

First Aid for Accidents and Injuries

- A quick easy breakdown for MA students

Foreign bodies are substances / objects that become lodged in any part of the human body. Common foreign bodies are dirt, metal shavings, and eyelashes to the eyes, small objects such as beads placed by children in the ears & nose, items accidentally swallowed; and splinters & fishhooks in the skin. Foreign bodies require immediate attention

A foreign body under the lower / upper lid can be removed w/ a bit of cotton or a fold of tissue moistened w/ water. If the material cannot be removed easily or is on the cornea, try flushing w/ large amounts of water to dislodge it. Any object embedded on the cornea must be removed by the provider. Until the object can be removed, the object must be stabilized by covering BOTH eyes w/ a sterile compress to keep the injured eye from moving. When chemicals, either liquid or powder, get in the eyes, use a sterile eye irrigation solution to dilute & neutralize the chemical, & should be continuously dripped into the eye for 20 mins

First aid for an object lodged into the ear consists of placing several drops of warm olive oil, mineral oil, or baby oil into the ear & pulling back on the earlobe to straighten the external canal while the head is tilted toward the unaffected side. Then they let the oil run out and see whether the object comes out. Never try to dig it out. Water should never be used w/ any object, such as beans or peas that would swell, thereby causing pain and making removal much more difficult

Protect the pts airway as much as possible when dealing w/ one who has swallowed something small. Its best for the provider to perform an x-ray exam such as a fluoroscope exam to see whether the object is actually in the stomach. If the object is not sharp, it might pass through the intestinal tract and be eliminated in the stool

Strains are the result of overuse of a muscle or group of muscles or when a muscle or tendon is overextended by stretching. **Sprains** occur when muscles, tendons, or ligaments surrounding a joint are torn. First aid for both sprains & strains is the RICE method. (Rest, Ice, Compress, Elevate). Another is PRINCE (Protect, Rest, Ice, NSAIDS or acetaminophen, Compression, & Elevation). If a lower extremity is involved, the pt might want to use crutches until the area is pain free. Ice the area for the first 48-72 hrs, or until the swelling is reduced. Nonsteroidal meds (NSAIDS) such as ibuprofen can be used for pain + swelling

At least half of all **dislocations** involve the shoulder, but dislocations are possible at any freely moving joint. When a bone end slips out of the socket or when the capsule surrounding a joint is stretched or torn, a dislocation is likely to occur. Sometimes dislocation can cause a bone to fracture. The only first aid measure is to immobilize the dislocation during the trip to the medical office or hospital. Treat all sprains, strains, and dislocations as if they were a fracture. The injured extremity should be carefully supported in the position it was found in to avoid additional injury.

Fractures are breaks in a bone caused by trauma or bone disease. There are several types of fractures, however they are all classified as either open or closed. In a closed or simple fracture, there is no open wound. In an open or composed fracture, there is an open wound. First aid for an open fracture is to control bleeding and to splint w/o moving bone ends. The pt might also need to be treated for shock. Check the pulse and motor and sensory reflexes (PMS). Capillary refill of the distal

area to all fracture sites on an injured limb will be impaired. A provider is the only person who should attempt to straighten, or reduce, a fracture

Bites can occur from animals and humans. They can be superficial or can break the skin, causing a puncture or laceration.

- Animal bites

An animal bite can tear skin and cause a bruise. The bite is dangerous because of the possibility of infection or rabies. The bite must be reported to the police or local health authorities, who will examine the animal for rabies. If the skin is broken and the animal cannot be tested, antirabies serum should be used. If the bite is located on an extremity, try to maintain the extremity below the level of the heart

- Human bites

Pts who have sustained such a bite from another person should be advised to have injections to be immunized against hep b. W/ all bites, a tetanus injection must be administered to the pt if they have not received one within 5 yrs

