



Title: Burns

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What is a first-degree burn?

A first-degree burn, the least serious type of burn, is one in which the top layer of skin has been burned slightly. These burns produce pain and redness of the skin.

What causes a first-degree burn?

First-degree burns are usually caused by:

- overexposure to the sun
- brief contact with a hot object, such as an iron or skillet
- minor scalding by hot water or steam
- brief contact with harsh chemicals, such as tile cleaners, car battery acid, drain cleaners, gasoline, wet or dry cement, lime, and chlorine.

What are the symptoms?

First-degree burns cause:

- redness
- mild swelling (with few or no blisters)
- pain.

Some first-degree burns, such as extensive sunburns, also cause restlessness, headaches, and fever.

How is it treated?

For a burn caused by heat, follow these steps:

- Remove jewelry or tight clothing from the burned area before the skin begins to swell.
- Flush the burn with cool running water or apply cold moist cloths until the pain lessens. Do not use ice or ice water, which can cause more damage to the skin.
- Use an antiseptic spray to help relieve pain and prevent infection or use an aloe cream to soothe the skin. Do not put ointments, grease, petroleum jelly, butter, or home remedies on the burn. They can keep the burn from healing and may cause infection.
- Cover the burn with a clean (sterile, if possible), dry, nonfluffy bandage such as a gauze pad. Do not put tape on the burn.

For first aid treatment of chemical burns, follow these steps, avoiding contact with the chemical:

- Remove right away any clothing or jewelry on which the chemical has spilled.
- Flush liquid chemicals from the skin thoroughly with cool running water for 20 minutes. Be sure to avoid

splashing the chemical in your eyes. After flushing, call the Poison Control Center for further advice. It helps to have the chemical container with you when you make the call.

- Brush dry chemicals off the skin if large amounts of water are not available. Small amounts of water will activate some chemicals, such as lime, and cause more damage. Be careful not to get any of the chemicals in your eyes.
- Do not try to neutralize a chemical. For example, putting an alkali chemical onto skin that has been exposed to an acid will often produce a large amount of heat and may increase the burning.
- Do not put any burn medication on skin burned by a chemical. Salves, grease, or butter may keep the chemical on the burned area, increasing exposure to the chemical.
- Do not put a bandage on the burn until you are told to do so by a health care provider.
- Seek emergency medical help if a chemical burn is on the face, feet, hands, groin, buttocks, or over a major joint.

For all burns:

- Take aspirin or ibuprofen to relieve pain and inflammation, or take acetaminophen to relieve pain.
- Get medical treatment if a burn covers more than a couple of inches.
- Call or see your health care provider if you develop any of the following symptoms:
 - fever over 100°F (37.8°C)
 - puslike drainage from the burned area
 - blistering
 - excessive swelling of the burned area
 - increased redness of the skin.

How long will the effects last?

Usually, first-degree burns heal quickly in 2 to 5 days. The damaged skin may peel within a day or two. You will not have any scarring unless an infection occurs.

What is a second-degree burn?

Second-degree burns are more serious than first-degree burns because a deeper layer of skin is burned. They can become infected more easily. Also, if the burn affects more than 10% of your skin, you may go into shock because large quantities of fluid are lost from the burned area.

All second-degree burns greater than 2 to 3 inches in diameter should be treated by a medical professional. Smaller burns can usually be treated at home.

What causes a second-degree burn?

Second-degree burns are usually caused by:

- deep sunburn
- contact with hot items such as skillets or irons
- exposure to flames
- contact with hot liquids

- burning gasoline or kerosene
- contact with chemicals.

What are the symptoms?

The skin is bright red and has blisters. Second-degree burns are often very painful.

How is it treated?

After the cause of the burn has been removed or controlled, the goals of treatment for second-degree burns are easing the pain and preventing infection.

For chemical burns, follow these steps (avoiding contact with the chemical):

- Remove any clothing and jewelry on which the chemical has spilled.
- Flush liquid chemicals from your skin thoroughly with running water for 20 minutes. Be sure to avoid splashing the chemical in your eyes.
- Brush dry chemicals off the skin. If large amounts of water are available, flush the chemicals from the skin for 20 minutes. Be sure to avoid splashing the chemical in your eyes.
- Remove any clothing and jewelry from areas where the chemical has had contact before swelling occurs.
- Once all chemical has been removed, cover the burn with a sterile or clean, loose bandage and seek medical care.

For burns with closed blisters:

- Try not to break the blisters. If the blisters break, the exposed skin can become infected.
- Flush the burn with cool running water or apply cold moist cloths until the pain lessens. Do not use ice or ice water, which can cause more damage to the skin.
- Remove jewelry or tight clothing from the burned area before the skin begins to swell.

For burns with open blisters:

- Do not remove clothing if it is stuck to the burn.
- Run cool water over the burn unless the burn is several inches in size. Running water over a large burn might increase the risk of shock.

For all second-degree burns:

- Cover the burn with a clean (sterile, if possible), dry, nonfluffy bandage such as a gauze pad. Do not put tape on the burn.
- Do not put ointments, grease, petroleum jelly, butter, or home remedies on the burn. These substances can hold the heat in, making the burn worse.
- Take aspirin or ibuprofen to relieve pain and inflammation, or take acetaminophen to relieve pain.
- Keep burned arms or legs raised to reduce swelling.

