

### **Basic Rules of Emergency Medical Aid**

- 1) Before beginning any treatment ensure that you (the rescuer) are safe.
- 2) Use hand disinfectant before and after administering treatment.
- 3) Always use gloves when fluids are present (blood, urine, saliva, etc.).
- 4) Before administering any treatment (including wound care), ask the patient if they have any allergies. In our case this would include allergies or sensitivities to Povidone Iodine, any antibiotic, Aspirin, Ibuprofen or any other NSAID (Non Steroidal Anti-Inflammatory Drug).
- 5) For any serious injury or condition, be sure to take notes including the date, time, patient's name, age and gender, as well as details about his/her condition and how the injury/condition occurred (if possible). Also note any changes in his/her condition as treatment continues.
- 6) Dispose of any used/biohazard materials in one of the zip lock bags provided in the first aid kit.
- 7) Remember your ABCs – **A**irway, **B**reathing and **C**irculation!

## **Heat Related Injuries**

Runs on hot days in the Madrid countryside present an excellent opportunity for heat related problems to occur. The best way prevent such problems is to make sure Hashers consume plenty of water and/or isotonic drinks to reduce the risk of dehydration and electrolyte depletion. However, despite best efforts (and after long Friday and/or Saturday nights of drinking), problems can arise during a mid-day or early evening run. Common problems and remedies are as follow:

### ◆ **Severe Sunburn**

Sunburn happens to most us at one time or another on a Hash, but getting too much sun can lead to other more serious conditions, such as dehydration, heat exhaustion or heat stroke. If a patient presents with severe sunburn, moisturizing cream should be applied (if available) and the affected areas should be covered to avoid further exposure. In addition, the area can be cooled with ice or a moist cool towel. A topical pain reliever might also be applied, such as Aloe Vera or hydrocortisone cream (not in our kits). Aspirin or Ibuprofen can also be used to reduce the inflammation and relieve pain. Plenty of fluids (preferably non-alcoholic) should also be consumed to reduce the risk of dehydration due to severe sunburn.

Long term, the patient should continue to apply hydrocortisone or betamethasone cream until his/her condition improves, and in the case of sunburn severe enough to create blistering, the patient should seek further medical advice as necessary.

◆ **Dehydration**

Running on hot days for 1 to 2 hours will cause some degree of dehydration for any of us. However, if plenty of fluids are consumed before, during and after the run, this condition can be avoided.

Signs and symptoms of **mild to moderate dehydration** include dry sticky mouth, thirst, tiredness, dry skin, headache, dizziness and decreased urine output or dark colored urine. In healthy adults this condition can be treated, and in most cases alleviated, by drinking non-alcoholic beverages, preferably isotonic drinks, or water with a small amount of salt.

**Severe dehydration** is a very serious condition, and can include all of the signs and symptoms listed above, but usually much more extreme. In addition, a patient can experience severe muscle cramps in the arms and legs (also referred to as Heat Cramps), chest or abdominal pains/cramps, seizures, fainting, vomiting and difficulty breathing, among other things. If the patient presents these symptoms, especially if they cannot tolerate liquids and electrolyte replacement fluids (isotonic beverages or water with a small amount of salt), you should immediately seek professional medical attention.

◆ **Heat Exhaustion**

Heat exhaustion shares many of the signs and symptoms of dehydration, and dehydration is considered a precursor to this condition. However, heat exhaustion varies somewhat from dehydration in that it can quickly lead to heat stroke, which is a very serious and life threatening condition. The signs and symptoms of heat exhaustion include profuse sweating, confusion, dark colored urine, fainting, muscle cramps, nausea, vomiting, pale skin (ashen grey, and sometimes cold and clammy) and rapid heartbeat.

