rescue if no other option.

Extract from water slowly.

Use in-water rescue breathing if needed.

Treat critical systems as needed, e.g., CPR, hypothermia.

Start with 5 rescue breaths, and then continue as normal; *Must Read - Immediate*

First Aid - Critical First Aid – Airway – Rescue Breathing.

If patient is breathing but unconscious, put on his/her side.

Prevention of Cold Water Immersion

Enter cold water slowly keeping the head above the water.

Wear a PFD. They are designed to help keep the head above water, and they also provide warmth.

Wear clothing to provide insulation.

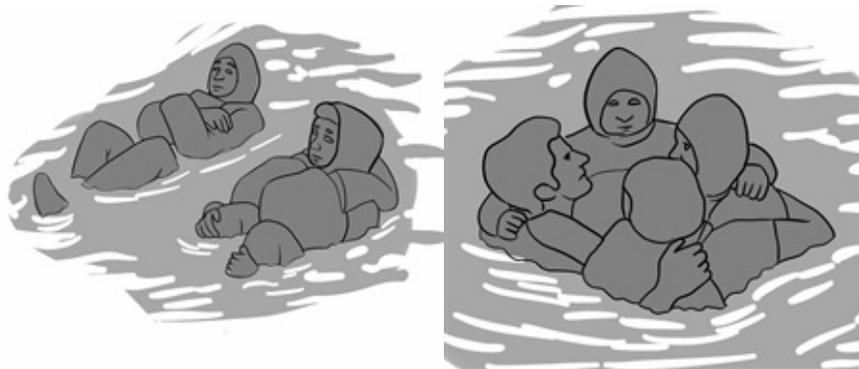
If in the water:

Adopt HELP (Heat Escape Lessening Position) (left picture) or Huddle position (right picture) if in a group placing children in the middle.

Consider swimming to safety. The average person wearing a PFD can swim about 800m in 10C water before failure.

Control hyperventilation with controlled breathing.

Tighten drawstrings.



Drowning

There are 3 basic classifications of drowning: asymptomatic, symptomatic and respiratory or cardiopulmonary arrest.

Symptoms of Asymptomatic Drowning

The patient has been rescued from the water.

Alert.

No respiratory distress.

With or without coughing.

Treatment for Asymptomatic Drowning

Monitor for respiratory symptoms.

If respiratory symptoms develop seek advanced medical care ASAP.

Protect against and assess for hypothermia *Diagnoses and Treatments - Environmentally Induced – Cold and/or Water Induced – Hypothermia.*

Patients that do not worsen after 15 minutes are not likely to diminish but should still be monitored.

Symptoms of Symptomatic Drowning

Patient requires resuscitation or shows signs of distress.

Treatment for Symptomatic Drowning

Seek advanced medical care.

Symptoms of and Treatment for Respiratory or Cardiopulmonary Arrest

Must Read - Immediate First Aid - Critical First Aid.

If patient is still in the water, only use rescue breathing.

Prevention of Drowning

Abandon a stalled vehicle in a flood area.

Always wear a PFD in open water.

Be prepared for flash flood during heavy rainfall and adopt high ground.

Do not attempt a water crossing when water is above the knees.

Do not try to swim beyond personal capacity.

Learn to swim and teach children to swim.

Never swim under the influence of drugs and/or alcohol.

Swim across rip tides.

Take a surf lifesaver course.

Use flotation devices.

Watch children closely near water.

Wear a helmet during water sports, e.g., kayaking.

Frostbite

Frostbite is the freezing of the water in the cells. The most commonly affected areas are the earlobes, nose, fingers and toes.

Frostnip is a very mild form of frostbite. Frostnip does not do any permanent damage to the skin.

Exposure to the cold is the main cause, but things such as constriction, e.g., tight boots, dehydration, exhaustion, prior cold injuries and vasoconstrictors such as coffee or nicotine are also contributing factors.

Symptoms of Frostbite

There are 3 levels of severity: superficial, partial and severe.

Superficial Frostbite Symptoms: Cold and uncomfortable.

Perfusion normal; *Must Read - Immediate First Aid - Critical First Aid - Circulation – Perfusion.*

Pink or pale complexion.

Partial Thickness Frostbite Symptoms: Reduced Perfusion.

Numbness.

Pale and soft.

Treatment for Frostnip, Superficial and Partial Frostbite

Note: thawing tissue and refreezing it will create more damage. Unless a stable environment is more than 24 hours away, it is best to wait.

Do not drink alcohol or smoke.

Do not massage or rub affected area.

Elevate extremity.

General re-warming of whole body.

Loosen constrictive clothing.

Maintain food and water intake.

Re-warm the affected body part with heat packs, skin to skin (do not rub or massage), warm water *etc.*

When re-warming, be careful not to burn the patient as he/she may not feel it.

Pharmaceuticals:

Analgesics before re-warming.

Symptoms of Full Thickness Frostbite

Numbness.

Pale and hard body part.

Possible ice crystals.

Perfusion absent.

Note: if the skin turns black it has died from a loss of circulation and is known as gangrene. Amputation is usually necessary; *Diagnoses and Treatments – Musculoskeletal System – Amputations.*

Treatment for Full Thickness Frostbite

Immersion of frozen area into 37 °C (98 °F) to 39 °C (102 °F) water.

Dry dressings. Separate digits when bandaging.

Pharmaceuticals:

Analgesics before re-warming.

NSAIDs for circulation.

Prevention of Frostbite

Avoid alcohol and tobacco.

Avoid handling cold liquids and metals, especially fuel.

Avoid wind, especially in high-altitudes.

Do not over wash as it will wash away natural protective oils.

Keep covered and warm.

Keep well rested.

Maintain hydration and nutrition.

Minimize cold exposure.

Hypothermia

Hypothermia occurs when the cold overwhelms the body's ability to produce and retain heat and usually occurs when exposed to the cold.

Symptoms of Hypothermia

Hypothermia can be mild or severe and it progresses through very definite symptoms, i.e., the patient will have mild hypothermia and, if untreated, it will progress into severe hypothermia.

Symptoms of Mild Hypothermia:

Body temperature between 35.5 °C (96 °F) to 32 °C (90 °F).

Difficulty speaking.

Intense shivering.

Irritable.

Lethargic.

Loss of fine motor coordination.

Sluggish thinking.

Violent shivering.

Withdrawn.

Symptoms of Severe Hypothermia:

Body temperature below 32 °C (90 °F).

Blue, puffy skin.

Coma.

Decreased vital signs (pulse, respiratory, B/P).

Jerky movements.

Muscular rigidity, i.e., no more shivering.

Respiratory and cardiac failure.

Treatment for Hypothermia

The treatment whether mild or severe is basically the same. The earlier you treat

... the treatment... it the better.

Cover the top of the head.

Do not rub or massage extremities (in case of frostbite).

Heat packs on armpits, chest, groin and neck.

Insulate from below and above, starting from the ground up.

Increase heat production, i.e., exercise.

Note: only exercise after sufficient food and fluid has been administered and when mental status has improved.

Remove causes, e.g., block the wind, remove wet layers.

Warm, non-alcoholic and non-caffeinated liquid (only if patient is capable).

Immersion heating (e.g., a warm bath), only if in a controlled environment; the possibility of after-chill may make it worse.

Re-warming a patient with skin-to-skin contact inside of a sleeping bag (or similar) is a survival technique but may cause the body-temperatures of all involved to drop.

Prevention of Hypothermia

Acclimatize to cold weather.

Avoid alcohol and other recreational substance use.

Dress appropriately.

Hypothermia Packaging

Hypothermia packaging is useful when you need to transport the patient, and even if you do not it is a great way to keep the patient warm.

Ensure the patient is dry.

Keep patient horizontal.

Stabilize any injuries, including covering any open wounds.

Sandwich the patient between layers of insulation and waterproof layers.

Suggested Hypothermia Packaging:

The face should be partially covered, but allow for breathing, monitoring *etc.*

Place a large plastic sheet on the ground.

Next place an insulated sleeping pad.

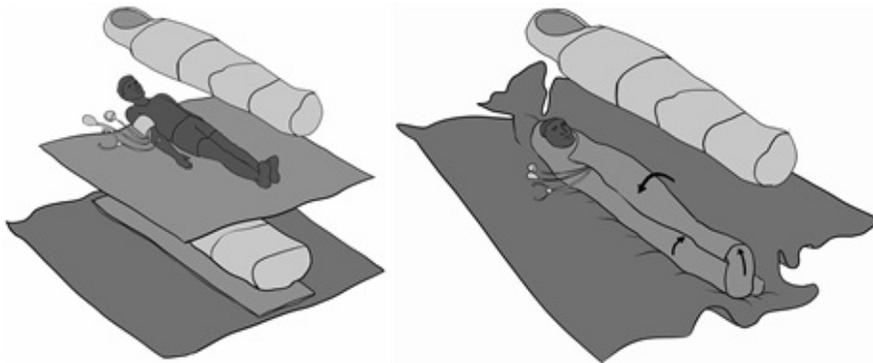
On the pad place a sleeping bag (or blankets or whatever you have).

The patient goes on top of this, along with heating bottles, IV's *etc.*

Fold tops and bottom over the patient, then fold the corners over.

Fold the sides over, keeping wrinkles to a minimum.

Strap in place.



Saltwater Sores

When a break in the skin is continuously exposed to salt water, salt water sores may appear.

They may also appear where clothing can be tight, e.g., wrists, ankles.

If in a survival-at-sea situation, prevent sores by not dampening yourself too much with salt water and change positions frequently.

Symptoms of Saltwater Sores

Scabs.

Pus.

Treatment for Saltwater Sores

Do not open or squeeze sores.

Flush with fresh water.

Keep dry.

Pharmaceuticals: Antiseptic.

Trench Foot

Trench foot (immersion foot), occurs when the skin is immersed in water (or similar) for an extended period of time. A minor form of this is like when you have been in a pool and your hands get wrinkled. A more serious case may be in a survival situation and you have been unable to take off wet shoes for an extended period of time.

Symptoms of Trench Foot

Red skin that becomes pale and extremely edematous (filled with fluid).

Initial Symptoms: Decreased perfusion; *Must Read - Immediate First Aid - Critical First Aid - Circulation – Perfusion.*

Leg cramps.

Numbness.

Pain.

Paresthesia (tingling).

After 2 to 7 days: Blisters.

Edema (swelling from fluid).

Ulceration.

After 7 days:

Stabbing pain.

Treatment for Trench Foot

Avoid use of affected part; if use is unavoidable, at least wear dry, loose fitting shoes and socks.

Do not apply creams or ointments.

Elevate the extremity.

Keep area dry, warm and open to air.

Pat dry (do not rub).

Prevention of Trench Foot

Keep feet dry and change to a dry pair of socks at least once a day.

Maintain body core temperature.

Remain active.

Remove your shoes when going to bed at night.

Periodically remove your shoes and socks and rub your feet for 5 to 10 minutes.

Diving Induced

There are many things that can go wrong when diving, but it is an activity that is usually (and should only be) done under the guidance of a trained professional who should know what to do.

All potential SCUBA divers should seek the advice of a medical practitioner to ensure they are able to participate in the activity, as some conditions are not suitable, e.g., epilepsy, pregnancy, severe asthma, various lung disorders.

Note: some of these conditions may, occur when flying, due to pressure change.

Do not SCUBA dive if:

Flying within 12 hours after last dive.

Flying within 24 hours if making multiple dives for repeated days or dives that require decompression stops.

Alternobaric Vertigo

Alternobaric vertigo usually occurs with ascent and is due to divers' ears not equalizing pressure at the same rate.

It can happen to anyone but is more common in those with a history of eustachian tube dysfunction or middle ear infections; *Diagnoses and Treatments – Head – Ears – Ear Infections – Otitis Media*.

Symptoms of Alternobaric Vertigo

The telltale symptom is a feeling of vertigo (perception of motion, usually spinning). Other symptoms include:

Ear pain.

Feeling of fullness in only one ear.

Muffled hearing in one ear.

Nausea.

Spinning sensation.

Sounds in one ear, e.g., hissing, ringing.

Treatment for Alternobaric Vertigo

Symptoms usually resolve quickly (usually within minutes). Symptoms that

persist for longer than a few hours or are frequently re-occurring may be a sign of something more serious.

If affected during ascent:

Stop ascending.

Descend a meter or so and stabilize until sensation passes.

Do the same if experienced on descent, but ascend a meter or so.

If patient still has vertigo on surfacing: Lie down with head elevated 30 degrees.

Discontinue diving until cleared by a professional.

Prevention of Alternobaric Vertigo

Ascend and descend slowly.

Do not dive if sick or congested or have been so recently.

Do not dive if unusual difficulty clearing ears on descent is experienced.

Equalize your ears early and often on descent.

Arterial Gas Embolism

Arterial gas embolism is when air bubbles enter the circulatory system due to ruptured alveoli. It usually occurs immediately after resurfacing and is deadly.

Symptoms of Arterial Gas Embolism

Sudden loss of consciousness upon resurfacing is the major symptom and should be considered arterial gas embolism until proven otherwise. Other symptoms include:

Air bubbles in the retinal vessels of the eye.

Bloody froth from mouth or nose.

Blurred vision.

Chest pain.

Convulsions.

Disorientation.

Dizziness.

Paralysis or weakness.

Personality change.

Respiratory arrest.

Skin Marbling.

Treatment for Arterial Gas Embolism

Treat critical systems and other complications as needed, e.g., CPR, hypothermia.

Recompression chamber ASAP.

Hydrate carefully.

Lie the patient down in a horizontal, neutral position.

Oxygen.

If traveling in an un-pressurized aircraft, fly as low as possible; maximum of 300m (980ft) above sea level.

Contaminated Breathing Gas

Carbon monoxide or oil may be present in the scuba tank.

Symptoms of Contaminated Breathing Gas

Carbon monoxide:

Dizziness whilst diving.

Headache.

Mental dullness.

Lethargy.

Nausea.

Oil contamination:

Cough.

Shortness of breath.

Oily taste.

Treatment for Contaminated Breathing Gas

Treat critical systems and other complications as needed, e.g., CPR, hypothermia.

Recompression chamber ASAP.

Lie the patient down in a horizontal, neutral position.

Oxygen.

If traveling in an un-pressurized aircraft, fly as low as possible; maximum of 300 m (980 ft.) above sea level.

Note: DCS not only affects scuba divers, it can also occur in high-altitude (flying and aerospace).

Inner Ear Barotrauma

Inner ear barotrauma most commonly occurs when a diver attempts to forcefully equalize his/her ears, which can result in deafness or vestibular disorders (parts of the inner ear and brain that help control balance and eye movements).

Symptoms of Inner Ear Barotrauma

Symptoms may develop immediately or after hours.

Hearing loss.

Feeling of fullness in the ear.

Tinnitus (ringing in the ears).

Vertigo (perception of motion, usually spinning).

Vomiting.

Treatment for Inner Ear Barotrauma

Rest with head elevated approximately 30 degrees.

Seek advanced medical care.

Mask Squeeze

Mask squeeze occurs when the air space in a divers mask is not equalized during descent. It is easily prevented by exhaling periodically into the mask from the nose when descending and anytime suction is felt on the face. Exhaling into the mask after each time you do ear equalization is good practice.

Mask squeeze is not usually dangerous, although severe mask squeeze can be.

Symptoms of Mask Squeeze

Blood in white of eyes.

Raccoon-like bruises over/around cheeks and eyes.

Treatment for Mask Squeeze

Mask squeeze is self-resolving. The color will probably fade to green or yellow before disappearing.

Pharmaceuticals:

Antibiotic drops (cortisporin) in severe cases to prevent infection.

Nitrogen Narcosis

Nitrogen narcosis is when a diver gets intoxicated by the nitrogen inside the compressed air tank. Severe cases can lead to death.

Most divers experience symptoms of nitrogen narcosis at depths greater than 30 m (100 ft.), but it can occur in as little as 10m depth. For this reason, it is not recommended to use compressed air deeper than 35 m (120 ft.).

Symptoms of Nitrogen Narcosis

Symptoms progressively worsen with depth.

Decreased co-ordination.

Euphoria.

Giddiness.

Light-headedness.

Severe symptoms:

Hallucination (sight and sound).

Increasingly poor judgment.

Overconfidence.

Slowed reflexes.

Unconsciousness.

Treatment for Nitrogen Narcosis

Ascend and stay in shallower water until symptoms resolve.

If symptoms do not resolve, there is another cause for the symptoms.

Hot Tub Folliculitis

Hot tub folliculitis (*Pseudomonas folliculitis*) is a skin infection that can occur after being in heated recreational water sources or from wearing a wet suit that has not been washed and dried properly after the previous use.

Symptoms of Hot Tub Folliculitis

Small, red, itchy or tender bumps usually within 48 hours of exposure and usually in areas covered by the bathing suit/wet suit.

Earache.

Headache.

Mild fever.

Nausea.

Sore throat.

Vomiting.

Treatment for Hot Tub Folliculitis

Pharmaceuticals:

Antihistamine.

Drying lotions, e.g., calamine.

Pulmonary Barotrauma

Pulmonary barotrauma (pulmonary over-pressurization syndrome) is a lung injury caused by the expansion of gas in the lungs during ascent in scuba divers and during descent in free diving.

It is not related to depth, dive time or nitrogen absorption, hence, all divers are susceptible. It is fatal.

It can be caused by holding the breath underwater, pre-existing lung conditions and/or rapid ascent.

Symptoms of Pulmonary Barotrauma

Chest pain several hours after diving.

Crepitus (grating feeling or sound).

Hoarse voice.

Severe Symptoms

Bloody sputum.

Decreased respiratory.

Fainting.

Pneumothorax.

Treatment for Pulmonary Barotrauma

Oxygen.

Prepare for and treat pneumothorax if needed; *Diagnoses and Treatments – Musculoskeletal System – Pneumothorax.*

Sinus Squeeze

Sinus squeeze (barosinusitis) is when pressure inside a sinus cavity causes pain. It commonly occurs if a diver has nasal congestion due to the inability to equalize sinus pressure.

Symptoms of Sinus Squeeze

Pain in and over the affected sinus is the main symptom.

Possible bloody nose.

Treatment for Sinus Squeeze

Avoid diving until recovered.

Warm compress to the face.

Monitor for development of sinusitis and treat if needed; *Diagnoses and Treatments – Head – Nose – Sinusitis.*

Pharmaceuticals:

Decongestant.

Corticosteroid.

Tooth Squeeze

Tooth squeeze (barodontalgia) mostly occurs during ascent. It is when gas/air gets trapped in either a cavity or filling, which causes pressure resulting in pain.

Symptoms of Tooth Squeeze

Bleeding around gums.

Broken tooth.

Tooth pain after diving.

Note: pain in the face and upper teeth is probably sinus squeeze; *Diagnoses and Treatments – Environmentally Induced – Cold and/or Water Induced – Diving Induced – Sinus Squeeze.*

Treatment for Tooth Squeeze

Pain will dissipate after time.

Discontinue diving until recovered.

Treat symptoms.

Heat and/or Sun Induced

General Prevention of Heat-Related Illnesses

Avoid drugs (including medical) and alcohol.

Maintain adequate hydration and nutrition.

Take the time to acclimatize.

Acclimatizing to Heat

Most heat-related illnesses can be prevented with proper acclimatization, i.e., the body will be able to deal with the heat if introduced to working in it in a controlled manner.

Acclimatize in similar conditions to what you will be in, e.g., if you are going somewhere hot and humid, it is best to acclimatize somewhere hot and humid.

Exercise moderately for 1 to 2 hours a day for 8 to 10 days.

As the days go on, gradually increase intensity and time spent working.

Burns

A burn is a flesh or skin injury caused by exposure and/or contact to/with heat, electricity, chemicals, friction or radiation.

Symptoms of Burns

The seriousness of burns is often categorized by their degree.

Superficial/First Degree:

Affects only the superficial skin (the epidermis).

Red, warm and dry.

Painful to touch.

Discomfort usually diminishes after 24 to 48 hours.

Partial Thickness/Second Degree:

Affects some underlying layers of the skin.

Blisters.

Clear or whitish fluid.

Moist.

Swollen.

Full Thickness/Third Degree:

Affects all layers of the skin and possibly even fat and/or muscle.

May appear charred or white.

May appear indented.

May cause shock.

Treatment for Burns

First, remove the heat source:

If clothing is on fire, roll on the ground or suffocate the flames, e.g., with a blanket.

If it is a chemical burn, or the eyes are involved, flush with copious water for at least 10 minutes.

It phosphorous, keep burn immersed in water.

Next:

Remove watches, jewelry, constrictive clothing *etc.*

Apply cool (not ice cold) water for at least 10 to 15 minutes.

Note: after 30 minutes cooling has no benefit other than comfort.

Consider draining large blisters; *Diagnoses and Treatments - Integumentary System – Blisters.*

Clean, cover and monitor; *Must Read - Open Wounds, Skin Infections and Sepsis - Open Wounds.*

Hydrate.

Wear loose, light clothing, e.g., cotton.

Full thickness burns may require a skin graft to heal.

Do Not:

Use lotion, grease, butter *etc.*

Remove embedded, charred material that will cause burned areas to bleed.

Move or rub the burned part.

Pharmaceuticals:

Burn cream.

Alternative/Natural Remedies for Burns:

There are a number of well known alternative/natural remedies to help heal and/or soothe first or perhaps even second degree burns.

Aloe Vera: split open a leaf and rub the gel directly on the burn every couple of hours.

Baking Soda: put 1/4 cup of baking soda into a warm bath, bathe in until the water cools off.

Black Tea: make yourself a cup of tea and then apply the used teabag topically.

Honey (raw):

Ø Pour clean honey liberally over and all around the burned area.

Ø Wrap with plastic wrap and secure with a bandage.

- Ø After 48 hours check for infection; treat if present, although it is not likely.
- Ø Remove charred or loose flesh; do not force removal if stuck to the wound.
- Ø Pour more honey over the wound and re-cover.
- Ø Repeat process every 2 days. Every time you open the dressing, add more honey. Do not wash off the honey.
- Ø After 7 to 10 days, the wound will begin to granulate. Do not wash. Leave the dressing off for an hour, then apply more honey and re-cover.
- Ø Remove dressing every 2 hours, and leave open for an hour longer each day.
- Ø After 3 weeks of doing this, you can wash the honey off. Do not use anything but clear, running, drinking quality water.
- Ø Continue to lightly dress.

Plantain: poultice.

Tannin: compress.

Vinegar:

- Ø A diluted 50/50 mix of vinegar and water will cool the burn and also help disinfect it.
- Ø Soak material in the mix and apply it to the burn.
- Ø Reapply as needed.
- Ø Vinegar could also be added to a cool bath, to soak clothing the patient will wear *etc.*

Yoghurt:

- Ø Use full fat yoghurt.
- Ø Smother the burn in yogurt.
- Ø Wait 15 minutes then bathe in cool water.
- Ø Could also be used as a compress.

Prevention of Burns

The two most common causes of burn injury are the sun and cooking accidents.

