

# Basic Safety and First Aid for Bicycle Travel & Tours

## Introduction.

The best solution is prevention. Prudent behavior and appropriate precautions can go a long way in avoiding or reducing injuries. Understanding how and where injuries occur can help prevent them by increasing your awareness of risks and hazards. Correcting or mitigating risks and hazards, where possible, and educating others to be aware of these conditions can make life safer and more fun.

**Good Samaritan Laws.** Many jurisdictions have Good Samaritan laws to protect people who willingly provide emergency care without accepting anything in return. These laws differ somewhat from place to place, but generally help protect people who act in good faith, within the scope of their training and are not negligent. Negligence can encompass failing to provide care, providing care beyond the scope of practice or level of training, providing inappropriate care and failing to control or stop any behavior that could result in further harm or injury.

**Consent.** If the patient is conscious you must obtain consent before providing first aid or emergency care. To obtain consent; state your name, tell the person what level of training you have, ask the person if you may help and explain what you plan to do. If the patient is a minor, consent need to be obtained from a parent or guardian, if they are present.

**Implied Consent.** Someone who is unconscious, confused or seriously injured or ill may not be able to grant consent. In these cases, the law generally assumes the victim would give consent if he or she were able to do so. This is called implied consent. Implied consent also applies to a minor who needs emergency medical assistance and whose parents or guardian is not present.

**Refusal of Care.** Some injured or ill victims, even those who desperately need care, may refuse care. Parents may also refuse care for children. Even though the victim may be seriously injured, his or her wishes must be honored. It is best if someone else witnesses the victim's refusal and documents it. You don't need consent to summons more highly trained Emergency Medical Services (EMS) personnel.

**Abandonment.** Once care is initiated it must be continued until EMS personnel or someone with equal or greater training arrives and takes over, or the care giver is exhausted.

**Maintaining Knowledge and Skills.** First Aid knowledge and skill can dissipate from lack of use so it important to regularly review and practice first aid knowledge and skills.

## In An Emergency.

- **Size Up The Scene. Evaluate The Situation.** Don't endanger yourself (move among down power line or enter a burning building) to aid someone. If the scene is safe approach the victim.
- **Perform and Initial Assessment.** Determine if the victim is conscious (shake and shout). If not, use Personal Protective Equipment (PPE) (latex gloves and a CPR mask) to prevent disease transmission and check for ABC (Airway, Breathing and Circulation (pulse)). If there is a problem with ABC begin appropriate treatment (rescue breathing or CPR). Don't stop until EMS takes over or you are exhausted. Check for severe bleeding.
- **Summons EMS.** Have an assistant summons EMS if the victim is; unconscious, has any problems with ABC, has severe bleeding, you suspect a head, neck or back injury, has a severe burns, allergic reaction, head ache, stroke, seizures, vomiting blood, passing blood, broken bones. or suspected poisoning. If EMS are not available begin arranging for other more highly trained and equipped medical assistance.

- **Obtain Consent.** If the victim is conscious ask for consent. (See “Consent”, “Implied Consent”, and “Refusal of Care” above.)
- **Perform a Secondary Assessment.** The secondary assessment is performed if there are no life-threatening conditions (ABC). It is a systematic, head-to-toe for adults and toe-to-head for children, method for gathering information about medical history, injuries or conditions that may need care

Use the mnemonic **SAMPLE** to remember the question for taking a brief history:

**S – Signs and symptoms.** Where do you have pain, discomfort, numbness, ect.?

**A – Allergies.** If so, what kind of reactions.

**M – Medications.** What medication for what conditions? Are they being taken as prescribed?

**P – Pertinent past medical history.** Any recent falls, accidents or blows? Past medical, surgical or trauma incidents?

**L – Last oral intact of food or liquid.** When and what?

**E – Events leading up to the incident.** Details on activities leading up to and during the incident.

**Perform a Head-to-Toe** (for adults) or **Toe-to-Head** (for children) examination.

**Head.** Look at the scalp, face, ears, eyes, nose, lips and mouth for cuts, bumps, bruises and depressions. Feel the forehead with the back of your hand. Note changes in the level of consciousness or alertness.

**Skin.** Is it moist or dry; or red, pale, flushed or ashen?

**Neck.** If no injury to the neck is suspected, ask the patient to move their head from side-to-side.

**Shoulders.** Ask the patient to shrug their shoulders.

**Chest and Abdomen.** Ask the patient to take a deep breath and blow air out. Listen.

**Arms.** Check on arm and then the other. Ask the patient to move their hands and fingers and bend the arm.

**Legs.** Check on leg and then the other. Ask the patient to move their foot and toes and bend the leg.

After completing the check, care for any conditions found. Have the patient rest in a comfortable position. Continue to watch for changes in consciousness and breathing. If any life-threatening conditions develop, at any time, provide appropriate care immediately.