Heat exhaustion should be treated like shock by placing the patient on his/her back in a cool shaded place. Tight or restrictive clothing should be loosened or removed, and the patient should be given isotonic fluids, **and should be cooled as quickly possible** with cool/damp clothing, ice, etc. Cooling can be accomplished by placing ice packs or cold beverage cans on each side of the neck, in the armpits and in the groin area (crotch) to cool the venous and arterial blood flow. By cooling these areas where major veins and arteries pass close to the skin, the patients core temperature can be quickly lowered, thus contributing to reversal of the condition. If the patient does not show signs of improvement, or cannot tolerate oral fluid replacement, you should immediately seek professional medical attention.

◆ **Heat Stroke**

Of all heat related injuries, heat stroke is by far the least common, and by far the most serious. **Heat stroke is considered a true emergency, and if this condition is left untreated the patient will die.** The signs and symptoms of heat stroke are hot, dry red skin, lack of sweating and loss of consciousness (coma). Pulse is rapid and full in the early stages of the condition, and body temperature is usually at 105 deg F (40.5 deg C) or higher. Because the body has lost its ability to regulate its temperature, body temperature will continue to increase until death occurs if not treated.

In a person who suffers from heat stroke and does not die, permanent central nervous system damage may result if the condition is allowed to persist for any significant period of time. Therefore, once recognized, it is imperative that treatment is started immediately. Recovery from heat stroke is entirely related to the rapidity of initiating treatment, and the vigor with which it is pursued.

**Treatment consists of using any and all measures available to reduce the body's temperature to below 100 deg F (37.8 deg C) as rapidly as possible.** These include immersing the patient in cold water, wrapping the patient in cold damp sheets or clothing, and placing ice packs in around the neck, under the arms and in the groin area. Tight or restrictive clothing should be loosened or removed. The patient should be immediately transported to the nearest emergency room as a top priority case.

## **Hypothermia**

Hypothermia (sometimes called systemic hypothermia) is a medical emergency that occurs when the body loses heat faster than it can produce it, resulting in a dangerously low body temperature. Normal body temperature is around 98.6 deg F (37 deg C). Hypothermia occurs as your body temperature passes below 95 deg F (35 deg C). It is important to note that hypothermia can occur at temperatures well above freezing, although it is usually caused by exposure to low or rapidly dropping temperatures, cold moisture, snow or ice. Contributing factors include hunger, fatigue and physical exertion, like running a Hash on a cold day.

When body temperature drops, the heart, nervous system and other organs can't work correctly. If left untreated, hypothermia can eventually lead to complete failure of the heart and respiratory system, and ultimately to death. Hypothermia, and generalized body cooling, manifests itself in five (5) stages as follow:

- 1) Shivering, which is an attempt of the body to generate heat,
- 2) Apathy, sleepiness, listlessness and indifference, which may accompany rapid cooling of the body core,
- 3) Unconsciousness with a glassy stare, a very slow pulse and slow respiratory rate,
- 4) Freezing of the extremities,
- 5) Death.

Progression from stage 2 to stage 3 can be very rapid. When body temperature drops below 95 deg F (35 deg C) sustained shivering begins, followed by clumsiness, fumbling, stumbling, falling down, mental confusion and difficulty speaking (i.e., signs similar to a drunken stupor). Death can occur within two (2) hours of the

onset of stage 1, and therefore, measures to rewarm the body must begin immediately upon recognition of the first signs. Because the body cannot generate enough heat to rewarm itself, simply giving the patient jackets and blankets are not sufficient. The recommended method of rewarming is the transference of body heat from rescuers via direct contact through loose or light clothing, or direct skin-to-skin contact, if practical. In addition, the use of warm water bottles, placing the patient into a warm environment, and administering warm liquids, especially warm drinks containing sugar, can also be very effective. Contrary to popular myths, **alcoholic beverages should never be given to a hypothermic patient.** If the patient's condition is stage 3, medical attention in a hospital emergency room must be sought as soon as possible because more advanced rewarming measures are most likely required. Stage 3 hypothermia is a priority one emergency, and cannot be adequately dealt with in the field. In cases of severe hypothermia, a condition referred to as **Rewarming Shock** could occur if rewarming of the patient is not performed in a careful and controlled manner. For this reason, measures taken in the field in severe cases should be limited to external warming, as described above, and immediate transport to a medical facility.