Prevention of Sunburn:

Be sun-safe. Minimize time in the sun, and when you are in the sun, Slip, Slop, Slap, Seek:

- Ø **Slip** on a shirt and long clothes in general.
- Ø **Slop** on lots of sunscreen regularly when exposed to the sun. Minimum SPF 30.
- Ø **Slap** on a wide brimmed hat and sunglasses.
- Ø **Seek** out shade and minimize time in the sun.

Prevention of Cooking Burns:

Protect yourself while cooking, e.g., hand protection.

If you need to test if something is hot, use the back of your hand.

Heat Edema

Heat edema is the swelling of extremities due to the heat. It may develop in the first few days of being in a hot climate.

Treatment for Heat Edema

Avoid diuretics, e.g., coffee.

Elevate affected limb.

Swelling will depreciate in time.

Heat Exhaustion

Heat exhaustion occurs when fluid loss is greater than fluid intake. It often occurs after strenuous activity in high temperatures.

The patient may also be dehydrated; *Diagnoses and Treatments - Circulatory System - Dehydration and Volume Shock – Dehydration.*

Symptoms of Heat Exhaustion

Chills.

Dizziness.

Elevated respirations, pulse and temperature.

Headache.

Nausea.

Sweating.

Vomiting.

Treatment for Heat Exhaustion

Rehydration; *Diagnoses and Treatments - Circulatory System - Dehydration and Volume Shock – Rehydration Plan.*

Place a moist, cold compress on the armpits, chest, groin and neck.

Remove restrictive clothing.

Rest in a cool environment.

Heat Rash

Heat rash (prickly heat) occurs when the sweat ducts become blocked and swell. It is usually found on body areas covered by clothing.

Symptoms of Heat Rash

Itching.

Red or pink rash-like dots or tiny pimples.

Treatment for Heat Rash

Avoid ointments or other lotions.

Dry and cool affected site.

Heat rash will usually dissipate within 10 days.

Loosen or remove clothing.

Pharmaceuticals: Antihistamine.

Heat Stroke

Heat stroke is when the body produces more heat than it can expel. It may or may not be preceded by heat exhaustion. It is life threatening.

Symptoms of Heat Stroke

Body temperature above 40.5 °C (105 °F).

Decreased blood pressure.

Decreased mental state.

Elevated pulse.

Elevated respiration.

Flushed or pale skin.

Seizures; *Diagnoses and Treatments – Head – Brain – Seizures.*

Sweat may or may not be present.

Treatment for Heat Stroke

Elevate legs above the heart.

Rapid cooling (e.g., cold water immersion, saturating and fanning, lying in a stream). Be careful not to overcool.

Rest.

Rehydration; *Diagnoses and Treatments - Circulatory System - Dehydration and Volume Shock – Rehydration Plan.*

Continue to cool until core temperature returns to normal, i.e., 38 °C (100.4 °F) to 39 °C (102.2 °F); check every 30 minutes.

Maintain airway, breathing and circulation; *Must Read – Immediate First Aid - Critical First Aid.*

Pharmaceuticals:

Benzodiazepine to treat seizures and shivering.

Prevention of Heat Stroke

Avoid drugs (including medical) and alcohol.

Maintain adequate hydration and nutrition.

Take the time to acclimatize.

Heat Syncope

Heat syncope is fainting as a result of low blood pressure due to overheating. It usually occurs due to standing in a hot environment for too long or standing up too fast.

Treatment for Heat Syncope

Cool the patient.

In case of a fall, perform a full secondary assessment.

Lay the patient flat and elevate his/her legs 15 to 30 degrees above the heart.

Oral fluids when alert.

If recovery does not occur after treatment, assess for more serious heat illnesses, e.g., heatstroke; *Diagnoses and Treatments – Environmentally Induced – Heat and/or Sun Induced – Heat Stroke*.

Hyponatremia

Hyponatremia occurs when there is excessive water consumption with inadequate salt replacement, e.g., when someone sweats a lot and drinks water to stay hydrated, but does not eat to replace salts.

Symptoms of Hyponatremia

Decreased mental status.

Dizziness.

Headache.

Muscle Cramps.

Nausea.

Loss of co-ordination.

Tremors.

Vomiting.

Vital signs and core temperature are often normal or only slightly irregular.

Treatment for Hyponatremia

Drink a full strength sports drink, but only if mental status is okay.

Eat when able.

If unable to drink, intravenous therapy may be needed.

Jet Lag

Jet lag (desynchronosis) is when your internal clock gets messed up due to crossing time zones too quickly, i.e., by plane. The problem occurs because your body is not used to the new daylight and darkness patterns.

This means that if you are traveling north/south along the same timeline, jet lag will not occur, no matter how long the flight is. Of course, you may not feel 100% due to a number of reasons, jet lag just won't be one of them in this case.

For most people, jet lag is only a problem when crossing two or more time zones. The time it takes for the body to adjust is dependent on the person and the number of time zones crossed.

Symptoms of Jet lag

Fatigue and/or insomnia are the major symptoms. Others may include:

Anxiety.

Constipation.

Diarrhea.

Irritability.

Nausea.

Treatment for Jet lag

Most people can expect their bodies to adjust at a rate of one or two time zones per day. This process can be made faster by helping the body adjust to the new time zone.

Change your watch to the new time zone and synchronize your routine to this new time zone including eating, exercising, sleeping, using the bathroom *etc.*

If you must nap, only do so for a maximum of an hour.

Avoid alcohol, caffeine and other drugs, including sleeping aids.

Keep hydrated.

Move about the plane.

If able, you can start this process a few days before you take off. In doing so, your body will not have to make such a big adjustment: Ø If traveling east, go to

bed an hour or two earlier.

Ø If traveling west, make it an hour or two later.

Lightning

Although rare, getting struck by lightning is not unheard of. Lightning can be present without rain or visible clouds.

People that have previously been struck or near struck are more susceptible, and about one out of every ten people that get struck by lightning die.

There are a number of ways lightning can cause injury: Contact with a conductive material that is hit or splashed by lightning.

Direct hit.

Splash (it first strikes an item then 'jumps' to the victim).

Vicinity, where the strike is close enough to affect the victim.

Signs of impending lightning strike: Blue halo around objects.

Hair stands on end.

High-pitched or crackling noises.

Symptoms of Lightning Strike

A number of injuries may be sustained from a lightning strike. Common ones are:

Altered mental state.

Burns.

Treatment for Lightning Strike

Victims of lightning do not stay 'charged' so rescuers are safe to treat any injuries that have occurred.

Treat any injuries.

Prevention of Lightning Strike

Know the weather forecast.

If you see lightning then hear thunder before you can count to 30 seconds:

Seek shelter in a sturdy building (not a tent or 'tin shed') or a metal topped vehicle (a sturdy building is preferred).

Close all windows.

Avoid all windows, open doors, fireplaces, metal structures *etc.*

Stay inside until 30 minutes after the last lightning is seen and/or the last thunder is heard.

Note: being in a metal topped vehicle may seem counter intuitive. Here is the reasoning:

- Ø A soft top vehicle will not help you since the lightning will go straight through it.
- Ø If lightning strikes the metal topped vehicle it will be grounded due to the tires. You will be safe (safer than outside) as long as you are not touching the metal frame whilst inside the vehicle.

If there is no adequate shelter:

If in a group, spread out.

Avoid cave entrances.

Avoid exposed areas, isolated tall objects, pools of water, anything metal, wet objects *etc.*

Crouch down on the balls of your feet and tuck your head in, i.e., make yourself as small as possible.

Do not touch the ground with your hands.

Insulate yourself from the ground, e.g., with a sleeping pad, rope.

Seek shelter in low ground.



Radiation Sickness

Radiation sickness is probably only likely if exposed to nuclear fallout, and although exposure to such an event may be slim, it is possible.

Radiation levels are measured in RADs and small amounts have little effect, in fact, we probably absorb about 0.6 RADs per year in normal settings, e.g., microwaves.

It is when we are exposed to a big dose in a short period of time that we get sick.

Once exposed to radiation: Your number 1 goal is to decrease your exposure. Do whichever is the best choice for your situation: Ø Find shelter.

Ø Leave the area, the further away you are the better.

Halving Thickness:

The effectiveness a material has against radiation in relation to the materials thickness is known as its halving thickness. Denser material has better halving thickness which means better protection.

One halving thickness will drop the exposure by one half. Doubling it will drop it to one quarter and tripling it will drop it to one eighth ($1/2 \times 1/2 \times 1/2$) etc.

Here are some halving thicknesses for some common materials: Ø Lead: 1 centimeter.

Ø Steel: 2.5 centimeters.

Ø Concrete: 6 centimeters.

Ø Soil (packed): 9 centimeters.

Ø Water: 18 centimeters.

Ø Wood: 30 centimeters.

For an illustrative example, if you are in a steel bunker 2.5 cm thick, it will drop your exposure to radiation by one half in comparison to the outside. To drop it by $1/4$ you need a 5 cm thick bunker etc.

You can estimate how long you should protect yourself for. Radiation levels usually drop about $1/8$ th of their level every 24 hours. There are a number of devices available for detecting and measuring radiation.

Symptoms of Radiation Sickness

Different levels of RADs have different effects, and symptoms may arise over time.

30 to 70 RADS: full recovery is likely Mild headache or nausea.

70 to 150 RADS: full recovery is expected Decreased immune system.

Decreased wound healing.

Mild nausea and vomiting.

150-300 RADS: may cause death Moderate nausea and vomiting.

Fatigue.

Weakened immune system.

300 to 500 RADS: may cause death Dehydration.

Diarrhea.

Fatigue.

Hair loss (over time).

Infection.

Moderate nausea and vomiting.

Skin breakdown.

Over 500 RADS: death almost certain Anorexia.

Bloody diarrhea.

Dehydration.

Fever.

Hair loss.

Infections.

Low blood pressure.

Spontaneous bleeding.

Stomach and intestinal ulcers.

Treatment for Radiation Sickness

Treat symptoms.

Hydration.

Maintain food intake.

Prevent additional exposure.

Rest.

Seek advanced medical care.

Prevention of Radiation Sickness

Pharmaceuticals:

Potassium iodine (KI) will prevent thyroid cancer. Take 130 mg (a standard tablet) 30 minutes to 24 hours prior to radiation exposure, and then once a day during prolonged exposure. Give children half doses.

An alternative to KI is 2 % iodine. Put 8 ml on your forearm or stomach 2 to 12 hours prior to exposure. Repeat daily. Only apply 4 ml for children under 70 kg, 2 ml for toddlers and 1 ml on infants. Cease after 3 days or when radioiodine levels have dropped to safe levels.

Cautions:

Do not drink iodine, it is poison if ingested.

If allergic to seafood you will probably be allergic to iodine.

Use caution if on other medication such as diuretics or lithium.

Smoke Inhalation

Smoke inhalation is the most common cause of death due to fire and is usually accompanied with burns in the airway.

It can cause asphyxiation (lack of oxygen) and/or chemical irritation.

Symptoms of Smoke Inhalation

Burns in the mouth, on the face, in the nose, in the pharynx (throat) *etc.*

Confusion.

Cough producing black sputum.

Difficulty swallowing.

Drooling.

Headache.

Muffled voice.

Shortness of breath.

Swollen tongue.

Wheezing.

Treatment for Smoke Inhalation

Move patient to clean air (only if safe to do so).

Treat critical injuries; *Must Read - Immediate First Aid - Critical First Aid.*

PROP; *Must Read - Immediate First Aid - Critical First Aid - Breathing – PROP.*

Pharmaceuticals: Albuterol (common asthmatic medication) may help.

Seek advanced medical care if: Difficulty breathing.

Hoarse voice.

Prolonged coughing.

Mental confusion.

Toxic Plants

There are a wide variety of toxic plants with have a wide range of symptoms, and some can be fatal. Sometimes a part of a plant can be edible while another part is not, e.g., you can eat the flower but not the stem. In others perhaps they are only edible when cooked a certain way *etc.*

In fact, there are so many plants and so many variables that for a majority of them, no specific treatment exists.

As a rule, do not touch, and especially do not ingest any plant that you are not 100% sure about.

Treatment for Toxic Plant Contact

Treat symptoms.

Use local knowledge.

For skin irritants, e.g., poison oak:

Thoroughly wash area.

Use alcohol to neutralize.

If ingested:

Take the following history:

- Ø Amount and part of plants ingested.
- Ø Initial symptoms.
- Ø Method of preparation, e.g., drying, cooking, boiling.
- Ø Number of persons who ate the same plant, and their symptoms.
- Ø Time between ingestion and onset of symptoms.
- Ø Time of ingestion.

Do not induce vomiting unless it is a specific treatment, but be prepared for it as a symptom.

Activated charcoal is preferable. If that is unavailable, mix tea and wood charcoal (not briquettes) and add milk of magnesia if available.

Note: be extra careful of passing on the toxin, e.g., touching your mouth or face after handling, giving rescue breaths.

You can learn more about plants at [**SurviveTravel.com/Useful-Plants**](https://www.survivetravel.com/useful-plants).

HEAD

Brain

Acute Stress Reaction

Acute stress reaction (ASRO) is a stress related psychological condition that will either cause a patient to panic or faint. Laymen often refer to this as shock, but it is not, though it can occur with shock; *Diagnoses and Treatments – Circulatory System – Dehydration and Volume Shock*.

Symptoms of Acute Stress Reaction

Fainting.

Panic attack.

Treatment for Acute Stress Reaction

Symptoms will subside with time.

Reassure the patient.

Treat other problems.

Epidural Hematoma

An epidural hematoma is when an artery inside the skull starts to bleed which results in an expanding blood clot.

Symptoms of an Epidural Hematoma

Patient wakes from unconsciousness and is normal, only to decline in mental status again, usually within 30 to 60 minutes.

Unconscious patient with one significantly larger pupil than the other.

Treatment for an Epidural Hematoma

Seek advanced medical care.

Headaches and Migraines

Headaches are often just a headache, but they are also a common symptom of other medical conditions.

There are a few different types of headaches.

Dehydration Headache

Dehydration is a common cause of headaches.

Symptoms of Dehydration Headaches

Pain on both sides, which worsens when standing up rapidly.

Treatment for Dehydration Headaches

Hydrate.

Rest.

Sinus Headache

A sinus headache is caused by a sinus infection.

Symptoms of Sinus Headaches

Constant pain in the front of the face.

Increased pain with head movement.

Often one-sided headache.

Treatment for Sinus Headaches

Treat the sinus infection; *Diagnoses and Treatments – Head – Nose – Sinusitis*.

Tension Headaches

This is the most common type of headache and is due to muscle spasms of the neck and head. It can be short-lived (e.g., 20 minutes), or may last up to a week.

Many things can cause a tension headache including anxiety, depression, head injury, head or neck in an abnormal position for a period of time, lack of sleep, poor posture, stress, teeth grinding *etc.*

Symptoms of Tension Headaches

Headache on both sides of the head and/or the back of the head and neck.

Sensation of pressure or tightening.

Treatment for Tension Headaches

Massage the back of the neck and temples.

Pharmaceuticals:

Analgesics.

Alternative/Natural Remedies: Clove oil topically to temples or neck.

Prevention of Tension Headaches

Identify and avoid the triggers.

Migraines

Migraines are recurrent moderate to severe headaches, the exact cause of which is uncertain.

Symptoms of Migraines

Affected vision, e.g., blurring, light sensitivity.

Nausea.

Pain behind the eye (usually one-sided).

Sensitivity to light, noise or odors.

Vomiting.

Treatment for Migraines

Bed rest in the dark.

Caffeine.

Pharmaceuticals:

Sumatriptan, e.g., Imitrex.

Alternative/Natural Remedies: Ice where it hurts most and on the back of the neck.

Keep body and head warm, e.g., hot bath, hot water bottle on feet.

Alternative/Natural Remedies for Headaches in General

Ice pack where the headache is.

Massage back of neck.

Massage where the headache is.

Lie down in a dark, quiet room.

Lie down in a calm, quiet room.

Sleep.

Clove oil (diluted) and mixed with salt (massage into the forehead).

1 drop of clove oil to the roof of the mouth.

Increasing Intracranial Pressure

Intracranial pressure (ICP) is pressure in the skull. Increasing ICP is when this pressure increases to dangerous levels and can lead to death.

Causes of Increasing ICP: HACE; Diagnoses and Treatments – Environmentally Induced – Altitude Induced – HAPE and HACE.
Infection; *Must Read – Open Wound and Skin Infections.*

Severe head injury (TBI); *Diagnoses and Treatments – Head - Traumatic Brain Injury.*

Stroke; *Diagnoses and Treatments – Head - Traumatic Brain Injury – Stroke.*

Symptoms of Increasing ICP

Early:

Change in mental status.

Persistent vomiting.

Severe headache.

Late:

Blown pupils.

Irregular respirations.

Low pulse.

Seizure.

Treatment for Increasing ICP

PROP; *Must Read - Immediate First Aid - Critical First Aid - Breathing – PROP.*

Seek advanced medical care.

Insomnia

Insomnia is the inability fall to sleep and/or to stay asleep for as long as you need.

Short term (acute) insomnia (days or weeks) may be caused by alcohol, caffeine, drugs, nicotine, illness, stress *etc.*

Long term (chronic) insomnia is when someone has insomnia 3 or more nights a week for over a month and may be caused by anxiety, chronic stress, depression *etc.*

Symptoms of Insomnia

Anxiety.

Daytime sleepiness.

Difficulty falling asleep.

Irritability.

Waking during the night and being unable to return to sleep.

Treatment for Insomnia

Treat underlying/contributing cause(s).

Pharmaceuticals:

Diphenhydramine: 12 years and older, 25 to 50 mg at bedtime.

Sleeping pills (caution of dependency).

Alternative/Natural Remedies:

Herbal tea: chamomile tea, ginger or peppermint after eating.

Salt and sugar: if waking up during the night, sprinkle a little salt and sugar (or salted honey) on the tongue.

Prevention of Insomnia

Avoid alcohol, caffeine and nicotine late in the day (at least 5 hours before).

Don't eat a heavy meal late in the day, but a light snack before bedtime may help.

Drink less before going to sleep.

Exercise regularly but not right before bedtime (at least 2 hours before).

Follow a routine to help you relax before sleep, e.g., read a book, listen to music, take a bath *etc.*

Have a comfortable sleeping area (consider noise, temperature, lighting *etc.*).

Have sex or masturbate before sleeping.

Maintain a consistent sleeping schedule, i.e., wake up and sleep at the same times every day.

Only use your bed for sleep and sex.

Meningitis

Meningitis is an infection of the spinal cord and brain lining, and although rare, it can be fatal in some cases (bacterial meningitis). It is completely different from influenza but the symptoms are almost exactly the same, which is why it is so dangerous; *Diagnoses and Treatments – Respiratory System – Cold and Flu*.

Symptoms of Meningitis

Tell-tale signs of meningitis to differentiate it from influenza are stiffness of the neck and back, and the lack of cough or a runny nose. Other symptoms are:

Fever.

Headache.

Intolerance to light.

High fever.

Nausea.

Rapid decline.

Vomiting.

Treatment for Meningitis

If you suspect meningitis, seek advanced medical care ASAP.

Pharmaceuticals: Antibiotics: ampicillin, metronidazole, sulfamethoxazole/trimethoprim.

Seizure

Seizures occur when there are changes in the brain's electrical activity with symptoms ranging from merely staring off into space to violent shaking. The underlying causes are numerous. Basically, anything that affects the body also may disturb the brain and cause a seizure.

Extremely long seizures can lead to coma or death.

Types of Seizures: Non-epileptic Seizures: these are typically a result of a head injury or an underlying illness. When the cause is treated the seizures go away.

Partial Seizures: these only affect one side of the body.

Generalized Seizures: these affect both sides of the body.

Petit mal Seizures: these are not as obvious and the patient may just be 'absent' for a short time (seconds), e.g., staring off into space.

Symptoms of Seizures

Some pre-seizure warning signs are: Altered vision.

Anxiousness or fear.

Dizziness.

Sick to the stomach.

Symptoms when a Seizure is in progress: Symptoms may be present for up to 15 minutes: Blackout followed by confusion.

Clenching teeth.

Drooling or frothing at the mouth.

Falling.

Loss of bladder or bowel control.

Making unusual noises, such as grunting.

Mood changes.

Muscle spasms.

Rapid eye movements.

Strange taste in the mouth.

Treatment for Seizures

Clear the area around the patient.

Cushion patients head.

Place on his/her side.

Seek advanced medical care if: Patient remains unconscious.

Seizures are repeated.

Seizure is longer than 3 minutes.

After the Seizure: Evaluate and treat any injuries.

Treat underlying cause.

Regardless of the symptoms, all seizures are a cause for concern and the patient should always be referred to advanced medical care.

If the seizures are due to epilepsy, the patient will probably know what to do for aftercare.

Stroke

A stroke is damage to the brain caused when the blood supply to the brain is either interrupted or reduced, e.g., burst blood vessel, clot, high blood-pressure. This causes brain cells to die.

Depending on the part of the brain of which the circulation is comprised, the functions of that part of the brain will be affected, e.g., speech, sight, comprehension.

Preventative measures mainly revolve around being healthy in general, e.g., exercise and nutrition.

Symptoms of Stroke

Altered consciousness.

Confusion.

Dizziness.

Headache.

Lack of coordination.

Loss of vision in one or both eyes.

Paralysis or weakness on one side of the body and/or face.

Slurred speech (or total inability).

Sudden severe headache.

Trouble with speaking, understanding *etc.*

Vomiting.

Treatment for Stroke

The first few days will show the most improvement, if any.

Seek advanced medical care.

Bed rest.

Elevate head and torso 30 to 40 degrees.

Maintain airway.

Oxygen.

Pharmaceuticals:

Blood thinners **ONLY** if certain the stroke is caused by a clot.

Traumatic Brain Injury

A head injury is considered a traumatic brain injury (TBI) when it results in amnesia, a change of mental status and/or a loss of consciousness. Usually there is no permanent damage unless the trauma is repeated, e.g., boxers.

Symptoms of a TBI

Amnesia (memory loss).

Change of mental status.

Temporary loss of consciousness.

Treatment for a TBI

If unconsciousness is more than 5 to 10 minutes, treat as increasing ICP;

Diagnoses and Treatments – Head – Increasing Intracranial Pressure.

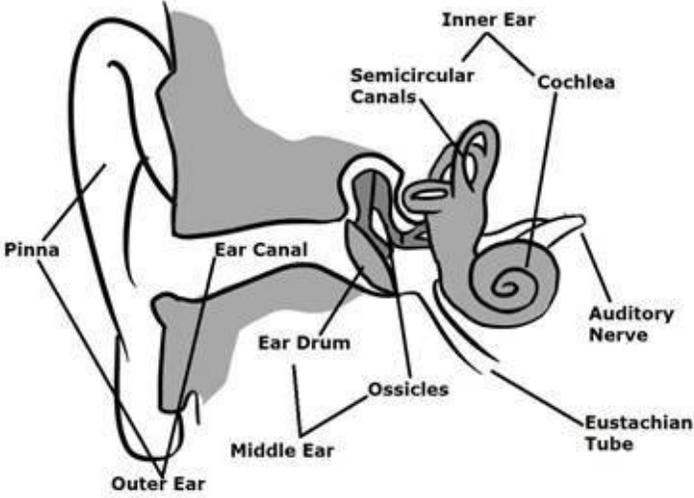
Perform spinal assessment; *Must Read – Secondary Exam – Spinal Assessment.*

Rest for at least 12 hours.

Observe for increasing ICP.

Awaken every 2 to 3 hours if sleeping to ensure no symptoms of increasing ICP.

Ears



Ear Infections

External Otitis

External otitis (swimmer's ear) is an infection in the outer ear canal. It's most common in children under the age of 15 and usually occurs after long periods of contact with water. It is not contagious.

Another cause is scratching the ear canal, e.g., when trying to clean the ears.

Sometimes the pus from otitis media (middle ear infection) can drain into the canal and cause external otitis; *Diagnoses and Treatments – Hear – Ears – Ear Infections – Otitis Media.*

Symptoms of External Otitis

Decreased hearing.

Earache.

Itching.

Pain which increases when ear is pulled.

Red, swollen canal.

Tinnitus (ringing in the ears).

Thick drainage from the ear canal.

Treatment for External Otitis

Keep ear dry if possible.

Warm compress to soothe the ear.

Pharmaceuticals:

Antibiotic ear drops, e.g., cortisporin 2 to 3 drops in the ear 4 times a day for 7 to 10 days.

Antibiotic, oral for severe cases: trimethoprim/sulfamethoxazole.

NSAIDs.

Prevention of External Otitis

Dry your ears thoroughly.

Keep all objects out of your ear canals.

Keep all objects out of your ear canals.

Medicated ear drops after swimming.

Otitis Media

Otitis media (middle ear infection) is the inflammation of the middle ear. It is most common in children and is usually associated with an earache.

Symptoms of Otitis Media

Dull appearance of eardrum (normally shiny and grayish).

Earache.

Fever.

Fluid from ear.

Hearing loss.

Holding or pulling the affected ear.

Loss of appetite.

Loss of balance.

Pain, especially when lying down.

Serious symptoms more common in adults.

Treatment for Otitis Media

Will usually self-resolve within 8 days.

A heat pack may soothe.

Pharmaceuticals:

Antibiotics if fever, no improvement within 72 hours, pain increase, symptoms of cold and/or re-occurring infections: amoxicillin/clavulanate 500 mg every 12 hours for 10 to 14 days or 875 mg every 12 hours for serious cases.

Antibiotics, other: amoxicillin, ampicillin, cephalexin, sulfamethoxazole/trimethoprim.

Alternative/Natural Remedies: Clove oil and sesame oil: mix 3 drops of pure clove oil in 2 teaspoons of sesame oil, warm it up and apply in ear.

Garlic and olive oil: Ø Crush a clove of garlic and mix with a teaspoon of hot olive oil for five minutes.

Ø Strain out the garlic.

Ø Once cooled, put a few drops at a time into your ear canal.

Hydrotherapy: Ø **This will help drain and soothe the ear.**

Ø Put a warm compress on the ear for 5 minutes, then a cold one for one minute.

Ø Repeat sequence five times, always ending with the cold.

Prevention of Otitis Media

Dry ears thoroughly.

Keep all objects out of your ear canals.

Refrain from bottle/breast feeding with infant lying flat.

Ear Wax

Ear wax is technically known as cerumen. It is normal and protective in healthy ears as it traps dust particles before they can reach the ear drum. Sometimes there can be a lot of buildup of cerumen, which may result in a blocked ear and therefore impaired hearing.

Prevention of this build up is regular cleaning of ears, but do not use cotton swabs as you are more likely to just push the wax in further. Also, sticking anything in your ear may lead to a perforated ear drum and/or otitis media;
Diagnoses and Treatments – Head – Ears.

A much safer alternative is to use a twisted up wet towel after your daily shower.

Symptoms of Ear Wax Buildup

Earache.

Impaired hearing.

Itching.

Odor or discharge.

Tinnitus (ringing in the ear).

Treatment for Ear Wax Buildup

Soften the wax, e.g., a few drops of warm olive oil.

Wait ten minutes then irrigate using a bulb syringe filled with warm water.

Tilt the ear you are irrigating slightly toward the floor so gravity will direct the water out of your ear.

Pull the external ear up and back.

Aim the syringe slightly up and back in the ear canal when squirting.

You may have to do the olive oil treatment 3 times a day for a few days in stubborn cases.



Foreign Bodies in the Ear

Any number of foreign bodies may enter the ear, e.g., dirt, insects *etc.* Luckily, the ear canal is very sensitive so the patient will usually notice if something is in there.

Symptoms of a Foreign Body in the Ear

Bleeding.

Discomfort.

Impaired hearing.

Nausea or vomiting if it's a live insect.

Sense of fullness in the ear.

If the foreign body is not removed, or goes unnoticed, it may lead to an ear infection. Signs of this are swelling or a foul discharge; *Diagnoses and Treatments – Head – Ears – Ear Infections – Otitis Media.*

Treatment for a Foreign Body in the Ear

Don't probe or jab.

Irrigate (bulb syringe or similar) with warm drinking grade water; *Diagnoses and Treatments – Head – Ears – Ear Wax.*

Do not irrigate in the case of a perforated eardrum.

Consider extracting object with forceps, irrigation is usually preferred.

Insects:

Shine a light to coax them out.

If that doesn't work, kill the insect with alcohol, 2 % lidocaine or mineral oil and then remove as usual.

Perforated Eardrum

A perforated eardrum is when the eardrum gets ruptured or punctured. It may be caused by air pressure changes, e.g., flying with a severe cold, ear infection, explosion, loud noises, surgery, trauma.

Symptoms of a Perforated Eardrum

Can be seen with an otoscope, unless infection blocks vision.

Earache.

Hearing loss.

Mucus discharge.

Tinnitus (ringing in the ears).

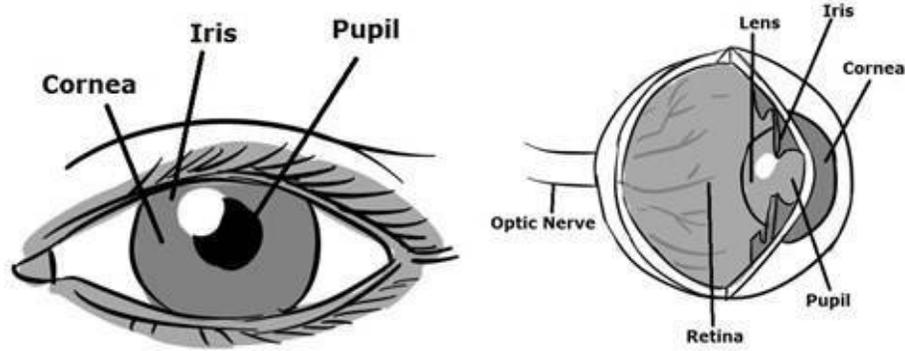
Treatment for a Perforated Eardrum

Usually self-heals within weeks.

Keep ear clean and dry while healing, e.g., cotton balls in ear whilst showering, no swimming.

Treat infection if needed; *Diagnoses and Treatments – Head – Ears – Ear Infections – Otitis Media.*

Eyes



Eye Patching

Many treatments of the eye call for patching of the eye. It can offer comfort and may even speed the healing process.

A patch may cause more problems for contact lens users.

Only patch an eye tightly enough to keep the eyelid shut.

Fold a gauze square or eye patch in half and place it over the closed eyelid.

If available, place another patch (unfolded) over the first one and tape completely over the patch from the forehead to the cheekbone.

If a second patch is not available, just tape the first folded one.

Inspect and re-patch every 24 hours if needed, using a clean patch every time.

Do your best to not use the eye, e.g., reading will use both eyes even if one is patched.

Do not use an eye patch if:

Infection is present, e.g., conjunctivitis, corneal ulcer.

Injury was caused by/contaminated with organic matter.

Injury is a penetrating injury; instead, use a donut bandage or protective cup to avoid pressure to the eye.

Foreign Bodies in the Eye

A foreign object is the most likely cause of eye irritation or pain.

Symptoms of a Foreign Body in the Eye

Irritation.

Pain.

Redness.

Tearing.

Treatment for a Foreign Body in the Eye

Locate the foreign body by examining the corners of the eye and under the eyelids; a moist cotton swab (Q-tip) can be used to lift and invert the eyelid.

Irrigate with drinking quality water (preferably disinfected) from the inside to the outside corner of the eye.

If the foreign body is not removed by irrigation, dab object off the eye with moist gauze.

If foreign body is still not removed, patch the eye for 24 hours and then reattempt removal as previously explained.

After removal, check for corneal abrasion; *Diagnoses and Treatments – Head – Eyes – Corneal Abrasion*.

A cool compress can soothe.

Pharmaceuticals: Antibiotic, topical, e.g., erythromycin: apply to inner surface of lid before patching.

Corneal Abrasion

A corneal abrasion is a scratch to the cornea.

People that wear contact lenses or have recently had a foreign body in the eye are at higher risk; *Diagnoses and Treatments – Head – Eyes – Foreign Bodies*.

Symptoms of Corneal Abrasion

Grain of sand feeling in the eye.

Irritation.

Redness.

Tearing.

Treatment for Corneal Abrasion

Healing should take a few days depending on the size of the abrasion.

Remove foreign body if present.

Irrigate.

Patch for 24 hours if it makes it feel better; *Diagnoses and Treatments – Head – Eyes – Eye Patching*.

If not patched, a cool compress can be applied.

If it does not heal in 4 days, gets larger or more painful, seek advanced medical care.

Pharmaceuticals: Antibiotic, topical, e.g., erythromycin; apply to inner surface of lid before patching.

Acute Angle-Closure Glaucoma

Acute angle-closure glaucoma (AACG) is when there is a sudden rise of pressure inside your eye, i.e., intraocular pressure. If not treated quickly it may lead to permanent blindness.

AACG may occur when the pupil is more dilated, e.g., watching television in dim light, excitement, stress.

Some medications may also trigger AACG, e.g., chlorphenamine, cimetidine, eye drops that dilate the pupil, general anesthetic, ipratropium (asthma medication), phenothiazines, ranitidine, SSRI (antidepressant), topiramate, tricyclic (antidepressant).

Farsighted individuals are more at risk.

Symptoms of Acute Angle-Closure Glaucoma

Ache around eye.

Blurred or reduced vision.

Dilation of pupil.

Eye feels hard to the touch.

Haloes around eyes.

Headache.

Nausea.

Redness.

Severe pain (sudden).

Vomiting.

Treatment for Acute Angle-Closure Glaucoma

Seek advanced medical care ASAP.

Do not cover.

Adopt a lying-up (supine) position as long as possible.

Pharmaceuticals: Anti-nausea.

Conjunctivitis

Conjunctivitis (pink eye) is a highly contagious eye infection. It is most common in children.

Symptoms of Conjunctivitis

Eyes 'glued' shut.

Itching.

Photosensitivity (sensitivity to light).

Pus and/or milky drainage.

Redness.

Treatment for Conjunctivitis

Do not patch.

Pharmaceuticals:

Antibiotic, topical, e.g., erythromycin; apply to inner surface of lid.

Alternative/Natural Remedies: Tea eyewashes: Ø **Chamomile tea (strong).**

Ø Baking soda (half a teaspoon in a cup of water).

Ø Honey tea (one tablespoon of honey dissolved in a cup of hot water).

Note: let teas cool before use.

Any of the above eyewashes can also be used as a compress. Apply for ten minutes every couple of hours.

Prevention of Conjunctivitis

Change contacts often.

Don't share eye drops, make up *etc.*

Keep contacts clean, e.g., don't put them in mouth.

Wash hands regularly.

Corneal Erosion

As the eyelid opens, a small part of the corneal epithelium (the 'shield' for the cornea) may be torn. It is more common if there is a history of corneal abrasion, and it often happens when first opening the eyes after sleeping; *Diagnoses and Treatments – Head – Eyes – Corneal Abrasion*.

Symptoms of Corneal Erosion

Pain.

Photophobia (light sensitivity).

Treatment for Corneal Erosion

Patch for twelve hours. Re-patch if needed; *Diagnoses and Treatments – Head – Eyes – Eye Patching*.

Pharmaceuticals: Antibiotic, topical, e.g., erythromycin (apply to inner surface of lid before patching).

Lubricant eye drops (e.g., Artificial Tears) every several hours.

Corneal Ulcer

A corneal ulcer is most commonly due to an infection and usually occurs after an injury and/or the use of soft contact lenses.

People who get a lot of cold sores often develop Corneal Ulcers; *Diagnoses and Treatments – Head -Mouth and Teeth – Cold Sores.*

Symptoms of Corneal Ulcers

Pain.

Photosensitivity (sensitivity to light).

Redness.

White or gray spot.

May have discharge.

Treatment for Corneal Ulcers

Do not patch.

Do not wear contact lenses.

Seek advanced medical care.

Pharmaceuticals: Antibiotic eye drops, preferably gatifloxacin ophthalmic.

Cycloplegic, e.g., atropine, cyclopentolate.

Displaced Contact Lens

Contact lenses can often become displaced. It will not go behind the eye.

Symptoms of a Displaced Contact Lens

Blurred vision.

Sensation of foreign body in the eye.

Treatment for a Displaced Contact Lens

Ensure the contact lens is still in the eye as it may have fallen out completely.

Attempt to feel the lens through the eyelid, applying artificial tears may help.

If you can see it, gently slide it back with a finger, and then remove it normally.

If that is not successful, ask the patient to look down as far as possible as you may then see it.

The use of a magnifying lens and light to find it may help.

Several minutes of gentle massaging over the closed upper lid may cause the contact lens to emerge.

If that fails, use upward finger pressure to lift the upper lid from the eye and sweep with a moist cue tip.

As a final option, fluorescein (a special type of dye) can be used to find it.

Giant Cell Arteritis

Giant cell arteritis (temporal arteritis, cranial arteritis) is a swelling of the lining of the arteries, generally in the head.

Symptoms of Giant Cell Arteritis

The main symptom is vision loss which usually affects one eye first. The second eye can be affected within hours or days.

Fever (low-grade).

Headache.

Jaw pain.

Ringing in ears.

Stroke (not common).

Vision loss (rapid and painless).

Treatment for Giant Cell Arteritis

Immediate pharmaceutical treatment is needed to prevent blindness.

Seek advanced medical care ASAP for further treatment.

Treatment should show improvement within a couple of days.

Pharmaceuticals: Corticosteroid: high dose, e.g., prednisone 100 mg/day.

Hyphema

Hyphema is blood in the front of the eye (the anterior chamber). It is most likely the result of a blunt injury to the eye and is usually not dangerous unless there is a loss of vision.

It is usually due to some kind of blunt trauma to the eye, but very forceful coughing or sneezing may also cause it.

Symptoms of Hyphema

Blood in the eye either as a red tinge or a pool.

Decreased vision and eye pain.

Treatment for Hyphema

Hyphema will resolve itself after a while.

Sit upright and rest.

Apply a cool compress.

Keep the head elevated.

Treat any abrasions.

Do not patch.

Pharmaceuticals: No NSAIDs.

Cycloplegic, e.g., atropine, cyclopentolate.

Impaling Object in the Eye

This is obviously a very serious injury, and loss of vision in the affected eye is high, especially in a survival situation.

Treatment for an Impaling Object in the Eye

Stabilize the object.

Patch both eyes; *Diagnoses and Treatments – Head – Eyes – Eye Patching.*

Seek advanced medical care.

If there is no advanced medical care:

If in a survival situation your options are limited.

If the object is not protruding from the eye it may be possible to let the wound heal over the object, but that will also increase the chance of infection.

Removal of the object is the other option.

A strong magnet may be helpful to remove metal splinters.

Colloidal silver orally as well as an eye wash.

If infection starts then evasive surgery must be considered.

The entire eyeball may have to be removed, which is a very high-risk procedure.

Solar/Ultraviolet Keratitis

Solar/ultraviolet keratitis (snow blindness) is a burn to the cornea as a result of intense exposure to UV light. It can occur within one hour, although symptoms may not show for up to 12 hours.

Symptoms of Solar/Ultraviolet Keratitis

Delayed onset of severe eye pain.

Impaired vision.

Gritty, burning sensation.

Photosensitivity (sensitivity to light).

Swelling of the eyelid.

Tearing.

Treatment for Solar/Ultraviolet Keratitis

Avoid the sun.

Remove contact lenses (if applicable).

Patch; *Diagnoses and Treatments – Head – Eyes – Eye Patching*.

Check and replace patch every 12 hours until healed, which is usually within 24 hours. If both eyes are affected and sight is needed, patch the eye that is more severely affected.

Cold compress can relieve pain.

Rest.

Pharmaceuticals: Antibiotic, topical, e.g., erythromycin; apply to inner surface of lid before patching.

Anesthetic, topical; use only once (to decrease pain during examination).

NSAIDs.

Prevention of Solar/Ultraviolet Keratitis

Protect eyes from glare, i.e., sunglasses, preferably with side shields.

Improvised eye protection can be made by cutting slits in a piece of cardboard,

duct tape, fabric *etc.*

Stye

A stye is like a pimple which forms on either the inside or outside of an eyelid. It is due to an infected oil gland and the main cause is poor hygiene.

Symptoms of a Stye

Discomfort or pain.

Redness.

Swelling.

Treatment for a Stye

Styes may last up to 2 weeks but can dissipate much faster if treated properly.

Allow stye to pop on its own.

Very warm moist compresses for 15 minutes, 4 times daily.

Close eye while applying compress.

Pharmaceuticals:

Antibiotic, topical, e.g., erythromycin (apply to inner surface of lid before patching).

Alternative/Natural Remedies:

Eyewashes: Ø **Strong chamomile tea.**

Ø Baking soda (1 teaspoon of baking soda in 2 cups of cool water).

Ø Honey tea (1 tablespoon of honey dissolved in a cup of hot water).

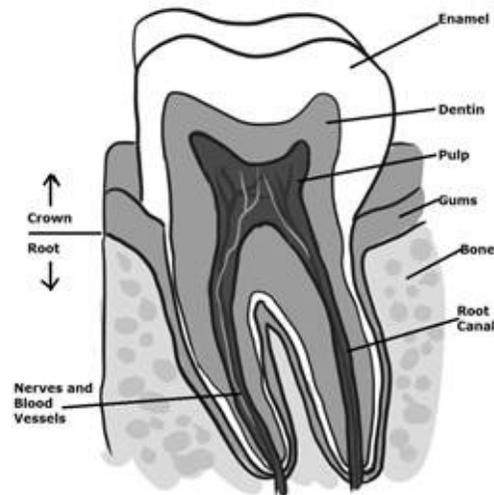
Note: let teas cool before use.

Any of the above eyewashes can also be used as a compress. Apply for 10 minutes every couple of hours.

Mouth and Teeth

Most issues with the teeth are not easily self-treated, and as such, they should not be.

When there is no dentist, e.g., in a survival situation, extraction of the problematic tooth will solve most dental emergencies; *Diagnoses and Treatments – Head – Mouth and Teeth – Dental Extraction.*



Crown: above the gum line.

Root: below the crown.

Alveolus: where the tooth sits.

Ligaments: what holds the tooth to the alveolar.

Enamel: the outside of the tooth, i.e., the white surface that you see.

Dentin: underneath the enamel and surrounding the pulp.

Pulp: all the blood vessels, nerves *etc.* that are in the middle of the tooth.

In any dental procedure:

Wear gloves, mask, eye protection *etc.*

Try to keep the area around the tooth as dry as possible.

Use cotton balls or rolled gauze around the tooth to help control bleeding.

Toothache

The common toothache (pulpitis) is mainly caused by a bacterial infection which is a cause of tooth decay. It is an inflammation of the dental pulp tissue.

Symptoms of a Toothache

Increased sensitivity to hot/cold stimuli.

Throbbing pain, radiating to the eye or ear region.

Treatment for a Toothache

Go to a dentist.

Clove oil applied topically will ease the pain.

If no dentist is available:

Be sure to identify the bad tooth correctly.

A dental mirror and pick will be useful.

Look for obvious cavities, abscess, trauma *etc.*

If nothing obvious is present, use hot/cold stimuli to further investigate.

Touch the teeth where there is the problem with something cold. A bad tooth is very sensitive to cold.

Touch this same tooth with something hot.

If there is pain there it may need to be extracted.

If there is no pain to heat, it can be repaired.

Remove decay and fill.

If there is no sensitivity to hot or cold but pain to the slightest touch, there is root nerve damage and extraction is needed; *Diagnoses and Treatments – Head – Mouth and Teeth – Dental Extraction.*

In a survival situation, treatment for a diseased tooth is extraction - the sooner the better.

Pharmaceuticals:

NSAIDs.

Dental Extraction

Extracting a tooth is extremely difficult, especially if untrained, and even more so in a survival situation where you may not have access to the proper tools. On the other hand, extraction will fix almost all otherwise non-treatable dental issues. This is good to know if you find yourself in a survival-type situation in which there isn't a dentist.

The procedure will cause lots of pain, so analgesic is advised.

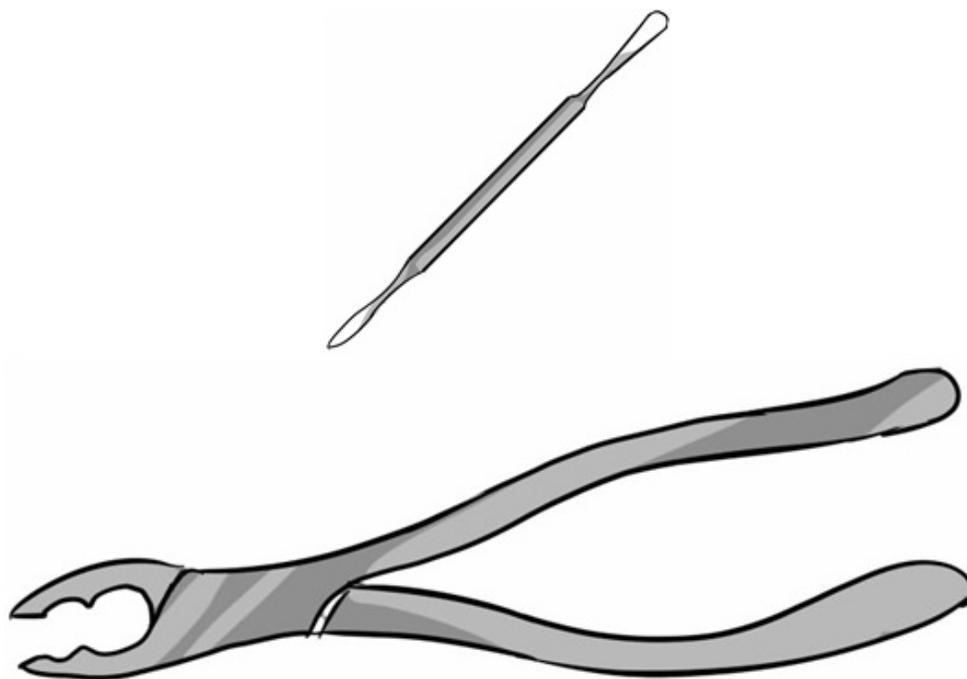
Tools Needed for Field Dental Extraction:

Analgesic.

Elevator (left picture).

Extraction Forceps (right picture).

Gauze.



Improvise if the correct tools are not available.

Procedure for Field Dental Extraction

Position yourself correctly:

- Ø If you are right handed, stand to the right of the patient and if you are a left

hander, stand to the left.

Ø If working on the upper teeth, the patient's mouth is best at your elbow height; have the patient head down at a 60 degree angle to the floor.

Ø If working on the lower teeth, the patient's mouth is best lower than your elbow and the patient sits upright.

Most people prefer to be in front of the patient except for lower molars where you might be better off behind.

Numb the tooth if possible. Clove oil contains eugenol which is well known for being a dental analgesic. Use a high concentration but be careful as it can burn the mouth, i.e., only apply it to the teeth.

Loosen the tooth. Using a dental elevator or similar (see picture above), apply light pressure between the tooth and gum on all sides to sever the ligaments and get to the root area. It will bleed.

Remove the tooth. If the tooth does not come out after severing the ligaments, use the extraction forceps (or similar) and grip the tooth as far down the root as possible.

Front teeth have one root. Pull them straight out, following the line of the tooth, i.e., directly down or up depending on if they are upper or lower teeth.

For other teeth, which have more than one root, use a rocking motion to help loosen it as you pull it out. Once loose, extract the tooth away from the tongue.

Commonly, the tooth will break. Use an elevator to push the remainder out.

Put gauze on the bleeding socket. The patient must bite down on it to keep it in place. Heavy bleeding may require stitches.

After-care of a tooth extraction: Cold packs for first 48 hours to reduce swelling.

Warm compresses beyond 48 hours to reduce stiffness.

Do not smoke, spit, use straws or do anything that may affect the clot.

No blood thinners, e.g., aspirin, alcohol.

Only consume cool liquids and soft foods for 72 hours.

Monitor for dry socket; *Diagnoses and Treatments – Head – Mouth and Teeth –*

Dry Socket.

Pharmaceuticals:

NSAIDs (ibuprofen, because aspirin thins the blood too much.)

Avulsion

Avulsion is when the tooth is completely knocked out by some kind of trauma.

Treatment for Avulsion

If you can find and re-implant the tooth within 30 minutes, attempt to do so.

Avoid touching the roots, i.e., pick it up by the crown.

Irrigate with saline solution or milk (do not scrub).

Place in preservation solution if available; if unavailable, place in milk, saline or saliva rather than plain water.

Thoroughly empty and irrigate the socket.

Put the tooth back into the socket with slow, steady pressure.

Cover it with gauze and have the patient bite down to keep it in place.

Splint it with soft wax to the neighboring teeth. Candle wax will work if there's nothing else.

Put the patient on a liquid diet.

Monitor for dry socket; *Diagnoses and Treatments – Head – Mouth and Teeth – Dry Socket.*

Note: do not replace children's primary (non-adult) teeth.

Dry Socket

Dry socket (alveolar osteitis) occurs in the socket bed after a tooth has been removed. It is due to the absence of a blood clot. It usually results in increased pain and a longer healing time after tooth avulsion or extraction; *Diagnoses and Treatments – Head – Mouth and Teeth*.

Symptoms of Dry Socket

Clot is gone.

Foul odor in breath.

Bad taste in mouth.

Pain in socket.

Treatment for Dry Socket

Irrigate and redress.

Medicated dressing until pain subsides.

Prevention of Dry Socket

After an avulsion or extraction: Avoiding hot fluids for 48 hours.

Don't smoke.

Don't drink through a straw.

Don't spit forcefully.

Take recommended medications.

Aphthous Ulcers

Aphthous ulcers are non-infectious sores that appear in the mouth. They are usually painful.

The cause is unknown but they are more common in women than in men. Some medications may trigger them, e.g., nicotine gum.

Patients usually have a history of similar ulcerations.

Symptoms of Aphthous Ulcers

Burning in the mouth a day or so before an ulcer appears.

Lesion(s) (painful with a red halo).

Treatment for Aphthous Ulcers

The lesions usually dissipate within 10 to 14 days, but some things can be done to speed up the process and/or reduce pain: Avoid spicy, salty and acidic foods and drinks.

Brush with a soft toothbrush.

Drink through a straw (not hot liquids).

Pharmaceuticals:

Chlorhexidine mouthwash.

Steroid lozenges.

Broken or Chipped Tooth

A broken or chipped tooth occurs when a fragment of the tooth breaks off. It may be due to biting down on something hard, trauma *etc.*

The sooner it is treated, the more likely the tooth can be fixed.

Symptoms of a Broken or Chipped Tooth

Pain when exposed to saliva, air, or hot or cold stimuli (food or beverages).

Visible missing fragments of the tooth.

Treatment for a Broken or Chipped Tooth

Save the pieces of the broken tooth.

Rinse pieces and wrap in moist fabric.

Rinse mouth with warm saltwater.

Apply gauze to stop any bleeding; cold water will help also.

Cover sharp edges with wax or sugarless gum.

Ice area.

Get to a dentist ASAP.

If no dentist is available, extraction may be needed; *Diagnoses and Treatments – Head – Mouth and Teeth – Dental Extraction.*

Cold Sores

Cold sores (herpes labialis, fever blisters) are the result of an infection that manifests on the lip. It may be caused by dehydration, local skin trauma, menstruation, stress *etc.*

It is infectious, so avoid touching the sores, wash hands frequently and don't share oral items, e.g., water bottles.

Symptoms of Cold Sores

Early symptom of tingling on the lip.

Small blisters or sores on or around the mouth.

Fever.

Sore Throat.

Treatment for Cold Sores

Sores usually dissipate within 2 to 3 weeks but are reoccurring.

Pharmaceuticals:

Famciclovir and other similar medications are available to speed up healing.

Alternative/Natural Remedies: Garlic: cut a garlic clove in half and place it directly on the cold sore for 10 minutes, several times a day. It may be uncomfortable and/or sting.

Condensing Osteitis

Condensing osteitis is the inflammation at the root of a tooth, as a result of a reaction to an infection.

Symptoms of Condensing Osteitis

Localized pain.

No obvious swelling.

Sensitive to tapping.

Throbbing.

Treatment for Condensing Osteitis

Condensing osteitis is usually self-resolving.

Soft diet.

Extract as last resort.

Pharmaceuticals: NSAIDs.

Dental Abscess

A dental abscess is a collection of pus around a tooth. It is commonly caused by a bacterial infection which may stem from tooth decay, broken teeth *etc.* If untreated, the infection will probably spread to other areas of the body.

In a normal setting you should go to the dentist. In a survival situation, extraction may be needed.

Symptoms of a Dental Abscess

Discomfort or pain.

Possible fever.

Sensitive/Painful to touch.

Swelling.

Treatment for a Dental Abscess

Drainage.

Extraction; *Diagnoses and Treatments – Head – Mouth and Teeth – Dental Extraction.*

Pharmaceuticals: Antibiotics alone will not cure a dental infection but can be helpful to reduce symptoms. Use with other treatment, e.g., drainage.

Antibiotic: amoxicillin/clavulanate 875 mg two times a day for 7 to 10 days.

Antibiotic: amoxicillin.

Fractured Tooth

A fractured tooth is basically a cracked tooth.

Symptoms of a Fractured Tooth

May have no symptoms at the start.

Pain as damage increases to the nerve.

Pain when chewing.

Severe fractures may cause bleeding.

Treatment for a Fractured Tooth

Stop the bleeding with direct pressure. A moistened teabag works well.

Cap the exposed area, e.g., candle wax, cavit.

Reposition the tooth as precisely as possible.

Splinting is recommended. If no access to specialist equipment, candle wax is better than nothing.

If the crack extends below the gum line, extract the tooth; *Diagnoses and Treatments – Head – Mouth and Teeth – Dental Extraction.*

Gingivitis and Gum Disease

Gingivitis is a bacterial infection of the gums. The exact cause is unknown, but poor oral hygiene is the general cause. If left untreated, gingivitis can progress to periodontitis (gum disease).

Symptoms of Gingivitis

Bad breath or bad taste in the mouth.

Bleeding gums, during and after brushing.

Loose or shifting teeth.

Pockets forming between teeth and gums.

Receding gums.

Red, swollen, or tender gums.

Treatment for Gingivitis

Prevention and treatment are the same: Brush.

Floss.

Mouthwash.

Regular dental check-up and clean.

Pharmaceuticals:

Antibiotics for serious cases only: doxycycline 100 mg every 12 hours for 3 days.

Others antibiotics: amoxicillin, metronidazole.

Lost Filling

A lost filling is when a previous filling falls out.

Treatment for a Lost Filling

Same treatment as a broken/chipped tooth; *Diagnoses and Treatments – Head – Mouth and Teeth – Broken/Chipped Tooth.*

Luxation

Luxation in dentistry is basically when a tooth has been pushed out of place, usually from some type of trauma.

Symptoms of Luxation

There are 5 types of luxation:

Concussion: there is no abnormal displacement or loosening but has reaction to being tapped (percussion).

Subluxation (loosening): a tooth that is knocked loose but not out of its alveolar socket.

Extrusive Luxation: partial displacement of the tooth out of its socket, the tooth is usually mobile.

Intrusive Luxation: displacement of the tooth deeper into the alveolar bone, fracture of the alveolar socket is also usually present.

Lateral Luxation: eccentric (off-center) displacement of the tooth and usually accompanied with fracture of the alveolar socket. The tooth is usually not mobile and there is a metallic tone when tapped.

Treatment for Luxation

Avoid use of affected teeth.

Splint if severe loosening, e.g., wax if nothing better.

Soft diet for 2 weeks.

Extrusive and lateral luxation: gently and slowly push back in place before splinting.

Intrusive luxation: spontaneous re-eruption (self-resolves) or orthodontic extrusion (manually pull it back into position).

Mandibular Dislocation

The mandible is the lower part of the jaw bone. A dislocation will probably render the patient incapable of closing his/her mouth.

A dislocation of the mandible can be brought on by something as simple as yawning, but if it is caused due to trauma, expect a fracture.

Symptoms of Mandibular Dislocation

Unable to fully open or close the mouth.

Pain.

Treatment for Mandibular Dislocation

Rest your thumbs on the patient's lower molars.

Move the lower jaw down, then push in, and finally up so it 'click' back into place.

Once fixed, the patient should avoid opening the mouth to extent.

Myofascial Dysfunction/Pain

This is immobility or pain in the chewing muscles of the jaw, which is usually caused by the grinding of teeth and/or excessive chewing, e.g., eating chewy and/or dried foods.

Symptoms of Myofascial Dysfunction

Clicking of jaw.

Deviation of the chin to one side on opening.

Headache or earache; *Diagnoses and Treatments – Head.*

Inability to open the mouth widely.

Limited jaw movement.

Pain in the muscles used for chewing.

Tenderness of jaw muscles.

Treatment for Myofascial Dysfunction

Avoid grinding teeth.

Moist heat to jaw.

Soft diet.

Thrush

Thrush is an oral yeast infection and is usually found in the mouth of infants; it sometimes spreads to the nipple tissue of breastfeeding mothers.

Symptoms of Thrush

Irritation.

White patches in the mouth which may bleed if wiped off.

Treatment for Thrush

Pharmaceuticals: Antifungal: fluconazole once a day for a week.

Antifungal: nystatin Alternative/Natural Remedies: Baking soda solution: 1 teaspoon to 8 ounces of water, apply to nipples.

White Vinegar (distilled): apply to nipples.

Yogurt: apply inside mouth.

Tonsillitis

Tonsillitis is when the tonsils, located at the back of your throat, become infected. It is more common in children.

Symptoms of Tonsillitis

The main symptom is the inflammation of the tonsils. Sometimes the swelling can result in difficulty of breathing. Other symptoms include:

Abdominal pain (children) Bad breath.

Blisters or ulcers on the throat.

Difficulty swallowing.

Discoloration of tonsils (white or yellow).

Ear pain.

Fever.

Headache.

Hoarseness.

Nausea (mainly in children).

Pain.

Voice loss.

Vomiting (mainly in children).

Treatment for Tonsillitis

Eat soft foods.

Gargle with warm salt water.

Lozenges.

Rest.

Warm or very cold fluids to ease throat pain.

Pharmaceuticals: Antibiotics if a bacterial infection: amoxicillin, azithromycin.

If viral, it should self-resolve (antibiotics won't work).

Nose

Broken Nose

A broken nose is actually a fracture of the nose usually caused by some form of trauma.

Symptoms of a Broken Nose

Difficulty breathing through the nose.

Pain, especially when pressure is applied.

Possible deformity.

Treatment for a Broken Nose

Consider adjusting obvious deformity back in place, although further damage may be caused.

Use both hands to straighten the cartilage.

Consider taping into position.

Place some ice wrapped in a cloth over the nose, for periods of 20 minutes throughout the day; do this for 48 hours.

Pharmaceuticals:

Nasal decongestant may help with swelling in the nasal passages.

Foreign Body in the Nose

A foreign body in the nose is when there is something stuck in the nose, e.g., beads, food, rocks, small parts of toys. The object may have gotten there voluntarily, e.g., a child sticking something in his or her nose, or by way of trauma. The object may or may not be in view.

Symptoms of a Foreign Body in the Nose

Bloody discharge.

Breathing difficulty.

Feeling of something present in the nose.

Foul smelling discharge.

Pain.

Sensitivity.

Swelling.

Visually seeing something in the nose.

Treatment for a Foreign Body in the Nose

Ø Breathe through the mouth.

Ø Close the unaffected nostril (press it).

Ø Blow gently out the nose.

If above does not work, attempt extraction with tweezers (or similar) but only if you can see the object.

Stop extraction if: Ø Extreme pain occurs.

Ø Object moves deeper.

If that does not work the object may have to be surgically removed. Seek advanced medical care.

Nosebleed

The common nosebleed (epistaxis) is due to a hemorrhage from the nose which may be caused by dry air, excessive picking, hypertension, irritation, trauma, underlying illness, upper respiratory infection *etc.*

Treatment for a Nosebleed

- Ø Breathe through the mouth.
- Ø Do not swallow blood; spit it out instead.
- Ø Sit upright with head tipped slightly forward.
- Ø Ice pack to bleeding side of nose.
- Ø Pinch nostrils and push towards the face for 10 to 15 minutes.

If after 15 minutes the nose is still bleeding, repeat the pressure for another 10 to 15 minutes.

If still bleeding: Flush with sterile saline, and then gently insert a thin strip of cloth drenched in epinephrine.

Do not remove the packing for several hours.

Raw Nose

A raw nose is a chapped nose, i.e., like chapped lips, but on your nose. It most often occurs due to the drying out of the nose from dry air, blowing the nose too much.

Symptoms of a Raw Nose

Irritation.

Raw inflammation inside nose.

Soreness.

Treatment for a Raw Nose

Avoid hot water on the nose.

Moisturize the nose, e.g., a damp cloth, face lotion, petroleum jelly.

Prevention of a Raw Nose

Keep hydrated.

Use a humidifier.

Use special tissues.

Sinusitis

Sinusitis is a nasal infection.

Symptoms of Sinusitis

Bad breath.

Cough.

Dental Pain.

Facial pain which may increase with head movement.

Facial tenderness.

Fatigue.

Fever.

Headache.

Loss of smell.

Nasal congestion.

Nasal discharge.

Treatment for Sinusitis

Hydration.

Warm facial compresses for relief.

Pharmaceuticals: Avoid diphenhydramine.

Antibiotic: amoxicillin/clavulanate 500 mg every 12 hours for 10 to 14 days or 875 mg every 12 hours for 10 to 14 days or longer for recurrent and/or more serious cases.

Antibiotic: ciprofloxacin 500 mg every 12 hours for 10 days.

Antibiotics, other: amoxicillin, ampicillin, azithromycin, levofloxacin, sulfamethoxazole/trimethoprim.

Corticosteroids if severe, e.g., prednisone.

Decongestants.

Nasal vasoconstrictors, e.g., Afrin (do not use for more than 5 day).

NSAIDs.

CIRCULATORY SYSTEM

Dehydration and Volume Shock

Dehydration occurs when the body loses too much water from things such as diarrhea, sweat, urine, vomiting *etc.*

Volume shock, specifically hypovolemic shock, is when the body loses too much fluid, i.e., blood and/or water.

Severe dehydration can lead to volume shock, and if volume shock is left untreated it will lead to death.

Most people (adults) require 2 to 3 liters of fluid replacement each day. This of course is highly dependent on many factors, e.g., size, environment, physical exertion, illness.

Dehydration

Common sense will help prevent dehydration. If you are losing more fluid than normal then replace it. The clearer your urine, the better. If it is dark and/or pungent, drink water.

Symptoms of Dehydration

Mild dehydration occurs when 2 % of a person's water content is lost:

Anxiety.

Concentrated Urine (darker).

Decreased work efficiency.

Loss of appetite.

Increased rate of pulse and/or respiration.

Moderate dehydration occurs when 4 % of a person's water content is lost:

As well as the symptoms of mild dehydration, the patient will also experience:

Decreased blood pressure.

Dizziness.

Fatigue.

Mood swings.

Nausea.

Vomiting.

Severe dehydration occurs when 6 % of a person's water content is lost:

As well as the symptoms of mild and moderate dehydration, the patient will also experience:

Loss of coordination.

Decreased skin turgor (when the skin is pulled up for a few seconds and does not return to its original state).

Incoherence.

Minimal or no urine output.

Further decline of vitals.

Treatment for Dehydration

Treat cause.

Rehydrate; *Diagnoses and Treatments – Circulatory System – Dehydration and Volume Shock – Rehydration Plan.*

Volume Shock

Volume shock occurs when there is a major loss of fluid from the body, i.e., blood and/or water loss. It is a deadly complication of a variety of underlying problems, most commonly dehydration or major hemorrhage.

Symptoms of Volume Shock

Decreased mental status.

Decreased urine output.

Fast breathing.

Pale, cool and sweaty skin.

Weak, fast pulse.

Treatment for Volume Shock

Treat the cause.

Rehydrate; *Diagnoses and Treatments – Circulatory System – Dehydration and Volume Shock – Rehydration Plan.*

Intravenous therapy may be needed, e.g., a blood transfusion.

Rehydration Plan

Oral Rehydration Solution

Only use oral rehydration if the patient is capable or it may cause more harm than good, e.g., if the water goes into the airways.

Oral rehydration solutions are available commercially or can be easily made by combining 6 teaspoons sugar, 0.5 teaspoon salt and 1 liter of drinkable water.

Intake 50 to 200 ml/kg/24 hours (the stomach can only absorb 1 liter of liquid per hour).

If oral rehydration is not possible due to patient condition, intravenous therapy may be required.

BRAT

When the patient is able, advance to BRAT foods: Bananas, Rice, Applesauce, Toast or crackers (plain) Finally, give the patient solid foods.

Diabetic Related Illnesses

Diabetes is basically when there are high blood sugar levels in the body. Diabetics are more prone to infection, illness and temperature related injuries; *Diagnoses and Treatments - Environmentally Induced.*

There are three main types of Diabetes: Type 1 is when the body does not produce enough insulin. The cause is unknown.

Type 2 is when cells do not respond to insulin properly. The cause is usually due to an unhealthy lifestyle, e.g., overweight.

Gestational diabetes is when pregnant women develop a high blood glucose level.

Diabetes Maintenance: Backup source of insulin.

Frequent munching.

Injectable glucagon.

Monitor blood sugar and keep accurate levels.

Plan meals for routine.

Prevention of Diabetes

Maintain a healthy lifestyle.

Hypoglycemia

Hypoglycemia is low blood sugar, and although not as common, can also happen to non-diabetics. It can be caused by alcohol, birth defect, diabetes, excessive insulin, hormone deficiencies, infection, medications and poisons, organ failure, prolonged starvation *etc.*

Symptoms of Hypoglycemia

Onset in minutes/hours.

Anxiety.

Decreased AVPU; *Must Read - Immediate First Aid - Critical First Aid - Mental Status – AVPU.*

Skin cool and moist.

Vitals elevated.

Treatment for Hypoglycemia

If unconscious, rub sugar (honey) under tongue and around gums.

Complex carbohydrates if able to eat.

Glucose solution.

Hydration if able to drink.

Hyperglycemia

Hyperglycemia is excessive blood sugar, and although not as common, can also happen to non-diabetics. It can be caused by critical illness, diabetes, drugs *etc.*

Symptoms of Hyperglycemia

Decreased AVPU.

Flushed, dry skin.

Fruity smell on breath.

Intense thirst.

Loss of appetite.

Nausea.

Onset in days.

Progressive dehydration; *Diagnoses and Treatments - Circulatory System - Dehydration and Volume Shock – Dehydration.*

Treatment for Hyperglycemia

Adjust insulin and diet.

Hydration.

Fainting

This covers fainting (syncope) not associated with seizures. A person who faints from a seizure will have jerky movements or will stare into space; *Diagnoses and Treatments – Head – Brain – Seizures*.

Fainting can be caused by a number of things, e.g., ASR, dehydration, low blood sugar.

Treatment for Fainting

Unless there is a serious underlying problem, most people will regain alertness shortly.

If the patient feels that he/she is going to faint before it happens, have them sit down and put their head between their knees.

If you see them fainting, gently lower them to the ground, preferably on their back.

Do a critical assessment and treat as needed, e.g., CPR, direct pressure to wounds; *Must Read – Immediate First Aid – Critical First Aid*.

If there is no serious underlying problem: Cool the patient if hot,
Fresh air.

Loosen constrictive clothing.

Lie patient flat on his/her back and raise their legs 60 cm above their heart/head.

Slowly sit the patient up when ready.

Eat and drink when alert.

Continue to rest until strength returns.

Assess for other injuries, e.g., concussion from fall.

Internal Bleeding

When an artery or vein ruptures blood will collect inside the body. This is internal bleeding. Put simply, it is getting a cut inside the body. It can be caused by alcohol-and/or drug-induced liver damage, blunt trauma, deceleration trauma, fractures, medication, pregnancy, spontaneous bleeding *etc.*

If it occurs in the chest, abdomen, pelvis, retroperitoneum (the space in the abdominal cavity behind the peritoneum) and/or thighs it can become life threatening.

Symptoms of Internal Bleeding

Symptoms of internal bleeding depend on the part of the body that has suffered damage. Internal bleeding is often accompanied with other medical issues.

Bruising (localized).

Bruising on the side indicates abdominal bleeding.

Black stool indicates bleeding in stomach or small intestine.

Blood from any orifice (mouth, nose, ears, anus, vagina or urethra).

Blood in urine indicates bleeding in the kidney or bladder.

Decreased mental status indicates bleeding in the brain, e.g., stroke; *Diagnoses and Treatments – Head – Brain – Stroke.*

Impaired vision indicates bleeding in the eye.

Inflammation indicates leaking outside a blood vessel.

Pain (localized): the pain is often the affected site, e.g., if caused by a fracture.

Pain in chest or that radiates to the shoulder indicates bleeding in the diaphragm.

Volume shock; *Diagnoses and Treatments – Circulatory System – Dehydration and Volume Shock – Volume Shock.*

Treatment for Internal Bleeding

Exact diagnosis and treatment is almost impossible without advanced medical care. The important thing is to notice the possible signs and symptoms so you can seek professional advice earlier rather than later.