Seek immediate medical care for second-degree burns greater than 2 to 3 inches in diameter or for burns on the hands, face, penis, buttocks, or vaginal area.

- You will need extra fluids to replace the large quantities of fluids your body loses through the burned area. Your health care provider may give you fluids intravenously (through a tube into your vein).
- Your provider may prescribe antibiotics because the burned skin can no longer protect your body from infection by airborne bacteria.
- Your provider will either lightly bandage the burned area with an antibacterial dressing or leave it unbandaged, depending on the size and location of the burn.
- Your provider will prescribe medicine to kill the pain.
- Your provider may recommend a skin graft to lessen scarring.
- Your provider may give you a tetanus booster.

How do I take care of a burn?

For a small burn, after you have cleaned and bandaged the burn, leave it alone for at least 24 hours to allow the healing process to begin.

If your health care provider had told you to change your bandages, follow these procedures to help prevent infection:

- Wash your hands carefully with soap and water.
- Open the clean bandage, but leave it in its package until you are ready to put it on the burn.
- Take off the old bandage gently. Soak it off if it sticks to the burn.
- Wash the burned area gently as you are instructed by your health care provider.
- Check for any changes or worsening of the burned area, such as pus, swelling, or increased redness.
- Put a thin layer of the antibiotic cream provided to you by your provider on the burn.
- Cover with the clean bandage.
- Keep your follow-up appointments with your provider.

Call your health care provider right away if you have any of the following:

- fever over 100°F (37.8°C)
- puslike drainage from the burned area
- excessive swelling of the burned area
- increased redness of the skin
- a blister filled with greenish or brownish fluid or one that becomes hot again or turns red
- a burn that doesn't heal in 10 days to 2 weeks.

How long will it take a second-degree burn to heal?

Usually, second-degree burns heal in 10 days to 2 weeks. There may be few or no scars if the burn was not too extensive and if infection is prevented.

What is a third-degree burn?

Third-degree burns, the most serious, involve all layers of skin. They are so deep that only the edges heal. Scars will eventually cover the rest of the burned area if skin grafting is not done.

What causes a third-degree burn?

Third-degree burns are usually caused by:

- clothing on fire
- immersion in hot water
- contact with flames, hot objects, or electricity
- corrosive chemicals.

What are the symptoms?

The skin may be white, or it may be black and leathery. There may be little pain in the burned area, but the areas surrounding the burn may be quite painful.

How is it treated?

All third-degree burns require medical treatment. Call 911 for emergency rescue if available, or transport the person to an emergency room. Assist a burned person as follows:

- If the person's clothes are burning, do not let the person run. Running can fan the flames so that they rise to the person's face. Smother the flames with a blanket, rug, or jacket, rolling the person on the ground if necessary.
- DO NOT remove clothing that is stuck to the burn.
- DO NOT apply ice water, lotions, ointments, sprays, or home remedies.
- Remove jewelry and tight clothing from the burned area before swelling begins.
- Immerse the burned area in cold water or apply cold moist cloths briefly to bring the body temperature back to normal. Leaving the burned area in cold water too long can lead to cooling down the body too much.
- In extensive burns, check for these signs of shock:
 - decreased level of consciousness
 - rapid, shallow breathing
 - faint, rapid pulse
 - nausea, sometimes followed by vomiting.

If the person is in shock, be sure you have called for medical help. Do not move the person unless you have to. The person should be lying on their side to prevent choking in case of vomiting. Unless the person has trouble breathing or pain, raise the feet. Cover the person with a blanket to conserve body heat. Keep him or her as calm as possible.

- Wrap the person loosely in a clean sheet if the burned area is extensive. Otherwise, apply dry, nonfluffy loose bandages, such as a pillowcase or clean disposable diaper.
- Raise a burned arm or leg higher than the person's heart. However, keep the head and shoulders raised slightly if the person is burned on the neck or face or is having trouble breathing.
- If the person is conscious and not vomiting and if medical help is more than 2 hours away, give small sips of water or clear juice. If the person is in shock, however, and asks for water, moisten the lips but do not allow drinking. Drinking may cause vomiting and choking.
- DO NOT give the person alcohol.

For chemical burns follow these steps, making sure you avoid contact with the chemical:

- Remove any clothing and jewelry on which the chemical has spilled.

- Flush liquid chemicals from the skin thoroughly with running water for 15 to 30 minutes. Avoid splashing the chemical in the eyes.
- Brush dry chemicals off the skin. Water activates some chemicals, so keep dry chemicals dry unless very large amounts of water are available. Be careful not to get any chemicals in the eyes.
- Cover the burn with a dry, loose bandage.

For electrical burns:

- All electrical burns must be examined by a health care provider. An electrical burn may appear to cause minor damage, but it can extend deeply into tissues beneath the skin. The damage may not be obvious for several hours.
- Cover the area of the burn with a dry, nonfluffy, loose bandage. Do not apply any ointments or other substances to the burned area.

How long will it take a third-degree burn to heal?

Third-degree burns may require hospitalization for a few days or for many weeks. Scars may require several operations by a plastic surgeon, depending on the severity of the burns. Extensive burns are usually treated at a burn center.

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