



# Burns: treatment and aftercare

patient information

INTRODUCTION	3
NORMAL SKIN	5
BURNT SKIN	6
TREATMENT OF BURNS	7
GENERAL AFTERCARE OF THE HEALED BURNS/DONOR SITES	10
CONTACT DETAILS	15
QUESTIONS FOR YOUR PHYSICIAN OR NURSE	16

When healthcare providers at a burns unit tell a patient: “Your burn is looking good, it's healing well” the patient often feels the opposite though. When they hear the word ‘healing’ they expect a more or less normal looking skin. This is definitely the case when they only to get see their new skin at a later stage, because of the multiple narcoses and strong painkillers during the wound care moments.

However, when your skin has been burned it doesn't have a 'healed' or normal appearance. The skin looks red, is discoloured and often feels thicker. The discolouration and thickening of the skin gradually decrease, but may take a long time. It's important to know that not all burns leave permanent scars. The depth, location and type of burn are all factors that determine scarring. In addition, each skin type is different and scarring can be very patient-specific.

Superficial burns that heal quickly within 14 days with proper aftercare usually have less chance of permanent scarring. The abnormal appearance of these burns after healing often disappears spontaneously after a few months to one year. Deep burns often leave clearly visible scars. The scar can sometimes cause considerable discomfort to the patient. Starting general and/or specific scar aftercare on time can help prevent or minimise problems. To achieve the best scar results, you'll need to show great self-discipline and therapy compliance for a long time.

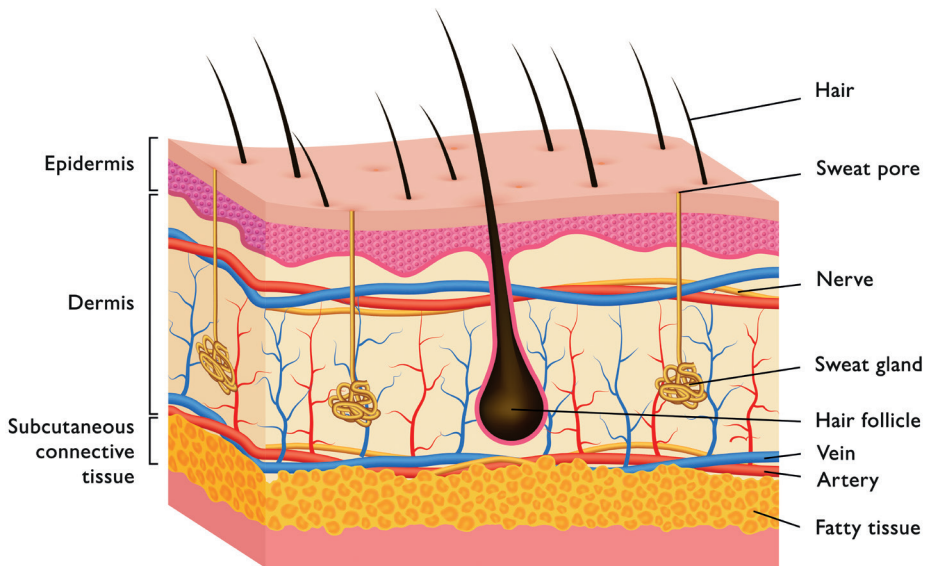
The multidisciplinary burns team treats scars every day. Right from the start of wound care, they apply all possible measures to prevent or improve a 'problem scar'. For a better understanding of the process of possible scarring, this brochure explains how the skin reacts after a burn and how burns are treated.

To monitor the evolution of the healing process, photos will be taken regularly. These photos will be available on the mynexuzhealth app immediately. The images can be shocking and are absolutely no indication of what the healed burn will look like over time. We therefore advise you (and your family) to only look at the photos when accompanied by our physicians or nurses. They can provide the necessary information and answer any questions you may have.

## NORMAL SKIN

Our skin is the largest organ of the human body. It protects our body against dehydration and germs. Skin also plays an important role in regulating our body temperature. And our appearance is also largely determined by our skin. Due to our sense of touch, our skin is also important in our social communication. The skin is made up of several layers and contains hair, sweat and sebaceous glands, nerves and blood vessels. Burns can damage the skin's structure and function. The deeper the burn, the greater the chance that several of these structures are damaged.