Avoid unnecessary movement of the patient.

Treat all fractures, in particular an unstable pelvic fracture.

Treat the cause.

DIGESTIVE SYSTEM

Abdominal Pain

The acronym **ABDOMINAL** can help you to assess the cause of abdominal pains.

Associated symptoms: what other symptoms are present, e.g., nausea, vomiting, fever, weakness, headache?

Blood: is there blood in the stool or vomit? How much? What color is it (red or darker)?

Description: what does the pain feel like? Is it sharp or dull, constant or intermittent, localized or general, is it getting worse?

Onset: when did the pain start? Was it gradual or sudden? What makes it feel better (or worse)?

Menstruation: is it a female patient? Could her menstruation cycle have anything to do with it? Could she be pregnant?

Inspection: inspect the abdomen with palpation. Is there any tenderness?

Nutrition: this includes food and hydration. What's gone in? What's come out?

Auscultation: what sounds are his/her bowels making? *Must Read – Secondary Exam - Physical Exam – Full Body Exam (Abdomen).*

Losing volume: is the patient vomiting? Does the patient have diarrhea? If so, how much?

Treatment for Abdominal Pain

Treat underlying problem if possible.

Rehydrate if needed.

Seek advanced medical care if: Abdominal trauma.

Altered mental status.

Blood in vomit or stool other than small amount, e.g., hemorrhoid; *Diagnoses and Treatments – Digestive System – Hemorrhoids.*

Diarrhea for over 24 hours.

Dehydration; *Diagnoses and Treatments - Circulatory System - Dehydration and*

Volume Shock – Dehydration.

Fever.

Persistent pain.

Tenderness for over 24 hours.

Vomiting for over 24 hours.

Alternative/Natural Remedies: Ginger.

Honey, water and vinegar.

Peppermint tea.

Alcohol Related Illnesses

Alcohol Poisoning

Alcohol Poisoning is the over consumption of alcohol to dangerous levels. It usually occurs when drinking large amounts of alcohol in a short time and can be life threatening.

Besides drinking alcoholic beverages, it can also occur if household products that contain alcohol are consumed.

Symptoms of Alcohol Poisoning

Confusion.

Hypothermia; *Diagnoses and Treatments - Environmentally Induced – Cold and/or Water Induced – Hypothermia.*

Reduced breathing, less than eight breaths a minute.

Seizures; *Diagnoses and Treatments – Head – Brain – Seizures.*

Skin discoloration (blue tinge or pale).

Unconsciousness.

Vomiting.

Treatment for Alcohol Poisoning

A person who cannot be woken up is in danger of dying. Get to advanced medical help ASAP.

All cases of alcohol poisoning should be referred to advanced medical help.

Do not induce vomiting.

Keep patient awake.

Sit patient upright or lay them on their side if unable to sit.

Hangovers

A hangover is the unpleasant symptoms you experience after the consumption of alcohol. It may be helpful to keep in mind the following while drinking; the more you drink the more likely and worse your hangover will be.

Symptoms of a Hangover

Anxiety.

Dehydration.

Depression.

Dizziness.

Fatigue and weakness.

Headache.

Increased heart rate.

Irritability.

Light and sound sensitivity.

Muscle aches.

Nausea.

Shakiness.

Stomach pain.

Vomiting.

Treatment for a Hangover

Hangovers dissipate on their own within a day or two.

Hydration. Sports drinks are good.

Honey. Eat a few tablespoons of honey.

Sleep.

Pharmaceuticals: Analgesics (acetaminophen is preferred over NSAIDs).

Prevention of Hangovers

The obvious prevention is to not drink. Otherwise, try the following:

Alternate alcoholic drinks with nonalcoholic beverages.

Avoid darker colored drinks.

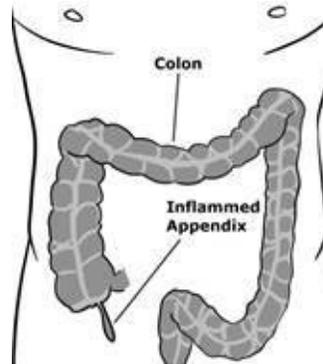
Before you go to sleep, drink electrolytic drinks and take a couple of Tylenol.

Don't smoke or do other drugs whilst drinking.

Eat before drinking.

Appendicitis

Appendicitis is the inflammation of the appendix. Patients are usually under 40. No obvious cause has been proven.



Symptoms of Appendicitis

Discomfort in the area of the belly button which moves to lower right of the abdomen after 12 to 24 hours.

Abdominal swelling.

Constipation or diarrhea.

Difficulty passing gas.

Fever and chills.

Nausea.

Loss of appetite.

Pain worsening with coughs or walking.

Vomiting.

Note: a sign of a ruptured appendix is if the pain increases when you remove your hand after pressing it.

Treatment for Appendicitis

Seek advanced medical care.

Restrict patient to clear liquids in small amounts.

Surgical removal of appendix if possible; ensure positive diagnosis as some conditions show similar symptoms to appendicitis, e.g., kidney diseases, ovarian

cysts, pelvic inflammatory disease, tubal pregnancy etc.; *Diagnoses and Treatments – Genitourinary System.*

Pharmaceuticals:

If surgery is not possible, administer antibiotics.

Antibiotic combination: ciprofloxacin 500 mg every 12 hours and metronidazole 250 to 500 mg every 8 hours.

Constipation

Constipation is the when a person suffers from infrequent or hard-to-pass bowel movements. Some common causes are lack of exercise, lack of opportunity to defecate, dehydration, lack of fiber *etc.*

Symptoms of Constipation

Cramping.

Hard, dry stool.

Unable/unwilling to move bowels.

Treatment for Constipation

Caffeine. It is a diuretic found in coffee, tea *etc.* Drink an extra glass of water for every cup.

Hydration. 2 liters of water a day for adults Increase fiber intake, e.g., bran, psyllium seed (Metamucil).

Provide a comfortable environment to pass the stool, e.g., private, lots of time.

Raw dehydrated flax seeds can help prevent traveler's constipation.

Pharmaceuticals: Laxative.

Stool softener.

Diarrhea and Dysentery

Diarrhea

Diarrhea is when you get frequent loose, watery stool.

Treatment for Diarrhea

Most cases of diarrhea will resolve itself in 24 hours if you restrict the patient to nothing but easily digested foods, i.e., applesauce, bananas, crackers, noodles, potatoes, rice, soups and toast.

Traveler's diarrhea can last up to a week.

Identify and treat/prevent the cause.

Monitor and treat to prevent dehydration; *Diagnoses and Treatments – Circulatory System – Dehydration and Volume Shock – Dehydration.*

Rehydration plan; *Diagnoses and Treatments – Circulatory System – Dehydration and Volume Shock – Rehydration Plan.*

Pharmaceuticals:

It is best to just let diarrhea pass, but if you need to slow the symptoms, these medications can help:

Anti-fever.

Antisecretory: Pepto-Bismal every hour, max 20/day.

Loperamide: Imodium, 4mg initial dose then 2 mg every 4 hours, max 16 mg/day.

More Serious than Diarrhea

Diarrhea in many cases is just diarrhea, but sometimes it is the sign of something more serious, e.g., appendicitis, cholera, colitis, intestinal bleeding, liver dysfunction.

Symptoms of Something More Serious than Diarrhea

Black or grey-white stool.

Blood or mucus in the stool.

Diarrhea lasting more than 3 days.

Diarrhea violent for more than 24 hours.

Fever equal to or greater than 38 °C (101 °F).

'Rice water' diarrhea with fishy smell indicates Cholera.

Severe vomiting.

Major abdominal distension and pain.

Moderate to severe dehydration.

Treatment for Something More Serious than Diarrhea

Seek advanced medical care.

Treat cause if possible.

Treat dehydration; *Diagnoses and Treatments – Circulatory System – Dehydration and Volume Shock – Dehydration.*

Pharmaceuticals:

Do not give antimotility agents, e.g., loperamide (Imodium).

Antibiotics are not needed for recovery in most cases and should only be considered in severe cases. For traveler's diarrhea research must be done in cases of antibiotic resistance depending on region.

Antibiotic for cholera: ciprofloxacin 1 g orally once, as an adjunct to fluid and electrolyte replacement.

Antibiotic for cholera: doxycycline 200 mg on the first day, given in 2 divided doses followed by 100 mg per day or 100 mg orally every 12 hours for severe cases.

Antibiotic for infectious diarrhea: ciprofloxacin 500 mg every 12 hours for 5 to 7 days.

Antibiotic for traveler's diarrhea: ciprofloxacin 500 mg every 12 hours for 3 to 7 days.

Antibiotic for traveler's diarrhea: sulfamethoxazole/trimethoprim.

Prevention of Diarrhea

Avoid milk.

Clean and/or peel fruits and vegetables.

Cook food thoroughly.

Cook food properly.

Disinfect water.

Practice good hygiene.

Dysentery

Dysentery is diarrhea which contains blood. It may be caused by an infection (viral, bacterial or parasitic), ingestion of contaminated food or water, oral contact with contaminated objects or hands, poor hygiene *etc.*

Symptoms of Dysentery

Abdominal pain.

Diarrhea.

Feeling of incomplete defecation.

Fever.

Treatment for Dysentery

Drink lots of boiled water.

Pharmaceuticals:

Do not give antimotility agents, e.g., loperamide (Imodium).

Specific medications for dysentery depend on the type, i.e., amoebic or bacillary. The diagnosis of these is usually made in a lab with stool samples.

If there is no advanced medical care available, and the dysentery does not self-resolve, a combination of an amoebicidal drug (to kill parasites) and an antibiotic (to treat bacterial infection) may help, e.g., ampicillin (antibiotic) 500 mg every 6 hours and metronidazole (systemic amoebicide) 750 mg 3 times a day for 5 to 10 days.

Alternative/Natural Remedies for Diarrhea and Dysentery in General:

Brown rice water. Boil brown rice in double the amount of water with a pinch of salt. Strain and drink. the water.

Tea every 2 to 3 hours: chamomile (strong), garlic and honey, peppermint, plantain seeds, tannin (strong for dysentery, will taste terrible), ginger tea will decrease any abdominal cramps.

For severe cases when nothing else is available: Bones: burn then grind them into a powder. Swallow the powder.

Chalk: consume school chalk Activated charcoal is preferable. If that is unavailable, mix tea and wood charcoal (not briquettes) and add milk of

magnesia if available.

Diverticulitis

Diverticulitis is a common intestinal infection, usually in people over 40. Pouches can form inside the lining of the colon, known as diverticula. When these pouches fill with feces, it can lead to infection.

Symptoms of Diverticulitis

Symptoms may last hours, weeks or even longer. The most common one is pain in the lower left of the belly, which may be worse when moving. Pain could also be on the lower right, which is more common in those of Asian descent. Other symptoms include: Bloating and gas.

Constipation or diarrhea (diarrhea less common).

Fever and chills.

Loss of appetite.

Nausea.

Vomiting.

Treatment for Diverticulitis

Seek advanced medical care for further testing.

Treat symptoms, e.g., compresses for belly pain, NSAIDs.

Pharmaceuticals: Antibiotic combination: ciprofloxacin 500 mg every 12 hours and metronidazole 7.5 mg/kg every 6 hours, maximum 4 g per day for 7 to 14 days.

Prevention of Diverticulitis High fiber diet.

Regular bowel movements.

Food Poisoning

Food poisoning or food-borne illness is when infectious organisms (bacteria, viruses and parasites) or their toxins are consumed.

Most cases of food poisoning are mild and resolve after time. Others, such as toxins from plants may be more serious and advanced medical care may be needed; *Diagnoses and Treatments – Environmentally Induced – Toxic Plants*.

Symptoms of Food Poisoning

Confusion.

Dizziness.

Nausea.

Palpitations.

Vision disturbances.

Vomiting.

Treatment for Food Poisoning

Wash your mouth out as soon as possible.

Make yourself vomit either with 2 fingers down your throat or Ipecac. When using Ipecac, only use the smallest amount that will cause you to vomit.

Drink lots of clear fluids to help flush your system.

Pharmaceuticals: Activated charcoal is preferable. If that is unavailable, mix tea and wood charcoal (not briquettes) and add milk of magnesia if available.

Alternative/Natural Remedies: Apple cider vinegar: two tablespoons of apple cider vinegar in a glass of water, 4 times a day, sweeten if needed.

Lemon juice: a glass of lemon juice 4 times a day, sweeten it if needed.

Gas

Gas (flatus), is created in the stomach when the body breaks down food. Most people pass gas about 14 times a day. Excessive gas may be caused by certain foods or beverages, certain medication, swallowing too much air, underlying medical problems, e.g., Crohn's disease.

Symptoms of Gas

Bloated feeling.

Burping.

Flatulence.

Pain if gas is in the intestine.

Treatment for Gas

Treat underlying illness.

Change diet.

Pharmaceuticals: Simethicone, e.g., Gas-X, Mylicon.

Alternative/Natural Remedies: Garlic.

Ginger.

Heartburn

Heartburn (acid reflux, indigestion, pyrosis, GERD etc.) is a burning sensation in the chest, behind the breastbone. It is caused by stomach acid flowing back up into the gullet (the pipe that food moves down).

The pain may also radiate up to the throat.

Treatment for Heartburn

Epigastric pain (upper central region of the abdomen) may be relieved by eating.

Pharmaceuticals:

Antacids, e.g., Mylanta, Roloids, Tums.

Anti-ulcer meds, e.g., Famotidine, Omeprazole.

Prevention of Heartburn

If you are prone to heartburn, consider the following: Don't eat within 2 hours of lying down.

Eat smaller portions.

Eat slower.

Avoid heartburn triggers. They are different for different people, e.g., caffeine, chocolate, citrus, high-fat foods, onions, peppermint, tomatoes.

Hemorrhoids

Hemorrhoids are painful, swollen veins in the lower portion of the rectum that often protrude from the anus. They are more common during pregnancy and are caused by low fiber diets and/or too much pressure.

Symptoms of Hemorrhoids

Bluish lump at the edge of the anal opening or inside the anal canal.

Inflammation, itching and redness to anus.

Pain while defecating and sitting.

Small amount of blood in stool.

Treatment for Hemorrhoids

Hemorrhoids usually go away after a few weeks. If needed you can try the following to soothe discomfort:

Pads (cushioning).

Pharmaceutical:

Hydrocortisone cream.

Specific soothing creams, e.g., Anusol.

Stool softeners to decrease further trauma.

For severe cases the clot may need to be removed: If advanced medical care is not available, a simple incision can be made to relieve pressure. This will not remove the hemorrhoid completely and it may come back.

Clean the area thoroughly with antiseptic.

Use local anesthesia if available.

Incise the skin over the hemorrhoid and drain the clotted blood; only cut as deep as you have to in order to drain the blood.

Relief should come very quickly.

Be prepared to absorb any bleeding, e.g., gauze pads.

Clean and dress.

Hepatitis

Hepatitis is when the liver becomes inflamed. This impairs the body's ability to do many important things, including processing toxins. Hepatitis can result in death.

There are many types of hepatitis, but hepatitis A, B and C are most common.

Advanced medical care is needed for precise diagnosis and treatment. If that is not available, field diagnosis and treatment are the same regardless of the type.

Symptoms of Hepatitis

Dark Urine.

Extreme fatigue.

Fever.

Grey stools.

Itchy feeling all over the body.

Jaundice (when the skin and the whites of the eyes turn yellow).

Liver becomes enlarged and/or tender to the touch.

Nausea.

Weight loss.

Note: people with hepatitis may be symptomless.

Treatment for Hepatitis

Most hepatitis will self-resolve after 2 to 6 weeks, but the patient should keep rested for 6 weeks after recovery.

Avoid fatty foods and alcohol.

Decrease protein intake.

Eat. Force feed if needed.

Improve hydration, especially with herbal teas, vegetable broths and diluted vegetable juices.

Increase zinc intake.

Prevention of Hepatitis

Hepatitis B vaccine; *Must Read – Prevention – Vaccinations.*

Hygiene.

Not abusing drugs.

Safe Sex.

Nausea and Vomiting

Nausea is an uneasy feeling in the stomach which is often followed by vomiting.

There are many possible causes including brain injury, drugs, emotional stress, motion sickness, morning sickness, overeating, pain (intense), smells, ulcers, underlying illnesses *etc.*

If vomiting does not cease within 24 hours, it may lead to volume shock;
Diagnoses and Treatments - Circulatory System - Dehydration and Volume Shock – Volume Shock.

Treatment for Nausea and Vomiting

Fresh air.

Treat the cause.

Pharmaceuticals: Anti-vomiting medication, e.g., ondansetron (Zofran).

Dimenhydrinate (Dramamine) for motion sickness: 50 to 100 mg every 4 to 6 hours, to a maximum of 400 mg in 24 hours, the first dose should be taken 30 to 60 minutes before starting activity.

Alternative/Natural Remedies: Clove oil: diffused clove oil is good for morning sickness. One drop on the roof of the mouth may help any nausea.

Ginger: most useful for motion sickness. Candied ginger is good to keep handy when traveling.

Peptic Ulcer

Peptic ulcers (stomach ulcers) are painful sores in the lining of the stomach. There are a variety of causes, including NSAIDs.

Symptoms of Peptic Ulcers

Bloating.

Dark stool, i.e., blood (severe cases).

Heartburn.

Nausea.

Pain (burning) in the middle or upper stomach between meals or at night, can be severe.

Vomiting (blood in severe cases).

Treatment for Peptic Ulcers

Peptic ulcers are often self-healing.

Medicinal treatment requires specific diagnosis and a combination of medicines.

If experiencing severe and/or lingering symptoms, seek advanced medical care.

Alternative/Natural Remedies: Raw cabbage juice. 1 liter a day for 10 days.

Prevention of Peptic Ulcers

Eating four or five small meals a day.

Avoid alcohol, carbonated beverages, coffee, fruit juice and milk.

Salmonella, Typhoid Fever and Paratyphoid Fever

Salmonella is a type of food poisoning which can cause typhoid fever, paratyphoid fever and salmonellosis. The most common foods affected are beef, eggs, milk and poultry, but anything has the potential to be infected and will often show no signs of contamination.

Apart from poorly handled food, salmonella can also be transmitted via drinks and animal feces (especially that of baby birds), rodents, reptiles or any pet that has diarrhea. Be sure to wash your hands after being in contact with any of these types of animals.

Symptoms of Salmonellosis

Abdominal cramps.

Diarrhea.

Fever.

Treatment for Salmonellosis

Salmonellosis usually subsides within a week.

Treat symptoms.

Monitor for dehydration; *Diagnoses and Treatments - Circulatory System - Dehydration and Volume Shock - Dehydration.*

Pharmaceuticals: Antibiotic: ciprofloxacin, 500 mg every 12 hours for 10 days.

Typhoid/Paratyphoid Fever

Typhoid fever is caused by either the salmonella typhi or paratyphi bacteria. For practical purposes, consider paratyphoid a less serious version of typhoid fever.

Regions of highest risk are Chile, India, Mexico, Pakistan, Peru, Southeast Asia and Sub-Saharan Africa.

It is possible for carriers to have no symptoms and carry/pass on the illness for years.

Vaccinations are available; *Must Read – Prevention – Vaccinations.*

Symptoms of Typhoid and Paratyphoid Fever

Abdominal pain.

Constipation.

Decreased appetite.

Decreased heart rate (bradycardia).

Diarrhea (more common in young children).

Fever as high as 40 °C (140 °F), slowly increasing over days and lasting 20-ish days before reducing again.

Generalized aches and pains.

Headaches.

Lethargy.

Reddish lesions on torso (rare).

Treatment for Typhoid and Paratyphoid Fever

Uncomplicated typhoid fever usually resolves within a month.

Pharmaceuticals:

Antibiotics can speed up recovery. Improvement will show within days and recovery follows within weeks. Exact diagnosis is made with a stool sample and correct antibiotics are given accordingly.

Relapses may occur after a week or two and are more common in those that take antibiotics. Relapses are treated in the same manner.

Antibiotic: ciprofloxacin 500 mg every 12 hours for 10 days.

Antibiotics (other): ampicillin, azithromycin.

Prevention of Salmonella, Typhoid Fever and Paratyphoid Fever

Apart from general good hygiene, the following precautions can be taken:

Avoid raw or unpasteurized dairy products.

Cook foods well.

Do not eat undercooked eggs, including those in homemade sauces/salad dressings (Caesar, hollandaise sauce, mayonnaise etc.) or other foods (ice cream, tiramisu etc.).

Keep uncooked meats separate from produce, cooked foods, and ready-to-eat foods (cross-contamination).

Wash or peel fruit and vegetables.

Worms

Worms are parasites which live inside the body. They are contagious so immaculate hygiene is needed to prevent the spreading of them.

Symptoms of Worms

Diarrhea.

Gas or bloating.

Fatigue.

Itching in the anal area.

Nausea.

Passing a worm in your stool.

Stomach pains.

Weight loss.

Vomiting.

Treatment for Worms

Keep hands away from anus, e.g., when sleeping.

Wash anus every morning.

Pharmaceuticals: Vermicides, e.g., Vermox.

Alternative/Natural Remedies: Garlic.

Honey, vinegar and water. Drink lots of it regularly.

Kerosene or gasoline. Drink a few tablespoons, kerosene is best. Only use if there is no other choice.

Tannin tea (strong).

GENITOURINARY SYSTEM

Kidney Infection

If a urinary infection is left untreated, it may spread to the kidneys. If the kidney infection is not treated, it can lead to sepsis in the bloodstream; *Must Read - Open Wounds, Skin Infections and Sepsis - Open Wound.*

Symptoms of a Kidney Infection

Abdominal pain.

Bloody, cloudy or foul urine.

Decreased mental status in the elderly.

One-sided back or flank pain.

Pain when urinating.

Persistent fever and chills.

Treatment for a Kidney Infection

Tests, e.g., a blood culture should be done for a proper diagnosis so the correct antibiotic and dosage can be administered.

Pharmaceuticals: Antibiotic: cephalexin 500 mg every 6 hours for 14 days.

Kidney Stones

Kidney stones are small and hard deposits made from mineral and acid salts which form inside the kidneys. They can be painful to pass but usually no permanent damage is caused.

Kidney stones often form when urine becomes concentrated, so adequate hydration is a good preventative.

Symptoms of Kidney Stones

Blood in urine.

Severe flank pain, radiating to genitals.

Treatment for Kidney Stones

Hydration.

Wait for the stone to pass.

Consider surgery if stone does not pass on its own.

Pregnancy

Pregnancy is the development of one or more fetuses in the womb. In a normal setting it can be a blessing and although complications can arise, the general procedure of birth has a high success rate.

In the case where there is no advanced medical care or facilities, it is best to avoid pregnancy.

During all stages of pregnancy it is important that the patient has adequate nutrition.

Symptoms of Pregnancy

Absent menstruation.

Backache.

Darkening of the nipples.

Fatigue.

Frequent urination.

Hemorrhoids.

Nausea and vomiting, i.e., morning sickness; *Diagnoses and Treatments – Digestive System – Nausea and Vomiting.*

Stretch marks.

