

## FIRST AID AT A MOTORCYCLE CRASH SITE – CMC OTTAWA - 2010

This information is intended to be a start in educating yourself on what to do if you encounter an accident. This information should not be viewed as an authoritative source of medical advice and does not cover all aspects of first aid...just those that you will likely deal with while riding. You should take further steps to educate yourself, such as taking certified CPR classes, a Red Cross First Aid class, St John's Ambulance, talking to your doctor or local fire department/rescue squad. By taking CPR you could save a life of a friend, loved one or someone who is in need of assistance....the cost of a CPR course is minimal but a life is priceless!! Many employers pay for or subsidize the cost of their employees taking a CPR course.

These are only suggestions and each situation may warrant different responses. CMC will not be held responsible for any injury that may occur as a result of following these steps. Responsibility for injury resides within every individual to educate themselves as much as possible.

When riding your motorcycle, it is your responsibility to have the proper knowledge, experience, and equipment to travel safely.

It is suggested to print this article and keep it on your bike, in your jacket and the glove compartment of your car for reference.

### **CMC Ottawa's Commitment to Safety**

CMC Ottawa is committed to safe and enjoyable rides for our members. To that effect, all official group rides will include motorcycle specific first aid kits that can be used in the event of an emergency. In each kit you will find a small booklet titled FIRST AID POCKET GUIDE which has EMERGENCY RESPONSE TIPS. Please take the time to familiarize yourself with the items in our CMC first aid kit....you can do this prior to a ride and the kits will be available during the riding season to review at our Monday Meet and Greet nights....see any Officer. However, these kits are only of value if you know what to do with them, hence this important publication. Please take the time to read this and prepare yourself for any emergency that could occur while riding.

We have also offered first aid/CPR training courses to our Members over the past two years and they have been well attended. Many of our members are already well qualified in first aid and some also have advanced CPR training, defibrillator training etc.

All "pre group ride briefings" in the future will identify to all participants the location of the first aid kit(s). They will be either a yellow or a red nylon bag so they should be fairly easy to find. We will also request who in the group is trained in first aid or has medical training. Please.....make sure you identify yourself in order that your Road Captains will be aware of who can help out in the event of an emergency so we can work together to assist whomever is injured.

**If you would like to get involved in our safety advisory committee and contribute your skills for the betterment of your fellow members, please contact any Ottawa Officer. This won't take a great deal of your time but we would greatly appreciate your help as CMC is growing very quickly and we wish to be pro active with respect to any programs that will benefit our members. Please help us help you.**

### **Calling 9-1-1**

One of your best life saving devices will be your cell phone, as you can administer aid and talk at the same time. No coin is needed to call 911 from a pay phone.

Try to remain calm and speak clearly. Let the 911 call taker ask you the questions. Call takers are specially trained and there is a reason for each question they ask. Some questions may be asked more than once to clarify or verify the information. No one is deliberately stalling or delaying response to the emergency. As soon as the call taker gets enough information, the call is sent to the appropriate dispatcher for dispatch.

While this is occurring, the call taker will ask additional questions and/or give you instructions that will help your particular emergency. Rest assured, even though the call taker is still asking you questions, your call has already been dispatched to emergency personnel. Instructing the operator to "hurry up" or "get them here now" does nothing to make units arrive any faster. *Last but not least, do not hang up the phone until you are instructed to do so by the call taker.*

Do NOT call the emergency numbers themselves to see if they work. If you ever call an emergency number by mistake, do not hang up. If the call taker cannot identify you, they will dispatch emergency personnel to try to find you, as they have no way of knowing that it isn't a real emergency.

## Assessments as You Approach the Scene of the Accident (this only takes about 30 seconds)

As you approach the scene of an accident, consider the following:

- Are there any further dangers to myself, the patient or any others? See below regarding “Secure the Crash Site”. (At this point you should be putting on protective gloves if you are going to assist the patient...they will be in the first aid kits carried on the ride)
- What is the mechanism of injury (what happened)?
- Are there any others injured? If so, who gets looked at first?
- Do I require assistance with handling the scene? (Do I need help from my fellow riders?)
- Is the situation serious enough to warrant a call to 911? If yes, consider calling for help right away (see note above regarding 911). Hospitals and paramedics are qualified so if you have any concern, contact 911 immediately...time is of the essence!
- Is there any major bleeding?
- Are there any angulated fractures? (i.e. a leg that is not aligned in the normal position)
- What is the skin color of the casualty? (early indicator of the onset of shock)
- What is the patient’s response – physically and emotionally?

