Everyday Safety

Tailgate Talks

First Aid for Chemical Burns

Chemical burns can come from many different types of substances we encounter every day. Daily work exposes us to some common ones such as gasoline, cleaners, paint thinners, and acids. Handling these chemicals on a regular basis can create dangerous habits where we “forget” about the potential dangers these chemicals have. Every chemical has the potential to cause burns upon contact and can lead to shock and infection.

SO WHAT CAN WE DO?

First, we can wear the proper PPE such as gloves, goggles, or an apron to avoid exposing ourselves to chemicals.

After the fact, call 911 or your local poison control at 1-800-222-1222.

Call 911 and seek immediate care when the chemical burn is deep, covers an area greater than three inches in diameter, or covers the hands, feet, groin, buttocks, or any major joint.

BURNS ARE CATEGORIZED INTO THREE DEGREES.

- First-degree is when the skin is reddened and can be treated with cool water or a cold temperature compress as soon as possible.
- Second-degree results in blistered skin.
    - If the blisters are not broken it can be treated with cool water, similar to a first-degree burn. Ice may be added to keep the compress cool.
    - If the blisters are broken follow the steps for treating a third degree burn.
- Third degree burns are serious and need to be treated with care.
    - Remove loose clothing, unless it is sticking to the skin, let the doctor remove it.
    - Cover with a dry sterile dressing to keep it away from the air.
    - Don’t use ointments.
    - Get medical help immediately.

Hanover Testing Labs

STEPS TO TAKE IMMEDIATELY IF YOU HAVE BEEN BURNED BY A CHEMICAL:

- Flush the chemical off of the skin with cool running water for a minimum of 10 minutes; 20 minutes is recommended or until help arrives. **Note, some chemicals should not be exposed to water! See below for more details.*
    - If it is a dry chemical, brush off the material before flushing – be sure to wear gloves or use a towel or brush to protect your hands.
    - Do not use a strong stream of water if possible!
- As you are flushing the burn, remove any contaminated clothing or jewelry.
    - If they are stuck to the skin, do not remove them.
    - Do not try to neutralize the burn with acid or alkali, this may cause a chemical reaction that could result in a more severe burn.
    - Do not put antibiotic ointment on the burn.
- If the burning sensation continues, flush again for several more minutes and wrap.
- Cover the burn. Using a sterile gauze or clean cloth cover the burn with a loose wrap and avoid putting pressure on the burned skin.

Verify if your tetanus shot is up to date and get a new one if it is not.

SPECIAL CONSIDERATIONS DEPENDING ON THE CHEMICAL ENCOUNTERED:

- **Hydrofluoric acid:** Flush with large amounts of water and then treat with calcium gluconate. Immediate medical care is necessary.
- **Dry Chemicals:**

    *Do **NOT** immediately flush the following dry chemicals:

    - » **Dry powders:** such as lime, contain calcium oxide which reacts with water to form calcium hydroxide, a strong alkali. Thoroughly brush the powder material away then flush with water for 20 minutes.
    - » **Carbolic acid or Phenols** do not mix with water, remove phenols from the skin with a sponge soaked in a 50 percent polyethylene glycol (PEG) or flush with isopropyl (rubbing) alcohol first to remove the chemical from the skin, then flush with water. If alcohol is not available, flush with a large amount of water. DO NOT flush the eye with alcohol.
    - » **Sulfuric Acid** should be flushed with a mild, soapy solution if the burns are not severe. Note that there will be a hot feeling as the water encounters the acid, but it is better than leaving it on the skin.
    - » **Elemental metals** and certain reactive metal compounds combust or release hazardous byproducts when exposed to water. These include: sodium, potassium, magnesium, phosphorous, lithium, cesium, and titanium tetrachloride.
        - Carefully remove any material fragments with dry forceps and place them in a non-water solution such as mineral oil. Once the area has been cleaned, cover the affected area with mineral oil or comparable solution to prevent further exposure to air or moisture.

EYE FIRST AID FOR CHEMICALS:

Chemicals in the eye should be flushed out immediately with large amounts of water to reduce the chance of eye damage. Many soaps and shampoos can cause the eye to burn but flushing them immediately can usually prevent any permanent damage. Other chemicals including pepper spray and air bags, can also cause the eye to burn.

Acidic products include toilet bowl cleaners, battery acid, bleach, and chemicals in gasoline can cause burning in the eye and can result in severe damage which is typically localized to the point of contact.

Alkaline products including lime products, plaster, mortar, oven & drain cleaners, fertilizers, and dishwasher soaps can cause serious damage, where burns penetrate and the damage is deeper into the layers of tissue.

First Aid:

- Flush the eye with large amounts of water for 30 minutes. Pull the lower lid from the eye and flush this area as well.
- If you are wearing contacts, remove them prior to flushing. If you cannot, flush with them in.
- Contact the poison control center for more information and seek medical help.
- Glue can result in damage to the eye:
    - Flush water-based glues with water.
    - Super glues need immediate medical attention. Flush with water and seek a specialist or go to the emergency room to have the eye examined.

Resources and References:

WebMD
https://www.webmd.com/first-aid/chemical-burns-treatment

CIGNA
https://www.cigna.com/individuals-families/health-wellness/hw/medical-topics/first-aid-for-chemical-burns-sig256946

https://www.cigna.com/individuals-families/health-wellness/hw/medical-topics/chemical-in-the-eye-sig57252

HealthLine.com
https://www.healthline.com/health/chemical-burn-or-reaction

Mayo Clinic
https://www.mayoclinic.org/first-aid/first-aid-chemical-burns/basics/art-20056667#:~:text=Cover%20the%20burn%20with%20a,again%20for%20several%20more%20minutes.

Date: _____/_____/_____

First Aid for Chemical Burns:

Name:	Signature: