



Basic nursing and first aids

Physical Therapy Techniques

First Level

Preparation

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♠ *First Aid:*



♠ *Definition of First Aid:*

First Aid: is the first and immediate assistance given to a person suffering from a minor or serious illness or injury, with care provided to preserve life, prevent the condition from worsening, or to promote recovery.

♠ *Importance of First Aid:*

- 1- First aid provides help during various emergency situations.
- 2- It Helps ensure that the right methods of administering medical assistance are provided.
- 3- Knowledge in first aid also benefits the individuals themselves.

♠ *Golden Rules of First Aid:*

1. Do first things first, quickly-quietly without fuss or panic.
2. Reassure the casualty through encouraging words.
3. Check ABC Rule. (Airway, breathing, Circulation).
4. Open the airway by tilting the head.
5. Give artificial respiration if breathing has stopped.
6. Perform chest compression if the pulse is not present.
7. Stop bleeding by direct pressure.
8. Treat for shock.
9. Do not allow people to crowd around.
10. Don't remove clothes unnecessarily.
11. Arrange for transportation of the casualty.
12. Casualty should be sent to a hospital or doctor by quickest means of transport.
Always inform police about serious accidents and the relatives.

♠ *scope and concept of emergency:*

Scope:

1. To provide immediate action to treat the patient.
2. For crisis intervention.
3. To treat emergency condition irrespective of age group.
4. To treat a wide variety of illness or injury situation, ranging from sore throat to a heart attack.

Concept:

1. Establish a patent airway and provide adequate ventilation.
2. Control hemorrhage, prevent and manage shock.
3. maintain and restore effective circulation.
4. Evaluate the neurological status of client.
5. Carry out a rapid initial and ongoing physical assessment.
6. Start cardiac monitoring.
7. Protect and clean wounds.
8. Identify significant medical history and allergies.
9. Document the findings in medical records.

♠ *Burns and scalds:*

Burns and scalds: are damage to the skin caused by heat. Both are treated in the same way.

Causes:

1. A burn can be caused by dry heat such as contact with fire, or a hot iron, or exposure to the sun.
2. A scald can be caused by contact with wet heat, like steam or a hot cup of tea.

♠ *Degree of burns:*

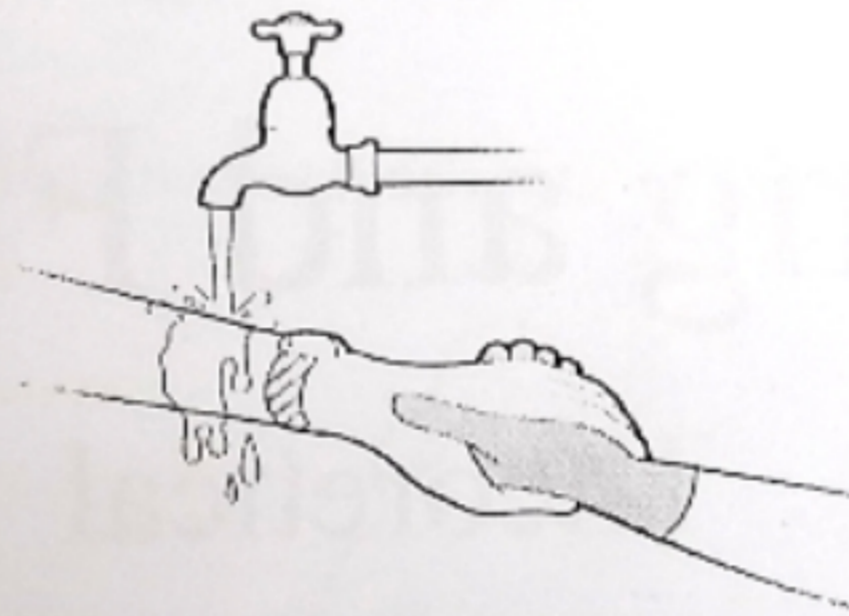
Burns are classified as first-, second-, third-degree, or fourth-degree depending on how deeply and severely they penetrate the skin's surface.

1. **First-degree (superficial) burns.** Affect only the outer layer of skin, the epidermis. The burn site is red, painful, dry, and with no blisters. Mild sunburn is an example. Long-term tissue damage is rare and often consists of an increase or decrease in the skin color.
2. **Second-degree (partial thickness) burns.** Involve the epidermis and part of the lower layer of skin, the dermis. The burn site looks red, blistered, and may be swollen and painful.
3. **Third-degree (full thickness) burns.** Destroy the epidermis and dermis. They may go into the innermost layer of skin, the subcutaneous tissue. The burn site may look white or blackened and charred.
4. **Fourth-degree burns.** Go through both layers of the skin and underlying tissue as well as deeper tissue, involving muscle and bone. There is no feeling in the area since the nerve endings are destroyed.

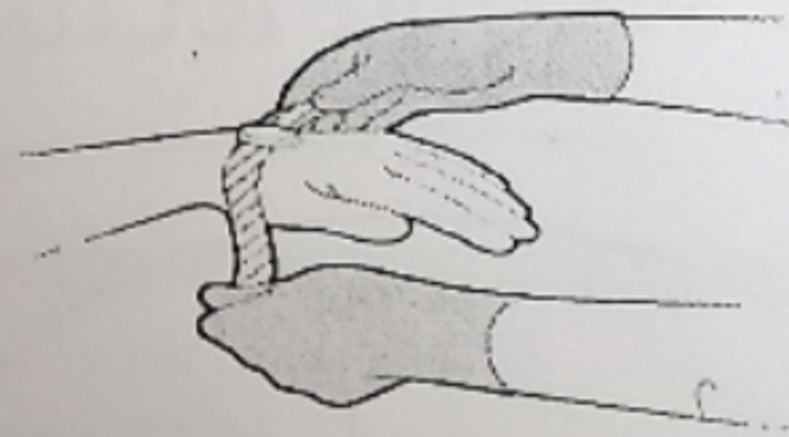
♠ First aid of burns:

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اليد

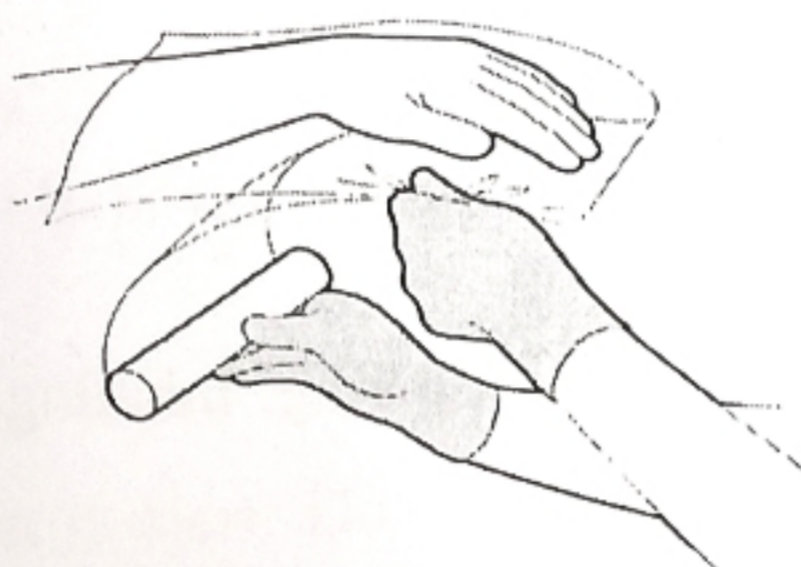
1. Start cooling the burn or scald as quickly as possible. Hold it under cool running water for at least 10 minutes or until the pain feels better. If there is no water available, you could use cold milk or canned drinks.



2. Remove any jewelry or clothing, unless stuck to the burn, before the area begins to swell.



3. When the burn has cooled, cover the area loosely with cling film, lengthways.
 - Do not wrap the cling film around the burn as the area needs space to swell.
 - If the burn is on a foot or hand you could use a clean plastic bag.
 - Do not use ice, creams or gels. They may cause damage and increase the risk of infection.
 - Do not break any blisters that may appear, as this may cause infection.



4. Monitor the casualty. Seek medical advice.



♠ General treatment of burns:

1. Medical treatment

- Water-based treatments. ultrasound mist therapy to clean and stimulate the wound tissue.
- Fluids to prevent dehydration. intravenous (IV) fluids.
- Pain and anxiety medications. morphine and anti-anxiety medications to decrease pain.
- Burn creams and ointments.
- Dressings.
- Drugs that fight infection. IV antibiotics.
- Tetanus shot. Your doctor might recommend a tetanus shot after a burn injury.

2. Physical and occupational therapy: If the burned area is large, especially if it covers any joints, you may need physical therapy exercises. These can help stretch the skin so that the joints can remain flexible. Other types of exercises can improve muscle strength and coordination.

3. Surgical and other procedures.

♠ Poisoning:

Poisoning: is injury or death due to swallowing, inhaling, touching or injecting various drugs, chemicals or gases.

♠ Classifications of poisoning:

1. Irritant Poisons: Cause irritation, pain and excessive vomiting, these poisons are further divided into:

X - (Inorganic Poisons) These poisons consist of both metallic (lead, arsenic, mercury, antimony, bismuth, silver, copper, zinc etc.) and non-metallic (zinc chloride, ferrous chloride, phosphate, sulphate, nitrate, nitrite etc.) compounds.

= - (Organic Poisons) It consists of poisons of both vegetable and animal origin. Animal Poisons consist of Snakes venom, scorpion venom, cantharides etc. Vegetable Poisons are the huge class of poisons which contains various plants which are toxic in nature (croton, castor, calotropis, nuxvomica, abrus, precatoreous, kaner etc.).

→ مفرغيات (Mechanical Poisons) The poisons which cause irritation, perforation, obstruction in the gastrointestinal tract, like powder glass, diamond dust, chopped hair etc.

= 2. Acids poisons: produce superficial injuries to the esophagus and deep injuries to various portions of the stomach.

= 3. Alkali poisons: Poisoning caused by ingestion of an alkali. For example, bleach, sodium hydroxide and potassium hydroxide.

= 4. Neurotic Poisons: These poisons affect the different parts of central nervous system such as Cerebral Poisons (alcohol, opium, barbiturates, and benzodiazepines) are the examples of Cerebral poisons and are the Central Nervous System.

= ♠ Symptoms and signs: Not all may be present

- = 1. nausea or vomiting.
- = 2. Diarrhea.
- = 3. abdominal pain.
- X 4. unconsciousness or deteriorating conscious state.

- = 5. Seizures.
- = 6. breathing difficulty.
- X 7. altered or changed behavior – e.g. hallucination, aggression ♠ *First aid for*

= *poisoning:*

- = 1. Swallowed: If the person is alert: Do not induce vomiting. Immediately rinse the mouth. Keep the product or medicine container handy.
- = 2. On the skin: Carefully remove contaminate clothing and wash exposed areas with copious amounts of room temperature water.
- = 3. In the eye: Rinse eyes with a slow gentle stream of water from a cup or a jug for 10 to 15 minutes. Allow the stream to flow from the inner corner across the eye to the outer corner. Do not apply eye drops.
- = 4. Inhaled: Immediately get the person to fresh air, without placing yourself at risk. Loosen any tight clothing at the neck. Open doors and windows, if indoors.
- = 5. Bites and stings: Serious allergic reactions occur in approximately 2% of stings from ants, bees and wasps. Symptoms such as swelling of the face, lips and tongue, breathing difficulties or a generalized rash are potentially life-threatening and require urgent medical attention.

♠ *General treatment of poisoning:*

X Immediate, life-saving measures may be needed initially. Beyond this, treatment consists of preventing further absorption of the poison, providing supportive treatment, and administering specific antidotes, if available.

♠ *First aid of trauma due to foreign body intrusion:*

♠ *To eyes:*

1. Advise the casualty not to rub their eye as this could make it worse. Ask them to sit down facing a light.
2. Stand behind them and gently open their eyelids with your thumbs. Ask them to look right, left, up and down as you look closely at the eye.
3. If you can see something, ask them to tip their head backwards and wash it out by pouring clean water from the inner corner from a glass or jug.
4. If this doesn't work and the object is still on the surface of the eye, try to remove it with a moist piece of gauze or the damp corner of a clean handkerchief or tissue. If the object isn't easy to remove or the eye is very painful, seek medical advice.