## **Choking**

Choking incidents can happen anywhere, and at pretty anytime. Choking is typically due to a foreign object (food or some other material) becoming lodged in the airway, although certain medical conditions can also produce choking events. Persons who are choking will try to signal for help by displaying the universal sign of choking (hands around the neck and a distressed facial expression), or by some action to get the attention of others. Although there is some controversy about the best way to treat a choking victim, generally accepted practice recommends the following for adult victims where there is a complete airway obstruction (i.e., the inability of the person to pass any air into or out of their throat):

- 1.) Five (5) hard back between the shoulder blades of the victim, followed by,
- 2.) Five (5) abdominal thrusts (the Heimlich maneuver).
- 3.) Repeat these two (2) steps in sequence until the object has been dislodged and the victim is breathing again.

The Heimlich maneuver is performed by standing behind the victim and placing your arms around their abdomen. Your hands should be clasped together into a fist, and placed just below the victim's sternum (breastbone). You should produce upward thrusts into the abdomen to force air out of the victim's lungs to expel the blockage. The following video presents an example of the Heimlich maneuver:

<https://www.youtube.com/watch?v=unAWWFAB2Ek>

Note that some sources do not recommend using back blows.



IF the choking victim becomes unconscious, or is already unconscious when you arrive, you must take immediate action to clear airway and begin rescue breathing. If the victim has gone unconscious due an airway obstruction, clearing the airway maybe sufficient for breathing to resume, but many time this is not the case. Therefore, the steps a first responder should take are the same as for any unconscious victim, as described later in the CPR section of this document.

If the victim has a pulse, and is unconscious due to an airway obstruction, the rescuer should visually check the airway to see if there is an obstruction, and listen for any breath sounds. If there is an obvious obstruction, it may be possible to remove it manually with one's fingers, or alternatively by performing chest compressions on the patient. The following video demonstrates this process:

<https://www.youtube.com/watch?v=X2Wc-qFo1Ow>

Alternatively, the rescuer might apply abdominal thrusts instead of chest compressions as demonstrated in the previous video. This is done by straddling the victim and placing heels (palms) of your hands together just under the victim's sternum (breastbone). One in place, five (5) forceful abdominal thrusts should be given, followed by reassessment of the patient's condition. Repeat this process as necessary until the victim's airway has been cleared and they have resumed breathing on their own once again.

## Heart Attack

There are two (2) heart attack scenarios that might occur on a Hash. These are **Symptomatic** (patient presents with typical symptoms of a developing heart attack), and **Full Arrest** (the heart stops and the patient collapses). In either case, medical attention must be immediately sought.

In the **Symptomatic scenario**, the patient will present with the typical signs and symptoms of a Myocardial Infarction (MI). These include pain/discomfort in the middle of the chest (medial sternal pain), shortness of breath, radiating pain in the left shoulder and extending down the left arm, anxiety (feeling of impending doom), profuse sweating, nausea and vomiting. Pain may also be present in the neck and jaw, especially in women. On a Hash, these symptoms would most likely be brought on during or shortly after the physical exertion of a run (or walk, depending on the person).

Emergency treatment for an MI involves calming the patient and transporting him/her immediately to an emergency medical facility. In addition, assuming the patient has not reported any history of allergic reaction to aspirin, you can administer 1, 325mg aspirin tablet, crushed and placed under the tongue of the patient (sublingual). Alternatively, the patient can chew the tablet, but **it is imperative that he/she does not simply swallow the tablet whole** as one might typically do for treating a headache or other ailments. This will delay the affects of the treatment by 10 to 12 minutes, which may be significant depending on the severity of the MI. **If aspirin is given in this manner, make sure to write down the time and quantity in your notes**, and make sure to give these notes to hospital or emergency services personnel.