### Skin structure



## BURNT SKIN

A **first-degree burn** is always superficial (= only damage of the epidermis) and manifests itself as redness without blisters. There's a distinct feeling of pain.

A **second-degree burn** can be superficial or deep (= superficial or deep damage to the dermis). Depending on the depth, there are still many hair follicles, sweat and sebaceous glands or not.

A second-degree burn always involves blisters.

- A **superficial second-degree burn** is painful because the nerve endings are exposed. The blood flow (capillary refill) is still good. After two to three weeks the wound may heal spontaneously.
- The blood flow of a **deep second-degree burn** is reduced, which means healing is only possible after three weeks or longer. A deep second-degree burn is less painful because the nerve endings are partially damaged.

A **third-degree burn** is always deep. The entire thickness of the skin is damaged. Because all the nerve endings have been destroyed, third-degree burns are painless. Spontaneous healing is not possible unless the burn is located on a very small area and heals spontaneously from the wound edges inwardly after a long time. There will always be a visible scar.

## TREATMENT OF BURNS

When your skin is burned the barrier that protects our body against germs is broken. This is why burn patients run a greatly increased risk of infection, and extensive burns need to be treated under special isolation measures. Because your body can no longer regulate its own temperature due to skin damage, extensive burns are always treated in a heated room. To clean burns, and to keep them clean, they are thoroughly washed in a bath (bath stretcher) or rinsed using a shower. The nurse will apply antibacterial liquids or soaps.

Because a burn still changes the first 48 hours, an LDI (Laser Doppler Imaging) scan is performed between two and five days after the burn happened at the physician's request. This scan is painless, there is no skin contact. The LDI scan measures the blood flow of the burn and can help estimate the depth of the burn.

The depth and extensiveness of the burn determine the nature and duration of treatment.

- A **first-degree burn** doesn't need wound care, but protection and adequate pain relief. Usually, a moisturising and soothing cream (for example Nivea®) is regularly applied.
- In case of **second-degree burns**, whereby the skin barrier is broken, antibacterial creams, ointments or other wound products are used.

- **Deep second- and third-degree burns** need surgical treatment with a skin transplant. Some parts of the skin, such as sweat glands and hair roots, may be irreparably damaged. Nerves may also be damaged. Nevertheless, the feeling in the skin may return after some time.

## **SURGICAL TREATMENT OF DEEP BURNS (SKIN GRAFTS OR SKIN TRANSPLANT)**

A surgical procedure is necessary to allow burns to heal without risk of skin deterioration, or to prevent reduced mobility of a joint afterwards.

Kinds of skin grafts:

- **Temporary biological dressing:** in cases of very deep burns or a suspected infection, a biological dressing is used in anticipation of a permanent skin graft (from your own body).
- **Permanent skin grafts:**
  - partial thickness skin grafts
  - full thickness skin grafts



In case of a skin transplant with your own skin, the surgeon surgically takes a skin graft, from your upper leg usually. This is called the donor site and is similar to an abrasion. The donor site heals on its own after about 10 days. Pain medication will be systematically provided during this period. Donor sites may remain visible for a long time and require good general aftercare. The skin graft is applied to the site of the damaged skin.

- **Permanent skin substitutes:**

- In case of very deep burns where no skin is left in functionally and/or aesthetically important areas or for very extensive deep burns, the surgeon sometimes decides on permanent skin substitutes, such as Integra®.
- Integra® replaces the normal dermal layer and is covered with a silicon film.
- For three weeks, this skin substitute enables regrowth (= stimulates good blood flow) and replaces the damaged dermis.
- The silicone film is surgically removed after three weeks and replaced by the patient's own skin, which continues to grow into the newly formed dermal layer.

To prevent infection, an antibacterial ointment and a paraffin gauze dressing are applied on all types of skin grafts.

## TREATMENT OF BURNS WITH PHYSIOTHERAPY

While your burn heals, you may see the physiotherapist of the burns team.

Burns on joints or burns with a longer healing time require a specific physiotherapy approach.

The rehabilitation and the aftercare of a severe burn scar are discussed in the brochure on 'Burns: rehabilitation and aftercare of a scar' ([www.uzleuven.be/en/brochure/701626](http://www.uzleuven.be/en/brochure/701626)).