♠ *To ears:*

1. Don't probe the ear with a tool such as a cotton swab or matchstick. You risk pushing the object farther in and damaging the ear.
2. Remove the object if possible. If the object is clearly visible, pliable and can be grasped easily with tweezers, gently remove it.
3. Try using gravity. Tilt the head to the affected side to try to dislodge the object.
4. Try using oil for an insect. If the foreign object is an insect, tilt the person's head so that the ear with the insect is upward. Try to float the insect out by pouring mineral oil, olive oil or baby oil into the ear. The oil should be warm, but not hot. Don't use oil to remove an object other than an insect. Don't use this method for a child if ear tubes are in place or if you think the eardrum may be perforated. Signs and symptoms of a perforated eardrum are pain, bleeding or discharge from the ear.
5. Try washing the object out. Use a rubber-bulb ear syringe and warm water to irrigate the object out of the canal, again provided no ear tubes are in place and you don't suspect the eardrum is perforated.

♠ *To nose:*

1. Don't probe at the object with a cotton swab or other tool.
2. Don't try to inhale the object by forcefully breathing in. Instead, breathe through your mouth until the object is removed.

3. Blow out of your nose gently to try to free the object, but don't blow hard or repeatedly. If only one nostril is affected, close the opposite nostril by applying gentle pressure and then blow out gently through the affected nostril.
4. Gently remove the object if it's visible and you can easily grasp it with tweezers. Don't try to remove an object that isn't visible or easily grasped.
5. Call for emergency medical assistance or go to your local emergency room if these methods fail.

♣ *To throat, stomach and lungs:*

If you swallow or inhale a foreign object, it will usually pass through digestive system. But some objects can lodge in the tube that connects your throat and stomach (esophagus) or pass to the trachea.

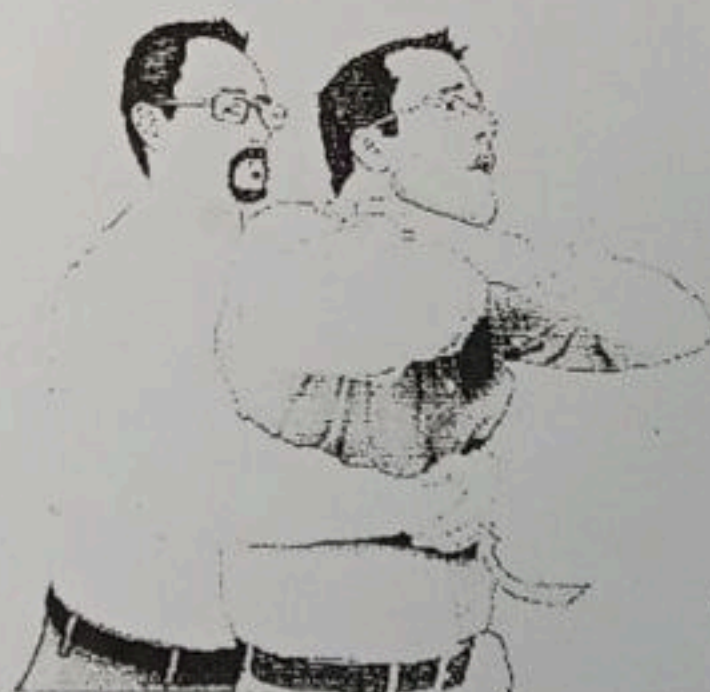
If the person is able to cough forcefully, the person should keep coughing. If the person is choking and cannot talk, cry or laugh forcefully, its recommend to use a "fiveand-five" approach to delivering first aid:

Five-and-Five

Give 5 back blows



Give 5 abdominal thrusts



1. Give 5 back blows. Stand to the side and just behind a choking adult. For a child, kneel down behind. Place one arm across the person's chest for support. Bend the

person over at the waist so that the upper body is parallel with the ground. Deliver five separate back blows between the person's shoulder blades with the heel of your hand.

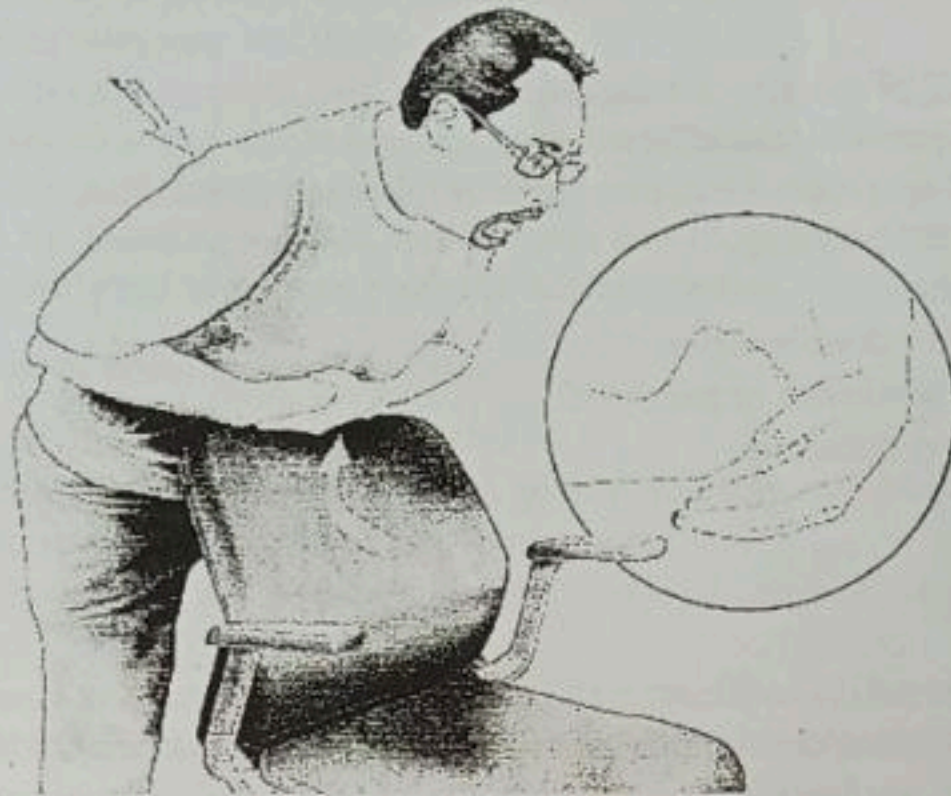
2. Give 5 abdominal thrusts. Perform five abdominal thrusts (also known as the Heimlich maneuver).
3. Alternate between 5 blows and 5 thrusts until the blockage is dislodged.