A related condition is known as **Angina**, and is caused when the heart muscle does not get enough oxygenated blood, usually during increased physical activity in the case of stable, or effort, angina. Symptoms of stable angina will usually dissipate within 10 to 15 minutes of onset with rest. Unstable Angina can occur at any time, and may be an indicator of a developing MI. Symptoms of angina are similar to those of an MI as noted above, but may not be as severe. However, such symptoms should always be taken seriously, and should be handled the same as an MI (i.e., rest, calming, crushed or chewed aspirin and referral to an emergency medical facility for treatment and/or further evaluation). It should also be noted that a patient that has previously been diagnosed with Angina will most likely have nitroglycerine tablets or other medications specific to his particular treatment.

In the **Full Arrest** scenario the patient will collapse and immediately become unconscious. There may be very few indications of the onset of a full arrest (apart from collapse), especially during a run as the patient is likely exerting himself, which may make visible signs difficult to recognize unless the patient indicates that he/she is in distress. In the case of a full arrest, call the local emergency number immediately (112 in Spain), and follow the American Heart Association recommendations for Cardio Pulmonary Resuscitation (CPR) below, but first ascertain that the patient is unconscious, is not breathing, and has no pulse (portions of the below text copied from <http://www.mayoclinic.com/health/first-aid-cpr/FA00061>):

- ◆ **Untrained.** If you're not trained in CPR, then provide hands-only CPR. That means uninterrupted chest compressions of about 100 a minute until emergency services personnel arrive (described in more detail below). You don't need to try rescue breathing.

- ◆ **Trained, and ready to go.** If you're well trained and confident in your ability, begin with chest compressions instead of first checking the airway and doing rescue breathing. Start CPR with 30 chest compressions before checking the airway and giving rescue breaths.
  
- ◆ **Trained, but rusty.** If you've previously received CPR training but you're not confident in your abilities, then just do chest compressions at a rate of about 100 a minute. (Details described below.)

If the patient is unconscious but has a pulse and is or is not breathing, it is likely that he/she is not suffering from a heart attack. If not breathing, check the airway to insure there are not any obstructions, and call for assistance. Try to clear any obvious obstructions and attempt to open the patient's airway.

When performing CPR, remember C-A-B (Compression, Airway, Breathing). This is the correct order in which CPR should be administered. For adult patients, the process is described below, but if you have not been trained, or are uncertain of your skills, do not attempt to perform CPR beyond your abilities.

- ◆ **Compression: Restore blood circulation with chest compressions**
  1. Put the person on his or her back on a firm surface.
  
  2. Kneel next to the person's neck and shoulders.

3. Place the heel of one hand over the center of the person's chest, between the nipples. Place your other hand on top of the first hand. Keep your elbows straight and position your shoulders directly above your hands.
4. Use your upper body weight (not just your arms) as you push straight down on (compress) the chest at least 2 inches (approximately 5 centimeters). Push hard at a rate of about 100 compressions a minute.
5. If you haven't been trained in CPR, continue chest compressions until there are signs of movement or until emergency medical personnel take over. If you have been trained in CPR, go on to checking the airway and rescue breathing.

◆ **Airway: Clear the airway**

1. If you're trained in CPR and you've performed 30 chest compressions, open the person's airway using the head-tilt, chin-lift maneuver. Put your palm on the person's forehead and gently tilt the head back. Then with the other hand, gently lift the chin forward to open the airway.
2. Check for normal breathing, taking no more than five or 10 seconds. Look for chest motion, listen for normal breath sounds, and feel for the person's breath on your cheek and ear. Gasping is not considered to be normal breathing. If the person isn't breathing normally and you are trained in CPR, begin mouth-to-mouth breathing. If you believe the person is

unconscious from a heart attack and you haven't been trained in emergency procedures, skip mouth-to-mouth rescue breathing and continue chest compressions.

◆ **Breathing: Breath for the person**

Rescue breathing can be mouth-to-mouth breathing or mouth-to-nose breathing if the mouth is seriously injured or can't be opened.