Stings from bees, wasps, and hornets cause deaths every year. When several stings are received at one time, the victim can become quite ill and might develop severe hives or generalized edema. When a pt is severely allergic to stings, the sting can cause acute illness. The pt can become restless, complain of headache, shortness of breath, or have mottled blueness of the skin. When shortness of breath is not apparent, the victim can appear to be in shock and have severe nausea, vomiting, and bloody diarrhea

- **Venom / poison / toxin**

- Venom is a toxin that's injected into you
- Poisons can come into contact w/ skin, be inhaled, eaten or touched
- A toxin is a poisonous substance produced within living cells or organisms
- Toxicity is a measure of the poisoning strength of a chemical

Burns are basically of 3 types: thermal, chemical, and electrical, w/ thermal being the most common

- Thermal: caused by residential fires; automobile accidents, playing w/ matches; accidents w/ gasoline; space heaters or firecrackers; scalding water from the stove or tub; and coming into contact w/ curling irons, stoves, or clothing irons. Some childhood burns, such as from cigarettes, can be traced to deliberate abuse. Sunburns too
- Chemical: from contact w/, ingestion, inhalation, or injection of acids or alkalines
- Electrical: occur after contact w/ faulty electrical wiring, a child chewing on an electrical cord, or from downed high-voltage power lines, or even a lightning strike

Burns are classified by 3 methods. One is the % of body surface area (BSA) involved in the burn. The Rule of Nines and the Lund & Browder chart are methods to estimate the size of the burn. These methods establish a standard by which all injuries can be estimated. The Lund & Browder chart is more specific and has a way to estimate areas for different age groups because body proportions are quite different for infants and small children than adults. Any burn on the head, chest, or genitalia must be sent to the hospital immediately.

Extent of burns (1st, 2nd, 3rd, 4th, minor, moderate, major)

<u>Thickness</u>	<u>Degree</u>	<u>Depth</u>	<u>Characteristics</u>
Superficial	First	epidermis	pain, redness, swelling (mild)
Superficial partial	second	dermis: papillary region	pain, blisters, swelling (severe), splotchy skin
Deep partial	third	dermis: reticular region	white, leathery, relatively painless
Full		hypodermis: (subcutaneous tissue)	charred, insensate, eschar formation

A minor burn has less than 2% of BSA at the third-degree level and burns on less than 15% for adults and 10% for children at the second degree level

A moderate burn is when third-degree burns cover 2-10% of BSA; second-degree burns cover from 15-25% on adults or over 10% on children

A major burn is when a third-degree burn covers more than 10% of BSA or second-degree burns cover more than 25% in adults or 20% in children

Treatment of burns:

1. Stop the burn
2. Treat for shock
3. Fluid replacement
4. Treating electrical burns *
5. Treating chemical burns *

DO NOT directly apply ice to the skin, apply toothpaste, apply homemade remedies, or burst blisters. Treat first degree burns w/ cold water and a dressing to protect the area. DO NOT use running water w/ electrical burns. In second degree burns, first aid can include treatment for shock, removal of any jewelry because edema might be severe, providing ample amounts of liquid to drink, and covering the burned area w/ a sterile dressing. Third and fourth degree burns should receive immediate medical attention. If more than 10% of the BSA is involved, it is considered a major burn and requires surgical intervention, IV fluids, meds, and probably tetanus antitoxin or a toxoid booster shot. The only first aid that is appropriate is to cover the burned area w/ sterile dressings and treat the pt for shock

The everyday electrical burn is treated like any other burn; however the extent of the damage might not be readily observable. Electrical burns can cause extensive internal damage along the conduction pathway, which can take a few days to manifest itself.

