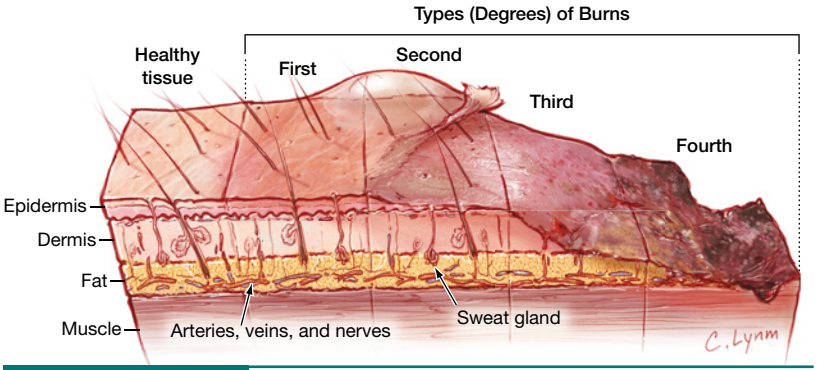
Burn Injuries

Burns, most commonly caused by fire, can also result from chemicals, electricity, and other heat accidents, such as scalding hot water or steam. More than 300 000 persons die each year worldwide because of fire-related burn injuries. Many more are seriously injured, disabled, or disfigured because of all types of burns. Risk factors for burns include cooking with an open flame, open cooking facilities on the ground floor of a building or residence, wearing loose clothing while cooking, smoking, alcohol use, water heaters that are set too hot, poor electrical safety, and unsupervised children. Occupational injuries involving burns can also occur, especially at job sites with open flames, chemicals, or superheated materials. The October 28, 2009, issue of *JAMA* includes an article about access to care for severe burn injuries in the United States.

TYPES OF BURNS

Burns are classified based on how much of the skin's thickness is involved. **First-degree** (or superficial) burns involve only the top layer of the skin and are the least serious burn injuries. **Second-degree** (or partial-thickness) burns injure deeper into the skin and cause blistering. **Third-degree** (or full-thickness) burns involve all the layers of the skin, including the nerves that supply the skin, and are extremely serious injuries. **Fourth-degree** burns extend into the muscle below the skin.



BURN TREATMENT

Treating burns depends on the severity of the burn, the type of burn, and the amount of body tissue involved. Persons who have large surface areas of their body burned have a poorer **prognosis** (chance of surviving and doing well after an injury). Burn treatments include fluids (given intravenously for serious burns), pain management, surgical **debridement** (removal of dead tissue) for third-degree or fourth-degree burns, intensive care (often in a specialized burn treatment intensive care unit), and skin grafting. For persons who have serious burn injuries, physical therapy is often used in addition to other treatments to aid recovery and prevent complications such as **contracture** (where the burned skin and body tissue become very difficult to move).

PREVENTION

- Do not smoke. If you do smoke, never smoke in bed. Avoid smoking while consuming alcoholic beverages.
- Never throw a lighted cigarette or a match anywhere. Dispose of those hazards in proper ashtrays.
- Be very cautious around any type of open flames.
- Supervise children carefully.
- Follow electrical safety rules. Never put electrical appliances or cords in or near water.
- Do not touch downed power lines.

FIRST AID FOR BURNS

- Call emergency services (911 in North America) immediately for large burns, third- or fourth-degree burns, burns with other injuries, or for a person who loses consciousness. Any person with an electrical burn should also have immediate emergency care, since there may be unseen internal electrical injuries as well.
- Seek medical attention rapidly if the burn is on the face, hands, feet, genital area, or buttocks, or if it involves a joint (such as the elbow or the knee).
- For minor burns, run cool (not cold) water over the burned area. Do not rub it or put ice, butter, or oil on a burn.
- Cover the burn with a clean gauze dressing. Do not break a blister if it forms. Antibiotic ointment may be gently applied.

FOR MORE INFORMATION

- World Health Organization
  www.who.int
- American College of Emergency Physicians
  www.acep.org
- American Burn Association
  www.ameriburn.org

INFORM YOURSELF

To find this and previous JAMA Patient Pages, go to the Patient Page Index on *JAMA*'s Web site at www.jama.com. Many are available in English and Spanish.

Sources: American College of Emergency Physicians; American Academy of Family Physicians; Centers for Disease Control and Prevention; National Institutes of Health; American Burn Association

Janet M. Torpy, MD, Writer
Cassio Lynm, MA, Illustrator
Richard M. Glass, MD, Editor

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