

Wound Care After Burn Injury

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<https://msktc.org/burn/factsheets>

BURN Factsheet

This factsheet explains how to take care of a burn injury after discharge from the hospital. It gives an overview of the three degrees of burns and the standard treatments for each. It also discusses the types of products available to treat burn injuries.

The Burn Model System Program is sponsored by the National Institute on Disability, Independent Living, and Rehabilitation Research, Administration for Community Living, U.S. Department of Health and Human Services. (See <https://msktc.org/burn/model-system-centers> for more information).

Understanding the Extent of Your Burn

When your burn care team assesses your injury, they will look at two factors. The first is the size of the burn. The second is the depth of the burn. To estimate the size of the burn, doctors measure the *percent total body surface area*, which is how much of the skin was injured. The depth of the burn depends on a few other factors. These include how the injury occurred, how hot the agent was, how long the burned area was in contact with the agent, and how thick the skin is in the area. Burn providers measure the depth of burns in degrees. There are three levels of injury:

- 1** **First-degree burns** affect the top layer of skin only, the epidermis (ep-i-DUR-mis). These burns may be very painful but are minor in terms of their short-term health impacts. Skin may be red and tender or swollen. An example is a sunburn that turns red and may peel. Because the base layer of the skin remains intact, you can treat first-degree burns at home. You do not need to use anything beyond a soothing moisturizer for your burn. Sun exposure, particularly intense and repeated exposures, can lead to skin cancers.
- 2** **Second-degree burns** go into the second, deeper layer of skin, called the dermis (DUR-mis). These injuries are also known as partial-thickness burns. These burns cause pain, redness, and blisters. The burn may weep fluid, ooze, or bleed if you stretch it. Second-degree burns usually heal within 1–3 weeks. After healing, your skin may become discolored. You may also have scars. The risk of scarring depends on the depth of the burn in the dermis and the time the wound takes to heal. Treatment for second-degree burns varies. In some cases, may need surgery for second-degree burns that are deep or slow to heal.
- 3** **Third-degree burns and more severe burns** damage both layers of the skin and even deeper layers. They are also known as full-thickness burns. They may damage the underlying fat, muscles, tendons, and bones. Injured skin may turn white, black, or gray. It may feel dry and leathery. Sometimes there is no pain because the burn destroyed the nerve endings under the skin. Third-degree burns have a higher risk of infection than other burns. Treatment includes debridement or removing dead tissue, followed by skin grafting or other forms of surgical reconstruction. With a skin graft, you will have general anesthesia. During the graft, the doctor removes the injured skin and replaces it with healthy skin from an uninjured area of the body. This is known as the donor site. The donor site



will usually heal in 1–3 weeks with minimal scarring. If you do not have a skin graft, it may take months or longer to heal. If not well treated, third-degree burns usually leave raised scars and can cause loss of movement or difficulty caring for yourself.

People with burn injuries may have a combination of first-, second-, and third-degree burns. Talk with your healthcare providers to better understand your injury.

Treatment Options for Burn Injury

Wound Care

To help create a wound care plan, your burn care team will:

- Assess your burn,
- Consider your treatment preferences and the support you have in place.

The wound care plan has several goals, including:

- To help you achieve optimal healing,
- Reduce the pain and stress of wound care,
- Make sure you can perform stretching and exercise as your team recommends.

Burn care providers often recommend antibiotic ointments or creams for second-degree burns. These ointments and creams keep the wound moist and prevent or treat infections. You will rarely need oral antibiotics for this. To use these ointments, you may need bandages. You may need to change your dressings each day. This can be a painful and stressful process. Your burn care team can help you to coordinate your dressing changes with your pain medicine. Your care team can also teach you about ways to cope with pain. These include medicines to treat anxiety, distraction techniques, and other approaches that don't include medicine. To reduce the pain of removing dressings, you can use water in a sink or shower to soak them off. Gently wash the skin and the burn wound with mild soap and rinse well with tap water. Use a soft washcloth to gently remove old medicines and debris from the wound. A small amount of bleeding is common with dressing changes.

There are many other wound care products available for burns. These products may not need daily dressing changes. Sometimes you can leave them in place until the wound heals. This can make pain control much easier and may lessen your anxiety about wound care but also has the disadvantage of covering the wound and limiting the ability to monitor it for infection and healing. Options include medicated foam, honey, and silver dressings. Your burn care team will decide on the right ointment, cream, and dressing for you. Your burn care team will choose the right product for you. They will also decide when to apply it and remove it.

Skin Grafts

Burn care providers use skin grafts to treat areas of deep second-degree and third-degree burns. This surgery removes dead skin and replaces it with healthy skin from another part of the body. The graft may be treated with an antibiotic ointment and a nonstick dressing, a silver dressing, or others. There are three types of skin grafts:



- **Sheet grafts** are generally applied to the face, neck, hands, and feet to improve appearance and reduce skin tightness over time, but may require more skin to cover the area and require greater immediate care with close monitoring to be successful. A sheet graft uses the whole piece of skin without adding holes to allow the wound to drain. Skin grafts can fail if there is too much fluid trapped under them. They may use larger sheet grafts with children or when they want minimal graft contraction in exchange for a larger donor site. These grafts often need close monitoring for 1 or 2 days after the graft is complete to remove trapped fluid beneath the graft. Newly healed grafts are very fragile. Take special care to protect them. Be careful not to bump, rub, or scratch them. Do not wear rough clothing or anything that rubs; this can cause blisters.
- **Meshed grafts** are often used for less functional and cosmetic areas and for larger wounds. To close the open area, burn care providers take a piece of your own skin from another part of your body. To cover a larger area, the team puts the donor skin through a machine that makes small slits or holes in the skin, which creates a mesh pattern that can expand the graft. This stretched skin covers a larger area than an unmeshed sheet graft. But it leaves a permanent mesh pattern like stockings. The wound heals as the areas between the meshed sheet graft and the holes fill in with new skin. This may take days or weeks. The wound doesn't need any dressing once the mesh sheet starts to stick to the skin and the drainage stops. This means the wound has healed. You should moisturize the wound each day. Although the meshed grafts can cover a larger area with a smaller donor site, the pattern of the mesh will always be visible to some degree.
- **Full-thickness grafts** can be used to reconstruct smaller areas and are frequently used later in recovery for reconstructive surgeries on tight scars. These areas include those around the eyes, mouth, and fingers. Full-thickness grafts consist of both layers of the skin and shrink the least compared to other grafts. The donor sites of full-thickness grafts are generally closed like a surgical incision.



