Introduction
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 21,000 workers in the United States in 2015. The U.S. Bureau of Labor Statistics published the following occupationally related burn statistics for 2015.

- 17,520 thermal burns, resulting in an average of five lost days of work
- 3,490 chemical burns, resulting in an average of three lost days of work

Definitions
- **First-degree burn** – Damage to the outer layer (epidermis) of the skin. These burns usually heal on their own within a week. A common example is a sunburn.
- **Second-degree burn** – Damage to the epidermis and the layer beneath it (dermis). These burns might need a skin graft — natural or artificial skin to cover and protect the body while it heals — and they may leave a scar.
- **Third-degree burn** – Damage to both layers of skin including hair follicles, sweat glands, and underlying tissues. These burns always require skin grafts.
Discussion
Ask participants to identify 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 (UV) and ionizing rays such as sunburn, which is an overexposure to the UV radiation from the sun.

Classifying burns
Ask how burn injuries are classified. Explain the following.

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.

- 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.

Treatment of burn injuries
Ask participants to 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. To treat these types of burns:

- 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 if participants can 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.

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Some second-degree burns can be self-treated, but should be seen by a physician if:
- More than 1% 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 healthier people.

Ask if participants can 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 cardiopulmonary resuscitation (CPR) if possible. Cover the burn victim with a cool wet cloth.

**Conclusion**
Conclude by pointing out that any electrical, steam, or inhalation burn (e.g., 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. Despite reported declines, occupational burn injuries remain a workplace safety concern. More severe burns may result in costly medical treatment and long-term physical and psychological consequences.

**Group activity**
Ask participants for examples of burn hazards in their workplace. Once they have identified burn hazards, determine and discuss the controls in place to eliminate or avoid them.

**Resources**
- [National Safety Council, Treatment of burns video](#)
- [University of South Florida, Burn prevention game](#)
- [National Institute of General Medical Sciences, Burns fact sheet](#)