- **Notify the Chain of Command.** Depending upon the context and seriousness of the incident you may need to notify superiors or officials.
- **Interview Witnesses.** Depending upon the context and seriousness of the incident you may need to interview and record information from witnesses.
- **Complete Reports.** Depending upon the context and seriousness of the incident you may need to submit some form of written information.
- **Check Supplies and Equipment.** If you used supplies and/or equipment, make sure used items are replaced and equipment is clean and ready for future use.
- **Debrief.** Review all the characteristics of the incident and if possible correct any policies, procedures or situations that will help to reduce future incidents.

## Patient Care

### Illness

There are many types of illness such as; allergic reactions, altitude sickness, appendicitis, bites and stings, diabetic emergency, concussions, diseases and ailments (i.e. malaria, food and water borne disease, diarrhea, dysentery), fainting, headaches, heat and cold illness, poisoning, shock, seizures, strokes, and vomiting. Most come on quite suddenly but some can be progressive, especially hot and cold illness.

**Allergic Reaction.** Some allergic reaction result in anaphylactic shock and a breathing emergency. Watch the patient for allergic reaction, care for life-threatening conditions (ABC) and keep the victim comfortable. Some people with allergies carry antihistamine, inhalers or epi-pens, which they should administer themselves. If someone is having a breathing emergency summons EMS personnel. For mild allergy symptoms, such as hay fever or hives, give an over-the-counter (OTC) antihistamine. For stuffy nose, give an OTC decongestant. For itchy, watery eyes, use OTC allergy eye drops. For itchy allergic rash, apply cold compresses and an OTC hydrocortisone cream.

**Altitude sickness.** Acute Mountain Sickness (AMS) commonly occurs above 2,400 meters (8,000 feet). It presents as a collection of nonspecific symptoms, acquired at high altitude or in low air pressure, resembling a case of "flu, carbon monoxide poisoning, or a hangover". A headache occurring at an altitude above 2,400 meters, combined with any one or more of the following symptoms, may indicate altitude sickness; lack of appetite, nausea, vomiting, fatigue, weakness, lightheadedness, dizziness, insomnia, pins and needles, shortness of breath upon exertion, nosebleed, persistent rapid pulse, drowsiness, general malaise, peripheral edema (swelling of hands, feet, and face), and/or diarrhea. It is hard to determine who will be affected by altitude sickness, as there are no specific factors that correlate with a susceptibility to altitude sickness. AMS can progress to high altitude pulmonary edema (HAPE) or high altitude cerebral edema (HACE), which are potentially fatal. Ascending slowly is the best way to avoid AMS. Avoiding strenuous activity in the first 24 hours at high altitude reduces the symptoms of AMS. As alcohol tends to cause dehydration, which exacerbates AMS, avoiding alcohol consumption in the first 24-hours at a higher altitude is wise. The only reliable treatment and in many cases the only option available is to descend. Attempts to treat or stabilize the patient in situ at altitude is dangerous unless highly controlled and with good medical facilities.

**Appendicitis.** Pain first, vomiting next and fever last has been described as the classic presentation of acute appendicitis. Some presentations are atypical and typical presentation may lead to different diagnosis. If appendicitis is suspected seek medical attention.

#### **Bites and Stings.**

**Spider Bites/Scorpion Stings.** Summons EMS personnel, wash the wound, apply a cold pack, give anti-venom (if available), care for life-threatening conditions (ABC) and keep the victim comfortable.

**Snake Bites.** For any snakebite, **DO NOT** apply ice, cut the wound, apply suction, apply a tourniquet or use electric shock (AED).

If the snake is a **viper snake** (includes rattlesnakes, copperhead, cotton mouth): Summons EMS personnel, wash the wound and keep the injured area still and lower than the heart.

If the snake is a **elapid snake** (cobra, mamba, coral, tiger, etc.): Summons EMS personnel, wash the wound, apply an elastic roll bandage and keep the injured area still and lower than the heart.

