



# Patient Information

## Burn Care: What to Expect

**B**urns are injuries that are caused by exposure to extreme heat or cold (both known as thermal burns), chemicals, electricity, or radiation (which includes sunburns). Most burns treated in hospitals are heat-related thermal burns. These burns can be divided into types that describe how they occurred, such as fire burns, scald burns (caused by steam or very hot liquid), or contact burns (caused by touching a very hot object). Common causes of thermal burns include fires, automobile accidents, careless use of matches, improperly stored gasoline, space heaters, electrical malfunctions, unsafe handling of firecrackers, and kitchen accidents. In addition, burns comprise up to 10% of combat-related injuries in military personnel involved in the conflicts in Iraq and Afghanistan.

The severity of a burn is measured using a number of factors, including the depth of the burn, its location, the percentage of the body it covers, and the age of the patient. (Burns are especially serious in the very young and the very old.) The depth of a burn has to do with how many of the skin's three layers the burn has penetrated. Burns that affect only the top skin layer are called first degree burns. They can be painful, are red in color but turn white when pressed, and may cause swelling. Burns that damage the top and middle skin layers are known as second degree burns. These burns are more painful, are very red (possibly turning white when pressed), and cause blisters. Third degree burns penetrate all three skin layers and may even damage organs or

tissues underneath. Although the area around these burns can be extremely painful, the burns themselves often are painless due to nerve damage. Third degree burns often feel and look leathery. They can be white, black, or bright red and do not change color when pressed.

### How do they affect the body?

Burns can cause a wide variety of health problems, depending on their severity and location. They usually make you more vulnerable to infection, since burned skin is a good place for bacteria to breed. Burns also may damage blood vessels, so that fluid leaks into the burn area. The leakage can lead to swelling; dehydration; and shock, a condition in which the body's tissues do not receive enough blood. Burns can prevent you from moving normally by leaving tight, scarred skin around your joints. They also can create *eschars* (**ess-kahrs**), which are thick, scabby surfaces that can cut off blood flow. And some burns—including those caused by inhalation of hot air, smoke, or chemicals—can make breathing difficult by damaging the lungs or upper breathing passages.

### How are they treated?

Any burn that interferes with your daily life should be treated at a hospital. Extensive second or third degree burns require emergency medical treatment. Particularly severe burn injuries may need to be treated by specialists at a burn center.

At the hospital, you probably will be given a transfusion of fluids, through a tube placed in one of your veins, to

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prevent dehydration and shock. Your burns will be cleaned thoroughly with soap and water. (In the case of chemical burns, your whole body may need to be cleaned.) The burns then will be covered in clean bandages, which will be changed regularly. Often, the bandages are soaked in an antibiotic ointment. If you are in pain, you will be given pain medication. And if you are having trouble breathing, a breathing tube may be inserted into your mouth or nose.

Severe burns often require surgery. If eschars are cutting off your blood flow, doctors may cut through them in a procedure called *escharotomy* (ess-kah-roht-uh-mee). Doctors also may remove any dead skin to prevent infection.

Sometimes, a transplant of healthy skin—known as a graft—over the burn area is necessary. An *autograft* (awt-oh-graft) is a type of permanent skin graft in which the healthy skin is taken from an unburned area of the person's own body—usually one that is hidden by clothing, such as the buttocks or inner thighs. *Allografts* (al-uh-grafts) and *xenografts* (zen-uh-grafts) are temporary skin grafts that can protect the skin as it heals over the course of days or weeks. In allografts, the replacement skin is taken from another person (living or deceased), and in xenografts, it is taken from another species—usually pigs. Skin grafts are held in place by padded dressing, staples, or stitches until they begin to adhere to the burned area.

### What is the recovery process?

Recovering from a severe burn can be a long process and, depending on your needs, can take place at home or in a special rehabilitation facility within a burn center. Throughout recovery, it is important to eat a nutritious diet with plenty of calories

(sometimes twice the daily amount that a healthy adult requires), vitamins, and minerals. Your doctor may advise you to use special drinks or supplements that provide additional nutrition.

To control scarring, you may need to wear special garments that put pressure on the burned areas. To ensure that scars do not prevent your joints from moving properly, a physical therapist may have you do regular exercises, and parts of your body might be held in certain positions by splints. Although it can be painful to move after you have been burned, a daily exercise program may be necessary for up to several months.

When your burns have left you with scars, it is difficult to know when or if they will go away. Some scars go away in months or after two or more years, while others do not. If you have permanent scars that affect your appearance or hinder your movement, it may be possible to improve them through plastic surgery.

Depression and other emotional problems are common in people with burn injuries—especially when those injuries have changed their appearance. Treatment with antidepressant medications, counseling with a professional therapist, or both may be beneficial.

For more information and a listing of burn centers and burn survivor support groups by state, visit the Burn Survivor Resource Center (<http://www.burnsurvivor.com>). ●

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