Tender Breasts.

Varicose veins.

Visually pregnant.

Symptoms of Impending Labor

An approximate due date can be calculated if the first day of the patient's last period is known. From that date, subtract 3 months and then add 7 days. For example:

The first day of her last period is November 7th, minus 3 months is August 7th, add 7 days is August 14th.

Expect the following near this due date: Change in abdominal appearance, i.e., the fetus repositions deep in the pelvis.

Mucus-like and sometimes bloody discharge.

Contractions becoming more frequent.

Her water will break.

Note: contractions may be irregular. This is a false labor. Have the patient lie on her left side and hydrate well. .

Delivery

Construct a very sterile environment with gloves, clean sheets *etc.* Avoid touching anything but the baby and the mother.

Place a sheet under her buttocks and onto your lap, and a towel on her belly.

Crowning is when the baby's head becomes visible.

If the water has not broken, it will be visible and will rupture.

Place two fingers along the edge of the vagina between the vagina and anus (perineum).

Gently move your fingers from side to side to give the baby more room.

The baby's head may move in and out with each contraction, this is okay.

With each contraction the mother should take a deep breath and push while exhaling slowly.

Once the baby has been born, dry and wrap him/her in the towel on the mother's belly.

Pregnancy Complications

Hyperemesis Gravidarum

Hyperemesis gravidarum is excessive vomiting during pregnancy.

Treatment for Hyperemesis Gravidarum

Treat for dehydration; *Diagnoses and Treatments - Circulatory System - Dehydration and Volume Shock – Dehydration.*

Miscarriage

When a woman miscarries, many times she will not pass all of the dead tissue relating to the pregnancy. On occasion, this tissue will become infected or cause excessive bleeding.

Symptoms of Miscarriage

Bleeding or spotting from the vagina.

Pain simulating menstrual cramps.

Treatment for Miscarriage

Bed rest.

Watch for infection (fever and/or a foul discharge from the vagina).

Pharmaceuticals: Antibiotics, other: clindamycin, metronidazole.

Pregnancy-Induced Hypertension

Pregnancy-induced hypertension usually occurs during the last month of pregnancy, most often with her first baby. It can lead to seizures and can be life threatening; *Diagnoses and Treatments – Head – Brain – Seizures.*

Symptoms of Pregnancy-Induced Hypertension

Elevated blood pressures.

Extreme swelling.

Treatment for Pregnancy-Induced Hypertension

Bed rest on the left side.

Consume less salt.

Hydration (8 glasses of water a day).

Consider blood pressure medication.

Prostatitis

Prostatitis is an infection of the prostate gland. It is most common in men under the age of 50.

Symptoms of Prostatitis

Symptoms depend on the cause, e.g., bacterial, immune system disorder, prostate injury *etc.* They may include: Difficulty urinating.

Flu-like symptoms (with bacterial Prostatitis).

Frequent urination (especially at night).

Pain in the abdomen, groin or lower back.

Pain when ejaculating.

Pain in the penis or testicles.

Pain in the perineum.

Pain when urinating.

Urgent need to urinate.

Treatment for Prostatitis

Seek advanced medical care for definitive diagnosis and treatment.

Pharmaceuticals:

Alpha blockers to ease symptoms.

NSAIDs.

Antibiotic for chronic bacterial prostatitis: ciprofloxacin 500 mg every 12 hours for 28 days.

Antibiotics, other: cephalexin, levofloxacin, sulfamethoxazole/trimethoprim.

Alternative/Natural Remedies

Avoid alcohol, caffeine and acidic or spicy foods.

Relieve pressure off the prostate, e.g., sit on a pillow.

Soak in a warm bath.

Sexually Transmitted Infections

There are many sexually transmitted infections, most of which are easily prevented with safe sex practices, i.e., monogamous relationships and/or the strict use of condoms.

Sexually transmitted infections are most commonly spread through sexual activity, but they may also be spread by fluid contact with an infected person, e.g., pregnant woman to unborn child.

General Treatment for Sexually Transmitted Infections

If you suspect any sexually transmitted infection, seek advanced medical care for a definitive diagnosis.

Partners should also be tested, even if they have no symptoms.

After treatment, get retested to make sure it is gone.

Do not have sex until you are sure both you and your partner no longer have the disease.

General Prevention of Sexually Transmitted Infections

Antibiotic prophylactic (preventative) if at high-risk, e.g., after sexual assault.

Condoms.

Monogamous relationships.

Regular STI checks.

Pharmaceuticals:

Antibiotic for STI prophylaxis: doxycycline 100 mg twice a day for 7 days.

Antibiotic for STI prophylaxis, other: metronidazole.

Chlamydia

Chlamydia is a common sexually transmitted bacterial infection. If left untreated it can lead to pelvic inflammatory disease in women and epididymitis in men which may even make him sterile.

Chlamydia and gonorrhea often occur together; *Diagnoses and Treatments – Genitourinary System – Sexually Transmitted Infections – Gonorrhea.*

Symptoms of Chlamydia

Symptoms do not always show, but if they do you will probably notice them within a couple of weeks.

Symptoms of Chlamydia in Women: Abdominal pain with fever.

Bleeding between periods.

Burning and itching around vagina.

Pain during period, sex and/or urination.

Vaginal discharge that may have an odor.

Symptoms of Chlamydia in Men:

Burning and itching around penis opening.

Discharge from tip of penis (clear or cloudy).

Pain and swelling around the testicles.

Pain when urinating.

Treatment for Chlamydia

The patient's sexual partner(s) should also be evaluated and treated if needed.

Pharmaceuticals:

Antibiotics should solve the problem within a couple of weeks.

Antibiotic: azithromycin single-dose is a preferred regimen.

Antibiotic for uncomplicated urethral, endocervical or rectal infection:
doxycycline 100 mg twice a day for 7 days.

Antibiotics, other: amoxicillin, azithromycin, levofloxacin, tetracycline.

Genital Herpes

Genital herpes is a common, highly contagious and often re-occurring sexually transmitted infection usually caused by the herpes simplex virus, which is the same virus that causes cold sores; *Diagnoses and Treatments - Head – Mouth and Teeth - Cold Sores.*

Symptoms of Genital Herpes

Not every instance will show symptoms, but those that do will usually show within 2 weeks of infection: Pain or itching (first sign).

Small, red bumps or tiny white blisters (showing a few days after the pain/itching).

Ulcers.

Scabs (forming as the ulcers heal).

The above sores will appear where-ever the infection entered your body, e.g., buttocks, mouth, penis, vagina *etc.*

Other symptoms of Genital Herpes include: Fever.

Headache.

Muscle ache.

Pain in genital area.

Pain when urinating.

Treatment for Genital Herpes

There is no cure for genital herpes, but anti-viral medication can help prevent re-occurring cases and ease symptoms.

Pharmaceuticals: Antivirals: acyclovir or famciclovir 200 mg every 4 hours for 10 days.

Gonorrhea

Gonorrhea (the clap, the drip, gonococcal) is an easily spread sexually transmitted infection. If gonorrhea is left untreated it can lead to (amongst other things) pelvic inflammatory disease in women and epididymitis in men which may even make him sterile.

Gonorrhea and chlamydia often occur together; *Diagnoses and Treatments – Genitourinary System – Sexually Transmitted Infections – Chlamydia.*

Symptoms of Gonorrhea

Not everyone that contracts gonorrhea will show symptoms, but those that do will usually show within 2 weeks of infection.

Symptoms of gonorrhea in women: May be confused with a yeast infection (seek professional medical advice to be sure); *Diagnoses and Treatments – Genitourinary System – Yeast Infection.*

Abdominal (lower) or pelvic pain.

Bleeding between periods.

Burning when urinating.

Conjunctivitis; *Diagnoses and Treatments – Head – Eyes – Conjunctivitis.*

Discharge from vagina (greenish-yellow or whitish).

Spotting after intercourse.

Vulvitis (swelling of the vulva).

If oral sex was performed:

Burning in the throat.

Swollen throat glands.

Symptoms of gonorrhea in men: Men are more likely to show symptoms than women.

Burning when urinating.

Discharge from penis (greenish yellow or whitish).

Painful or swollen testicles.

If oral sex was performed:

if oral sex was performed.

Burning in the throat.

Swollen throat glands.

Treatment for Gonorrhea

Seek advanced medical care for a definitive diagnosis, e.g., swab or urine test.

Partners should also be tested, even if they have no symptoms.

After treatment, get retested to make sure it is gone.

Do not have sex until you are sure both you and your partner no longer have the disease.

Pharmaceuticals:

Antibiotic for uncomplicated urethral and cervical gonococcal infections:
ciprofloxacin 250 mg one time.

Consider treating concurrent chlamydia infection, e.g., single dose azithromycin;

Diagnoses and Treatments - Genitourinary System – Sexually Transmitted Infections – Chlamydia.

Pelvic Inflammatory Disease

Pelvic inflammatory disease is most often caused by a sexually transmitted infection such as chlamydia or gonorrhea. It is an infection of a woman's pelvic organs, i.e., cervix, fallopian tubes, ovaries and womb. If left untreated it may lead to infertility, ectopic pregnancy, chronic pelvic pain *etc.*

Symptoms of Pelvic Inflammatory Disease

Pain and fever may come as a quick onset.

Irregular periods.

Fever.

Foul vaginal discharge.

Pain on both sides of the lower abdomen.

Painful sex.

Painful urination.

Treatment for Pelvic Inflammatory Disease

Pharmaceuticals: Antibiotic: doxycycline 100 mg every 12 hours for 14 days.

Antibiotics, other: azithromycin, levofloxacin, metronidazole, tetracycline.

Tubal Pregnancy

Tubal (ectopic) pregnancy is when a fertilized egg wrongfully grows in the fallopian tube until it ruptures the tube. If left untreated the fallopian tube will burst, causing internal bleeding, which may lead to death; *Diagnoses and Treatments – Circulatory System – Internal Bleeding.*

Symptoms of Tubal Pregnancy

Sign of normal pregnancy in first few weeks.

Pelvic or belly pain which is possibly sharp on one side and then spreads through the abdomen, worsening with movement.

Vaginal bleeding.

Treatment for Tubal Pregnancy

Advanced medical care is needed to treat an ectopic pregnancy. The earlier it is detected and treated, the less chance there is of permanent damage.

Urinary Tract Infections

A urinary tract infection (UTI) is when there is an infection of any of the organs that urine passes through before excretion of urine, i.e., kidneys, ureters, bladder, or urethra. If left untreated, it can lead to a kidney infection; *Diagnoses and Treatments – Genitourinary System – Kidney Infection*.

The most commonly known UTI is an infection of the bladder. It is most common in women but men are susceptible also.

Causes of UTIs include dehydration, lack of toilet use, poor hygiene, sexual transmission *etc.*

Symptoms of Urinary Tract Infections

Blood tinged urine.

Frequent urge to urinate.

Painful, burning urination.

Treatment for Urinary Tract Infections

Cranberry juice.

Hydration.

Applying warmth to the bladder can be soothing.

Pharmaceuticals:

Phenazopyridine: this will eliminate painful urination. It may cause your urine to temporarily have a reddish-orange tinge.

Antibiotic: amoxicillin/clavulanate 500 mg every 12 hours for 3 to 7 days or 875 mg every 12 hours for 3 to 7 days for serious cases.

Antibiotic: ciprofloxacin 250 mg every 12 hours for 3 days for uncomplicated cases (cystitis) or 250 mg every 12 hours for 7 to 14 days for moderate cases or 500 mg every 12 hours for 7 to 14 days for severe cases.

Antibiotic: doxycycline 200 mg on the first day, given in 2 or 4 evenly divided doses, then 100 mg per day given once a day or in 2 divided doses for 3 to 7 days or 100 mg every 12 hours for 3 to 7 days for severe cases.

Antibiotics, other: amoxicillin, ampicillin, levofloxacin, sulfamethoxazole / trimethoprim.

Alternative/Natural Remedies: Alka-Seltzer and warm water poured over the urethra 3 times a day.

Prevention of Urinary Tract Infections

Cranberry juice.

Hydration.

Proper hygiene.

Safe sex.

Urinate immediately after sexual intercourse.

Urinate regularly.

Wear cotton undergarments (increases air flow).

Wipe from front to back after going to toilet.

Yeast Infection

There are two types of yeast infections: oral and vaginal; *Diagnoses and Treatments – Head – Mouth and Teeth – Oral Yeast Infection.*

Vaginal Yeast Infection

A vaginal yeast infection (monilia) is not a sexually transmitted disease and is, in fact, extremely common.

Symptoms of a Vaginal Yeast Infection

Odorless, thick, white discharge reminiscent of cottage cheese.

Vaginal itchiness.

Treatment for a Vaginal Yeast Infection

Pharmaceuticals: Antifungal: miconazole cream or suppository.

Antifungal for recurring cases: fluconazole 150 mg once, repeat in 3 days if symptoms persist.

Bacterial Vaginosis

Bacterial vaginosis is a non-yeast vaginal infection caused by bacteria.

Trichomoniasis is also a non-yeast vaginal infection caused by protozoa.

Symptoms of Bacterial Vaginosis

Foul odor.

Treatment for Bacterial Vaginosis

Vinegar and water douche (minor infections). 1 Tablespoon of vinegar mixed with a liter of water, use until patient feels better, douche once daily.

Caution: douching too often will actually cause yeast infections, so only use when needed.

Pharmaceuticals:

Antifungal: metronidazole 500 mg every 8 hours for 5 to 7 days.

Alternative/Natural Remedies: Garlic: insert a clove of garlic wrapped in gauze in the vagina for no longer than 8 hours. Ensure you leave some gauze to reach for easy removal.

INTEGUMENTARY SYSTEM

Abscesses

A skin abscess (boil) is a bacterial skin infection that starts in a hair follicle or oil gland and forms a pocket of puss. It may be caused by a cyst, infected wound *etc.* They most commonly appear on the armpits, buttocks, face, neck and shoulders. When there are a group of boils, it is known as a carbuncle.

Symptoms of an Abscess

Hard, red, painful lump which becomes softer, larger, and more painful. Pus forms on the top.

Signs of a severe infection include: Fever.

Multiple abscesses.

Surrounding skin becomes infected (inflamed, red etc.).

Swollen lymph nodes.

Treatment for an Abscess

For treatment of an abscess on the eye; *Diagnoses and Treatments – Head – Eyes – Stye.*

For treatment of an abscess in the mouth; *Diagnoses and Treatments – Head – Mouth and Teeth – Dental Abscess.*

Do not forcefully pop the abscess, e.g., with a needle.

Warm water soaks and compresses.

Within 10 days of soaks the boil should burst.

Clean very well with antiseptic.

Apply a topical antibiotic and cover.

Continue cleaning and compresses until wound heals.

If spontaneous drainage does not happen within the 10 days, an incision must be made.

Making an incision:

Ice the area to numb the skin.

Pierce the skin where the abscess is closest to the skin's surface to drain the pus.

Immediate relief will be felt.

Apply a topical antibiotic and cover.

Acne

Acne (pimples, blackhead, whiteheads, zits) occur when the sebaceous glands produce sebum (oily matter) and block the pores in the skin. This cultivates bacteria which break out as acne, usually on the back, face and/or neck. The exact root cause is unknown, but diet (including food allergies), hormonal imbalance and stress are thought to play a role.

Treatment for Acne

Most of the time, acne will go away on its own.

Alternative/Natural remedies are highly recommended before other medications.

There are many creams available.

Pharmaceuticals:

Antibiotics can be used for serious cases: Antibiotic: doxycycline 200 mg on the first day, given in 2 divided doses, then 100 mg per day or 100 mg every 12 hours for severe cases.

Antibiotics, other: tetracycline.

Alternative/Natural Remedies for Acne: Acidophilus (found in yogurt or as a capsule).

Clove oil (apply topically).

Calendula (found in marigold petals).

Garlic (cut a clove of garlic in half and rub it over the affected area; do it regularly).

Honey – raw (dab it onto affected areas; wait 15 minutes then rinse it off).

Prevention of Acne

Eat healthy and keep well hydrated.

Keep pores clean.

Minimize stress.

Blisters

A blister is typically a protective pocket of clear fluid (plasma) underneath the layers of the skin. If they are filled with blood they are called blood blisters, and if they become infected they will fill with puss.

They can be caused by cold, exposure to chemicals, friction, heat *etc.*

The most common, troublesome blisters are those found on the feet caused by friction and heat whilst hiking or engaging in similar activities.

Hot Spots

Before a blister forms, the area will often get red and painful. This is known as a hot spot. Treat it before it becomes a blister.

Treatment for Hot Spots

A hot spot can simply be covered, e.g., Band-Aid.

Ideally, raise the area around it slightly and then cover it.

Treatment for Blisters

In controlled environments, the blister should be left intact. The skin will keep it protected from infection.

Pad it like a hotspot.

Draining a blister:

If there is a chance of the blister rupturing, it is often better to drain it manually so you can clean and dress it.

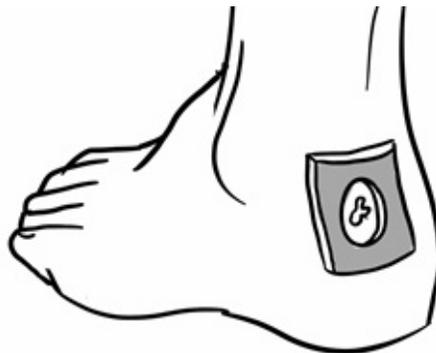
Clean the area around blister.

Sterilize a needle and pierce the side of the blister.

Let the fluid drain.

Apply antibiotic ointment.

Cover and monitor.



Prevention of Friction Blisters

Proper footwear.

Sock liners.

Cover blister-prone areas with a Fixamol, a Band-Aid *etc.*

Change wet/sweaty socks.

Foot powders to keep feet dry.

Bruises

A bruise usually occurs from some kind of trauma which ruptures the blood vessels. They are somewhat painful to the touch and may change color from blackish-blue to brown to yellow.

Treatment for Bruises

RICES; *Diagnoses and Treatments - Musculoskeletal System - Musculoskeletal Injuries in General – RICES.*

In later stages, stretching may help.

Chickenpox

Chickenpox (varicella), is a contagious virus causing a red, itchy rash. It is usually not harmful, (more harmful to people over 12 years) and once you have gotten it once, you are not likely to get it again.

In some cases, the virus can re-activate causing shingles; *Diagnoses and Treatments – Integumentary System – Shingles.*

Chickenpox is most contagious from a couple of days before the rash appears until all the blisters have crusted over. This crusting over usually takes about 10 days from the initial symptoms.

Vaccines are available.

Symptoms of Chicken Pox

Fever.

Headache.

Lethargy.

Loss of appetite.

Sore throat.

Itchy rash appears a day or two after initial appearance of the above symptoms.

Treatment for Chicken Pox

Treat rash with compresses, oatmeal baths *etc.*

Treat fever.

Pharmaceuticals: Diphenhydramine.

For serious cases, consider the chicken pox vaccine, especially if over 12 years old, pregnant or immune system is compromised.

Eczema

Eczema is an irritation of the skin resulting in an itchy rash. It is not contagious.

It usually occurs when someone comes into contact with a known trigger; avoiding these triggers is the best defense.

The triggers are different depending on the person, but some common ones are allergies, animals, coarse materials, foods, soaps, respiratory infections, temperature *etc.*

Stress can make the symptoms worse.

Symptoms of Eczema

Change in skin pigmentation.

Dry, thickened or scaly skin.

Itchy rash.

A crusty oozing can appear in infants.

Treatment for Eczema

Avoid irritants.

Avoid scratching.

Cold compresses to help with itching.

Moisturize, particularly while the skin is damp, e.g., after bathing.

Pharmaceuticals

Diphenhydramine (helps with itching).

Corticosteroids (for serious cases).

Cyclosporine (last resort).

Alternative/Natural Remedies: Baths or compresses: oatmeal, Epson salts, sea salts or sulfur bath salts.

Ingrown Toenail

An ingrown toenail is when the nail grows in a way that it cuts into the skin at the end or side of the toe. It requires the downward pressure by a shoe, so does not occur in people that habitually do not wear shoes. If left untreated it can lead to infection and/or other complications.

Symptoms of an Ingrown Toenail

Redness.

Pain.

Swelling.

Warmth in the toe.

Treatment for an Ingrown Toenail

Do not repeatedly cut the nail.

Foot soaks in warm water, 4 times a day.

During the soak, gently massage the side of the nail fold to help reduce the inflammation.

After each soak: Ø Roll up a small bit of clean gauze so it is like the wick of a candle.

Ø Lift up the troublesome corner of the nail.

Ø Stick the gauze between the nail and the skin. The idea is to keep it elevated until it grows out. Pain is normal.

Ø Try putting it further in after each soak.

Ø Change it every day.

Wash with soap and water twice a day.

Keep clean and dry during the rest of the day.

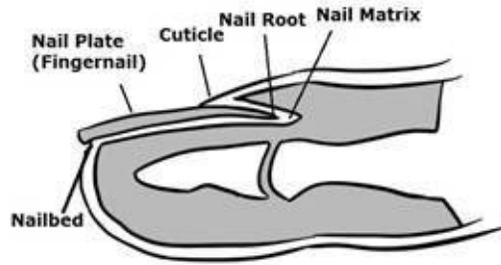
Wear sandals if possible, but definitely not heels.

Prevention of Ingrown Toenails

Don't cut nails too short.

Don't wear shoes that are too tight or too loose.

Nail Injuries



Nail plate: the hard covering of the end of your digit (the part what most people consider to be the nail).

Nail bed: the skin under the nail plate.

Nail matrix: part of the nail under the cuticle (the half-moon).

Nail Avulsion

This is when the nail plate is ripped off by some sort of trauma.

Treatment for Nail Avulsion

A completely torn-off nail will take 4 to 5 months to grow back.

Numb the area.

Clean and dress with non-adherent dressing. Use antiseptic liberally.

Change dressing frequently.

If the nail is still attached to the nail bed by a small amount:

Remove it.

Consider using the nail as a protective covering on the nail bed.

Do not scrape off loose edges.

Crush Injuries

Crush injuries are caused by traumas such as striking with a hammer, slamming in a door *etc.*

Symptoms of a Crush Injury to the Nail

Bruising (brown or blue).

Blood (deep blue to black).

Pain.

Treatment for a Crush Injury to the Nail

A bruise will heal in time.

For significant blood: Consider making a hole to relieve pressure: Ø Using a hot paper clip or similar, make a hole in the nail plate.

Ø Dry, splint and bandage for at least 48 hours.

Shingles

Shingles (herpes zoster), is a re-activation of the chicken pox virus, varicella;
Diagnoses and Treatments – Integumentary System – Chicken Pox.

Vaccines are available.

Symptoms of Shingles

The telltale sign of shingles is a stripe of itchy/painful blisters wrapping around one side of the torso; this rash may appear elsewhere.

Fatigue.

Fever.

Headache.

Sensitivity to light.

Treatment for Shingles

Shingles will self-resolve between 2 to 6 weeks, but it can re-occur.

Cool compresses.

Seek advanced medical care if pain and rash is near an eye or widespread.