**Insect Stings.** Insect stings can be fatal for people who have severe allergic reactions. This allergic reaction may result in anaphylactic shock and a breathing emergency. If someone is having a breathing emergency summons EMS personnel. To care for an insect sting; if the stinger is in the skin scrape it away with a fingernail or plastic card, wash the wound with soap and water, cover the site and keep it clean, apply a cold pack, watch the patient for allergic reaction, care for life-threatening conditions (ABC) and keep the victim comfortable.

**Concussion** or other head injuries are often accompanied by a leakage of watery blood from the nose or ears. Other symptoms may include convulsions, an unresponsiveness of the pupils or headache and vomiting. For a hard hit or severe symptoms seek medical attention. Keep the injured party warm, dispense a pain killer regularly and allow time for the body to rest and repair.

**Diabetic Emergency.** People who are diabetic sometimes become ill because there is too much or too little sugar in their blood. Signs and symptoms are fast breathing, fast pulse, dizziness, weakness, change in the level of consciousness, vision difficulties, sweating, headache, numb hands or feet, and hunger. If the diabetic victim is conscious and can safely swallow food or fluids, give them sugar, preferably in liquid form. Most fruit juices and non-diet soft drinks have enough sugar to be effective.

**Fainting.** Fainting is not usually harmful and the victim will usually quickly recover. Lower the victim to the ground, position them on their back, loosen any tight clothing such as a tie or collar.

**Food and Water Borne Illnesses.** There is an array of symptom for food and water borne illnesses. This group include viral or travelers diarrhea, food poisoning, amoebic dysentery, diarrhea associated with worms, giardia and bacillary dysentery. It is often difficult to be certain of the causes of food and water borne illness without lab test. Some food and water borne illness are self-limiting, and the quicker they come the quicker they go. If diarrhea is present always need to treat for dehydration. If there is blood or mucus in the stool or the symptoms last more than 72 hours seek medical attention.

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**DIARRHEA CHART**

Disease	Incubation Period	Duration	Frequency of stools	Character	Blood	Mucus	Fever	Nausea/Vomiting	Cramps	Treatment
Viral & Travelers Diarrhea	12-72 hrs	12-72 hrs	Every 15-30 min.	Runny stool brown	Rare	Rare	Common 102 F	Common not severe	Common not severe	1, 2
Food Poisoning	Rapid 4-24 hrs. after eating	12-24 hrs	Variable but severe	Soft stool	Never	Never	Never	Common	Always, not severe	1, 2
Ameobic Dysentery	Slow days/Weeks	Chronic	Initially not true diarrhea, may become severe	Normal to soft --may become liquid	Common in small amounts	Always	Low if present	Not present	Common, 3 not severe	
Diarrhea Associated with worms	Slow	Variable	Usually not diarrhea	Normal to soft	Never	Never present	Never	Not	Common, 3 usually mild	
Giardia	1-4 weeks	Chronic	Diarrhea to constipation	Loose stool to formed	No	Yes	Low,	Nausea, sulfuric gas burps	Not severe	1, 2, 3
Bacillary Dysentery	1-7 days	3-10 days	Every 15-30 min.	Watery stool	Common	Common	Always high	Yes	Yes severe	1, 2, 4 if not severe, 3 if severe

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\* 1 - Bed rest. 2 - Liquid diet. 3 - Requires physician and medication. 4 - Aspirin or Tylenol

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**Headache.** Headaches are often experienced on adventures due to inadequate eye protection, tension in the neck, constipation or "water intoxication" (a swelling of the brain tissue which happens when the participant has sweated excessively over a period of days and consumed large quantities of water without taking salt tablets). Aspirin may be used to alleviate the pain but one should find the source of headache to prevent further discomfort. Headaches are also a symptoms of altitude sickness, concussion, heat exhaustion, malaria, and stroke, so check for other signs as well.

**Heat and Cold Illnesses.** Exposure to heat or cold can lead to illness. Wind, humidity, ventilation and a person's physical activity, age, nutrition and state of health can also play a role

**Heat-related emergencies.** Heat-related emergencies are progressive conditions. If recognized in the early stages they can usually be reversed. If not they may progress to a life-threatening condition (heat stroke).

**Heat cramp.** Painful muscle spasms (usually in the legs and abdomen) are an early sign of heat related illness. There are two basic causes of heat cramping: One is inadequate oxygenation of muscle, and the other is lack of water or salt. Cramps can occur when lactic acid builds up from anaerobic muscle metabolism. When muscles burn sugar without enough oxygen, they make lactic acid. When lactic acid becomes concentrated enough it can trigger muscle contractions. When the muscle lacks salt, the nerves firing the muscle are unable to recharge properly, causing a similar effect. Cramps from poor oxygenation can be improved by rapid deep breathing and stretching the muscle. Cramps from lack of salt and water can be treated by stretching the muscle, drinking water and eating salt.