1. With the airway open (using the head-tilt, chin-lift maneuver), pinch the nostrils shut for mouth-to-mouth breathing and cover the person's mouth with yours, making a seal. A CPR Pocket mask is included in the Hash First Aid Kits, and can be used as an aid to making a good seal.
2. Prepare to give two rescue breaths. Give the first rescue breath — lasting one second — and watch to see if the chest rises. If it does rise, give the second breath. If the chest doesn't rise, repeat the head-tilt, chin-lift maneuver and then give the second breath. Thirty (30) chest compressions followed by two (2) rescue breaths is considered one cycle. Don't confuse chest rise with abdominal distension!
3. Resume chest compressions to restore circulation.
4. Continue CPR until there are signs of movement or emergency medical personnel take over.

## **Strains and Sprains**

Strains and sprains are very typical Hash injuries. In the case of severe strain or sprain, the patient's weight should be eliminated from the injured area, and ice should be applied as soon as possible. But take note not to apply ice directly on the skin, but rather put it into a sock, towel, shirt, etc., before placing it over the injured area. Depending on the type of injury, an elastic support bandage might also be applied.

Sprains are typically accompanied by rapid swelling, pain and reduced mobility of the injured joint. Treatment with ice will reduce the severity of these symptoms, but in the case of a severe sprain, symptoms can persist for 5 to 10 days, which may also include discoloration of the injured area. If substantial pain and/or swelling persist for more than 1 or 2 days following the injury, the patient should consider having a medical evaluation of the injury.

## **Fractures and Dislocations**

Like sprains and strains, fractures and dislocations also occur on Hashes. While it is impossible to accurately diagnose a fracture without an x-ray (apart from obvious deformities resulting from severe fractures), there are few things to keep in mind. First, fractures dislocations are generally quite painful, but may not present rapid swelling around the injury, as in the case of a sprain. In addition, if the patient has suffered a fracture, he/she will likely be unable to put any weight on the limb (in the case of a lower extremity fracture), and movements of the limb in certain ranges of motion (if not all) will be very painful.

Dislocations are usually obvious, and on a Hash might occur in shoulders, knees, hips or ankles. Like fractures, it is impossible to determine the extent of such injuries in the field. An easy rule-of-thumb to help determine if there has been a dislocation or a fracture in a lower extremity is to remember the term **BODI**. **Broken Out, Dislocation In**, meaning that typically if there is a fracture in a lower extremity, the patient's foot will be pointed out – away from the midline – and in the case of a dislocation it will be pointed in.

Emergency treatment for suspected fractures and dislocations consists of immobilization of the injury, and treatment with ice. Under no circumstances should the rescuer attempt to reduce a dislocation or straighten a fracture in the field, unless he has been specifically trained to do so, and has appropriate adjunctive aids available. In most cases the injured person will have already moved to a position of least pain, and therefore, this position should be maintained if at all possible. However, if the rescuer has sufficient training, and there is no distal pulse present, small adjustments in the position of the injury may be warranted, depending on how long it will be before medical assistance can be obtained. Once the injury has been immobilized, the patient should be transported to a medical facility for further evaluation, diagnosis and treatment.



**Bleeding Control**

Hash injuries that produce bleeding are usually minor, and can be easily treated and managed. However, in some cases profuse bleeding may occur due to capillary dilation resulting from hard exercise and/or warm weather. Control of bleeding is accomplished by applying direct pressure to the site of the bleeding, and elevating the injury above the level of the heart, if possible. In the case of a large/deep wound, it could take some time to control the bleeding, but it will usually stop with direct pressure.

Once bleeding has been controlled, the wound should be cleaned prior to bandaging, assuming the wound is not too large or deep, in which case treatment in a hospital emergency room may be required. Cleaning can be done by applying clean/purified water or hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>), and physically removing any debris (dirt, pebbles, wood fragments, etc.) from the wound. Note that in the case of a puncture wound, promoting some degree of bleeding can be beneficial to help clean the site, although there is no guarantee that this will completely eliminate all foreign material in the puncture site. Once cleaned, a disinfectant such as Betadine (Povidone Iodine) or an antibiotic ointment should be applied to the wound site (be sure to check for allergies/sensitivities prior to applying either treatment), followed by a sterile non-adherent bandage or adhesive fabric bandage (depending on the size and severity of the wound). If bleeding persists, as may be the case, additional gauze pads may be applied, and if possible, a pressure wrap might also be applied.

