

Wound Care (from scrapes to sutures)

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SKIN, which covers our body, has the important function of protecting the internal organs and tissues from the environment and physical objects. Technically, this protective covering is also our largest body organ and the first line of defense from injuries and bacteria. With injury, the outer layer of skin, the epidermis, is either scraped away or opened-up to permit bacteria and materials to enter. In a more severe wound, the next layer downward, the dermis is penetrated. This contains connective tissue, sweat glands, hair follicles, nerves, lymph and blood vessels. Generally speaking, the deeper the wound, the more serious the consequences it can have for the body.

As survivalists, you want to be prepared for about anything at any time. Therefore, the best approach to a presentation on wound care is to cover everything from the simple closed wound to more serious injuries. In these, the skin has been compromised and the wound is therefore referred to as open.

CLOSED WOUND TO THE SKIN: This is the common *BRUISE* or *CONTUSION*, which is caused by a blunt object impacting upon the body. The result is that blood will begin to leak from the injured vessel under the skin, which then causes that area to change color to a black or blue. The good thing with this injury is that because the skin has not been broken, infection is not a great possibility. Therefore, the immediate first aid treatment is to apply ice for about 10 minutes and then throughout the day.

Even though the skin was not broken, this could still be a serious problem, one depending on what was injured beneath the skin and the amount of force that originally caused the injury. If an internal organ in the abdominal area was severely injured, bleeding could be taking place internally without evidence externally.

When traveling or hunting with horses, an injury could happen by simply stopping to adjust a load on a packhorse. If he gets spooked and you kicked, an internal injury could result. A hard kick to the abdomen when days from medical care could cause internal bleeding that may be fatal. Not all is obvious at all times!

OPEN WOUNDS TO THE SKIN: It is in this category where everything from a band-aid to sutures are necessary along with special considerations and concerns. In beginning with the least serious of six major categories of open wounds, we have the *ABRASION*. This is where the outer surface of skin has been scraped away as from a scratch or rope burn. There is usually some minor oozing of blood and serum.

Depending on how the injury was obtained, there is usually dirt or foreign matter ground into it. This problem brings to light another player against wound healing, infection. The treatment now goes beyond the application of ice. To treat an abrasion as a scraped knee, the wound must first be cleansed with soap, water and if available, hydrogen peroxide. This will remove dirt that will cause an infection and therefore impair healing.

Once cleaned, the wound should be blotted dry with a clean cloth or preferably sterile gauze. It now would also be a good idea to apply pressure over the injured site for a few minutes for the purpose of slowing down and hopefully stopping any bleeding. The application of a first aid or antibiotic cream to the abrasion could help to prevent infection and keep the bandage that you will apply from sticking to the raw wound. For the best protection, the bandage should cover an inch beyond the wound. An ice pack over the final bandage can serve to reduce swelling and some of the discomfort.

The next category of wounds is the *INCISION*. This is made from a sharp knife-like object that leaves a clean cut. To keep this one separated from the next, think of a surgical incision where the cut edges are smooth.

The third is the *LACERATION* which is similar but with jagged edges due to a tear. Because these go beyond the outer layer of skin and into the deeper layers that contain blood vessels, there is a lot of

bleeding. If you were deep enough or unlucky enough to cut an artery, blood will squirt out with each heart beat due to the high pressure in these vessels. The best approach here is to apply a pressure dressing and get to medical care where sutures will usually be needed to fully or partially close the wound, depending on if it was dirty or clean. Because suturing is a common medical procedure, I will later outline some information on what is involved to better inform you of your doctor's options.

The next wound is the *PUNCTURE*. As its name implies, this is when a foreign object is pushed into the skin. This could be a splinter that only penetrates the superficial layers of skin or a nail, sharp stick or fishing hook that penetrates deeper. With this you usually will not see much external blood which does not mean that there is little internal bleeding. To treat something such as a puncture wound to the foot from a nail, all you can do is to put ice on it along with a pressure wrapping and get to medical care. This is critical since if you are not already protected against tetanus, you will need to get an injection for such protection. If you are in the outdoors a lot, it pays to keep your immunizations updated.