**Heat exhaustion** is when the bodies cooling system is becoming overwhelmed, is more severe. Early signs and symptoms are: Excessive sweating, fatigue, thirst, muscle cramps and headache. Later, more serious signs are; cool, moist, pale, ashen or flushed skin, nausea and vomiting, dizziness, exhaustion, and/or dark urine.

**Heat stroke** is when the bodies cooling system is overwhelmed by heat and stops functioning. Symptoms are: Red, hot, dry skin, changes in level of consciousness, confusion, seizures, vomiting or dry heaves, shallow breathing and a weak rapid pulse. Watch for signs of shock.

**Treatment for heat-related emergencies is:** move patient to a cool placer, loosen or remove clothing, apply cool, wet towels to the skin (especially where blood vessels are near the surface on the neck, head, groin, and under the arm pit), fan the patient. If the patient vomits place them on their side. If the person is awake encourage them to sip a half cup of salt beverage every 15 minutes. DO NOT give liquids that contain alcohol or caffeine. These are diuretics and will hinder the body's ability to re-hydrate.

#### Heat Stress Index

Temperature (F) versus Relative Humidity (%)						
°F	90%	80%	70%	60%	50%	40%
80	85	84	82	81	80	79
85	101	96	92	90	86	84
90	121	113	105	99	94	90
95		133	122	113	105	98
100			142	129	118	109
105				148	133	121
110						135

  

HI	Possible Heat Disorder:
80°F - 90°F	Fatigue possible with prolonged exposure and physical activity.
90°F - 105°F	Sunstroke, heat cramps and heat exhaustion possible.
105°F - 130°F	Sunstroke, heat cramps, and heat exhaustion likely, and heat stroke possible.
130°F or greater	Heat stroke highly likely with continued exposure.

#### Cold-related emergencies.

**Hypothermia.** This occurs when a victim's entire body cools because they are unable to keep warm (the core body temperature falls below 33.7C (92.6F)). If a person is wet and in a mild wind, it can occur in less than an hour at temperatures as high as 15°C (59°F). Signs and symptoms are: Shivering, numbness, a glassy stare, apathy, weakness, impaired judgment, and/or loss of consciousness. To care for hypothermia move the victim to a warm place, remove any wet clothing, dry the victim, and work to warm the victim. Do not warm the too quickly. Rapid warming may cause dangerous heart rhythms. If the victim is alert, give them warm liquids to drink that do not contain alcohol or caffeine.

**Frostbite.** This occurs when a body part freezes. Signs and symptoms are: a lack of feeling in the affected area and skin that appears waxy, cold to the touch or discolored (flushed,

white, yellow or blue.) To care for frostbite get the victim out of the cold, warm gently by soaking the affected area in warm water until normal color returns and the area feels warm. Never rub the affected area. Avoid breaking blisters. If the victim's fingers or toes are frostbitten, place dry sterile gauze between them to keep them separated. Take precautions to prevent hypothermia.

**Ingested Poison.** If a person is showing signals of poisoning, call the Poison Control Center (in the USA 1-800-222-1222). Do not automatically induce vomiting as this may cause burning of the airway if it is a corrosive substance. Do not automatically give fluids to drink as some substances may react more. Treat any life-threatening condition (ABC) and summons EMS personnel.

**Inhaled Poison.** Poisonous fumes can come from a variety of sources, including carbon monoxide (car exhaust, fires, charcoal grills), chlorine gas, or burning of urushiol containing plants. Size up the scene to be sure it is safe to help the victim, summons EMS personnel, move the victim to fresh air, care for life-threatening conditions (ABC) and keep the victim comfortable.

**Malaria.** Malaria may cause one or more of the following symptoms; high fever, chills and profuse sweating, excruciating headache, extreme fatigue and death. They may be suppressed because of the prophylactic treatment or it may be like a "flu" that does not go away. The symptoms may come and go in 24, 48 or 72 hour cycles. Generally symptoms get worse in the afternoon and evening. To confuse matters, there are a number of other diseases in most malarial areas that have similar symptoms. If you experience these symptoms you should contact a physician immediately. Malaria is detected by a blood smear. If a physician is not available, the emergency regime for treatment is often a super high dose of prophylactic medicine. Read the literature with the medicine for details.