Pharmaceuticals: Antivirals: acyclovir, famciclovir, valacyclovir.

Splinters

A splinter is a piece of a larger object lodged inside the body, e.g., wood, glass, animal spine, metal.

A splinter is minor to begin with, usually just causing discomfort or minor pain, but if left untreated it may lead to infection or perhaps even internal damage.

Symptoms of a Splinter

Abscess; Diagnoses and Treatments - Integumentary System – Abscesses.

Bumps under the skin.

Cyst.

Discoloration beneath the skin.

Pain.

Puncture wound.

Wound that won't heal.

Treatment for Splinters

Clean the area.

Using tweezers (or similar), pull the splinter out along the same angle that it entered the skin; a magnifying glass may help.

If needed, place a thin slice of garlic over the splinter and hold on with a bandage. It should help the splinter work its way out after a few hours.

If that doesn't work, carefully cut the skin that lies over it, just enough to expose the splinter.

Clean the area.

Fishhooks

If you cannot easily slide a fishhook out, it may be because of the barb.

Treatment for Fishhooks

Press down on the skin where the barb is and then pull it out.

If pulling back does not work: Ø Put it further in until the barb comes out.

Ø Cut off the barbed end, e.g., using wire cutter and remove the hook.

Clean and dress.

Tinea/Ringworm

Tinea (ringworm) is a common fungal infection on the skin. Athlete's foot, jock itch, ringworm, scalp ringworm *etc.* are all just forms of tinea in different places. It is usually not serious, but it can be irritating and, if not treated, it may last for years. It is contagious.

One symptom is a skin rash that forms a ring, hence the name ringworm. It has nothing to do with worms, which are intestinal parasites; *Diagnoses and Treatments – Digestive System – Worms.*

Symptoms of Tinea

Bald patches if on a hairy area.

Raised, itchy patch that is darker on the outside.

Scratching causes blistering and oozing.

Treatment for Tinea

For treatment of tinea on the feet, see athlete's foot; *Diagnoses and Treatments – Integumentary System – Tinea – Athlete's Foot.*

Avoid tight-fitting clothing on irritated areas.

Keep skin as dry as possible.

Wash regularly.

Wash sheets daily.

Drying powders, e.g., talcum powder.

Pharmaceuticals:

Antifungals: miconazole, clotrimazole.

Alternative/Natural Remedies: Clove oil. Apply topically a few times a day.

Garlic. Cut in half and rub on area a few times a day.

Athlete's Foot

Athlete's foot (tinea pedis) is tinea/ringworm on the feet. It usually occurs between the toes, but can also appear anywhere on the feet and hands. Keeping feet clean and dry, wearing footwear in public showers *etc.* are the best ways to prevent contraction.

Athlete's foot can be caused by cuts on feet and hands, having wet feet for prolonged periods (including perspiration), sharing shoes or socks, spending long hours in closed shoes, wet surfaces *etc.*

Symptoms of Athlete's Foot

Discolored nails.

Flaking of skin.

Fluid drainage from surfaces traumatized by repeated scratching.

Itching and burning.

Reddened skin.

Scratching causes oozing.

Treatment for Athlete's Foot

Keep feet clean and dry.

Drying powders, e.g., talcum powder.

Pharmaceuticals: Avoid anti-itching creams as it keeps the area moist and may delay healing.

Antifungals: miconazole, clotrimazole.

Alternative/Natural Remedies: Clove oil. Apply topically a few times a day.
Garlic. Crush a couple of cloves into warm water for a 30 minute foot bath.

MUSCULOSKELETAL SYSTEM

Musculoskeletal Injuries in General

There are 2 types of musculoskeletal injuries: stable and unstable. Whether an injury is stable or unstable will determine the basic treatment. Injury symptoms will define whether it is unstable or stable.

Symptoms of Stable and Unstable Musculoskeletal Injuries

The following symptoms may occur in both stable and unstable musculoskeletal injuries:

Bruising/discoloration.

Pain.

Pop/snap.

Swelling.

Tenderness.

Symptoms of Unstable Musculoskeletal Injuries

The following symptoms will occur only in unstable musculoskeletal injuries:

Angulations/deformity.

Crepitus.

Feeling of instability.

Impaired CSM; *Diagnoses and Treatments - Musculoskeletal System - Musculoskeletal Injuries in General – Impaired CSM.*

Reduced ability to bear weight.

Treatment for Stable Injuries

RICES; *Diagnoses and Treatments - Musculoskeletal System - Musculoskeletal Injuries in General – RICES.*

Treatment for Unstable Injuries

If there is severe deformity or loss of CSM then the body part must be repositioned back towards its correct anatomical position unless a significant increase in pain or physical resistance is met; *Diagnoses and Treatments - Musculoskeletal System - Dislocations – Reduction.*

In all other cases, the body part can be splinted in position; *Diagnoses and Treatments - Musculoskeletal System – Immobilization – Splints.*

RICES

RICES is an acronym for a common treatment of musculoskeletal injuries.

Rest: do your best to cease using the limb.

Ice: apply a cold compress (or similar) 4 times a day for approximately 20 minutes during the first 48 hours of the injury occurring.

Compression: apply a compression bandage after each cold therapy. Lightly pad the area then wrap it starting below the joint and working your way up beyond it. The wrap should be as tight as possible without causing discomfort or impaired CSM; *Diagnoses and Treatments - Musculoskeletal System - Musculoskeletal Injuries in General – Impaired CSM.*

Elevation: elevate the affected limb above the heart.

Stabilization: depending on the seriousness of the injury, a splint or cast may be needed.

If the injury is unstable then a splint/cast is definitely necessary. The joint should be immobilized; *Diagnoses and Treatments - Musculoskeletal System – Immobilization.*

Impaired CSM

CSM stands for circulation, sensation and movement. Testing for impaired CSM can help to diagnose problems as well as ensure correct treatment is being given.

Circulation:

Color, temperature and capillary refill:

Color: is the skin discolored?

Temperature: is the skin warm or cold?

Capillary Refill; *Must Read - Immediate First Aid - Critical First Aid - Circulation - Perfusion*

Sensation:

Have the patient close his/her eyes, then move a part of his/her body. Can the patient tell you which part you are moving?

Lightly tap with dull and sharp sensations. e.g., a safety pin. Can the patient tell the difference?

Motion: **Can the patient move the part of the body you are testing?**

Immobilization

Immobilizing a body part means to prevent it from moving or bearing weight. This will stabilize the body part and allow it to rest.

Any injury that requires immobilization should be referred to advanced medical care when possible.

Immobilize the joints above and below the fracture, e.g., if it is the forearm, the elbow and the wrist are included in the splint.

For joint injuries, immobilize the bone above and below.

Immobilize joints in a position for normal function: Ankles: 90 degree angle to the leg.

Elbows: 90 degree angle to the upper arm.

Fingers: slightly flexed, as if holding an apple.

Legs: basically straight with a slight bend in the knee.

Wrists: straight or extended slightly upward.

Collars

Collars stabilize and support the neck and prevent further injury by limiting head movement. A collar can be improvised from a fanny pack, rolled towels, foam mat etc.; *Must Read - Secondary Exam - Physical Exam - Spine Stabilization.*

Mobility Aids

These are things such as crutches, walking sticks, wheelchairs etc. Things like crutches and walking sticks can be easily improvised using any pole type item.

Slings

Slings are used to immobilize an arm injury, including a wrist or shoulder. They are often used together with a cast or splint on the arm.

Triangular Bandage Sling and Swath

A triangular bandage can be improvised from many different materials, but having one or two of them in your first aid kit will save some trouble. Also, a triangular bandage can be used in a variety of ways, e.g., to stop bleeding, tying something.

Drape the triangular bandage under one arm and over the opposite shoulder.

Tie the two ends of the cloth behind the neck.

Pin the remaining elbow corner up onto the body of the sling.

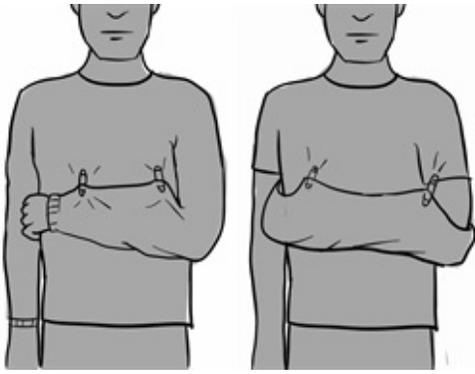
Use another bandage or similar to secure the arm to the chest.



Shirt Slings

If wearing a long shirt, pin it to the chest.

If wearing a short-sleeved shirt, fold the bottom up over the injured arm and secure in place.



Splints

Splints are commonly improvised until a cast can be fitted. In the case of small fractures, splints may be the only thing used. Even in more serious injuries a splint can be used if a cast is not possible, and, as long as proper care is taken, the injury will heal just as well.

Commercial field splints are readily available (SAM Splints), but they can also be improvised with a great number of readily available materials e.g.:

- Ø Body parts, e.g., adjacent digit (finger or toe), arm to chest, the patient's other leg.
- Ø Sticks or straight, stiff materials from equipment.
- Ø Pliable materials, e.g., strips of cloth, parachute cord.

General Splinting Tips:

When constructing a splint, remember the following:

Adjustable (and adjust when needed).

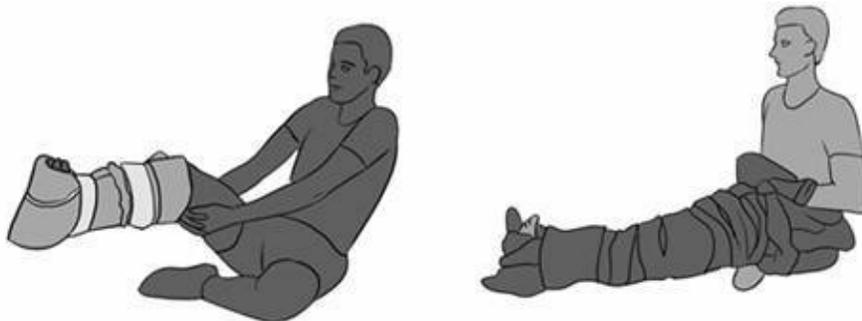
Light weight.

Monitor CSM before and after splinting; *Diagnoses and Treatments - Musculoskeletal System - Musculoskeletal Injuries in General - Circulation, Sensation and Movement.*

Pad well.

Sandwich the limb.

Example splint pictures from left to right: ankle, leg, wrist.





Taping

Taping is good for immobilizing whilst healing as well as preventing injuries, e.g., during sporting activities.

If taping around a whole body part (circumferential wrapping), e.g., for anchors, ensure swelling does not impair CSM, i.e., it is best to tape after swelling has gone down; *Diagnoses and Treatments - Musculoskeletal System - Musculoskeletal Injuries in General - Circulation, Sensation and Movement.*

General Taping Tips:

Anchor points are those to which tape can stick.

Avoid leaving gaps as they can lead to blisters.

Duct tape can be used in emergencies, but it does not ventilate.

Ensure your skin is dry.

Follow the contour of the skin.

Keep your limb in a neutral position.

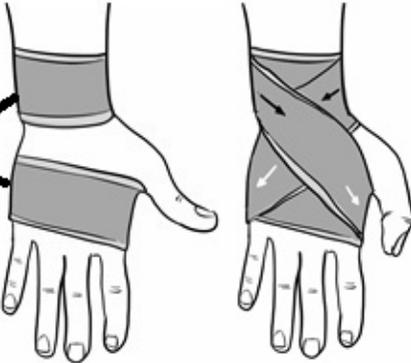
Overlap a half-width on each strip.

Taping an Ankle



Taping a Wrist

**Anchor
Points**



Dislocations

A dislocation occurs when a bone is pulled out of the joint and is often a reoccurring injury. It can be caused either by a direct injury or an indirect injury:

Direct injuries: caused by forces generated from outside the body, e.g., getting hit or crashing into a blunt object.

Indirect injuries: caused by a force from within the body, e.g., injury from an abnormal twisting motion.

Symptoms of a Dislocation

Bruising.

Pain and/or numbness.

Swelling.

Visibly abnormal.

Unusable.

Treatment for a Dislocation

The dislocation may correct itself. This is called subluxation and is treated with RICES; *Diagnoses and Treatments - Musculoskeletal System - Musculoskeletal Injuries in General – RICES.*

Dislocations that do not correct themselves require reduction and then stabilization; *Diagnoses and Treatments - Musculoskeletal System – Immobilization.*

Reduction

Reductions are safe to use on dislocations caused by an indirect force if the dislocation is of the shoulder, patella or digits.

Everything else should be splinted in position unless there is no advanced medical care available in the foreseeable future.

Perform a reduction as soon as possible. Discontinue if pain significantly increases or physical resistance is encountered.

Use RICES after any successful reduction; *Diagnoses and Treatments - Musculoskeletal System - Musculoskeletal Injuries in General – RICES*.

Any reduction that doesn't work after 3 attempts should be referred to advanced medical care.

Pharmaceuticals:

Anti-inflammatory.

Muscle Relaxers: cyclobenzaprine (flexeril).

Traction

Traction is a procedure in which you pull the dislocated bone away from the joint in order to give the bone room to slip back into place.

Hold the affected joint in a steady fashion.

Slowly pull the bone away from the joint.

Shoulder Reduction

There are two ways in which a dislocated shoulder can be reduced.

Whichever one you choose, and whether or not the reduction is successful, sling and swathe the arm so the elbow is alongside the body; *Diagnoses and Treatments – Musculoskeletal Injuries - Immobilization – Slings.*

Pain and swelling are extremely likely.

Shoulder Reduction Method 1

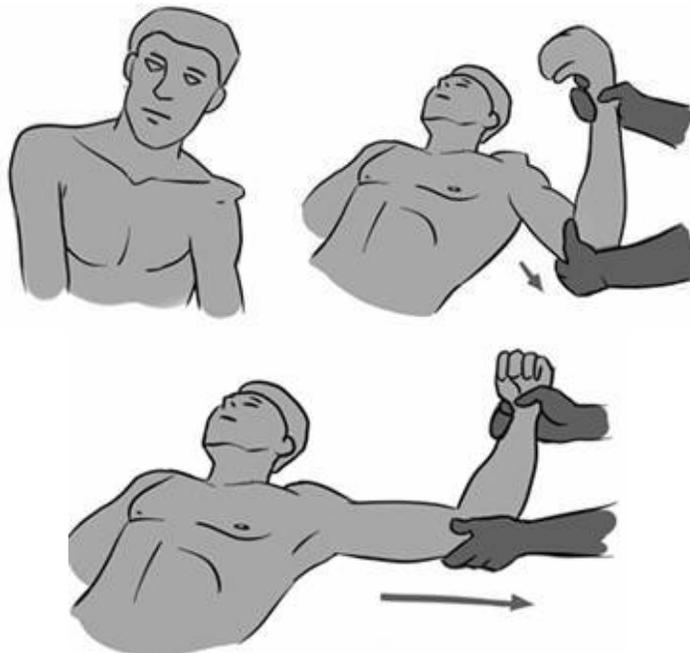
Lay the patient on his/her back.

Sit next to the dislocated shoulder.

Apply traction to the shoulder.

Whilst keeping the elbow at a 90 degree angle, gradually rotate the arm until it is in a baseball-throwing position.

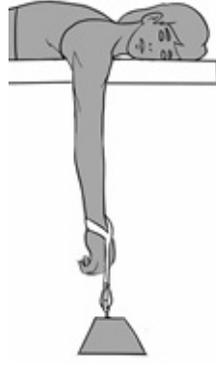
If successful, it will 'pop' back into place.



Shoulder Reduction Method 2

Lay the patient facedown with the affected arm hanging unsupported.

Weigh the person's hand with 3 to 5 kg until the shoulder is reduced.



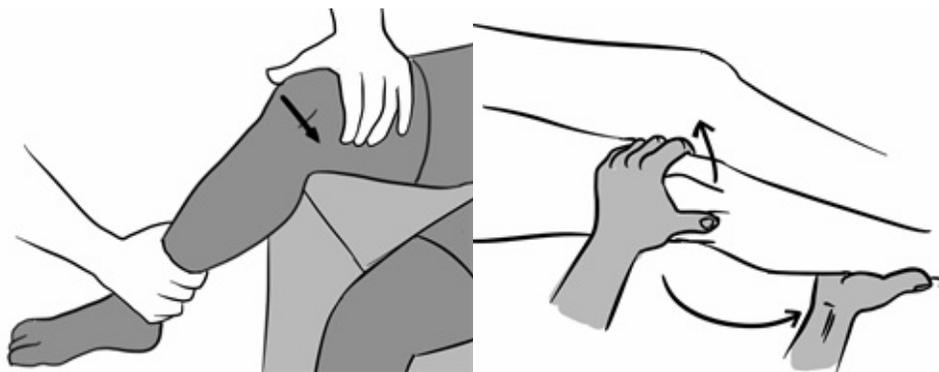
Patella Reduction

Gently straighten the patient's knee.

If the patella does not spontaneously reduce, gently guide it into position (see pictures).

Splint the knee at about 10 degrees of flexion.

Stabilize the patella, e.g., tape, brace etc.



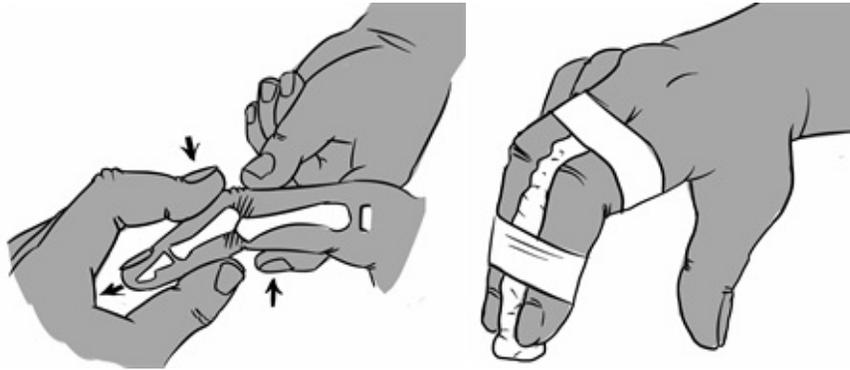
Digit Reduction

This includes fingers, thumbs and toes.

Hold the finger/toe still nearer the hand/foot.

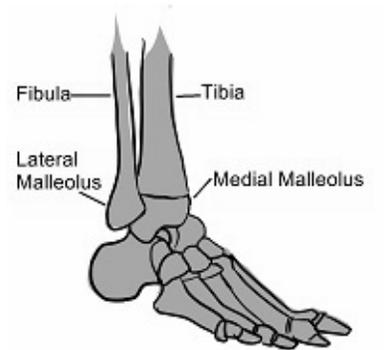
Pull out and traction into place.

Splint in its correct anatomical position.



Ankle Reduction

An ankle dislocation usually comes with a fracture of one or both malleoli, i.e., the bony part on each side of the ankle.



With the patient's knee bent, grasp the heel and apply traction.

Align the foot with the tibia.

Elbow Reduction

The patient keeps his/her elbow slightly flexed.

Apply counter traction to hold the upper arm in place, e.g., a second rescuer.

Apply traction of the lower arm out and down.



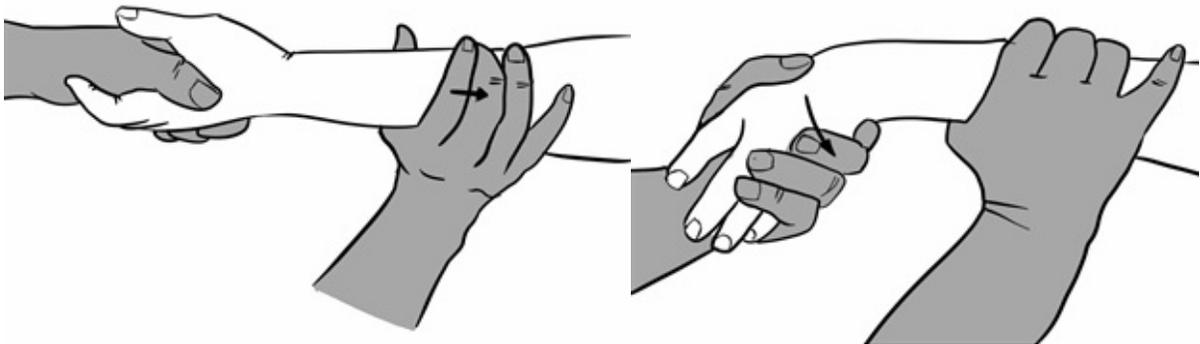
Wrist Reduction

Apply counter traction to hold the arm in place.

Grasp the fractured hand as if giving a handshake.

Pull out with significant force.

A downward movement may be needed.



Hip Reduction

Place the patient on a flat, hard surface.

One rescuer stabilizes the pelvis by pushing down at/near the waist.

Bend the patient's knee.

Pull up and on the leg and, if possible, out on the thigh.



Fractures

A fracture occurs when a bone is broken, most commonly due to trauma. All fractures are unstable injuries. Once immobilized, most fractures will take 6 to 8 weeks to heal (rejoin). Large-bone and complicated injuries may take longer.

For the purpose of this book, there are two main types of fractures:

A closed fracture is when there is a break in the bone, but the skin is intact.

An open fracture is when the skin is broken.

A closed fracture can become an open fracture if not treated well.

Symptoms of a Fracture

Deep cut in the area of the injury (open fracture).

Grinding sensation.

Inability to use the bone, i.e., patient cannot put any weight on it.

Motion of the bone where there is no joint.

Severe pain, more so than a sprain; *Diagnoses and Treatments - Musculoskeletal System - Sprains and Strains – Sprains.*

Swelling and bruising, more so than a sprain.

In the case of your hand, a ‘fifth knuckle’.

Treatment for a Fracture

Cut away clothing.

If it is an open fracture, gently irrigate and dress.

Check CSM; *Diagnoses and Treatments - Musculoskeletal System - Musculoskeletal Injuries in General - Circulation, Sensation and Movement.*

If CSM is compromised, reduction is needed; *Diagnoses and Treatments - Musculoskeletal System - Dislocations – Reduction.*

If CSM is okay, splint in place and seek advanced medical care.

If there is no advanced medical care and the bone is deformed, reduction is needed in order for the bone to heal properly.

Notes:

Reducing a fracture will be more painful and riskier than reducing a dislocation

reducing a fracture will be more painful and riskier than reducing a dislocation.

Damage to nerves and blood vessels may occur.

Fractured Ribs

Fractured ribs usually occur along the side of the chest. Pushing on the sternum will produce pain at the site of the fracture.

Symptoms of Fractured Ribs

Pain in the chest after blunt chest trauma.

Pain when breathing.

Treatment for Fractured Ribs

Treat flail chest if applicable (below), otherwise: Do not tape the ribs.

Encourage deep breathing at least 10 times per hour.

Position of comfort.

Monitor and treat for pneumothorax (punctured lung) if needed; *Diagnoses and Treatments - Musculoskeletal System – Pneumothorax*.

Transport injured side down.

Flail Chest

Flail chest occurs when a part of the rib cage breaks away from the chest wall, i.e., when three or more ribs are broken in two or more places, due to blunt trauma.