Other items to think about regarding the downed motorcycle:

- a. Turn off motorcycle and kill switch
- b. Heat/exhaust pipes - are the pipes burning the downed rider?
- c. Batteries/brake fluids - any leaks?
- d. Gasoline - any leaks? Potential for explosion?
- e. Radiator fluid - can be slippery
- f. Moving parts (i.e. are tires still spinning?)
- g. Sharp or broken parts that can cut you or the patient
- h. Broken glass

## Secure The Crash Site – IMPORTANT!

If you are the first on the scene, stop for a moment to consider the BIG PICTURE, take a few moments before attending to the patient, and look around for signs of further danger to the patient, yourself or bystanders (see above). Although you may have a biker down with injuries, it is important that you control the site!

Ensure that any fellow riders who are NOT involved in traffic control or assisting the downed rider are well away from the accident scene. All bikes should be parked **well off the travelled part of the highway** and should have their flashers on - bikes parked on or too close to the road can get hit by vehicles and become projectiles dangerous projectiles.

If injured people are still on the road, stop traffic from coming into the crash site. Only EMS and Police have the authority to stop or re-direct traffic, but do what you deem is in the best interests of the welfare of the injured person. The people controlling traffic should NOT stand in the middle of the road and should wear bright clothing...if you have a fluorescent vest, wear it. DO NOT MOVE INJURED PEOPLE OUT OF THE ROAD; LEAVE THEM WHERE THEY ARE UNLESS THEY ARE IN IMMEDIATE DANGER BY BEING AT THAT LOCATION.

Assuming it is necessary to stop or slow down traffic, seek assistance from fellow riders or others to hold the traffic back, as some people may lose patience and try to drive through. Station highly visible riders (wear fluorescent vests if you have them) behind and in front of the accident site (depending on whether this is a two or four lane highway) in order that they can warn oncoming traffic and get them to slow down....BUT BE CAREFUL....you can get hit by a vehicle. We will be carrying high visibility vests in our safety kits. Make sure there is enough room for traffic to stop before reaching the crash site, especially if it occurs on a turn, where the line of site is short. Do this with extreme caution. Make sure these people stay in position until the patient has been removed by the ambulance or the accident has been dealt with by the Police.

Use traffic cones, flares, high visibility vests (in our safety kits) and reflectors if available, or simply stop the traffic yourself, but be very aware of your own safety. If you have flashers on your bike, turn them on but ensure your bikes are parked off the road to the side in order that they do not get hit by another vehicle and become a dangerous projectile.

## Next You Can Attend To the Injured

**ALWAYS ASSUME INJURY TO THE SPINAL CORD OR HEAD HAS OCCURRED AND LIMIT THE AMOUNT OF MOVEMENT OF THE INJURED AS MUCH AS POSSIBLE.**

**IF A PATIENT IS UNCONSCIOUS AND CIRCUMSTANCES INDICATE A FALL, FORCEFUL IMPACT OR BLOW FROM AN OBJECT, ALWAYS SUSPECT POSSIBLE SPINAL INJURY.**

**EVEN IF THEY INSIST THEY ARE FINE OR CAN WALK. THE SPINAL CORD CONTAINS NERVES THAT CONTROL BREATHING, SO SPINAL INJURY NOT ONLY COULD CAUSE PARALYSIS OF MUSCLES, BUT COULD ALSO BE LIFE THREATENING BY PREVENTING BREATHING.**

Ask permission to help.....caution patient not to move. If no response, speak louder and clap hands by each ear. If no response...immediately call 911!

### **Positioning and Spinal Support (C Spine Control)**

Spinal injury can occur but the injured may initially feel fine. Unnecessary movement may make the injury worse; it is best to leave the person where they are unless they are in immediate danger. Do NOT move them if you suspect any spinal injury.

