

Electrical Injuries

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Burns

What is it?

Tissue damage from hot liquids, the sun, flames, chemicals, electricity, steam and other causes.

Plan of Action:

Minor Burns

- **Cool the burn.** Hold the area under cool (not cold) running water for about 10 minutes. If the burn is on the face, apply a cool, wet cloth until the pain eases. For a mouth burn from hot food or drink, put a piece of ice in the mouth for a few minutes.
- **Remove rings or other tight items from the burned area.** Try to do this quickly and gently, before the area swells.
- **Don't break blisters.** Blisters help protect against infection. If a blister does break, gently clean the area with water and apply an antibiotic ointment.
- **Apply lotion.** After the burn is cooled, apply a lotion, such as one with aloe vera or cocoa butter. This helps prevent drying and provides relief.
- **Bandage the burn.** Cover the burn with a clean bandage. Wrap it loosely to avoid putting pressure on burned skin. Bandaging keeps air off the area, reduces pain and protects blistered skin.
- **If needed, take a nonprescription pain reliever,** such as ibuprofen (Advil, Motrin IB, others), naproxen sodium (Aleve) or acetaminophen (Tylenol, others).

For major burns until emergency help arrives:

- **Protect the burned person from further harm.** If you can do so safely, make sure the person you're helping is not in contact with the source of the burn. For electrical burns, make sure the power source is off before you approach the burned person. Don't try to remove clothing stuck in the burn.
- **Make certain that the person burned is breathing.** If needed, begin rescue breathing if you know how.
- **Remove jewelry, belts and other tight items,** especially from the burned area and the neck. Burned areas swell quickly.
- **Cover the burn.** Loosely cover the area with gauze or a clean cloth.
- **Raise the burned area.** Lift the wound above heart level if possible.
- **Watch for signs of shock.** Signs and symptoms include cool, clammy skin, weak pulse and shallow breathing.

When to seek emergency care:

Call 911 or seek immediate care for major burns, which:

- Are deep, involving all layers of the skin
- Cause the skin to be dry and leathery
- May appear charred or have patches of white, brown or black
- Are larger than 3 inches (about 8 centimeters) in diameter
- Cover the hands, feet, face, groin, buttocks or a major joint, or encircles an arm or leg
- Are accompanied by smoke inhalation
- Begin swelling very quickly

Electrical burns, including those caused by lightning, and major chemical burns need emergency medical care. A minor burn might need emergency care if it affects the eyes, mouth, hands or genital areas. Babies and older adults might need emergency care for minor burns as well.

Electrical Burns

What is it?

A skin burn that occurs when the body comes in contact with electricity.

Symptoms:

- Burn or other injury to the skin
- Confusion, dizziness, or headache
- Heart pounding or fluttering
- Muscle contractions
- Numbness or tingling
- Problems with balance
- Red or re-black urine
- Seizures
- Shortness of breath
- Trouble staying awake

Plan of Action:

For minor electrical burns:

- Put a cool wet cloth on the area
- Do not break any blisters

- After you gently clean the skin, put a bandage on the area

When to contact your doctor:

A person who has been injured by contact with electricity should be seen by a health care provider. The damage may be worse than it looks from the burn on the skin. Sometimes an electrical injury can cause damage to skin, muscles, blood vessels and nerves, often in an arm or a leg. The heart, brain and other body organs can be damaged.

Caution

- Don't touch the injured person if the person is still in contact with the electrical current.
- Call 911 or your local emergency number if the source of the burn is a high-voltage wire or lightning. Don't get near high-voltage wires until the power is turned off. Overhead power lines usually aren't insulated. Stay at least 50 feet (about 15 meters) away — farther if wires are jumping and sparking.
- Don't drive over downed power lines. If a live electrical line contacts the vehicle you're in, stay in the vehicle. Call 911 or your local emergency number to disable the power line before touching any metal to try to exit the vehicle.
- Don't move a person with an electrical injury unless the person is in immediate danger.

When to seek emergency care:

Call 911 or your local emergency number if the injured person experiences:

- Severe burns
- Confusion
- Difficulty breathing

- Irregular heart rhythm (arrhythmias)
- Does not have a pulse and is not breathing (cardiac arrest)
- Muscle pain and contractions
- Seizures
- Loss of consciousness

Take these actions immediately while waiting for medical help:

- Turn off the source of electricity if possible. If not, move the source away from both you and the injured person. Use a dry, nonconducting object made of cardboard, plastic or wood.
- Begin CPR if the person is not breathing, coughing or moving and doesn't have a pulse.
- Do not remove clothing or try to clean the burned area. Cover any burned areas with a sterile gauze bandage, if available, or a clean cloth or sheet. Don't use a blanket or towel, because fuzz or loose fibers can stick to the burns.
- Try to prevent the injured person from becoming chilled.

Electrical Shock

What is it?

Injury to the body from direct contact with a high-voltage source.

The danger from an electrical shock depends on:

- Voltage
- Length of time in contact with the source
- Overall health
- Electricity's path through your body
- Type of current (an alternating current is often more harmful than a direct current)

Symptoms:

- Loss of consciousness
- Muscle spasms
- Numbness or tingling
- Breathing problems
- Headache
- Problems with vision or hearing
- Burns

- Seizures
- Irregular heartbeat

Plan of Action:

Caution:

- Don't touch an injured person who is still in contact with an electrical current.
- Call 911 or your local emergency number if the source of the burn is a high-voltage wire or lightning. Don't get near high-voltage wires until the power is turned off. Overhead power lines usually aren't insulated. Stay at least 20 feet (about 6 meters) away — farther if wires are jumping and sparking.
- Don't move a person with an electrical injury unless there is immediate danger.

When to seek emergency care:

Call 911 or your local emergency number if the injured person experiences:

- Severe burns
- Confusion
- Difficulty breathing
- Heart rhythm problems
- Cardiac arrest
- Muscle pain and contractions
- Seizures

- Loss of consciousness

Take these actions immediately while waiting for medical help:

- Turn off the source of electricity, if possible. If not, use a dry, nonconducting object made of cardboard, plastic or wood to move the source away from you and the injured person.
- Begin CPR if the person shows no signs of circulation, such as breathing, coughing or movement.
- Try to prevent the injured person from becoming chilled.
- Apply a bandage. Cover any burned areas with a sterile gauze bandage, if available, or a clean cloth. Don't use a blanket or towel, because loose fibers can stick to the burns.

A person who has been injured by contact with electricity should be seen by a health care provider.