Symptoms of a Flail Chest

Extreme chest pain.

Impaired breathing.

Visual sign of the chest wall moving in and out when breathing.

Treatment for a Flail Chest

Pad heavily, e.g., rolled up clothing (use hand pressure to keep it on).

Roll patient onto flail side, if possible.

Monitor for Pneumothorax; *Diagnoses and Treatments – Musculoskeletal System – Pneumothorax*.

Seek advanced medical treatment.

Fractured Pelvis

A fractured pelvis is extremely painful and can result in major blood loss.

Symptoms of a Fractured Pelvis

Bruising and pain around the pelvis.

Impaired CSM; *Diagnoses and Treatments - Musculoskeletal System - Musculoskeletal Injuries in General - Circulation, Sensation and Movement.*

Treatment for a Fractured Pelvis

A pelvic sling can be improvised with such things as clothes, a sleeping bag, sleeping mat, tent *etc.*

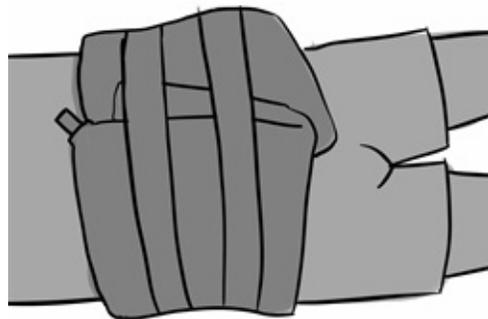
The aim is to achieve circumferential binding.

Remove any object that may cause discomfort, e.g., belt, pocket items.

Slide the sling under the bony part of the hips and cross it over the front of the pelvis.

Apply so the pressure is focused over the greater trochanters of the femur (the part of the femur connecting to the hip bone).

Tighten enough for stabilization and comfort.



Sprains and Strains

Sprains and strains are common sporting injuries.

Sprains

A sprain is when a ligament (the fibrous tissue that connects one bone to another) is excessively stretched due to the forcing of a joint beyond its normal range of motion.

A twisted ankle is a common type of sprain.

Symptoms of Sprains

Bruising.

Pain.

Swelling.

Treatment for Sprains

Most sprains will heal over time. Severe knee sprains may require surgery to heal completely.

RICES; Diagnoses and Treatments - Musculoskeletal System - Musculoskeletal Injuries in General – RICES.

Immobilize if unstable; Diagnoses and Treatments - Musculoskeletal System – Immobilization.

Pharmaceuticals: Anti-inflammatory.

Strains

Strains are when the muscle or its tendon (tissue that connects the muscle to connect to bone) is partially torn. Back muscles are most commonly strained.

Daily morning stretches and using correct lifting techniques will help prevent strains.

Correct lifting techniques: Don't lift things whilst unbalanced.

Don't reach for an object, i.e., hold it as close to your body as possible whilst lifting.

Don't twist while lifting.

Lift with your legs and a straight back.

If carrying a pack, keep the weight of it on your hips as opposed to your shoulders.

Treatment for Strains

Mild massage.

Pharmaceuticals: Anti-inflammatory.

Muscle relaxer.

Alternative/Natural Remedies: Clove oil compress.

Ginger and raw honey tea.

Salicin poultice.

Amputations

Amputation is a last resort procedure to remove all or part of an extremity in an effort to save a life in the case of severe injuries.

When to amputate:

Cancerous tumors.

Extensive injury from trauma or burns.

Gangrene.

Serious infection that does not get better with antibiotics.

Severe frostbite.

Where to amputate:

At areas of reddened (infection) or blackened (gangrene) skin.

Where the bone has been crushed beyond repair.

Where the extremity is no longer sensitive to touch.

Where the extremity loses normal temperature.

Where the extremity loses pulse.

Note: the closer to the body that the amputation is performed, the more dangerous it is.

Amputation procedure:

Sedate the patient.

Use antiseptics on the damaged area.

Consider a tourniquet to prevent massive blood loss; *Must Read - Immediate First Aid - Critical First Aid - Severe Bleeding – Tourniquet.*

Amputate the limb and preserve enough living tissue to cover the exposed end of the bone.

Remove debris and bits of shattered bone.

Tie off any bleeding blood vessels.

Shorten and smooth the bone.

Stitch remaining muscle to the bone lining, if possible.

Suture remaining muscle to the bone lining, if possible.

Before closing completely, place a drain.

Adequately close the wound with sutures or staples.

Change dressings regularly.

Backache

Back pain is a common occurrence and usually feels like an ache, tension or stiffness in your back. It can be caused from a variety of things, e.g., bad posture, incorrect lifting, punched nerve, unusual moment (bending or twisting) *etc.* Sometimes it occurs for no apparent reason, e.g., you just wake up with a bad back. People with excess weight (including pregnancy) are more at risk.

Back pain is not generally caused by a serious condition and in most cases it gets better within 12 weeks. It can usually be successfully treated by taking painkillers and keeping mobile.

Treatment for a Back Ache

Back pain will usually go away within 12 weeks.

Hot or cold compresses.

Unless incapacitated, continue with daily activities; excessive inactivity will make it worse.

Pharmaceuticals:

Muscle relaxers.

Alternative/Natural Remedies for a Back Ache:

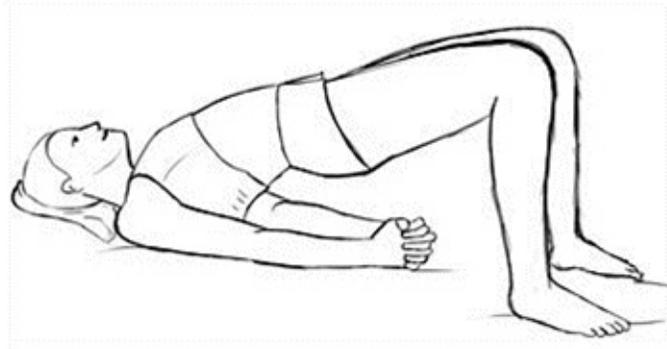
Yoga

The bridge can be helpful with any type of back pain (as well as having a multitude of other benefits), but it's particularly good for lower back pain, which is the most common type of back pain. It is also great for prevention.

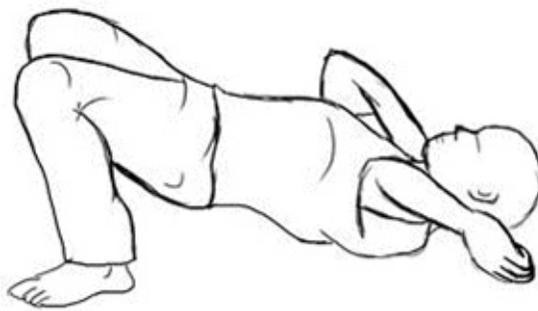
Bridge

If you are on hard ground, use something to provide padding on your head, e.g., a folded towel.

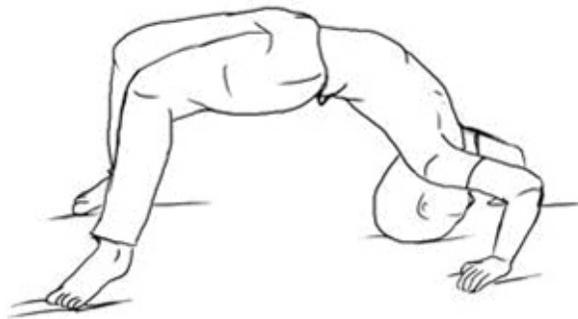
Lie on your back with your arms parallel to your body. Bend your knees so your feet are flat on the floor. Keeping your head, neck, arms and shoulders on the floor, push with your legs and arch your back to lift your stomach to the sky.



Next, place your hands flat on either side of your head.



Place your feet on the ground and use them to push yourself into an arched back position.



Finally, push up on your hands to raise your head off the floor.



Yoga has an incredible number of health benefits. It is amazing for prevention. To learn more about yoga visit SurviveTravel.com/Yoga.

Pneumothorax

Pneumothorax is when a lung is punctured and becomes decompressed, usually from a rib fracture; *Diagnoses and Treatments – Musculoskeletal System – Fractures – Fractured Ribs.*

Symptoms of Pneumothorax

Crackly or no sound from lungs.

Cyanosis (bluish skin).

Pain with breathing.

Signs of shock; *Diagnoses and Treatments - Circulatory System - Dehydration and Volume Shock.*

Swollen neck veins.

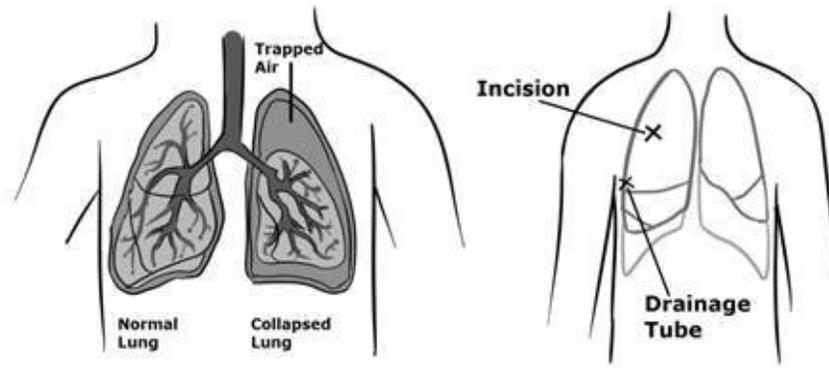
Treatment for Pneumothorax

Only treat if it becomes life threatening. This is definitely only for a last result do-or-die situation. Even if this operation is successful, the patient may not recover from the wound.

The aim of this is to create a way for the air to escape but not be able to go back in, i.e., a one way valve.

You need to make an incision between the nipple and the top of the shoulder, just above the third rib.

- Ø Clean the site.
- Ø Make the incision no wider than a pencil, just deep enough to hear the air pass through.
- Ø Tape 3 sides of a plastic bag or similar (cling film) over the incision.
- Ø Fluid will build up in the lung. Drain it with a tube.



Tetanus

Tetanus is an infection that targets the nerves serving muscle tissue. It can be caused from any break in the skin, but puncture wounds are particularly vulnerable, e.g., animal bite, rusty nail, splinter.

Tetanus can be deadly, but there are vaccinations available.

Symptoms of Tetanus

Initial:

Initial symptoms may not present themselves for up to 2 weeks:

Difficulty swallowing.

Involuntary muscle contraction.

Irritability.

Lockjaw.

Sore muscles (especially near the site of injury).

Weakness.

Progressive: Fever.

High blood pressure.

Involuntary back arching.

Irregular heartbeat.

Muscle spasms.

Respiratory distress.

Treatment for Tetanus

Dim lights.

Reduce noise.

Rehydration.

Pharmaceuticals: Muscle relaxants: valium in severe cases.

Antibiotics: metronidazole, penicillin.

RESPIRATORY SYSTEM

Asthma

When people with asthma are exposed to a substance that they are allergic to (allergens), their airways swell which decreases the amount of air that can get to the lungs. This is known as an asthma attack.

There are a variety of triggers depending on the sufferer. Some common ones are animal hair, cold air, dust and dust mites, infection, mold and mildew, over-exertion, pollen, pollutants, severe stress, smoke, various medicines *etc.*

Symptoms of an Asthma Attack

Symptoms vary from attack to attack and from individual to individual:

Mild:

Agitated.

Increased respiratory rate.

Moderate wheezing at end of breath.

Pulse under 100 bpm.

Shortness of breath while walking.

Moderate:

Agitated.

Loud wheezing.

Prefers to sit.

Pulse 100 to 120 bpm.

Shortness of breath while talking.

Talks in phrases.

Use of accessory muscles (shoulder girdle and chest wall) when breathing.

Severe:

Agitated.

Cyanosis (blue, gray or purple coloration of the skin; usually lips, fingertips and/or face).

Confusion.

Drowsiness.

Higher pitched wheezing.

Lung sounds may be loud or diminished.

Pulse over 120 bpm.

Respiratory rate greater than 30 bpm.

Shortness of breath while resting.

Sits upright.

Talks in one or two words.

Unconscious.

Treatment for an Asthma Attack

When treating asthma the main idea is to avoid the cause and to maintain an open airway.

In mild to moderate cases, patients will often know what to do and can treat themselves.

Minimize the causes.

Pharmaceuticals:

Albuterol: 2 puffs and rest will usually do the trick. An increased heart rate is a common side effect.

If patients do not respond to their self-medication and/or severe symptoms are present, the following action can be taken: PROP; *Must Read - Immediate First Aid - Critical First Aid - Breathing – PROP.*

Epinephrine if needed: 0.01 ml/kg of body weight, maximum dose of 0.3 ml, injections can be repeated every 5 minutes if needed.

Corticosteroid: prednisone 1 mg/kg of body weight, maximum dose of 60 mg, once a day.

Albuterol or the patient's equivalent, 6 to 10 puffs which can be repeated every 20 minutes for up to three doses.

Seek advanced medical care.

Alternative/Natural Remedies: Alternative/natural remedies may be effective in mild to moderate cases:

Herbal teas: chamomile, ginger and garlic, nettle, rosemary.

Coffee: black unsweetened coffee.

Honey: breathe deeply from a jar of honey for quick relief.

Prevention of Asthma Attacks

Honey: drink raw honey tea a few times a day.

Stay away from known allergens and other triggers.

Diet control: avoid dairy, eat organic, hydrate well, increase intake of omega-3 fatty acids and replace animal proteins with plant proteins.

Breathing methods: activities such as swimming, yoga, meditation *etc.* can help to regulate and improve breathing habits.

Dirgha Pranayama:

Dirgha Pranayama (3 part breath), is a yoga breathing exercise.

Sit in a comfortable cross legged position, don't slouch.

Relax your abdomen.

Place your palms on your belly.

Breathe deeply into your lower lungs, feeling your belly expand.

Repeat this breath 3 to 4 times.

Next, place your palms on the sides of your rib cage.

Breathe into your chest, feeling your rib cage expand.

Repeat this breath 3 to 4 times.

Now, place your fingertips on the front of your chest just below your collarbones.

Breathe into the upper part of your chest and feel your hands lifting.

Repeat this breath 3 to 4 times.

Finally, combine all three in-breaths.

Exhale completely and gently squeeze your abdomen to expel all the air

Exhale completely and gently squeeze your abdomen to expel all the air.

Repeat the whole cycle 3 to 4 times.

Focus on filling and emptying your lungs completely.

Bronchitis

Bronchitis is an inflammation of the tubes that carry air to your lungs (the bronchial tubes). If left untreated it may lead to pneumonia; *Diagnoses and Treatments – Respiratory System – Pneumonia*.

There are two main types of bronchitis: Acute Bronchitis:

Acute bronchitis is common and usually stems from another respiratory infection, e.g., common cold. It will usually only last a few days, although the cough may linger for weeks.

Chronic Bronchitis: Chronic bronchitis is more serious and requires advanced medical care. Smoking is the most common cause but dust, pollution, toxic gases etc. may also cause the condition.

Symptoms of Bronchitis

Chest tightness.

Cough producing mucus.

Fatigue.

Mild fever and chills.

Shortness of breath.

Wheezing.

The difference in symptoms between acute and chronic bronchitis:

Acute bronchitis will resolve quickly although a nagging cough may persist for several weeks.

Chronic bronchitis will have a productive cough for at least three months and will reoccur.

Treatment for Bronchitis

Avoid irritants (fumes, smoke etc.).

Hydrate.

Rest.

If suspected chronic bronchitis, seek advanced medical care.

Pharmaceuticals:

Antibiotic: amoxicillin-clavulanate 875 mg every 12 hours for 7 to 10 days.

Antibiotic: ciprofloxacin 500 mg every 12 hours for 7 to 14 days or 750 mg every 12 hours for 7 to 14 days for severe cases.

Antibiotic: doxycycline 200 mg on the first day, given in 2 doses, followed by 100 mg per day or 100 mg every 12 hours for severe cases.

Antibiotics, other: amoxicillin, ampicillin, azithromycin, levofloxacin, sulfamethoxazole/trimethoprim, tetracycline.

Cough suppressant: not for chronic bronchitis.

Cold and Flu

The common cold and influenza are both respiratory infections. Technically they are different, but for practical purposes, and because initial treatment is the same, the flu can be considered a more serious cold.

The common flu can be countered with a yearly vaccination. Special precautions must be taken if in threat of more serious strains of influenza, e.g., swine flu, bird flu.

Caution: meningitis is a potentially deadly virus that has very similar symptoms to influenza; *Diagnoses and Treatments - Head – Brain – Meningitis*.

Symptoms of Cold and Flu

Symptom	Influenza	Cold
Symptom onset	3 to 6 hours	Gradually
Aches	Usual, often severe	Slight
Chest discomfort	Often severe	Mild to moderate
Chills	Fairly common	Uncommon
Coughing	Dry, unproductive	Hacking, productive cough
Fever	Usually present	Rare
Headache	Common	Uncommon
Sneezing	Uncommon	Common
Sore throat	Uncommon	Common
Stuffy nose	Uncommon	Common
Tiredness	Moderate to severe	Mild

Treatment for Cold and Flu

Basic treatment for cold and minor flu is the same. Flu will probably take a week or 2 until complete recovery, whereas a cold may only take a few days.

Treat symptoms, e.g., throat lozenges, pain and fever meds, decongestions.

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Avoid alcohol, cigarettes and recreational drugs.

Avoid flying.

Hot or cold packs around your congested sinuses.

Hydration with hot clear fluids, e.g., soup, water.

Rest.

Steam inhalation and/or steamy showers.

Seek advanced medical care and consider antiviral medication for more serious bouts of flu with any of the following symptoms: Altered skin color, i.e., grayish or bluish.

Confusion.

Flu-like symptoms improve but then return with fever and cough.

High fever for more than three days.

Hyperventilation.

Respiratory distress.

Pain or pressure in the chest or abdomen.

Severe vomiting.

Sudden dizziness.

Pharmaceuticals: Antiviral: Tamiflu 75mg twice a day for 5 days.

If taken early enough Tamiflu may completely prevent the flu, but if not taken within the first 48 hours of symptoms, it won't have much effect at all.

Alternative/Natural Remedies: Clove oil.

Garlic, ginger and honey tea, 3 cups a day (acts as a cough syrup and will ease a sore throat).

Salicin tea.

Water and vinegar sponge baths (combats fever).

Dry Cough

A cough can be a symptom in many cases, but sometimes it is also just a dry cough due to altitude, dry air, irritants *etc.*

If it produces phlegm, blood *etc.* or comes with other symptoms, e.g., fever, then it is more than just a cough and the underlying cause should be treated accordingly.

Treatment for a Dry Cough

Pharmaceuticals: Cough suppressants at night.

Throat lozenges.

Pneumonia

Pneumonia is a disease of the lungs that often results from a lung infection. Lots of things can cause pneumonia including bacteria, chemicals, viruses, fungi, other infectious agents *etc.*

Symptoms of Pneumonia

Chest cold.

Chest pain.

Chills.

Coughing colors.

Fever.

Mild fever; less than 38.5 °C (102 °F).

Muscle aches.

Productive cough.

Tiredness.

Wheezing.

Weakness.

Treatment for Pneumonia

Hydration.

Pain/fever meds.

Rest.

Seek advanced medical care for specific diagnosis and treatment if:

Coughing up blood.

Excessive vomiting.

Shortness of breath, either at rest or with just a little exertion.

Severe chest pain.

Severe weakness.

For serious bouts of pneumonia where no medical drugs are available. it is

... of course, even if pneumonia were the main diagnosis, it is important to keep patient's interested and on his/her feet. Do not let them "give up in a corner".

Pharmaceuticals: Antibiotic: amoxicillin-clavulanate 875 mg every 12 hours for 7 to 10 days in the case of pneumococcal pneumonia, or up to 21 days for other.

Antibiotic: doxycycline 200 mg on the first day given in 2 divided doses followed by 100 mg a day or 100 mg every 12 hours for severe cases.

Antibiotics, other: amoxicillin, ampicillin, azithromycin, levofloxacin, metronidazole, sulfamethoxazole/trimethoprim, tetracycline.

Sore Throat

A sore throat is a common symptom for many ailments and also presents its own problems, e.g., hard to swallow, pain.

If there are red or white blotches in the back of the mouth, it may be pharyngitis (sore throat infection), e.g., strep throat; *Diagnoses and Treatments – Respiratory System – Strep Throat*.

Treatment for a Sore Throat

Gargle warm salt water.

Pharmaceutical: Anti-inflammatory.

Lozenges.

Alternative/Natural Remedies: Clove oil: gargle diluted clove oil.

Garlic, ginger, honey and lemon tea(s).

Salicin tea.

Strep Throat

Strep throat (streptococcal pharyngitis) is a contagious bacterial throat infection spread via close contact with an infected host. If untreated it may lead to kidney inflammation or rheumatic fever.

Symptoms of Strep Throat

Fatigue.

Fever.

Headache.

Rash.

Small, white spots on the back of the throat and/or tonsils.

Sore throat.

Stomach ache.

Swollen tonsils.

Tiny, red spots at the back of the roof of the mouth.

Vomiting.

Treatment for Strep Throat

Hydration.

Rest.

Treat symptoms.

Pharmaceuticals: Antibiotic: amoxicillin/clavulanate, 500 mg every 12 hours for 10 days or 875 mg every 12 hours in severe cases.

Antibiotic: doxycycline 200 mg on the first day, given in 2 evenly divided doses followed by 100 mg per day or 100 mg every 12 hours in severe cases.

Antibiotics, other: amoxicillin, ampicillin, azithromycin, cephalexin, sulfamethoxazole/trimethoprim, tetracycline.

Symptoms usually subside after 48 hours of antibiotic treatment, but finish the whole course.

Whooping Cough

Whooping cough (pertussis), is a highly contagious bacterial infection. It is most common in un-immunized infants and teenagers whose immunity has started to fade. Vaccines are available.

Symptoms of Whooping Cough

Symptoms come in 3 stages.

Stage 1:

Usually last 1 to 2 weeks and mimic the common cold: Cough (mild).

Fever (mild).

Nasal congestion.

Runny nose.

Sneezing.

Red, watery eyes.

Stage 2:

Usually last 2 to 4 weeks.

Severe, uncontrollable coughing which may cause: Extreme fatigue.

Red or blue face.

Vomiting.

Whooping sound on inhale (mainly in children).

Stage 3 is recovery: This is a gradual easing of symptoms which may last months.

Treatment for Whooping Cough

Cool-mist vaporizer.

Hydrate.

Remove irritants, e.g., aerosols, smoke.

Rest.

Smaller, more frequent meals (prevents vomiting).

Patients should cover their cough and wash hands often.

People in contact with patients should wear a mask.

Pharmaceuticals: Cough medicine will probably not help.

Antibiotic: amoxicillin/clavulanate 500 mg every 12 hours for 10 days or 875 mg every 12 hours for severe cases.

Antibiotic: doxycycline 200 mg on the first day, given in 2 doses followed by 100 mg per day or 100 mg every 12 hours for severe cases.

Antibiotics, other: amoxicillin, ampicillin, azithromycin, cephalexin, sulfamethoxazole/trimethoprim, tetracycline.