The most stable position for the spine is lying on the back. This also makes it easier to perform CPR if necessary and helps if they are in shock. If they try to walk around, help them lay down. If they are laying down on their side, or face down, carefully roll them on to their back if you have no spinal concerns. **This will require three people**. IF AT ANY TIME THE INJURED PERSON COMPLAINS OF PAIN OR LOSES SENSATIONS IN A PART OF THE BODY WHILE DOING THIS PROCEDURE, STOP IMMEDIATELY.

#### **Positioning**

- No movement of patient unless the ABC's are compromised or the patient is being readied to be placed on a backboard.
- With as little movement as possible, position the injured person's arms straight down and to their side, position their legs straight down as well to position their spine in a straight line.
- Have one person, **Responder 1**, kneel above their head – facing their feet and hold their head or helmet. Hold their head or helmet with your pointer finger just above the spine in the back of the head and your thumb toward their chin and other fingers under their head. A second person, **Responder 2**, kneels to the injured person's side and holds their arms and chest while a third person, **Responder 3** kneels to the same side and holds their hips. **Responder 4**, if available, holds their legs.
- **Responder 1** at the head is in control of the roll.....do NOT move the patient unless directed to do so by the First Responder. In a single coordinated move directed by **Responder 1**, roll the person over to their back while supporting their head – keeping their neck straight and un-tilted – and keeping their back straight and supported. This is done by **Responders 2 & 3** pulling on the far side of the injured person's arms and legs toward them to roll them over onto their back, while the head is supported by **Responder 1** and turned along with the body to keep it aligned with the spine.
- If you are the only person available, try to roll the person over keeping their head, neck and spine aligned by using a board.

#### **Helmet Removal (CAUTION!!)**

- Only remove the helmet if the injured is not breathing or the airway is obstructed. This should be done with extreme caution and without movement of the neck (cervical spine). Removal of the helmet will always require two first responders. If the patient is breathing LEAVE THE HELMET ON!
- **Responder 1**, the person supporting the head stays where they are, and **Responder 2**, the person supporting the arms and chest moves up to the injured person's neck, while still kneeling to their side. **Responder 1** takes hold of the helmet on the sides with their fingers over the lower edge of the helmet.
- **Responder 2** unbuckles the chin strap and puts one hand under the injured person's neck, with their pointer finger and thumb holding the base of their head, with their other hand holding the jaw.
- **Responder 1** spreads the sides of the helmet as much as possible and rotates the helmet, face side towards them, to clear the nose, then presses in on the sides of the helmet to support the head right before fully removing the helmet.
- **Responder 2** moves the hand that is under the neck, up to position it under the head – to trade off with the responder who is supporting the head when the helmet is completely taken off.
- **Responder 1** then rotates the helmet the other way to completely remove it while **Responder 2** supports the head. Be careful to not let the head drop!
- After the helmet is off, padding is placed under the head to maintain the original position.

## First actions are “**ABCD**” & 911

### **Airway, Breathing, Circulation, Disability + call 911**

- **Airway:** Is the airway open and clear? If not, open and clear it. (see below)
- **Breathing:** Is breathing present and if so, is it adequate and what is its quality?
- **Circulation:** Is a pulse present? Check the neck and wrist (don't use your thumb on a wrist as your own thumb has a pulse). Apply direct pressure to uncontrolled bleeding. Checking for heartbeat and treating for shock are imperative. (see below)
- **Disability:** What is the patient's level of consciousness and are the spinal functions intact? See note above regarding spinal control. Watch for the onset of shock as this can happen very quickly...monitor constantly.
- **Call 911:** If you are able, make the call and administer to **ABCD** at the same time. Use your cell phone or a close, land based phone. If you are dealing with the patient and cannot make the call yourself, give instructions to a fellow rider or passersby to make the call immediately, and ask them to return back to you and confirm that the call has been made. Give as much information about your location as needed. Ask the dispatcher if they could receive your location through a GPS signal in your cell phone if you are using it to make the call.
- **Observe for closed head injury:** Details below.

#### Airway

- Ensure the airway is clear...without a clear airway, breathing can be compromised. An unconscious patient may suffocate if the tongue is blocking the throat. Open the airway with a gentle upward lift of the bottom jaw. Be careful not to choke the patient or push anything that might be in the airway further down into the airway.
- If no head, neck or spinal injury is suspected, use head tilt/chin lift maneuver to provide best air passage.