**Poisonous Plants.** Poison ivy, oak and sumac contain urushiol oil which can be transferred from object to object. Sensitivity may differ from person to person. Be careful not to spread the oil. Carefully remove contaminated clothing. **Clean the skin immediately.** If you do this within 10 minutes, you may be able to get the urushiol off before it penetrates your skin. Clean the skin with rubbing alcohol first, then rinse thoroughly with cold water. Don't scrub. Don't use hot water. Don't use soap until after an initial thorough rinse with cold water.

**Shock.** There several type of shock, including; hypovolaemic (low volume of blood from severe bleeding), cardiogenic (heart is pumping poorly) anaphylactic (caused by swelling of the lungs from a severe allergic reaction) and septic (result of severe infection and sepsis). Any serious trauma, injury or illness can cause the condition of shock – a depression of the body's processes. Signs and symptoms of shock include: restlessness, irritability, altered level of consciousness, pale or ashen, cool, moist skin, sweating, nausea, vomiting, rapid breathing and pulse and/or excessive thirst. To minimize the effects; have the victim lie down and elevate the legs (if a head, neck or back injury, or broken bones in the hips or legs are not suspected), monitor the ABCs, control external bleeding, control the victim temperature, DO NOT GIVE FOOD OR DRINK to a victim of shock.

**Seizure.** Protect the patient from being injured by removing any nearby object that might cause injury. Protect the patients head by placing a cushion or folded clothing under it. When the seizure is over, the patient will usually begin to breathe normally. They may be drowsy and disoriented or unresponsive for a period of time. If the seizure lasts more than five minute, repeats or there are additional medical conditions summons EMS.

**Stroke.** Signs of a stroke can be sudden weakness or numbness of the face, arms or leg (usually only on one side), difficulty speaking, blurred or dimmed vision, or sudden, severe headache, dizziness or confusion. Think F.A.S.T. (face, arms, speech, time). If the signs of a stroke are present summons medical help immediately. Note the time symptoms began to relay on to medical personnel.

**Vomiting.** Lower the victim to the ground and position them on their side so that any fluid will drain from the mouth. Do not give them anything to eat or drink.

## Injuries: Wounds.

**Closed wounds.** Internal bleeding may occur when the skin's surface is not broken and damage to soft tissue and blood vessels happens below the surface. Seek medical attention if the victim complains of severe pain or cannot move a body part without pain, injury was caused by great force, injured extremity is blue or extremely pale, victim has excessive thirst, becomes confused, faint, drowsy or unconscious, vomits or coughs up blood, has a rapid or weak pulse, skin that feels cool or moist or looks pale or bluish, or the victim has tender, swollen, bruised or hard areas of the body, such as the abdomen. While waiting for medical assistance care for life-threatening conditions (ABC), watch for changes in level of consciousness and treat other problems.

**Open wounds.** There are four main types of open wounds:

**Abrasions.** The skin has been rubbed or scrapped away – road-rash. Dirt and other matter can enter the wound. Cleaning the wound is important to prevent infection.

**Lacerations.** Cuts bleed freely and deep cuts can bleed severely. Deep cuts can damage nerves, large blood vessels and other soft tissue.

**Avulsions.** A cut in which a piece of soft tissue or part of the body is torn loose or severed entirely. Often deeper tissues are damaged, causing significant bleeding.

**Puncture.** These often do not bleed a lot and can easily become infected. In severe wounds there can be severe bleeding and damage to blood vessels and internal organs. An embedded object in the wound should be removed only by medical personnel.

**Care external bleeding.** For a **minor wound**; cover the wound with a sterile dressing, apply direct pressure until bleeding stops, wash the wound thoroughly with soap and water, apply triple-antibiotic ointment and cover the wound with a sterile dressing. For a **major wound**; cover the wound with a sterile dressing, apply direct pressure until bleeding stops, cover the dressing with a roller bandage and tie the knot directly over the wound, treat for shock, summons EMS personnel.

## Injuries: Special Wounds

**Animal and Human Bites.** Seek medical help if the wound bleeds severely or if the animal is suspected of having rabies. For severe bleeding, control the bleeding. Do not clean the wound. For minor bleeding, if the bite barely breaks the skin and there's no danger of rabies, treat it as a minor wound.

**Burns.** Heat, radiation, chemical, electrical, cold and frictions can cause burns. Heat burns can be caused by fire, hot objects or hot liquids. Burns can be superficial (first degree), partial thickness (second degree) and full thickness (third degree). The severity depends upon the temperature or strength of the heat or other source, duration of exposure, location, size and the victim's age and general medical condition.