To perform abdominal thrusts (the Heimlich maneuver) on someone else:

1. Stand behind the person. Place one foot slightly in front of the other for balance. Wrap your arms around the waist. Tip the person forward slightly. If a child is choking, kneel down behind the child.
2. Make a fist with one hand. Position it slightly above the person's navel.
3. Grasp the fist with the other hand. Press hard into the abdomen with a quick, upward thrust — as if trying to lift the person up.
4. Perform between six and 10 abdominal thrusts until the blockage is dislodged.

To perform the Heimlich maneuver on yourself:

If you're choking and alone, you can't perform back blows on yourself. But you can perform abdominal thrusts.



1. Place a fist slightly above your navel.
2. Grasp your fist with the other hand and bend over a hard surface — a countertop or chair will do.
3. Shove your fist inward and upward.

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Symptoms and signs – Not all may be present

1. Pain.
2. Swelling of the bite or sting area.
3. Discoloration of the affected area.
4. Altered sensation – e.g. numbness or ‘pins and needles’.
5. Nausea or vomiting.
6. Headache.
7. Blurred or double vision.
8. Muscle weakness or paralysis.
9. Breathing difficulty.

♣ *Dog Bites:*

First aid steps:

1. Wash the wound with soap and warm water.
2. Gently press a clean cloth over the wound to stop the flow of blood.
3. Apply an antibacterial ointment to the wound.
4. Cover with a sterile bandage.
5. Watch for signs of infection.
6. Seek help if you suspect infection or possible exposure to rabies, or if the wound is severe.

Rabies first aid:

1. Stop Bleeding: Apply sustained pressure for several minutes.
2. Clean Wound: Wash with clean water and gentle soap for 15 minutes.
3. Gather Information About Animal.
4. See a Healthcare Provider Immediately: Do not wait for symptoms to appear.
5. Follow Up: If there is any risk of rabies infection, the healthcare provider will recommend anti-rabies treatment. This may include a series of shots. The person may require a tetanus shot, depending on the date of the last shot.

♣ *Snake Bites first aids:*

First aid treatment for mild bites:

If the snake wasn't poisonous, treat the area of the bite for bleeding and other symptoms:

1. Use a clean cloth or gauze to apply pressure to the area until bleeding stops.
2. Clean the area with soap and water.
3. Apply an antibiotic cream to help ward off infection.
4. Cover the wound with a sterile bandage or gauze to protect it while it heals.
5. If the person is experiencing severe bleeding, continue to apply new layers of cloth or gauze to the bleeding area, on top of layers that have been soaked through with blood. Removing old layers can make the bleeding worse.

First aid treatment of poisonous snake bites:

1. Help them get medical help immediately.
2. Encourage them to remain calm, lie down quietly, and stay still. Movement can cause the venom to spread through their body more quickly.
3. Remove tight jewelry or clothing around the site of the bite, since swelling may occur.
4. If they develop pale and clammy skin, dizziness, weakness, shortness of breath, or increased heart rate, treat them for shock. Give them a blanket or extra layer of clothing to stay warm.
5. If you can do so safely, take a description or picture of the snake that bit them. This can help medical professionals identify the snake and an appropriate course of treatment.

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Wounds and Hemorrhage:

Wounds: is damage to the integrity of biological tissue, including skin, mucous membranes, and organ tissues. Wounds may be classified by several methods; their etiology, location, type of injury or presenting symptoms, wound depth and tissue loss or clinical appearance of the wound. The common method for classification of a wound is classification composed of four classes of wound statuses:

1. **Class 1 wounds are considered to be clean.** They are uninfected, no inflammation is present, and are primarily closed. These wounds do not enter respiratory, alimentary, genital, or urinary tracts.
2. **Class 2 wounds are considered to be clean-contaminated.** These wounds lack unusual contamination. Its enter the respiratory, alimentary, genital, or urinary tracts.
3. **Class 3 wounds are considered to be contaminated.** These are fresh, open wounds that can result from insult to sterile techniques or leakage from the gastrointestinal tract into the wound, incisions made that result in acute wounds.
4. **Class 4 wounds are considered to be dirty-infected.** These wounds typically result from improperly cared for traumatic wounds. They most commonly result from microorganisms present in perforated viscera or the operative field.

♠ *Wound Management:*

1. Promote a multidisciplinary approach to care.
2. Initial patient and wound assessment is important and whenever there is a change in condition.
3. Consider the psychological implications of a wound- especially relevant in the pediatric setting in relation to developmental understanding and pain associated with the wound and dressing changes.
4. Determine the goal of care and expected outcomes.
5. Respect the fragile wound environment.
6. Maintain bacterial balance- use aseptic technique when performing wound procedures.
7. Maintain a moist wound environment.
8. Maintain a stable wound temperature. Avoid cold solutions or wound exposure.
9. Maintain an acidic or neutral pH.
10. Allow a heavily draining wound to drain freely.

11. Eliminate dead space but don't pack a wound tightly.
12. Select appropriate dressings and techniques based on assessment and scientific evidence.
13. Initiate appropriate adjunctive wound therapies, e.g. compression, splinting and pressure redistribution equipment, off-loading orthotics.

♠ *Hemorrhage*: or Bleeding is the name used to describe blood loss. It can refer to blood loss inside the body, called internal bleeding, or to blood loss outside of the body, called external bleeding.

♠ *Hemorrhage Classification and symptoms of each one*:

Normal Blood Volume: - Adult: 7% (5 Liter Blood Volume for a 70 kg man).
- Child: 8-9% (80-90 ml/kg for a child)

Class I Hemorrhage - Minimal Blood Loss A.

Characteristics:

1. Blood Volume Loss <15%
2. Adult blood loss <750 ml B. Cardiovascular:
 1. Heart Rate normal or mild increase
 2. Pulses normal
 3. Blood Pressure normal
 4. pH normal

C. Respiratory: Rate normal D.

Neurologic: Slightly anxious

E. Skin:

1. Warm and pink
2. Capillary Refill brisk (<2 seconds) F. Renal: Normal

urine output:

1. Adults: >0.5 ml/kg/hour (>30 cc/hour)
2. Children: >1 ml/kg/hour
3. Infants <1yo: >2 ml/kg/hour

Class II Hemorrhage - Mild Blood Loss A.

Characteristics:

1. Blood Volume Loss: 15-30%
2. Adult: 750-1500 ml of blood loss B. Cardiovascular:
 1. Tachycardia

2. Diminished peripheral pulses
3. Blood Pressure normal
4. Normal pH

C. Respiratory: Mild Tachypnea

D. Neurologic:

1. Irritable
2. Confused
3. Combative E. Skin:

1. Cool extremities
2. Mottling
3. Delayed Capillary Refill F. Renal:

1. Oliguria
2. Increased specific gravity

Class III Hemorrhage - Moderate Blood Loss A.