#### Breathing

Check to see if the person is breathing. Is their chest moving? (listen and feel). Can they talk or can you feel their breath if you put your cheek in front of their face or on their chest? Signs of breathing trouble include;

- Noisy breathing
- Wheezing
- Blue around lips, earlobes, under finger nails
- Indrawing at the top of the breast bone, inability to speak but conscious
- If they are breathing, then check for bleeding
- **Unconscious and Not Breathing:** Open their mouth to see if they are choking on anything, like broken teeth or typically, the tongue. Carefully **remove any objects** by placing your pointer finger in their mouth and with a sweeping or hooking motion remove the object. Only attempt to remove objects to can see to avoid choking the patient. You may want to hold a solid object between their teeth that is wider than your finger in case they try to bite you. If a person vomits when they are on their back, use extreme caution and roll the person to the side and wipe out the mouth keeping the head, neck and spine inline as you roll them. **If a choice has to be made – life cannot be sustained without oxygen.**
  - Once you are sure they are not choking, gently lift their chin, which moves the jaw forward and tilts the head backward. This is done by kneeling above their head and putting your index finger at the base of their jaw, near where it joins to the skull and place your thumb next to the ridge of their eye and lift their jaw upward. **Do not push the forehead to tilt the head**, as this could cause more injury to the neck, head or spine. **If the person has a severe injury to the mouth, then ventilate through the nose** while keeping the injured person's mouth sealed shut.
  - If they do not start breathing on their own, start ventilation. A barrier device such as a pocket mask or face shield (in our CMC safety kit), should be used for ventilations. Please check out the barrier device in our CMC kit to make sure you know how to use it.
  - Pinch their nose closed, and then blow slowly twice in their mouth, making sure to have an airtight seal. For children or infants, reduce the volume of the ventilation. Check to see if their chest rises as you blow into their mouth and that air comes out when you stop blowing. If air does not go in, reposition and try again. Still not, check for more obstructions. Keep repeating until the air successfully fills the chest.

- **Next check for a heartbeat.** Check the carotid artery in the neck. Place your index and middle finger on top of the hard trachea in the middle of the neck, then move your fingers to the far side of the trachea; there will be a band of muscle on the side. Slide your fingers up along the junction of the hard trachea and the band of muscle toward the jaw, stop when you run into tissue under the jaw and feel to a pulse in the area where the trachea, band of muscle and tissue under the jaw meet. Check for pulse for at least 15 seconds. **CHECKING FOR A HEART BEAT MUST BE DONE QUICKLY TO DETERMINE IF THE CHEST COMPRESSION PART OF CPR IS NEEDED.**
- If a heartbeat is found, just continue blowing air into their mouth (ventilating) as before until they start to breathe on their own.
- **If no heartbeat is found, do chest compressions.** All serious bleeding must be controlled before chest compressions are started.
- Expose the chest, using your middle and index fingers; find the bottom of the ribs on both sides. Follow the ribs up toward the head to the point where the ribs join the breastbone. This point is called the Xiphoid Process. With your middle finger on this point, place your index finger on the sternum itself. Slide the heel of your other hand down the sternum until it reaches your index finger. This should be the middle of the lower half of the sternum.
- The second hand is positioned over the first and the fingers of the second hand entwine or interlock the first. Ensure that pressure is not applied over the casualty's ribs and that there is no pressure exerted over the upper abdomen or bottom tip of the sternum.
- Position your body directly above the patient's chest and, arms straight, press down on the sternum with two hands between 4-5 cm. Release all the pressure without losing contact between the hand and sternum. Do 30 compressions and then give 2 breaths.
- When time is taken for the 2 breaths, there will be about 60 compressions per minute.
- After 5 cycles of 30 compressions and two breaths, check for a pulse for 10 seconds.
- If no pulse, resume 30 compressions and two breaths for 4 to 5 minutes and then check for pulse.
- If a pulse is found, then check for breathing.
- If not breathing, give breaths, one every five seconds.
- If pulse and breathing are restored, place in the recovery position (on their side) and monitor breathing and pulse carefully until help arrives.
- **NEW!!** Current simplified Canadian CPR guidelines call for 30 compressions and 2 ventilations and apply to adults, children and infants.
- If it will be a long time before help arrives, get someone to help take over when you get tired doing CPR. Also, if it is cold out, have someone else cover the injured person as much as possible without interfering with your CPR.

