

Burn injuries

By John N. Waller



Review your company's incident reports for the last couple of years to determine if any burn incidents were reported. If burns have occurred, obtain a copy of the incident report to review with employees. Review the incident, maintaining the individual employee's privacy.

Introduce the topic of burn injuries to the group. One of the most painful injuries you can experience is a burn. Share that burns injured more than 35,000 workers in the United States last year. The Federal Bureau of Labor Statistics published the following occupationally related burn statistics for 2002:

- 24,298 thermal burns, resulting in an average of four lost days of work;
- 1,575 electrical burns, resulting in an average of 10 lost days of work;
- 9,395 chemical burns, resulting in an average of two lost days of work.

Ask participants for examples of burn hazards in their workplace.

Ask what are some common types of burns and their causes. Share the following:

- Thermal burns are caused by exposure to heat sources, such as flame, hot liquids or hot objects. Thermal burns continue to burn until the heat source is removed, and the skin is cooled;

- Chemical burns occur when the skin comes in contact with strong acids, alkalis and other corrosive materials. Chemicals continue to burn until the chemical is removed through flushing or is neutralized;
- Electrical burns occur when an electric current enters the body. As the current travels through the body, it follows the path of least resistance, traveling through nerve bundles and blood vessels. You will normally see an entry wound and an exit wound. However, the most serious damage may occur along the path of the current. Electricity may also cause the heart to develop a fatal arrhythmia (irregular beat); damage to the eye from the electrical arc; and thermal burns if the victim's clothing ignites.
- Mechanical burns are caused by friction, such as from ropes, carpet or sports activities;
- Radiation burns are caused by ultraviolet and ionizing rays.

Ask what processes do we have in place at this facility to protect against fire hazards, are they adequate, and have they been tested.

Classifying burns

Ask how burn injuries are classified.

Explain the following:

- Partial thickness (also known as first and second degree) burns do not extend completely through the dermis. Because new skin can grow from the remaining dermis, partial thickness burns usually heal well and are easier to care for;
- Full thickness (also known as third degree) burns extend completely through the dermis. The dermis is destroyed, and no skin can grow back. These types of burns usually cause deep scarring and require skin grafting.

The definitions first, second and third degree are still in use, but medical professionals also refer to burns as partial thickness and full thickness. It is important to be able to determine the classification of a burn to determine the correct level of emergency care that may be needed.

Treatment of burn injuries

Ask can you describe a first-degree burn and the treatment for it. Share that first-degree (partial thickness) burns involve only the outermost layer of skin. The area appears red, with slight swelling and is painful. The skin remains intact, with no open sores.

Immediately immerse the burned area in cool water. Do not put anything on the burned area, such as ice, butter or lotions.

After cleansing the area, apply a mild antibiotic and a clean bandage. Keep the area clean and dry to avoid infection. Seek additional medical treatment if the burn is not healing.

Ask can you describe a second-degree burn and the treatment for it. Explain that second-degree (partial thickness) burns involve the outermost layers of skin. The area is very painful to touch. The skin will be moist and have a mottled pink or red appearance. It will blanch on pressure, and blisters usually form.

Some second degree burns can be self-treated, but should be seen by a physician if:

- More than 1 percent of your skin surface is involved (more than the size of the patient's palm);
- Face, neck, genital area, hands or feet are involved;
- The patient is a child or senior citizen. These patients usually have more severe reactions to burns and different healing processes;
- The patient has a pre-existing physical or mental condition. Patients with respiratory illnesses, heart disorders, and diabetes or kidney disease are in greater jeopardy than healthy people.

Ask can you describe a third-degree burn and its treatment. Point out that third-degree (full thickness) burns are white, brown, black or charred. The burned area may feel painless or numb. These types of burns require immediate professional medical attention. Immediately call 911 or your local emergency number. If possible, remove the victim to a safe area. Extinguish flames by rolling the victim. Do not remove embedded clothing or any other embedded material from the burn. If the person is not breathing, perform CPR if possible. Cover the burn victim with cool wet cloth.

Conclude by pointing out that any electrical, steam or inhalation burn, such as smoke, chemical, or extremely hot air or vapors must be evaluated by a medical professional right away. These types of burns can have unusual complications despite mild symptoms at first.

References

Web sites

- Burns (National Library of Medicine): www.nlm.nih.gov/medlineplus/burns.html
- Fire Safety (Occupational Safety and Health Administration): www.osha.gov/SLTC/firesafety/index.html

Videos

BWC's Division of Safety & Hygiene's video library has a number of videos on burns, first aid and fire prevention. These are available for loan to Ohio employers. Order a catalog by calling 1-800-OHIOWC (ask for the video library), or visit our Web site, ohiobwc.com.

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We always strive to improve the *Safety Leader's Discussion Guide*. Your feedback can help. Please e-mail your comments to Safety@ohiobwc.com.