

What is a wound?

The skin is our body’s most accessible organ. As such, it’s very easy to damage or wound it.³ When you injure the skin, the body tissue loses its continuity. This can happen as the result of [trauma](#), [infection](#) or some pathological process, such as inflammation.⁶

When the skin is injured or damaged, a wound is created. Once this happens, the body immediately begins to repair itself. It does this by re-establishing tissue integrity in order to restore the skin’s barrier function.⁴

How wounds heal

Wound healing is the physiological process the body uses to replace and restore damaged tissue.¹ It involves a complex interaction of physical, chemical and cellular events.

The body uses two mechanisms to heal:

- tissue regeneration; and
- tissue repair.

Tissue regeneration	Tissue repair
Tissue regeneration is when the body replaces damaged tissue by replicating identical cells. This is the ideal healing method. The regenerated tissue has the same function as before, and the skin resembles its original appearance. Unfortunately, the body can only regenerate certain cell types, such as epithelial cells*. ⁶	Tissue repair is when the body repairs damaged or destroyed dermal or subcutaneous tissue . However, in this case, the repaired tissue loses its specialised function and original structure. This is a more complicated process, which causes scarring and changes the skin’s appearance. Evidently, wound healing is a very sophisticated process that follows a set sequence of events. ² In the next section, we’ll take a look at the four stages of wound healing.

The four stages of wound healing

Wound Healing

Stage 1: haemostasis⁷

When an injury damages the blood vessels, the body's first reaction is to stop the flow of blood, a process called 'haemostasis'. The body activates platelets and releases growth factors. The release of these growth factors starts the healing process.⁶

Stage 2: the inflammatory response

The second stage is divided into an early and a late inflammatory response.⁷

- In the **early inflammatory response**, neutrophils (a type of white blood cell) are present for two to five days. Neutrophils play an important role in the healing process. They kill local bacteria, which helps to break down dead tissue. They also release active antimicrobial substances and proteases (an enzyme that catalyses proteolysis), which start debridement (i.e. the removal of damaged tissue).
- In the **late inflammatory response**, approximately three days after the injury, monocytes (another type of white blood cell) appear. Monocytes are important because they mature into macrophages, large cells that eat bacteria, dead neutrophils and damaged tissue. They also secrete growth factors, chemokines and cytokines. In this way, macrophages play an important role in wound healing and fighting off infection.

Stage 3: proliferation

During this stage, macrophages produce a variety of substances that cause the body to produce new tissue and blood vessels – a process called angiogenesis. The new tissue then fills the wound bed.⁶ In the final stage of proliferation, the wound edges slowly start to contract and move closer together.

Stage 4: re-modelling

Re-modelling starts already in the proliferation stage and continues for an extended period of time. Collagen plays an important role in this stage of the healing process. Throughout this stage, the body simultaneously produces and breaks down collagen. It does this to maintain a balance between the need for tensile strength and the re-modelling of new tissue. This balance is what determines the scar tissue's final quality and appearance.⁷

How long does it take for a wound to heal?

Wounds can be divided into two categories: acute and chronic wounds. Acute wounds repair themselves quickly and with minimal complications. If a person is healthy, an acute wound should heal within three weeks. In such cases, re-modelling normally occurs within the next year or so.

However, if a wound gets stuck in one of the four healing stages, it might become hard-to-heal or chronic.¹⁴ Finding the right treatment for chronic wounds can be challenging. Research shows that finding the right dressing is a key part of effectively managing chronic wounds. You should choose the dressing based on [an assessment of the wound](#) and its fluid, or exudate.

If you're working with a patient with a chronic wound, your goal should be to [choose a dressing](#) that helps create an optimal healing environment.

An effective dressing should:

- conform to the wound bed;
- have antimicrobial properties;
- absorb excess [exudate](#) from the wound bed;
- protect the wound edges and periwound skin;
- maintain a [moist healing environment](#);
- be comfortable and cost-effective; and
- be easy for the patient to remove and care for.

Understanding moist wound healing

- What is a moist wound healing environment?
- Why do moist wounds heal faster?
- How do I create a moist wound healing environment?

[Learn all about moist wound healing](#)



The role of the skin in wound healing

- How does the skin work?
- The three different layers of skin
- Four factors that affect the integrity of the skin

[Understand the role of the skin](#)

References

[View references](#)



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