The **general care for a burn** is: remove the person from the source of the burn, cool the burn area with cool, running water, and cover the burned area loosely with a sterile dressing to prevent infection. Do not pop any blisters.

**Minor sunburn** can be treated with a moisturizing cream, over the counter hydro-cortisone cream (follow direction closely) or apply aloe vera either the plant form or gel. Aloe contains active compounds that help reduce pain and inflammation.

**Severe burns** (those causing difficulty breathing, burns covering a large area, those to the head and neck, burns to the airway, burns from chemicals, explosion or electricity, and those to young children or the elderly) can lead to shock and require immediate medical attention. Do not remove clothing stuck to the burn. Do not immerse in cold water. Do not apply any ointment. Do not pop any blisters or disturb dead skin. Do not blow or cough on the wound. Do not give food or water to a person who has a severe burn as they may require surgery.

For an **electrical burn** you must be sure that the scene is safe before proceeding. Electrocutation can cause cardiac and breathing emergencies and there can be more serious injuries under the skin that may not be visible to the eye.

For a **chemical burn** brush off dry chemical with a gloved hand, being careful about where you brush the chemical. Flush chemical wounds with large amounts of water. If possible, have the person remove contaminated clothes to prevent further injury.

**Scalp Injury.** Scalp injuries often bleed heavily. Do not apply direct pressure on a skull fracture. Putting pressure on the area around the wound can help control the bleeding.

**Eye Injury.** Never put direct pressure on the eyeball. Do not try to remove embedded objects from the eye. For small foreign bodies in the eye (i.e. sand or dust) have the victim blink several times and gently flush the eye with water. For chemicals in the eye, flush with water continuously for 10 minutes. Always flush away from the uninjured eye. The eye can be bandaged loosely. A paper cup can be used to protect the eye.

**Nosebleed.** Have the victim sit leaning slightly forward. Pinch the nostrils together for about 10 minutes or until the bleeding stops. Other remedies include applying an ice pack to the bridge of the nose or putting pressure on the upper lip just beneath the nose.

**Mouth Injury.** If a head, neck or back injury is not suspected, rinse out the mouth with cold water, if available. Try to prevent the victim from swallowing blood, which may cause vomiting. Apply a dressing.

**Tooth Injury.** Rinse out the mouth with cold water, if available. Try to prevent the victim from swallowing blood, which may cause nausea or vomiting. Have the victim bite down on a rolled sterile dressing in the space left by the tooth. Save any displaced teeth (handle by the crown, not the root). Rinse the root – do not scrub or remove attached tissue. Place the tooth in milk, if possible, or water. Go to the dentist as soon as possible.

**Abdominal Injury.** Carefully remove clothing from around the wound. Do not attempt to reinsert any internal organs that have pushed out. Cover the organs with a moist, sterile dressing and cover the dressing with plastic wrap. Place a folded towel or cloth over the dressing to keep the organs warm. Care for shock.

**Embedded Object.** Do not remove the object. Place several dressings around the object to keep it from moving. Seek medical assistance.

**Severed Body Part.** Seek medical help immediately. Control the bleeding and wrap and bandage the wound to prevent infection. Wrap the severed body part in sterile gauze (or clean material), place it in a plastic bag and put the plastic bag on ice (but so not freeze it.) Care for shock.

### **Injuries: Muscle, Bone and Joint.**

There are four types of muscle bone and joint injuries: Fractures (a break, chip or crack in a bone), dislocation (movement of a bone away from its normal position at a joint), sprain (tearing a ligament at a joint) and strain (stretching or tearing a muscle or tendon).

It is not necessary to know what type of injury the victim has because the care that is provided is the same: Support the injured area above and below the site of the injury, check for feeling, warmth and color below the site of the injury, immobilize and secure the injured area if the victim must be moved and recheck for feeling, warmth and color below the site of the injury.

Splinting is a method of immobilizing an injured extremity. Splint the injury in the position in which the injured area was found. Splint the injured area above and below the site of the injury. Check for circulation before and after splinting. Three kinds of splints used for transporting a victim are: Anatomic splint (securing injured extremity to another body part), soft splint (using a soft material to provide support) and rigid splint (using rigid materials to provide support).

**Open Fracture.** Do not move the exposed bone and limb. Place sterile dressing around the open fracture and bandage the bandage in place around the fracture.

**Injuries: Head, Back and Neck.** If a head, back or neck injury is suspected perform in-line stabilization. Move the victim as little and as gently as possible. Check for consciousness and ABC.