Characteristics:

1. Blood Volume Loss: 30-40%
2. Adults: 2000 ml blood loss B. Cardiovascular:
 1. Significant Tachycardia
 2. Thready peripheral pulses
 3. Hypotension
 4. Metabolic Acidosis C. Respiratory: Moderate Tachypnea

D. Neurologic:

1. Irritable
2. Lethargic
3. Diminished pain response E. Skin:
 1. Cool extremities, mottling or pallor
 2. Prolonged Capillary Refills F. Renal:
 1. Oliguria
 2. Blood Urea Nitrogen (BUN) increased

Class IV Hemorrhage - Severe Blood Loss A.

Characteristics: Blood Volume Loss: >40%

B. Cardiovascular:

1. Severe Tachycardia

2. Thready central pulses
 3. Significant Hypotension
 4. Significant acidosis
- C. Respiratory: Severe Tachypnea
- D. Neurologic:
1. Lethargic
 2. Coma
- E. Skin:
1. Cold extremities
 2. Pallor
 3. Cyanosis
- F. Renal: Anuria

♠ *First aid for hemorrhage:*

1. The person who's bleeding should try to remain calm to keep their heart rate and blood pressure controlled. Either heart rate or blood pressure being too high will increase the speed of bleeding.
2. Lay the person down as soon as possible to reduce the risk of fainting, and try to elevate the area that's bleeding.
3. Remove loose debris and foreign particles from the wound. Leave large items such as knives, arrows, or weapons where they are. Removing these objects can cause further harm and will likely increase the bleeding. In this case, use bandages and pads to keep the object in place and absorb the bleeding.
4. Use the following to put pressure onto the wound: (a clean cloth, bandages, clothing and your hands - after applying protective gloves).
5. Maintain medium pressure until the bleeding has slowed and stops.

♠ *Treatment of hemorrhage for special areas:*

♠ *Scalp:*

1. Stop the bleeding:
 - Put some pressure on the scalp wound or cut using a clean cloth or tissue until it stops.
 - Use thick layer of cloth to soak the blood if that is possible.
 - You should wash your hands after this first aid and before cleaning and dressing the wound
2. Clean the wound/Cut:

- Using soap and warm water clean the scalp wound or bleeding spot. Wash out the soap out of the affected spot to avoid irritation.
 - Remember to apply hydrogen peroxide or iodine that can damage the scalp tissue around the bleeding area.
3. Protect the wound:
- To protect the bleeding wound, you need to apply antibiotics to avoid or to reduce the risk of infections.
 - Cover the wound with sterile bandage.



- Make sure to change the bandage daily to keep your scalp wound clean and dry.
- Keep your scalp hair short until the bleeding relieves

Mouth:

1. Have the person sit up and tilt his or her head forward with the chin down. This will help any blood drain out of the mouth, not down the back of the throat. Swallowing blood can cause vomiting.
2. Remove any visible objects that are easy to remove. Remove chewing gum if it is present. Do not attempt to clean out the wound.
3. Remove any jewelry from the general area of the wound.
4. Press firmly on the wound with a clean cloth or the cleanest material available. If there is an object in the wound, apply pressure around the object, not directly over it.
5. Apply steady pressure for a full 15 minutes. Use a clock to time the 15 minutes. It can seem like a long time. Resist the urge to peek after a few minutes to see whether bleeding has stopped. If blood soaks through the cloth, apply another one without lifting the first.
6. **Inner lip bleeding.** Press the bleeding site against the teeth or jaw or place a rolled or folded piece of gauze or clean cloth between the lip and gum. Once bleeding from inside the lip stops, don't pull the lip out again to look at it. The person should avoid yawning or laughing, which may make the bleeding begin again.
7. **Tongue bleeding.** Squeeze or press the bleeding site with gauze or a piece of clean cloth.
8. **Inner cheek bleeding.** Place rolled gauze or a piece of clean cloth between the wound and the teeth.
9. **After tooth extraction by a health professional,** follow any instructions given to you by your health professional. If you do not have the instructions, bite on gauze or a piece of clean cloth to control bleeding. If pressure does not stop the bleeding, try biting down on a moistened tea bag for 10 to 15 minutes. Avoid spitting, using any form of tobacco, and using straws, which can make bleeding worse.



10. **If moderate to severe bleeding** has not slowed or stopped, continue direct pressure while getting help. Do all you can to keep the wound clean and avoid further injury to the area.
11. **Mild bleeding** usually stops on its own or slows to an ooze or trickle after 15 minutes of pressure. It may ooze or trickle for up to 45 minutes.
12. Return any skin flap to its normal position. If necessary, hold the flap in place with a clean cloth or gauze.
13. Watch the person so he or she does not swallow the gauze or cloth.
14. Do not put a bandage across the mouth.
15. Do not exercise for several days. Exercise could raise blood pressure and restart mouth bleeding.

Nose:

1. **Anterior nosebleed:** bleeding from the front of the nose, usually a nostril. Treated by:
 - While sitting up, squeeze the soft part of the nose.
 - Make sure that nostrils are fully closed. Keep nostrils closed for 10 minutes, lean forward slightly, and breathe through the mouth.
 - Don't lie down when trying to stop a nosebleed. Lying down can result in swallowing blood and can irritate stomach. Release nostrils after 10 minutes and check to see if the bleeding has stopped. Repeat these steps if bleeding continues.
 - Apply a cold compress over the bridge of nose or use a nasal spray decongestant to close off the small blood vessels.
 - See doctor immediately if you're unable to stop a nosebleed.
2. **Posterior nosebleed:** bleeding from the back of the nose. The blood also tends to flow from the back of nose down throat. Posterior nosebleeds are less common and often more serious than anterior nosebleeds. Posterior nosebleeds shouldn't be treated at home. Contact doctor immediately or go to the emergency room (ER) if you think you have a posterior nosebleed.
3. **Nosebleeds caused by foreign objects:** If a foreign object is the cause, doctor can remove the object.



