Emergency First Aid for Cyclists

Presentation by Dr. Edward Fishkin, Medical Director, Woodhull Medical Center, Brooklyn, April 2014

Transcribed by Carol A. Wood

The physician's creed is "Above all, do no harm." As cyclists, there's no reason we shouldn't follow this good advice too. For that reason, one of our members who actually is a medical doctor (he doesn't just play one on TV) devoted an April evening explaining to SIC participants the important basic facts about caring for injuries on the road. Because these facts are so important, we reproduce them here. Read up — the life you save could be your favorite cycling pal's, or your own.

Trauma

Trauma is a wound or injury inflicted by a physical agent. For people up to age 40, it's the leading cause of death. After 40, only cancer and heart attacks exceed trauma as a cause of death. In bicycle accidents, 80% of deaths are due to head and neck injuries. Knowing how to administer first aid — and how to seek proper follow up care — can help prevent a trivial injury from becoming a catastrophic one.

Deaths due to trauma occur in three peak periods:

* Within seconds or minutes of the accident, usually due to laceration to heart, brain, etc.

* Within one hour of the accident. This is known as the "golden hour," when proper care can prevent catastrophe.

* Within weeks to a couple of months — usually due to infections or multiple system failure.

Teamwork is Critical

When you're on a ride and an accident occurs, teamwork is critical. (New leaders should orchestrate a trial run of a team response before heading out on the road.)

One person should take charge of the victim (usually a leader).

Other individuals should:

* Direct traffic around the site.

* Get all cyclists off the road.

* Call 911 on their cell phone or flag down a passing car.

* Write down the details of what happened — it's easy to forget the details. Record the victim's reactions; this could be critical to emergency personnel.

1. Secure the victim's head and neck.
    This takes 30 seconds. If necessary, one person should hold the victim's head and neck. Never take the victim's helmet off. If the neck is injured, moving it can lacerate the spine and cause paralysis. Until proven otherwise, assume that such an injury is possible. Don't move the victim until their condition has been assessed. Don't give them food or water. (Remember the cookie scene in "Seinfeld"?) Try not to move the victim.

2. Recite your ABCs
    Once the neck and head are stabilized, check the victim's airways and breathing — are they breathing and talking? Then this is okay. If they are not, then you need to know CPR in order to revive them. Circulation — are they bleeding? Gently palpatate their limbs for signs of wetness and blood.

3. Communicate.
    Ask the patient questions to determine their mental status, to see if it's been
altered by the injury. Tell them not to nod their head but to respond in words or with their hands.

- Does your neck or head hurt? (If yes, don’t do anything more.)
- Did you black out?
- Do you hurt anywhere?
- Do you know what happened?
- What day is it?
- Who is the president?

The record-keeper should note these responses in writing, and tell the emergency personnel. They should state whether the victim:

- Demonstrates change in mental status — loss of consciousness, confusion, irritability, amnesia.
- Throws up.
- Exhibits any other reactions.
- Concussions

Concussions are very common injuries. They occur when the brain hits the skull due to an acceleration or deceleration injury. The impact disturbs delicate electrochemical processes. If not properly cared for, a concussion can lead to the “second impact syndrome,” This occurs when an area is hypersensitive due to an injury — even if it was trivial — can cause severe fluid leakage and lead to death.

There are three grades of concussion, according to the Colorado Grading System. All should be examined by a physician.

* **Grade 1** — Mild concussion: confusion, but no amnesia for events surrounding accident and no loss of consciousness. Treatment should include hospital triage to “urgent” area. Should be evaluated every 15 minutes or so, until has been “normal” for one hour, when can be discharged. Can cycle home if necessary, though a taxi or another means of transport is preferable.

* **Grade 2** — Moderate concussion: confusion, plus some amnesia for events either before, during or after the accident, but no loss of consciousness. No cycling home for this puppy. Treatment should include a CAT scan, close observation to see if pupils become unequal, if becomes drowsy or starts crying. If patient starts to deteriorate, he or she should have another CAT scan in trauma care. After recovery, can cycle again after one week with no symptoms.

* **Grade 3** — Severe concussion: Loss of consciousness, even for a second with or without accompanying amnesia or confusion. This patient needs urgent hospital evaluation and may require an overnight stay. If released from hospital, someone should stay with them to monitor their condition for any signs of deterioration. If no one can stay with them, they should remain in hospital. After recovery, they should wait one month before cycling again — and they should be symptom-free for two weeks before they do.

