



Safety instructor Don Rouse conducts a construction safety workshop on a St. Louis job site.

First Aid Basics for Builders

by Donald Rouse

*First aid know-how can save lives
and reduce injuries on the job site*

Construction work is dangerous, and despite your best efforts accidents will happen. When they do, your crew should be well-prepared with first aid training so you know what to do — and, equally important, what not to do — for each type of injury. If you know how to react to typical construction injuries, you can reduce the degree of harm.

First aid training will prepare you in two important areas: assessment and treatment. In the event of an accident, knowing how to quickly assess the victim's condition and injuries is critical in knowing the correct course of action. For treatment, there are many specialized first aid techniques; knowing them will reduce the effects of an injury, and in some cases, may save lives.

Below we'll discuss basic first aid procedures for eight of the most common job site injuries and accidents. The advice given is meant as an introduction to first aid and should be followed up with training from first aid professionals.

In any accident, you should never go beyond your level of training. If you've had no training, the best thing you can do is to summon help as quickly as possible.

Cuts and Lacerations

Everyone who works in construction has either been cut or seen someone else get cut. Most of the time a band-aid is all that's needed, but with serious cuts further action is required to limit blood loss.

For a severe cut, apply direct pressure to control bleeding. Place a clean dressing on the wound, and apply pressure directly over the affected area. In emer-

gency situations, don't waste precious time looking for sterile dressings. Use any piece of clean cloth or clothing. As a last resort, you can use your hand. Get the victim to medical treatment as soon as possible.

Direct pressure will control almost any form of bleeding you encounter, but if you've had training, two additional first aid techniques can also be of benefit: elevation and pressure points.

Embedded Objects

Construction cuts and lacerations frequently leave fragments of construction material in the wound. If you're sawing plywood or pressed board, you may have wood chips and formaldehyde contaminating the cut. If you're using a band saw or cutting metal, you might get metal

particles in there. Leave removal of any object to medical personnel; they'll provide antibiotics and reduce the chance of infection or blood poisoning.

Don't try to be helpful and use your pocket knife to dig out the object. You might not get the whole thing out. Also, your knife isn't sanitary, and your buddy can get blood poisoning in the arm. I've seen cases where slivers of metal have gone into the vein and traveled to the heart.

Sometimes embedded objects cause a lot of bleeding. Normally, you control bleeding by applying direct pressure to the wound. But don't do that here. Instead, apply thick dressings on either side of the object and apply pressure to the dressings. These will help stabilize the embedded object, preventing it from being pushed in further.

Don't Forget the Paperwork

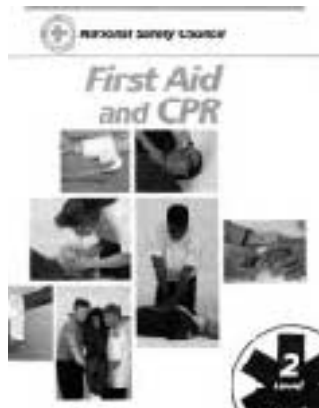
You should stress to your employees that if they do get hurt, they need to report it to you immediately and fill out the necessary accident report paperwork in a timely fashion (days, not weeks). Even if the injury doesn't initially seem serious, symptoms could persist or complications show up later that might require treatment. Without proper documentation of the original accident, your employee might jeopardize his right to workers comp benefits.

Eye Injuries

Two types of eye injuries can occur on job sites. The most common is caused by particles, such as wood chips or bits of masonry, lodging in the eye. This kind of injury is easily preventable by the use of safety glasses.

Other eye injuries come from chemicals found on the job site, such as paint solvents or muriatic acid (used in brick and tile cleanup).

Foreign bodies. Getting an embedded foreign body out of an eye is not a first-aid procedure. Don't try to wipe the object out of your buddy's eye with the corner of a pocket handkerchief. If a chip is partially embedded, it will scrape across the eye and cause further damage. So let medical personnel deal with the injury.



The First Aid Institute of The National Safety Council conducts training courses which are tailored to the special needs of different occupations.

Hazardous materials. The Hazard Communication Standard from OSHA requires every job site to have a copy of the Materials Safety Data Sheet (MSDS) for all hazardous materials on site. OSHA requires these sheets for a reason: They give specific information on what type of personal protective equipment is needed to work safely with the product. They also give the signs and symptoms of overexposure, and emergency first aid instructions. Make sure you read the MSDS and the warning label for a product *before* you start working with it.

If a hazardous material gets in a worker's eye, your first move should be to identify the product. Don't do anything until you know what you're dealing with. Even if the victim is carried to a medical facility, the MSDS will need to go along or the treatment might be delayed.

Follow first aid procedures for the specific product. The MSDS may say, "Irrigate for 20 minutes with water." But if it says, "Only irrigate with normal saline solution," that's the only thing you should use. Adding water to some compounds may cause a chemical reaction. That's why the MSDS information is so critical.

If the MSDS recommends it, gently flush the affected eye with a large amount of water or saline solution. Tilt the head so the eye wash flows out across the cheek, away from the other eye. Continue with an even flow for the time specified. While you perform first aid, make sure that someone else summons medical assistance.

Broken Bones and Major Sprains

The orthopedic surgeon who taught me used to say: "Sprains and strains and broken bones are all the same in the field." If you think an injury is only a mild sprain and have the injured person "walk it off," you may turn a closed or simple fracture into an open or compound fracture (where the bone sticks through the skin).

The right way to handle a dislocation or fracture is to immobilize the limb in the position found and get it x-rayed. Stabilize the injured area

between two adjacent joints with a splint. For instance, if the forearm is broken, place a splint that immobilizes the wrist to the elbow. A dislocated shoulder, knee, hip, or elbow is very painful; keep the injured person from moving the limb.

Treat sprains the same way. Immobilize the area with a splint or bandage and seek medical attention for the victim. If there will be a delay in getting the injured person medical treatment, apply ice to reduce swelling and elevate the sprained area.

Amputation

A person who cuts off a finger or limb is likely to become very agitated. Get the victim to sit or lie down. Talk to him and try to keep him calm and relaxed. This will slow blood flow. Apply direct pressure to control bleeding.

Retrieve the extremity. Keep it cool and dry to keep the tissue alive. Make sure you send the extremity in the ambulance with the victim, so that it can be reconnected if possible.

Don't apply tourniquets to prevent bleeding from the amputated area. Doctors have found that contaminants below a tourniquet will circulate back into the victim's tissue and cause problems when released. If you do feel that a tourniquet is the only way to keep a person from bleeding to death (e.g., if you are many hours from medical help), don't take the tourniquet off. Leave it on until you get the victim medical attention. In most cases, amputations can be treated successfully without tourniquets.

Head Injuries

When people are working overhead on a job site, everyone should wear a hard hat. A hard hat will help prevent head injuries if someone kicks a brick off a scaffold or drops a hammer.

If someone does get hit in the head, at a minimum he can have a contusion (bruise or bump). There may also be external bleeding, and possibly internal injury or concussion.

Because head injuries are potentially very serious, first aid consists mainly of controlling bleeding and monitoring symptoms. First, establish consciousness. Is the victim awake? Can he talk? Does he know what's going on? If the victim is unconscious or seems to be disoriented, call immediately for medical assistance.

If the victim is unconscious, look for signs and symptoms to report to medical personnel when they arrive. Clear fluid trickling from ears or nose is a sign of a traumatic head injury. This is cerebral spinal fluid. It may be pink if mixed with blood and would indicate a crack in the skull. Do not try to stop this type of bleeding. If you stop the flow of such fluids, you can cause life-threatening problems for the victim.

Symptoms such as nausea or vomiting, if they last for more than two hours after the accident, may also indicate serious injury.

Control bleeding. Head wounds bleed profusely because there are lots

The ABCH of First Aid

In the event of a serious injury, the first aid provider is trained to make a quick assessment of the victim's condition by asking four questions: 1) Is the victim's airway open? 2) Is he breathing? 3) Is his heart beating? 4) Is there severe bleeding? This is easily remembered as the ABCH of first aid: airway, breathing, circulation, hemorrhage.

The first concern is that the victim's airway is unobstructed. If the victim is unconscious and the airway is blocked, he will be dead in four to six minutes. The victim is turned onto his back if he is face down. Treatment may involve lifting the chin and forcing the forehead back to open up the airway. Often the tongue is blocking the airway.

Next, while the airway is kept

open, the first aid provider checks the victim's breathing. The key is to look, listen, and feel. See if there is an air change from the mouth and nose. Listen for respiration. Feel in front of the mouth for an air exchange.

Then the victim's pulse is checked, alongside the Adam's apple or at the victim's wrist. If the victim has a pulse but no breathing, he needs to receive CPR. If no one on site has the necessary training to administer CPR, the victim's chance of survival is very slim.

Finally, bleeding is controlled with direct pressure on the wound. Bleeding is treated last because in most cases a victim will die from lack of oxygen before he can bleed to death.

of tiny blood vessels in the head. Even a small cut can make you think there is a major trauma.

Also monitor the victim's breathing rate. If it repeatedly halts and then starts up again, the injury is severe. Monitor the pulse and respiration. Keep the victim comfortable, and don't move him. Wait for medical help to arrive. With all head injuries, suspect a spinal cord injury and treat accordingly.

Falling From A Scaffold

Scaffold collapse or other falls can cause serious, multiple injuries. First, send someone for medical help. Your next instinct will be to rush in and help the injured person. Before doing this, however, you need to quickly assess why the scaffold failed. Was it overloaded? Is anything about to fall? You may need to stabilize the remaining scaffold or materials before helping the victim.

Once you've assessed the collapse and taken any necessary action, you must assess the victim's condition. Someone with training should follow the procedure outlined in "The ABCH of First Aid," above. Comfort the victim and stay with him. Find out where he's hurting. Keep him lying down.

Should you move the victim to a more comfortable spot? In most situations, no. If there is a spinal injury, moving the injured person can make it worse.

The one exception is where some other life-threatening condition is imminent. In this case, if there's an obvious danger of further scaffold collapse, someone with training should move the injured person. This is done by placing one hand under each shoulder, supporting the neck and head, and pulling in a straight line, maintaining the basic alignment of the spinal cord. If you try to drag the person by the feet or use a fireman's carry, you may permanently damage the spinal cord.

Electrical Shock

Electrical shock could occur when someone tries to play amateur electri-

cian or a crew member accidentally cuts a wire. If as little as 35 to 50 milliamps of electrical current crosses the heart, it may stop or go into ventricular fibrillation (which means ineffective uncontrolled beating of the heart). By comparison, a standard 20-amp household electrical circuit can supply 400 times that current. This is why GFCIs typically trip at three to five milliamps. If the heart is in fibrillation for four to six minutes, the victim is clinically dead.

Rescuers first have to make sure there is no imminent danger. If a live electrical wire is still in contact with the individual, trip the circuit breaker before touching him. Once the power is off, follow the ABCH procedure: Open the airway; check breathing; check circulation. CPR may be necessary.

Get First Aid Training

The odds are that all of us in the construction industry will witness a serious accident one day. Don't wait for it to happen: Make sure that someone on your crew is trained in first aid and CPR.

This is not a matter of choice. If a medical facility is not located within minutes of your job site, OSHA requires that at least one person in the crew have first aid training.

Training is widely available from a number of sources. Call the emergency medical services in your area, or the local chapter of the American Heart Association or the American Red Cross. Often community and vocational/technical colleges sponsor first aid courses. Or contact the First Aid Institute of the National Safety Council (800/621-7619, Ext. 7206), which is currently conducting training seminars in cities across the U.S. ■

Donald Rouse has been involved with health and safety for over 23 years, including 16 years as a Paramedic/EMT. He now teaches in the Operation SafeSite Program in St. Louis, Mo., a project sponsored by Associated General Contractors of St. Louis.