♠ *Ear:*

1. **Antibiotics:** Antibiotics can treat and clear up some infections. However, not all ear infections will respond to antibiotics. Viral infections will not respond to antibiotic therapy.
2. **Watchful waiting:** Many of the underlying causes for ear bleeding will clear up by themselves over time. This is the most common treatment for both a ruptured eardrum and a concussion or other types of observable head trauma. During the days and hours after you start bleeding, your doctor will ask you to report any changes. Additional treatment could be needed.
3. **Pain treatment medication:** Over-the-counter pain medications may ease the discomfort and irritating pain sensation from ear infections, damage, or pressure problems.
4. **Warm compresses:** Wet a washcloth with hot or warm water. Place the cloth over your sore ear. The heat from the warm compress will gently ease pain and discomfort.
5. **Protect your ears:** Until your doctor gives you the all clear, use ear covers or plugs to prevent water and debris from entering your ears.

Palm:

2. For Cuts:
 - Apply direct pressure until bleeding stops.
 - Remove rings and bracelets that may impede blood flow or compress nerves if swelling occurs later.
 - Clean area with warm water and soap.
 - Apply antibiotic ointment and a sterile bandage.
 - Apply ice and elevate hand to reduce swelling.
 - If a finger or part of a finger has been cut off, collect all parts and tissue and place in a plastic bag on ice for transport to the hospital with the person.
 - See a healthcare provider immediately for a deep cut, puncture wound, animal bite, human bite, or a scrape that you cannot get clean or if the cut shows signs of infection.



3. For Sprains, Finger Dislocations or Fractures: - Apply ice to reduce swelling.
 - Keep finger elevated above the heart.
 - If finger is bent or deformed, don't try to straighten it. - See a doctor immediately.
4. For Infection:
See your healthcare provider if a hand injury shows signs of infection, including redness, swelling, warmth, or discharge.

♠ *Varicose veins:*

Emergency treatment for bleeding from a varicose vein is simple:

1. Elevate the leg higher than the heart.
2. Apply pressure over the bleeding site. This may be done initially with a finger to control the bleeding followed by a pressure dressing. A folded gauze sponge or a cloth applied over the site with pressure from compression tube or an elastic wrap usually work well to prevent repeat bleeding for the short term.

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internal Hemorrhage:

Bleeding inside the body that is not seen from the outside. It occurs when damage to an artery or vein allows blood to escape the circulatory system and collect inside the body. The internal hemorrhage or bleeding may occur within tissues, organs or in cavities of the body including the head, chest and abdomen.

Examples of other potential sites of bleeding include the eye, lining tissues of the heart, muscles, and joints. Internal bleeding may not be evident for many hours after it begins, and symptoms occur when there is significant blood loss or if a blood clot is large enough to compress an organ and prevent it from functioning properly.

Types of internal hemorrhage:

1. **visible Internal bleeding:** The most common type of visible internal bleed is a bruise, when blood from damaged blood vessels leaks into the surrounding skin. Some types of internal injury can cause visible bleeding from an orifice (body opening). For example:
 - bowel injury – bleeding from the anus.
 - head injury – bleeding from the ears or nose.
 - lung injury – coughing up frothy, bloodied sputum (spit).
 - urinary tract injury – blood in the urine.
2. **Concealed or not visible Internal bleeding:** It is important to remember that an injured person may be bleeding internally even if you can't see any blood. An internal injury can sometimes cause bleeding that remains contained within the body; for example, within the skull or abdominal cavity.

Symptoms of concealed internal bleeding: The signs and symptoms that suggest concealed internal bleeding depend on where the bleeding is inside the body, but may include:

 - pain at the injured site.
 - swollen, tight abdomen.
 - nausea and vomiting.
 - pale, clammy, sweaty skin.
 - Breathlessness.
 - extreme thirst.
 - unconsciousness.

- Some signs and symptoms specific to concussion (caused by trauma to the head) include:
 - headache or dizziness.
 - loss of memory, particularly of the event.
 - Confusion.
 - altered state of consciousness.
 - wounds on the head (face and scalp).
 - nausea and vomiting.

♠ *First aid of internal hemorrhage:*

1. Call or get someone to call emergency services. Don't wait to see if the person improves or deteriorates.
2. If available put synthetic gloves on as bleeding may become apparent.
3. Check airway, breathing and circulation. Begin cardiopulmonary resuscitation (CPR) if necessary.
4. If unconscious and breathing – place the person in the recovery position and with legs higher than the heart if possible.
5. If conscious – lie the casualty down and raise or bend legs if injuries permit.
6. Keep casualty warm. This may help delay the onset of shock by minimizing the bodies heat loss.
7. Reassure and stay calm. This helps provide security for the injured person.
8. Continue to check pulse and breathing.
9. Treat other injuries as appropriate.
10. Do not give anything to eat or drink as they may require surgery to stop the bleeding.

♠ *Shock and Unconsciousness:*

Shock: Is a life-threatening medical condition as a result of insufficient blood flow throughout the body. Shock often accompanies severe injury or illness.

Medical shock: Is a medical emergency and can lead to other conditions such as lack of oxygen in the body's tissues (hypoxia), heart attack (cardiac arrest) or organ damage. It requires immediate treatment as symptoms can worsen rapidly. Medical shock is different than emotional or psychological shock that can occur following a traumatic or frightening emotional event.

♠ *Types of Shock*

1. **Septic shock:** results from bacteria multiplying in the blood and releasing toxins. Common causes of this are pneumonia, urinary tract infections, skin infections, intra-abdominal infections (such as a ruptured appendix) and meningitis.
2. **Anaphylactic shock:** is a type of severe hypersensitivity or allergic reaction. Causes include allergy to insect stings, medicines, or foods (nuts, berries, seafood), etc.
3. **Cardiogenic shock:** happens when the heart is damaged and unable to supply sufficient blood to the body. This can be the end result of a heart attack or congestive heart failure.
4. **Hypovolemic shock:** is caused by severe blood and fluid loss, such as from traumatic bodily injury, which makes the heart unable to pump enough blood to the body, or severe anemia where there is not enough blood to carry oxygen through the body.
5. **Neurogenic shock:** is caused by spinal cord injury, usually as a result of a traumatic accident or injury.

♠ *Causes of Shock:*

1. Heart conditions (heart attack, heart failure).
2. Heavy internal or external bleeding, such as from a serious injury or rupture of a blood vessel.
3. Dehydration, especially when severe or related to heat illness.
4. Infection (septic shock).
5. Severe allergic reaction (anaphylactic shock).
6. Spinal injuries (neurogenic shock).
7. Burns.
8. Persistent vomiting or diarrhea.