Chemical burns are treated by removing any clothing from the burn area and immediately flooding the area w/ water for at least 15 min

Types of wounds:

- Abrasions
- Avulsions
- Incisions
- Lacerations

- Punctures

Abrasions involve a scrape of the epidermis w/ dots of blood and possibly the presence of foreign material. First aid is to clean the area carefully w/ soap and water, apply an antiseptic solution/ointment, and cover w/ a dressing

An **avulsion** is where the skin is torn off and the wound is bleeding profusely. Clean the wound w/ soap and water and replace the skin flap in its original position. Apply pressure to control the bleeding. When the bleeding has stopped, apply a pressure bandage

A wound that's caused by a sharp object and leaves clean cut is an **incision** and can need sutures to close. A laceration is a tearing of body tissue and is more difficult to clean and suture properly. In first aid care, the first concern must be control of bleeding. Apply direct pressure to the wound area and elevate the extremity. If direct pressure is not effective, apply indirect pressure on the appropriate pressure point

A **puncture** wound is one made w/ a pointed object. First aid is to clean the wound area, and if needed, enlarge the hole w/ a probe to allow for irrigation w/ antiseptic solutions

When cleaning wounds, we can use soap and water, antiseptic solution, irrigation, and soaking. When the wound does not bleed excessively and does not involve tissues below the skin, the area can be thoroughly cleaned. If a wound is superficial and will heal well w/ simple cleaning and protection from contamination, sutures are unnecessary. When bleeding has been severe, no attempt should be made to clean the area because it can restart the bleeding. A pressure bandage should be applied securely and the pt taken for emergency medical care immediately. The general rule is for the pt to have a tetanus injection every 10 yrs; however, for an injury, the requirement changes to every 5 yrs

You must educate the pt to keep the bandages clean and dry and to watch for signs of infection such as redness, pain, and drainage

Heat & Cold_____

<u>HOT</u>	<u>COLD</u>
How does it work? Heat increases blood flow to the affected areas providing oxygen and nutrients to aid the healing process and help restore movement	When cold is applied it causes blood vessels to constrict. This can help minimize damage and thereby reduce the amount of repair damage
How do I apply? Heat should be applied to the affected area where pain is felt. It can be used before exercise as part of a warm up where previous injury has happened	Cold should be applied to the affected area ASAP after area injury where pain is felt. Treatment should continue until all swelling has subsided (can take up to 72 hrs)
When should I use? ● Stiff aching muscles ● Muscular back pain ● Before exercise (for muscle aches and pains)	● Sprains, strains, after injury ● Sharp, shooting muscle pain ● Muscular back pain during pregnancy

The application of cold decreases bacterial growth, body temp, and local circulation temporarily. It also is a temporary anesthetic, relieves inflammation, helps control bleeding, and reduces swelling. The avg temp is between 10 C and 26.7 C (50 F and 80 F)

Heat applications are used to increase tissue temp, circulation, and rate of healing. When heat is applied to an injured area, pain decreases. The avg temp is between 40.6 C and 49 C (105 F and 120 F). Heat treatments relieve congestion in deep muscle layers and visceral organs and muscle spasms. Heat dilated blood vessels, which helps increase circulation and reduce localized swelling AFTER the initial 48-72 hrs or cold treatment

Summary

- When deciding whether the given situation warrants emergency medical care, an office visit, or management @ home, ask the caller to give you a brief history of the victims situation, the nature of the initial injury or accident, the time the accident occurred or illness began, and description of the victims current condition
- Remove a foreign body under the lower eyelid w/ a bit of cotton or a fold of tissue moistened w/ water
- Placing several drops of warm olive oil, mineral oil, or baby oil into the ear and pulling back on the earlobe to straighten the external canal, letting the oil run out to see whether the object will w/ it
- W/ animal and human bites, the wound must be thoroughly cleansed w/ an antiseptic soap and rinsed well w/ water. The area should be bandaged and immobilized, and the pt should be examined by a provider ASAP
- Acute illness can occur in pts that are severely allergic to stings. The pt might become restless, complain of headache, have shortness of breath, or have mottled blueness of skin. When

shortness of breath is not apparent, the victim might appear to be in shock

- Burns are classified by 3 methods: the percentage of BSA involved in the burn, Rule of Nines, and the Lund and Browder chart. These methods establish a standard by which all injuries can be estimated
- Wounds can be caused by trauma or surgical procedures. Open wounds are abrasions, avulsions, incisions, lacerations, and punctures, and closed wounds are contusions