The donor site is like a second-degree burn. Many burn providers use a wound dressing that can stay in place for 7–14 days or until healing occurs. You can treat any remaining small, open areas on the donor site with antibiotic ointment and a dressing. Tell your burn provider about any areas of redness, warmth, newly weeping/open areas, and increased pain. These can be signs of an infection.

Moisturizing

- Once the skin closes and is no longer draining, it is important to keep it well moisturized. This decreases the chances of developing blisters or skin tears. It also lessens itching and can make it easier to move. Use a moisturizer that does not have a scent.
- There are many lotions available. Avoid those that have a scent.
- Moisturizers in bottles, such as lotions, have a higher water content. They are also easier to apply. But you may need to apply them more often.
- Moisturizers in tubes and jars, such as creams, are thicker. You will need to massage them into the skin more thoroughly. But they last longer on your skin.
- Use a moisturizer that does not have a scent several times a day. Massage them into the scar. Ask your doctor what they recommend. See this infographic for more information on how to choose a moisturizer after a burn: <https://msktc.org/burn/infographics/how-select-moisturizer-itchy-skin-after-burn-injury>



- Using too much moisturizer, especially on the face, can clog your pores and cause pimples. If this occurs, cut back on moisturizing and consult your doctor or burn team.
- When you apply moisturizer, it is a good time to touch your scars using moderate pressure. Touching your scars can help to keep them from getting sensitive. Over time, more pressure and scar massage may be part of your care plan. It is also a good time to do stretching. See this factsheet for more information about stretching: <http://www.msktc.org/burn/factsheets/Exercise-After-Burn-Injury>

Blisters

- Skin that is newly healed is fragile. Scratching or bumping the scar can cause blisters. Blisters also can develop if you wear clothes that fit too tightly.
- You should pierce and drain blisters as soon as you notice them. Use a sterile needle to make a small hole. Then, drain the blister onto a piece of gauze. Put a little antibiotic ointment and nonstick dressing on the area.
- If a blister opens, you will need to bandage it with a nonstick dressing. Do not use adhesive or sticky bandages or tape that is hard to take off. Your skin might tear or blister even more.



Skin Tears

- Skin tears occur when you bump into something such as a doorway, a countertop, or a piece of furniture. Scratching can also cause skin tears.
- If the area bleeds, put firm pressure over the wound for about 5 minutes or until the bleeding stops. Wash the area gently and thoroughly with mild soap and water. Use a small amount of antibiotic ointment and a nonstick dressing each day and let the wound heal. If the area around the skin tear becomes red and warm or the wound gets shiny or larger than it was originally, you might have an infection. Contact your health care provider for further evaluation.
- If the wound continues to crack open, get bigger, or deepen, contact your health care provider.



Ulcerations

- Ulcerations (uhl-suh-REY-shuhns) are breakdowns in the skin. They may occur with bands of scar tissue around your neck, shoulder, the front of your elbow, or the back of your knee.
- It may be difficult for these areas to heal. Physical movement like exercise can cause the wound to continuously crack open or get bigger.
- Keep the wound covered. Use a thin film of antibiotic ointment and a nonstick dressing. Keep the skin around the wound well moisturized, especially when you are exercising and stretching.

Allergic Skin Reactions

- Be sure to let your doctor know if you have any skin allergies.
- If you use an antibiotic ointment for a long time, even on healed skin, you may have an allergic skin reaction. This can also happen if you change your moisturizer, soap, or laundry detergent. Your skin may react if you change the elastic in your pressure garments.



- If you have an allergic skin reaction, stop using all soaps, moisturizers, and ointments for 2 to 3 days.
- Once the reaction has gone away, you can start using soaps and moisturizers again. Add these products back into your daily routine one at a time. Allow 2 to 3 days in between adding each product back into your daily routine. This will give you time to see if the reaction returns.

What Can You Do?

- Take part in your recovery. Ask questions and help make decisions about your care.
- Take a list of questions or concerns to your medical appointments for your provider to address.
- Follow your provider's instructions for wound care.
- Keep your skin clean and well moisturized.
- Avoid bumping, scraping, or scratching your wound.
- Work with your healthcare team on pain management. See this factsheet for more information: <https://msktc.org/burn/factsheets/managing-pain-after-burn-injury>
- Start exercises as soon as you can. See this factsheet for more information about exercise after a burn: <http://www.msktc.org/burn/factsheets/Exercise-After-Burn-Injury>



Authorship

Wound Care After Burn Injury was originally developed in 2017 by Karen J. Kowalske, MD, Sandra Hall, PT, DPT, Radha Holavanahalli, PhD, and Lynne Friedlander, MEd, in collaboration with the Model Systems Knowledge Translation Center (MSKTC). It was reviewed and revised in 2023 by Karen Kowalske, MD, and Kyra Solis-Beach, CHES, in collaboration with the MSKTC.

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