## Circulation

Look for signs of circulation (normal breathing, coughing or movement) in response to rescue breathing. If none is present, begin CPR. If present, control all major disabilities including major bleeding and chest wounds.

## External Bleeding

If the injured person is breathing, then check for bleeding. If any obvious bleeding is seen, use a sterile bandage if possible to cover the area that is bleeding and apply direct pressure to the bleeding wound (ice in a plastic bag or a chemical ice pack that is activated by crushing, may also be applied to small wounds to help stop bleeding, especially for a nose bleed).

### Pressure Bandage for External Bleeding Wounds

- The first thing to do is clean the area as well as you can. Check the area very carefully for items such as glass in the skin or other items. Gently brush away small items (see note below regarding penetrating objects). Apply a compress comprised of a sterile non stick dressing and a small pad (these are in our CMC kits), applying pressure with your hands.
- If the wound continues to bleed through the compress, apply more on top of the compress you are using. Do NOT remove the first compress. If the wound continues to bleed and you cannot put continuous pressure on it, apply a pressure bandage. Find a long narrow strip of cloth or use one of the cravats in our motorcycle safety kit. You may have to rip a piece of clothing if all the cravats are used. Start by placing the center of the cloth directly over the compress on the wound. Pull the bandage to keep the compress in place, wrap it around the body part and tie a knot in the bandage directly over the compress.
- **Penetrating objects (i.e. if someone is impaled by a tree branch etc.), should not be removed, but stabilized to keep the objects from moving and causing further injury. This is because more damage may occur during removal and the object may be preventing severe bleeding.**

**If you suspect a skull fracture, DO NOT apply direct pressure to the bleeding face or head.**

If severe bleeding is occurring in an arm or leg, try to elevate it above the chest. An arm can be elevated by using a body sling. For severe bleeding from the leg, lay the person down and elevate the leg about 30cm by placing a blanket or clothing under it. Keep pressure on until help arrives.

If there are multiple bleeding wounds, have other people help, or tape bandages or compression gauze down to the wound wrapping the tape/gauze around the body to make it as tight as possible.

## Internal Bleeding

**Internal bleeding cannot be controlled by a first aider....call 911.**

### **Signs and symptoms of internal bleeding include:**

- General: Shock will be evident. Signs are pale, cold, sweaty skin, weakness, anxiety or confusion and thirst.
- Recent falls, other injuries or ulcers: Abdominal rigidity, bruising in the liver and spleen areas or bruising in the flank or kidney area.
- Stomach: Vomiting of blood, or vomitus having the appearance of used coffee grounds.
- Lungs: Cough producing bright red frothy sputum
- Bowels: Bloody or black tarry stools.
- Kidney/bladder: Blood in the urine and bruising in the flank after trauma.

### **Treatment?**

- Call 911
- Lay the patient flat if no spinal concerns.
- If no spinal cord injury or leg fracture, elevate the feet about 6".
- Monitor all vital signs watching for the onset of shock.
- If oxygen is available, give it if trained to do so.

**YOU SHOULD HAVE VINYL GLOVES TO KEEP THE INJURED PERSON'S BLOOD FROM CONTACTING YOU, IF THAT IS NOT POSSIBLE, LEATHER GLOVES OR CLOTHS MAY OFFER SOME PROTECTION.**

- **Abrasions** - try to clean as much as possible and bandage.
- **Punctures** - clean and apply bandage if no foreign object is inside - Do not remove objects!
- **Avulsions** - loss of a body part - stop bleeding and find missing body part. Try to clean carefully and either put on ice in a plastic bag or keep next to person's skin.
- **Incisions** - stop bleeding with compress bandages, pressure or pressure bandages
- **Lacerations** - stop bleeding with compress bandages, pressure or pressure bandages

## Shock

**Treat for shock before checking for shock and even if the victim is not showing signs of shock.** Shock is life threatening and can develop very quickly....**MONITOR CONTINUALLY!**

**To check for shock:** Note if the skin is pale looking and may feel cold and clammy. If their heartbeat feels weak and breathing is shallow and irregular, they may be in shock. Lastly, note the color the skin under their thumbnail. Press the thumb so that skin becomes pale and count how long it takes to return to normal color. If it takes over 2 seconds to return to normal color they may be in shock due to compromised circulation.