♠ *Symptoms of Shock:* Low blood pressure and rapid heart rate (tachycardia) are the key signs of shock.

Symptoms of all types of shock include:

1. Rapid, shallow breathing.
2. Cold, clammy skin.
3. Rapid, weak pulse.
4. Dizziness or fainting.
5. Weakness

Depending on the type of shock the following symptoms may also be observed:

1. Eyes appear to stare.
2. Anxiety or agitation.
3. Seizures.
4. Confusion or unresponsiveness.
5. Low or no urine output.
6. Bluish lips and fingernails.
7. Sweating.
8. Chest pain.

♠ General and special treatment of shock:

A. General treatment: fluid resuscitation (giving a large amount of fluid to raise blood pressure quickly) with an IV in the ambulance or emergency room is the first-line treatment for all types of shock. The doctor will also administer medications such as epinephrine, norepinephrine, or dopamine to the fluids to try to raise a patient's blood pressure to ensure blood flow to the vital organs. **B. Special treatment:**

1. Septic shock: is treated with prompt administration of antibiotics depending on the source and type of underlying infection. These patients are often dehydrated and require large amounts of fluids to increase and maintain blood pressure.
2. Anaphylactic shock: is treated with diphenhydramine (Benadryl), epinephrine, steroid medications methylprednisolone, and sometimes a H2-Blocker medication (for example, famotidine, cimetidine).
3. Cardiogenic shock: is treated by identifying and treating the underlying cause. A patient with a heart attack may require a surgical procedure called a cardiac catheterization to unblock an artery. A patient with congestive heart failure may need medications to support and increase the force of the heart's beat. In severe or prolonged cases, a heart transplant may be the only treatment.
4. Hypovolemic shock: is treated with fluids (saline) in minor cases, but may require multiple blood transfusions in severe cases. The underlying cause of the bleeding must also be identified and corrected.
5. Neurogenic shock: is the most difficult to treat. Damage to the spinal cord is often irreversible and causes problems with the natural regulatory functions of the body. Besides fluids and monitoring, immobilization (keeping the spine from moving), anti-inflammatory medicine such as steroids, and sometimes surgery are the main parts of treatment.

♠ *Methods of Transportation of patient:*

1. **Single helper:** There are situations in which it's just you. There is no equipment, and you have to evacuate a patient.

a. If you are alone with a patient, the *fireman's carry* is effective and keeps the victim's torso relatively level and stable.

- While squatting or kneeling, grasp the person's right wrist with your left hand and drape it over your shoulders.
- Keeping your back straight, place your right hand between their legs and around the right thigh.
- Using your leg muscles to lift, stand up. You should end up with their torso over your back and the right thigh resting over your right shoulder.
- If you have done this correctly, the patient's left arm and leg will hang behind your back. Adjust the patient's position in order to cause the least strain on you.

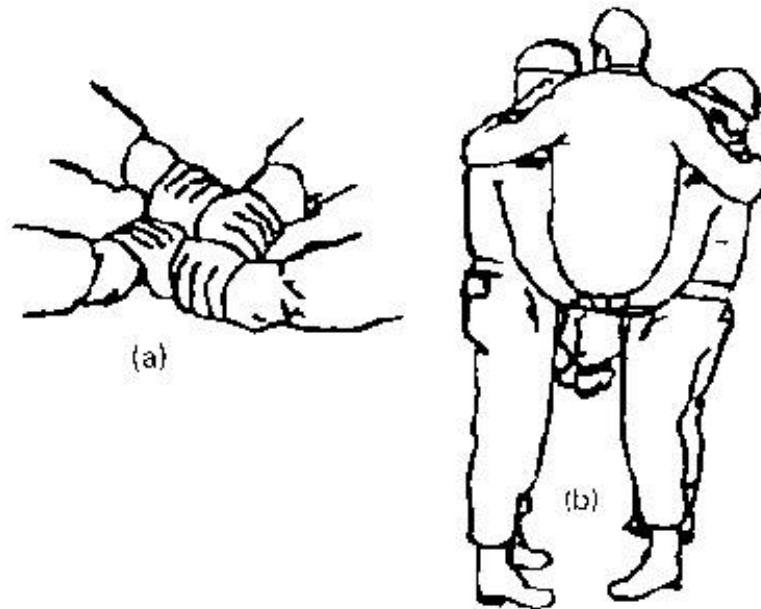
b. *Pack-strap carry:* Another option when you are the lone rescuer is the packstrap carry.

- With the patient behind and facing your back, grasp both arms and cross them across your chest.
- If you are squatting, keep your back straight; use your legs and back muscles to lift the patient.
- Bend slightly so that their weight is on your hips, and then lift them off the ground.

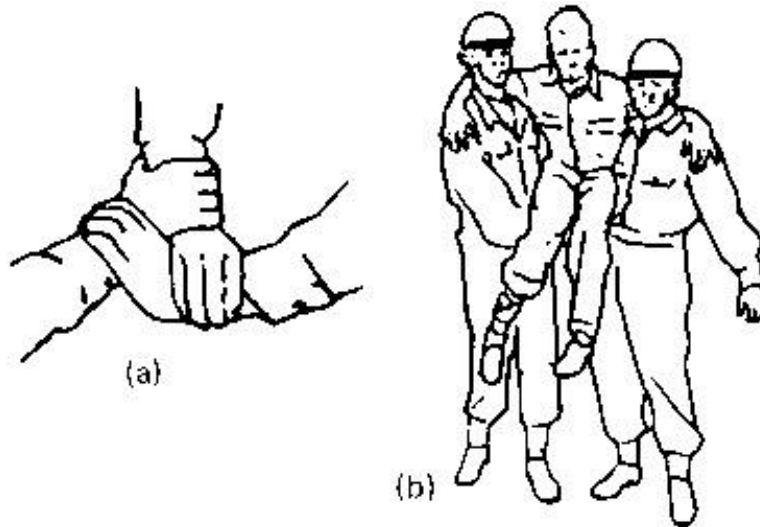
2. **Hand seat:**

a. **FOUR-HANDED SEAT:** This technique is for carrying conscious and alert victim's moderate distances. The victim must be able to stand unsupported and hold themselves upright during transport.