Note that if the skin is damp from perspiration, or from fluids used to clean the wound, bandage adhesives and/or tape may not stick. In this case, apply a small amount of Tincture of Benzoin (not in our kits) to the area where tape will be applied, let it dry for a minute or two, and then apply the bandage or tape.

If the injury involves a long or deep laceration (cut), it might also be beneficial to apply butterfly closures over the wound to help hold it together and reduce scarring. These should be applied after bleeding has been stopped and the wound has been cleaned. A severe laceration may require stitches, which can only be done in a hospital ER or emergency clinic.

The patient should monitor the wound closely for the first day or two after injury to ensure no signs of infection are present (unusual swelling, pain, oozing of puss or other suspect fluid). This is especially important for puncture wounds. If infection is suspected, the patient should seek medical assistance as soon as possible.

## **Shock**

There are many types of shock resulting from different medical conditions and/or injuries, and most of these will hopefully never occur on a Hash. However, for continuity, the following list presents the most commonly encountered types of shock:

- ◆ Hemorrhagic – Loss of blood,
- ◆ Respiratory – Inadequate supply of oxygen,
- ◆ Neurogenic – Loss of vascular control due to a nervous system disorder or injury,
- ◆ Psychogenic – Fainting,
- ◆ Cardiogenic – Inadequate functioning of the heart,
- ◆ Septic – Severe infection,
- ◆ Anaphylactic – Severe allergic reaction (typically treated with an EpiPen), and
- ◆ Metabolic – Volumetric loss of body fluid.

With the exception of Anaphylactic Shock, which is discussed in further detail in relation to Bee and Insect Reactions, emergency treatment of shock conditions is relatively consistent. In all cases, except possibly psychogenic shock (fainting), which (for example) can occur from the sight of one's own blood, the onset of shock is likely related to a serious illness or traumatic event. The signs and symptoms of shock include restlessness and anxiety, weak and rapid pulse, profuse sweating, cold and clammy skin, shallow/labored respiration, dull or lusterless eyes, dilated pupils, thirst, nausea and fainting.

If shock is suspected the following steps should be taken:

- 1) Make sure the patient has, and can maintain, a clear airway,
- 2) Control all obvious bleeding by compression,
- 3) Lay the patient on his/her back (unless in the case of heart attack or respiratory distress, in which a sitting position may be more comfortable for the patient), and elevate the lower extremities approximately 12 inches (30 cm), if possible,
- 4) Splint and immobilize fractures, if present,
- 5) Avoid rough or excessive handling,
- 6) Prevent loss of body heat by covering the patient with blankets or jackets,
- 7) Do not feed or offer anything to drink, and
- 8) Document the patient's condition and any changes along the way.

In most cases, additional medical assistance will be required, and you should seek such medical attention as soon as possible. However, in the case of fainting (psychogenic shock), patients usually fully recover within 10 to 15 minutes when laid down and/or have their lower extremities elevated. Sometimes drinking a sugary beverage can also aid in recovery from this condition.

## Bee and Insect Reactions/Treatment

Most reactions to insect or bee stings are short, albeit quite painful. In such cases, there are topical treatments that can be easily administered to temporarily alleviate the discomfort resulting from such encounters. However, upon application of topical treatments, one should also verify there are no remaining parts of the bee/insect stinger still lodged within the sting site. If so, these parts should be extracted as soon as possible. If symptoms do not dissipate within a few hours, or worsen, the patient should consider obtaining a medical opinion.