## GENERAL AFTERCARE OF HEALED BURNS AND DONOR SITES

When burns are healed, the structure of the skin has not yet recovered. The healed skin must still 'mature', so to speak. Depending on the depth of the burn, this recovery may take a long time, ranging from several weeks to several years in some cases. This is why **all** burns require proper aftercare.

## GENERAL AFTERCARE

### Hygiene

Good hygiene with special attention for all skin folds is necessary. Unscented, skin neutral soap (= pH 5), soap-free soap or bath oil are advisable. The water should not be too hot or too cold. Don't run the tap too hard. Rinse off all soap residue well to avoid itching. Drying is best done by dabbing with a soft towel.

### Moisturise against itching

- As long as the scar is active (red) and the sebaceous and sweat glands have not recovered, you may experience itching and dry skin. The new skin doesn't have its natural, protective, oily film. This is why you must nourish your skin well by moisturising it at least three times a day. Use a [good moisturising cream or lotion](#) for this like dermatologically tested Nivea soft<sup>®</sup>, Eucerin<sup>®</sup>, etc. Healed donor sites also need to be well moisturised.
- Don't use almond oil under pressure garments: it affects the elastic fibres of the pressure garments, making them less efficient in the long run. Also, oils leave a film on the skin and don't penetrate into the deeper layers. If you use natural oils, which often contain preservatives, the skin may react hypersensitively. We therefore advise you [not](#) to use these products.

- Make sure your skin does **not get too hot**. Heat increases the blood supply, causing your scar to swell up and itch even more. This also happens when you dry your skin, for example: if you wipe it firmly with a hard towel, the blood supply increases, causing itching.
- **Softly tapping** itchy skin may provide temporary relief. Cooling the scar with a cold pack, cooling spray or cold shower can also reduce itching.
- Wear **airy, cotton clothing** instead of wool or synthetic fabrics. If you need to wear pressure garments, keep them on day and night. They prevent scar hypertrophy and will reduce itching.
- To avoid damage to the fragile skin, do **not scratch**. Make sure your fingernails are clean and short.
- If your skin is still itchy after all these precautions, your physician may prescribe **medication** (an antihistamine).
- To keep your skin hydrated, you should also drink **plenty of fluids**. In case of persistent dry skin, increase the frequency of moisturising, not the amount of moisturiser you apply.
- To moisturise your hands, it's best to use hand cream.
- Sleeping in a cool environment will reduce itching.
- Moisturise well after swimming, because chlorine dries out your skin.

## Use a UV-resistant factor 50 sunscreen for one year

UV rays cause melanin formation in your skin. Melanin gives you a tanned skin colour and protects against sunburn. Burns on your skin disrupt the melanin pattern. This may result in brown specks that can still be visible many years later. As long as the discolouration of the healed skin is still visible, we recommend avoiding the sun and applying a total sun block for one year. And don't forget to protect donor sites as well. Apply sunscreen generously even if the sun isn't shining. Apply half an hour before sun exposure and repeat every two hours.



Permanent brown spot  
due to lack of total sun protection

## Residual lesions and blistering after healed burns

- **Residual lesions**

When you're discharged from hospital, you may still have some minor residual lesions. These injuries can be treated by a home care nurse, yourself or a family member. You'll receive the necessary instructions upon discharge from hospital.

- Blistering



Bumping or rubbing a healing burn can cause blisters or new wounds. This is because the structure of the new skin has not yet been fully repaired. In normal skin, the epidermis is embedded in the dermis in a wavy pattern. In the case of recently healed burns, this is not yet the case, making blistering more likely. Blistering will disappear spontaneously over time.

Even in case of blistering and residual lesions, you can wash with water and use shower oil or neutral soap. Small blisters can be left intact and disinfected daily with, for example, Braunol® or an aqueous chloramine-based disinfectant. You may cover them with a protective bandage. Larger blisters usually open spontaneously when you move and can be treated with an antibacterial cream (e.g. Flaminal®, etc.).

Classic adhesive bandages to prevent blistering are not advisable. Silicone bandages (e.g. Mepilex border lite®) can be used. Contact the burns team in case of blistering. The nurse will give you additional instructions on whether or not to continue wearing your pressure garments and/or silicone scar plasters. Silicone scar plasters are never applied to open wounds or blisters.

## CONTACT DETAILS

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