If you disagree with the hospital’s decision to release the patient, ask to speak to the patient ombudsman or senior medical personnel. They can explain the decision to you. If you still disagree, you can demand that they keep the patient. However, if this turns out to not be necessary, the patient will be charged for the hospital stay.

**Heat Injuries**

Heat stroke is a serious injury. In fact, it’s the No. 3 cause of death for high school athletes. When our body generates excess heat, it rids itself of it in four ways: through sweating, evaporation, convection (when blood vessels near the skin dilate), and conduction (when deep blood vessels carry blood to the skin surface, where heat is lost from the body).

The human body may generate more heat than it can dissipate due to high heat and humidity (e.g., 95 degree air temperatures), excess exertion, dehydration — even relative dehydration (when more fluid is lost than is replaced), and daily cycling without drinking sufficiently. Unfortunately for our species, our thirst mechanism doesn’t kick in soon enough to prevent dehydration from occurring. This is why you need to keep drinking BEFORE you get thirsty.

**Note:** Professional and elite athletes and cyclists with medical conditions should speak to a physician or trainer regarding fluid and electrolyte replacement and exercising during extreme weather conditions such as heat and cold.
Heat Stroke

Heat stroke is extremely serious — and it can happen very quickly, with little warning. The skin may or may not be hot and dry, for instance. Other signs to look for are when the person starts to slow down or becomes irrational.

When the body's core temperature rises above 105.8 degrees Fahrenheit, many of the crucial chemical reactions needed to maintain the body and many of our organs and organ systems begin to shut down. This is a real medical emergency!

If someone in your group suffers heat stroke, a team should form as above, get the victim into the shade, call 911 immediately and remove outer layers of clothing. Begin spraying him/her with water and try mechanical fanning (with newspaper, helmet or even your cupped hands). These efforts will help stop the temperature from rising further and may begin the cooling process.

When the ambulance arrives, more intensive heat loss measures will be taken. Upon arrival to the hospital, this patient will be admitted immediately to the Medical Intensive Care Unit. As mentioned above, this is a medical emergency and even when quickly and appropriately managed, there is a significant chance of death.

Heat Cramps

Heat cramps occur when the body's core temperature rises but does not exceed 105.8 degrees. They are less severe than heat stroke, though if left untreated they can progress to heat stroke. For this reason, they must be treated as well. Get the victim's clothing off, wet them down, and get them to the intensive care unit of a hospital.

Preventing Heat Stroke

- Drink lots of water.
- Wear sun block and protective clothing. (Avoid wearing tank tops!)
- If it's really hot out, think about doing something besides cycling that day.
- Drink still more water.

Abrasions, Road Rash

After checking for head and neck injuries, and reciting your ABCs, look the victim over for signs of obvious bruises. Gently palpate the limbs and ask them if they hurt. Feel for wetness/signs of bleeding. Injuries usually occur on our "tips"—shoulders, elbows, hips, knees, ankles, etc.

Just because a bone doesn't hurt or doesn't feel broken, doesn't mean it isn't. Get an x-ray.

To treat road rash, first gently remove dirt, glass, and other debris from the wound. Pick it off (wearing a latex glove to prevent introducing bacteria) or wash it off with water. Add antibiotic ointment. Apply a bandage if you have one, otherwise leave it alone — don't wrap a greasy jersey around it, it's better to let it air dry. When you get to a place where there's running water, clean the wound thoroughly. Don't use alcohol — peroxide is okay.

Lacerations

If a wound is gushing blood, apply direct pressure with a jersey or glove. Note that it takes around 15 to 20 minutes for a blood clot to form, so don't keep peering at it to see if it has done so.

A deep wound should be evaluated by a physician. The general rule concerning stitches is that you need them if a wound is more than 1/4 inch deep, 1/2 inch in length, or near a joint, eye or eyelid, or if you see bone or muscle.

An ounce of prevention . . .

Being reasonably prepared for an accident won't turn you into a noxious worry wart. In fact, it will make you an even more desirable cycling partner than you already are. You can raise your safety quotient by doing the following:

- Take a CPR course. They're available all over the city.
- Ride predictably and responsibly on group rides.
- Carry first aid items in your saddle bag.

Here’s what Dr. Ed carries (note that these items add very little weight and bulk):

- latex gloves
- Advil and aspirin
- Band-Aids, gauze pads
- Neosporin or other antibiotic ointment
- health insurance card
- a cell phone
- Chapstick with sunblock