**SHOCK COULD BE CAUSED BY A LOSS OF BLOOD NESSECITATING REPLACMENT OF LOST FLUIDS, THIS MUST BE DONE INTRAVENIOUSLY BY A PARAMEDIC – DO NOT TRY TO REPLACE LOST FLUIDS BY HAVING THE INJURED PERSON DRINK WATER... THIS DOES NOT WORK FAST ENOUGH AND MAY CAUSE CHOKING.**

Cover them with a blanket; clothing, your rain gear, jacket, etc. can be used. If possible, gently elevate their feet by placing clothing or a blanket underneath them, if possible, do the same to their hands, so that their feet and hands are higher than their chest.

**IF ELEVATING THEIR FEET AND HANDS WILL CAUSE MOVMENT OF THEIR SPINE OR CAUSES PAIN IN THEIR BACK OR NECK, STOP IMMEDIATELY AND RETURN THEM TO THEIR STRAIGHTENED POSITION. DO NOT ELEVATE THEIR HEAD. DO NOT ELEVATE THE INJURED PERSON'S LEGS IF YOU SUSPECT A SPINAL OR HEAD INJURY.**

### **Anaphylaxis (i.e. Insect stings, allergic reactions, asthma etc)**

**THIS IS A MEDICAL EMERGENCY!!** Anaphylaxis is caused by a serious and rapid allergic reaction that usually involves more than one part of the body. Allergic reactions may also cause severe swelling of the face and throat leading to blockage of the airway. The reaction can be severe enough to kill. It can be caused by various things such as asthma, latex, bee stings, and severe food allergies such as to nuts, some types of fruit, fish and sometimes spices. Anaphylaxis usually happens quickly.

Epinephrine is one of the drugs that will work against all the effects of dangerous substances released in anaphylaxis. For serious attacks, it's a vital treatment. Special syringe kits such as the "EpiPen" or the "Ana-Kit" are available and carried in a robust and clearly marked pouch by most patients who have a history of anaphylaxis. Additionally, many people may carry a small bottle of Benylyn which contains epinephrine...this fits easily into your motorcycle bag but keep an eye on the expiry date. We intend on carrying Benadryl in our CMC first aid kits.

The "EpiPen" is a spring loaded injector that will automatically inject the correct dosage once the injector is properly applied to the skin. It is available in two formats identified as EpiPen Jr. and EpiPen.

The "Ana-Kit" usually contains a pre-prepared syringe (not spring loaded) ready for injection. The dosage required varies according to the age and size of the patient. Injection kits are dispensed in the following pre loaded dosage. The adult dosage (person weighing more than 15 kg) delivers 0.3 mg of epinephrine. The child dosage (person weighing less than 15 kg) delivers 0.15 mg of epinephrine

#### **An injection should be given when**

- There is obvious evidence of a general reaction
- There is evidence of deterioration
- Death seems imminent. If the first injection is ineffective and if one is available, assist the patient to administer another dose 15 to 20 minutes after the first injections. Do not administer additional dosage if signs of improvement are present.

#### **Signs and Symptoms of Anaphylaxis can include**

- respiratory distress (wheezing)
- rapid breathing
- rapid pulse
- throat tightness and closing
- difficulty swallowing
- dizziness
- faintness and unresponsiveness
- cool and clammy skin
- swelling
- vomiting
- red watery eyes
- abdominal cramps
- diarrhea
- tingling feeling in the lips or mouth
- itchy rash
- sense of doom

#### **Treatment for Anaphylaxis**

- activate EMS
- help the patient administer the injection in the thigh muscle (no other area)
- hold the injector at a 90 degree angle to the skin and press against the thigh muscle
- monitor vital signs closely

- administer oxygen if available
- be prepared to assist ventilations or perform AR
- treat for shock

### **EpiPen Administration**

**CAUTION:** Epinephrine is a vasoconstrictor and a bronchodilator, in certain cases it can be extremely dangerous. The first vasoconstricting effect is required to control the rapid onset of shock (without the presence of bronchospasms) caused to certain individuals by a severe allergic reaction. The severity of the shock varies according to the type of allergin and the person.