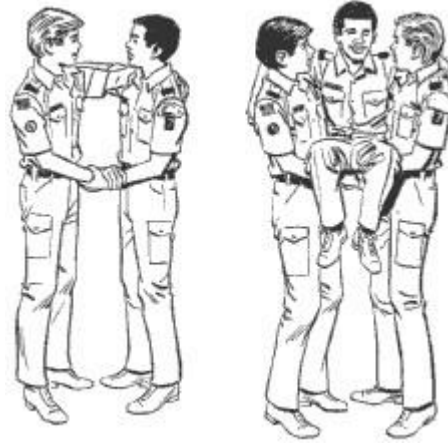
- Position the hands as indicated in the graphic.



- Lower the seat and allow the victim to sit.
 - Lower the seat using your legs, not your back.
 - When the victim is in place, stand using your legs, keeping your back straight.
- b. THREE- HANDED SEAT:** This method gives the casualty good support and is reasonably comfortable for the rescuers. It has the added advantage that the two rescuer team has a spare hand for steadying.
- One rescuer grasps his left wrist with his right hand and the second rescuer places his hand and wrist as shown in Figure.



- This forms a seat. If the casualty is capable of standing for a short period he can be loaded by placing the seat under his buttocks, but if not, the rescuers' hands must be placed under the casualty's knees first and then joined up.
- c. **TWO-HANDED SEAT:** This technique is for carrying a victim longer distances. This technique can support an unconscious victim.



- Pick up the victim by having both rescuers squat down on either side of the victim.
 - Reach under the victim's shoulders and under their knees.
 - Grasp the other rescuer's wrists.
 - From the squat, with good lifting technique, stand.
 - Walk in the direction that the victim is facing.
3. **Stretcher Transportation:** Stretcher medical transportation is reserved for patients who are bed-ridden and cannot get up or move into a sitting position. There are many different reasons that a patient may be confined to a stretcher for transportation. A specialized vehicle is required to safely transport stretchers.
- To move a patient onto a stretcher, the medic positions the casualty next to it on his back with his arms at his side.
 - Then, one helper slips his arms under the casualty's back and waist, and another helper does the same under the hip and knees.
 - Upon your command, they lift and place the victim on the stretcher.
 - An alternative would be to have two helpers carefully turn the patient on their side, rather than lift.
 - You would then slip the stretcher underneath. For this, the casualty's arms can be placed across their chest. The head is kept in alignment with the spine throughout.
4. **Wheelchair Transportation:** Patients confined to a wheelchair or who cannot walk independently require the extra assistance provided by wheelchair transportation. In

some cases, patients can be moved from their wheelchair into a vehicle seat, in other instances patients are more comfortable remaining in their chair. Vehicles must be outfitted with the appropriate restraints and hookups to secure the chair in the vehicle so that it remains stable no matter what.

5. **Ambulatory Transportation:** Ambulance transportation is hailed in the instance of an emergency. Being transported by ambulance is the most expensive form of transportation, and so you only want to go this route in a true emergency. Due to the associated costs, ambulance rides are typically reserved for life and death situations, or situations where a limb is at risk.

♠ *Precautions taken:*

1. **Blanket lift:** This method is safe only when there is a minimum of 6 bystanders available, plus a strong blanket long enough to support the patient's entire body. It is not a suitable method for an emergency when life-threatening danger is present, but it may be useful in a remote area where there is likely to be a significant delay before the arrival of trained personnel. In this situation it is designed to assist in the transfer of a sick or injured person out of extreme weather conditions.

□ **Method:**

- First the blanket must be rolled up along its length until only half of the blanket is left flat on the ground. The rolled edge is then placed along the patient's side, making sure that the blanket will support both the feet and head.
- Next the three helpers on the opposite side roll the patient onto their knees using a 'log-roll' technique in which the patient's head, neck, spine, hips and legs are kept in a straight line throughout. The rolled edge of the blanket is then placed close to the patient's spine and the patient gently eased back onto the ground.
- The patient is then 'log-rolled' flat to allow the blanket roll to be pulled out, leaving the patient lying centrally on the blanket. Three helpers should stand on each side and roll up their side of the blanket into a tight roll held close to the patient's body.
- The first person on each side should grip the blanket roll with one hand close to the patient's ears and the other at shoulder level.
- The middle person on each side should grasp the blanket roll at mid-chest level and close to the patient's hips.
- The third person on each side should grasp the blanket roll with one hand close to the patient's thighs and the lower hand close to the patient's feet.

- When the most highly trained person present is satisfied that the lift will be safe, the lifters are told to lean outwards slightly to keep the blanket tightly stretched and the order is given to 'lift slowly'. Lifters should use their legs for lift rather than their back.
 - The lifters then face forwards and walk slowly to the planned location. It is vital that the lifters are instructed to avoid walking 'in step' because this will cause the patient to rock from side to side. Once the new location has been reached, the order is given to lower the patient, slowly and carefully.
2. **air and sea transportation of patient:** Worldwide, an estimated 3.6 billion people travel by commercial aircraft every year. Travelers have concerns about the health risks of flying in airplanes.
- a.** Those with underlying illness need to be aware, although illness may occur as a direct result of air travel, it is uncommon; the main concerns are:
- Exacerbations of chronic medical problems due to changes in air pressure and humidity.
 - Relative immobility during flights leading to thromboembolic disease.
 - Close proximity to other passengers with communicable diseases.
- b.** For those who require supplemental in-flight oxygen, the following must be taken into consideration:
- Travelers must arrange their own oxygen supplies while on the ground.
 - Passengers requiring in-flight supplemental oxygen should notify the airline ≥ 72 hours before departure.
 - Airlines might not offer in-flight supplemental oxygen on all aircraft or flights.
- c.** Barotrauma can occur when the pressure inside an air-filled, enclosed body space (such as the middle ear, sinuses, or abdomen) is not the same as the air pressure inside the aircraft cabin. It most commonly is the result of rapid changes in environmental pressure, such as during ascent when cabin pressure rapidly falls, and during descent, when cabin pressure rapidly rises. Barotrauma most commonly affects the middle ear. The following suggestions may help avoid potential barotrauma:
- People with ear, nose, and sinus infections or severe congestion may wish to postpone flying to prevent pain or injury.
 - Oral or nasal decongestants may alleviate symptoms.
 - Travelers with allergies should continue their regular allergy medications. - Travelers should stay hydrated to help avoid irritation of nasal passages and pharynx and to promote better function of the Eustachian tubes.

- Travelers sensitive to abdominal bloating should avoid carbonated beverages and foods that can increase gas production.
- People who have had recent surgery, particularly intra-abdominal, neurologic, intrapulmonary, or intraocular procedures, should consult with their physician before flying.