The next skin wound is the *AVULSION*. This is where skin is pulled or torn off. As with an *AMPUTATION*, the severed tissue should be saved and taken with you to the hospital. If a finger, a pressure dressing over the stump or if skin, again a pressure dressing over the wound is about all one can do until medical facilities are reached. One other point should be addressed concerning "serious wound" dressings. That is, once a dressing is applied, leave it alone and do not take it off every 20 minutes to check the wound. If unnecessarily disturbed, all you will be doing is to undo the positive measures already applied.

WOUND MANAGEMENT SUMMARY: The first concern with any wound is to control bleeding. On the first aid level, this usually means through the use of a pressure bandage. The next concern is to prevent wound contamination, which refers to cleaning the wound and applying a sterile bandage and possibly an antibiotic ointment. Lastly, immobilization of the injured part along with rest and if severe, medical intervention, are all wise procedures.

The Mystery Of Sutures - Many of us while growing up had to be sewn back together. My father, a small town GP who did it all put six in my leg and another six or seven in my chin all before the age of 12. If you were like me, you just wanted to get it over with and therefore could not have cared about details. In the following, I will give a general summary of what suturing encompasses. Hopefully, this will help to lift some of that curtain of mystery concerning this common procedure.

THE SUTURE ITSELF: The thread like material attached to a curved needle or used on a straight one is absorbable and used internally or non-absorbable and used internally and externally as in holding skin together. Some of the materials used in the non-absorbables and that which we are concerned with are made from silk, cotton, nylon, dermal and stainless steel. One of the reasons for all of the different materials concerns tissue reaction to something foreign to the body even though it is serving a purpose. All the body knows is that there is a foreign substance within it that was not there before. The body can then react against this invader and you will get a tissue reaction. The reason stainless steel is popular in surgery by some surgeons is that of all the suture materials, it evokes the least tissue reaction.

Suture size is also important since different materials and weights of thread are matched to the task and tissue. Generally speaking, suture material should not be stronger than the tissues it is expected to hold together. Of all the sutures, those of silk or nylon are most widely used in holding skin together. The size is designated as 2-0 or 00, 3-0 or 000, etc. The smaller the number, the stronger the material. To hold skin together, a 000 or 0000 is generally used. Needles attached to the thread can either be straight or curved with those curved most commonly used in your doctor's office. With ones curved, a needle holder or hemostat is required to use it.

A friend of mine who is an orthopedic surgeon told me that he would recommend a straight needle for use in the outdoors to close the skin since a needle holder is not needed. When using a continuous suture with a straight needle, this would be the quickest way to close a skin wound. If you are heading into remote areas and feel that you would like to know how to do this, I would recommend that you ask your family doctor for advice since he best knows you and would be the one to advise you on this. Yet, for

most lacerations, a pressure dressing over the wound would be the preferred procedure until medical care would be available.

Another consideration your doctor will have to be careful about is that after skin has been sutured back together, edema or swelling of the tissues usually enters into the picture. If the suture was originally tight, with swelling, it will soon be too tight. Therefore, proper tension the first time the job was done is critical to good healing.

The purpose of suturing is to pull the tissue together just enough so that there will be no dead spaces below the skin where blood and fluid can accumulate. If there is, it will eventually be a breeding ground for an infection. In staying with how sutures are put in, it is also important that the same amount of tissue be included on each side of the suture.

If the suture includes more tissue on one side than the other and/or the needle is inserted deeper on one side than the other, when tied together, the skin edges can overlap causing poor wound healing and/or a scar. All your doctor wants to do is to put the severed edges back like they were before the accident so that the body can complete the job of healing.

Because a medical emergency as a laceration can happen anywhere with the worst place being when medical care is not readily available, I would highly recommend a Red Cross first aid course. Once this is completed, I would then recommend that you take advanced courses and hopefully get certified as an Emergency Medical Technician. Also, if you go on outfitted back country hunts, one of the questions you should ask of the outfitter/guide is if he or she is certified in first aid. In the event that your guide would get injured, it would also be to everyone's advantage if you were qualified to help him.

A rule of good medicine is to do no harm to your patient. Therefore, take a first aid course and learn how to help yourself and if the situation presents itself someone else.

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