If you accidentally inject yourself with a dose while assisting a patient administer the EpiPen, you have now become a medical emergency. Consult the emergency services immediately as it is impossible to know how you will react to the injection. You may experience a vasoconstriction causing necrosis. If you injected yourself in a finger, toe, penis or nose you could potentially lose it. Even worse, you may have infected yourself with a tainted needle.

### **Major Closed Head Injury**

If the victim has a major closed head injury, swelling of the brain may start to occur which may or may not always occur immediately. If help is delayed, it may result in prolonged or non-reversible brain damage. The problem is that the swelling and bleeding will not be able to expand within the skull. Since the skull cannot stretch to relieve the pressure, the fluid and swelling ends up compressing the brain, compounding any initial damage in the original trauma.

This pressure is called inter-cranial pressure "ICP." **This is a medical emergency. There is nothing you can do in the field to help relieve the pressure. This must be done surgically. Call 911. This person must be immediately transported to medical aid.**

### **Signs and Symptoms of "ICP"**

- Loss of consciousness, confusion, or drowsiness
- Low breathing rate or drop in blood pressure
- Convulsions
- Fracture in the skull or face, facial bruising, swelling at the site of the injury, or scalp wound
- Fluid drainage from nose, mouth, or ears (may be clear or bloody)
- Severe headache
- Initial improvement followed by worsening symptoms
- Restlessness, clumsiness, lack of coordination
- Slurred speech or blurred vision
- Inability to move one or more limbs
- Stiff neck or vomiting
- Pupil changes\*\*
- Inability to hear, see, taste, or smell
- Irritability (especially in children), personality changes, or unusual behavior
- Ask the person their name, age, address, or the date. If they are unsure or incorrect, they are confused.

*\*\*If you shine a light into their eyes and their pupils (black center of eye) do not get smaller in response to the light, they may have swelling of the brain (if it is bright out, their pupils may be a small as they can get, try shading their eyes for a minute and test again). If the injured person is conscious, try to get them to hyperventilate (breathing about 24-30 breaths per minute) for only a short amount of time.*

### **Sucking Chest Wound**

If there is a puncture wound in the chest that is making a gurgling noise when the injured person breathes in, they are at great risk of one or more lungs collapsing (tension pneumothorax).

**Tape down on three sides an airtight material over the wound.** Leave the unsealed side facing downwards. The unsealed side will allow the release of accumulated air between the lungs and chest wall. Lacking an airtight material, use your gloved hand. It will also allow fluids to drain. When the patient breathes in, the airtight material will prevent air from entering the chest cavity.

## Broken Bones

Broken bones are less life threatening than the injuries addressed above. Severely broken bones can be seen by an abnormal shape of the body or bone protruding out of the skin. Less severe broken bones may be noticed by bleeding under the skin and pain.

Splinting the broken bone may help alleviate pain and prevent further damage.

**As a general rule, don't move a broken bone; splint it in the position it was found.** However, if an arm or leg is broken and the rest of the limb further away from the body feels numb or a heartbeat may not be felt (as felt on the wrist or ankle) this is a serious complication and the patient must be rapidly transported to medical aid. If a bone is sticking out of the skin however, never try to push it back in.

When warranted, you may try to gently align the broken bone, but, if pain occurs while straightening stop immediately and splint in the position it is in.

Traction: The ONLY time traction should be applied is when a patient's tibia (large bone front of leg below knee) is fractured MID THIRD!! Traction can alleviate a great deal of pain BUT it must be applied properly by someone with first aid training, otherwise you can cause more damage and greater pain.

If part of the bone is sticking out of the skin, cover it with a damp sterile gauze (dampen with sterile water or the injured person's own blood).

Splinting is done by taping a semi sturdy object along the axis of the bone that is broken. A stick, or rolled up blanket could also be used. We have a small fold up mesh splint kit in our CMC first aid kit. For fingers and toes, tape the broken finger to a neighboring unbroken finger.

**If an elbow or knee is broken, you may splint with the joint bent** and the supporting object laid across the bones above and below the break as to make an "A" with the bone making the sides and splint making the middle.

Ice in a plastic bag or a "cold pack" that we carry in our safety kit, should also be applied to the broken area to prevent swelling and pain but never to the end of a protruding bone. Note: Never apply ice directly to skin as skin could freeze....wrap prior to application.

<u>Signs and symptoms</u>	<u>Treatment</u>
Swelling	Apply ice or cold packs – 20 min max per hour
Bruising	Apply ice or cold packs – 20 min max per hour
Pain	No treatment
Deformity	Do not straighten...see note above on TRACTION!
Bone protrusion	Cover with sterile dressing
Immobility	Prevent movement

In the case of arm injury, most patients will generally be supporting the injured limb in the most comfortable position. If injury is serious, do not move the patient...call 911! Improper movement may result in long term complications and in some cases, death.

## Eye Injury

An injured eye is not usually life threatening, but may cause blindness. If the eye looks injured, or there is bruising around the eye or bleeding from the nose and eye pain, **cover both eyes with a sterile gauze and a light blocking material** (like a piece of leather, a skull cap, or the cravats in the CMC kits) to prevent the injured person from moving their eyes around which could cause further damage.

## Burns

Burns can be classified as partial thickness and full thickness. The most common causes of burns are moist or dry heat, chemical and electrical. When riding a motorcycle that has crashed, the exhaust pipes and/or engine can cause severe burns if the patient is pinned beneath the bike. Remove the source of the burn immediately if possible to prevent further burning. Be aware of any spilled gasoline on the road when removing the motorcycle.

### Treatment for burns?

- Treat affected area with cool clean water.
- If burn area is large, cover with a sterile burn sheet or clean cotton sheet and soak with cool clean water. Monitor for shock as this can quickly develop with a large burn area.
- Remove all loose metal objects from the burn area (rings, belt buckles, watches etc).
- Do not break blisters.
- Minor burns may also be covered with a burn dressing.
- All other burns should be covered with a loose dry dressing and further medical attention sought.
- Watch for hypothermia...if patient starts to shiver, keep warm.

### Heat-Related Illness - (How to recognize it, what to do)

#### Early Warnings (Serious: Cool Down & Rehydrate Immediately)

- Headache
- Flushed, sweaty face (often followed by cool, clammy, pale or ashen skin)
- Leg or stomach cramps (sometimes back, arms, etc.)
- Nausea
- Dizziness or weakness
- Exhaustion
- Small amounts of dark yellow urine

#### Later Stage (Life-Threatening: Call 9-1-1 & Treat for Shock)

- Throbbing headache
- Red, hot, dry skin (no longer able to sweat)
- Body temp climbs quickly
- Changed mental state (confused, uncoordinated, slow responses)
- Vomiting
- Severe cramps
- Rapid, weak pulse
- Rapid, shallow breathing (panting)

#### Treatment?

- Remove from the hot environment. Do NOT allow the patient back into the same environment until they feel better.
- For heat stroke, remove outer clothing and cool by placing sheets soaked in cool water over the patient. Fan the patient. Monitor vital signs. Place patient in a semi prone position if unconscious.

### Medical Information ID Card For Your Wallet

Download this card, fill it out, and keep it in your wallet in the event of an emergency.

<http://www.firstaidco.ca/medcard.pdf>

**These procedures are primarily for life threatening injuries that can be treated without much equipment. More sophisticated treatments are possible by paramedics and at hospitals. No treatment should be done to delay or substitute transporting the injured person to a hospital. The best chance of surviving a crash is to rapidly get to a hospital. Even if the injured person feels alright and seems uninjured, get them to a hospital, there are many types of injuries which are not obvious or notice immediately, but may cause death if undetected and untreated.**

### WANT MORE INFORMATION?

Medical info: <http://www.mayoclinic.com/health/FirstAidIndex/FirstAidIndex>

Riding info – great link: <http://www.msgroup.org/articles.aspx>

CMC Group Riding info: <http://www.cmcottawa.com/CMC011GroupRiding.pdf>

50 Ways to Save Your Life:

<http://members.cox.net/twilightstarr/50%20Ways%20to%20Save%20Your%20Life.pdf>