Some people suffer from extreme allergies to bee and insect stings, which can result in a very serious and life threatening condition known as Anaphylactic Shock, or Anaphylaxis. This condition can occur within minutes or even seconds of contact with an allergen. **Anaphylaxis is considered a true/priority one emergency, and treatment must be sought as quickly as possible.** Indications of anaphylaxis include:

- 1) Flushing, itching or burning sensations, especially on the face and upper chest. Hives may also develop on large areas of the body, and the patient may exhibit swelling of the face tongue and lips. Lips may also rapidly become cyanotic (blue),
- 2) Wheezing and difficulty breathing, as well as a tightness or pain in the chest accompanied by a persistent cough, and

- 3) Impaired circulation. There will be perceptible drop in blood pressure, and a weak (almost imperceptible) pulse, as well as dizziness and faintness. The patient may eventually lapse into a coma if not promptly treated.

People who have prior history of anaphylactic reactions typically also carry an emergency treatment kit known as an Anakit, or EpiPen. EpiPen treatment is quite common today, and these are likely what most patients with known allergies would carry. Use of the EpiPen is very simple, and involves jabbing the pen into a large muscle, preferably the thigh or buttocks (don't place your thumb on the top of the EpiPen when administering it). The injection can be made through clothing. Before using a patient's EpiPen, make sure read the directions printed, or illustrated on the device. The EpiPen is designed to deliver the correct dose of Epinephrine, and within seconds of injection, marked improvement in the patient's condition should be obvious. If treatment from an EpiPen or via any other form of injection is performed, the patient should be transported to a hospital emergency room for further observation, even if the reaction seems to have passed.

The Hash kit does not include an EpiPen or any similar treatment, and therefore, if anaphylactic symptoms are observed, and the patient does not have one, he/she must be transported to the nearest emergency medical facility without delay.

## Insulin Shock/Diabetic Coma

There are two (2) common diabetic conditions known as **Hypoglycemia** and **Hyperglycemia**. **Hypoglycemia** is a condition in which there is an abnormally low amount of sugar in the blood. In a patient that is aware he/she suffers from such a condition, he/she can relieve the symptoms by eating a piece of fruit, a candy bar or drinking a large glass of natural fruit juice. If left untreated, the patient can go into insulin shock (too much insulin in the body), which is a serious life threatening condition.

**Hyperglycemia** is a diabetic condition caused by an excess of sugar in the blood, and too little insulin. When there is too much sugar in the system, increased exercise may cause more sugar to be created, which can lead to ketoacidosis (KA), which is also a life threatening condition. Patients who have been diagnosed with Hyperglycemia typically know how to control their blood sugar either through a mix of diet and exercise, and possibly insulin injections. However, if something goes wrong, or there is an upset in the patient's normal treatment regime, the patient can experience KA, and lapse into diabetic coma.

A conscious patient with a history of diabetes can usually tell you what he needs, so listen carefully if you can communicate with him/her.

Insulin Shock (low blood sugar) and Diabetic Coma (high blood sugar) are both serious conditions, but **Insulin Shock is considered a higher priority than Diabetic Coma** because the lack of sugar in the system can quickly result in permanent brain damage once the patient has lapsed into unconsciousness. Therefore, rather than trying to describe how an untrained person can determine if an unconscious patient is suffering from high or low blood sugar, **if a diabetic condition is suspected, always give the patient sugar**. In an

unconscious patient, sugar (or any other sweet substance) can be administered sublingual (under the tongue). If the patient is suffering from low blood sugar, he/she may recover to consciousness within 1 to 2 minutes after receiving the sugar. Note that any sugar will do, even candy if that is all that is available, just be sure you do not put a large piece of candy in an unconscious patient's mouth, as it could become lodged in the airway and inhibit breathing. If he/she is suffering from too much blood sugar, administration of sugar will not substantially contribute to a worsening of the condition. In either case, professional medical attention should be immediately sought if a patient enters an unconscious diabetic state.

**Hypoglycemic symptoms** include shakiness, dizziness, sweating, drooling, intense hunger, headache, pale skin color and tingling sensations around the mouth, among other things.

**Hyperglycemic symptoms** include frequent urination, intense thirst, dry mouth and lack of hunger. In addition, a hyperglycemia patient entering ketoacidosis, or already in a diabetic coma, will have an unusual acetone (sweet/fruity) odor to his/her breath.