

Review in Types and Degrees of Burn in Medicine

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Abstract :

The skin has an important role to play in the fluid and temperature regulation of the body. If enough skin area is injured, the ability to maintain that control can be lost. The skin also acts as a protective barrier against the bacteria and viruses that inhabit the world outside the body.

Keywords : body , barrier .

Introduction:

There are three primary types of burns: first-, second-, and third-degree. Each degree is based on the severity of damage to the skin, with first degree being the most minor and third degree being the most severe. Damage includes:

- first-degree burns: red, non-blistered skin
- second-degree burns: blisters and some thickening of the skin
- third-degree burns: widespread thickness with a white, leathery appearance

There is also technically a fourth-degree burn. In this type, the damage of third-degree burns extends beyond the skin into tendons and bones.



Determining burn depth is important. Things to consider are temperature, mechanism, duration of contact, blood flow to skin, and anatomic location. Epidermal depth varies

with body surface, which can offer varying degrees of thermal protection. Older adults and young children also have thinner skin



First degree:

- Includes only the outer layer of skin, the epidermis
- Skin is usually red and very painful
- Equivalent to superficial sunburn without blisters
- Dry in appearance
- Healing occurs in 3-5 days, injured epithelium peels away from the healthy skin
- Hospitalization is for pain control and maybe fluid imbalance

Second degree: Can be classified as partial or full thickness.

- Partial thickness
 - Blisters can be present
 - Involve the entire epidermis and upper layers of the dermis
 - Wound will be pink, red in color, painful and wet appearing
 - Wound will blanch when pressure is applied
 - Should heal in several weeks (10-21 days) without grafting, scarring is usually minimal
- Full thickness
 - Can be red or white in appearance, but will appear dry.
 - Involves the destruction of the entire epidermis and most of the dermis
 - Sensation can be present, but diminished
 - Blanching is sluggish or absent
 - Full thickness will most likely need excision & skin grafting to heal



Third degree:

- All layers of the skin is destroyed
- Extend into the subcutaneous tissues
- Areas can appear, black or white and will be dry
- Can appear leathery in texture
- Will not blanch when pressure is applied
- No pain

Fouth degree: Full thickness that extends into muscle and bone.



Fifth and Sixth Degree Burns :

Fifth and sixth degree burns are most often diagnosed during an autopsy. The damage goes all the way to the bone and everything between the skin and the bone is destroyed. It is unlikely that a person would survive this type of injury but if a miracle occurred then amputation of the affected area would be necessary.



Types of Burn Injury	
Thermal	<p>Flash - Explosions of natural gas, propane, gasoline and other flammable liquids. Intense heat for a very brief period of time. Clothing is protective unless it ignites.</p> <p>Flame - Exposure to prolonged, intense heat. House fires, improper use of flammable liquids, automobile accidents, ignited clothing from stoves/heaters.</p> <p>Scalds - Burns caused by hot liquids. Water, oil, grease, tar, oil. Water at 140 degrees F, creates a deep burn in 3 seconds, but at 156 degrees F will cause the same injury in 1 second. (Coffee is 180 degrees F just brewed). Circumferential burns should raise suspicion of non-accidental trauma. Tar needs to be removed either with an adhesive remover solution or petroleum based dressings.</p> <p>Contact - Result from hot metals, plastics, glass or coals. Can be very deep.</p>
Chemical	<p>Caused by strong acids or alkali substances. They continue to cause damage until the agent is inactivated. Alkali substances usually cause more severe injury since they react with the lipids in the skin.</p>
Electrical	<p>Caused by either AC or DC current. Current follows the path of least resistance and causes injury in areas other than the contact/entry site. They cannot be judged from the external injury alone. High voltage > 1,000 volts, low voltage < 1,000 volts and lightning. Electrical burns are thermal burns from very high heat.</p>
Radiological	<p>Caused by alpha, beta or gamma radiation. They may need to have some type of decontamination done to stop the injury.</p>



Burns Treatment

The treatment of burns depends on the depth, area and location of the burn. Burn depth is generally categorized as first, second or third degree. A first degree burn is superficial and has similar characteristics to a typical sun burn. The skin is red in color and sensation is intact. In fact, it is usually somewhat painful. Second degree burns look similar to the first degree burns; however, the damage is now severe enough to cause blistering of the skin and the pain is usually somewhat more intense. In third degree burns the damage has progressed to the point of skin death. The skin is white and without sensation.



The treatment required depends on the severity of the burn. Superficial burns may be managed with little more than simple pain medication, while major burns may require prolonged treatment in specialized burn centers. Cooling with tap water may help relieve pain and decrease damage; however, prolonged exposure may result in low body temperature. Partial-thickness burns may require cleaning with soap and water, followed by dressings. It is not clear how to manage blisters, but it is probably reasonable to leave them intact. Full-thickness burns usually require surgical treatments, such as skin grafting. Extensive burns often require large amounts

of intravenous fluid, because the subsequent inflammatory response causes significant capillary fluid leakage and edema. The most common complications of burns involve infection.

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