

The skin - how it works

3.1 Tasks of the skin

the skin has a multitude of important, even life-supporting tasks. Not only do we look a bit funny without skin, but we don't become viable without skin.

The skin protects the body against all kinds of external influences. It alleviates all mechanical influences on the underlying sensitive structures. It is relatively insensitive to friction, shocks, injuries, and chafing. It also protects against chemical influences, regulates temperature and prevents bacteria from entering the body.

The skin can regulate the temperature by either contracting its blood vessels to prevent as much heat from escaping. If it is too warm, the skin becomes more strongly bled with blood, it becomes red and warm and gives off heat to the outside. If it gets even warmer, the sweat glands become active and water is drained off onto the skin surface. Due to the evaporation cooling, we have an effective air conditioning system.

3.2 Multilayered: the skin

The skin is not only versatile but also literally multi-layered. Roughly speaking, the skin consists of three layers: the epidermis (Latin/scientific: epidermis), the corium and the subcutis.

3.3 The epidermis

Tender in the face - hard on the feet. The horny layer of the epidermis maintains direct contact with the outside world. This outer part of the skin, which faces the environment, is on average one-twentieth of a millimeter thin but adapts to the strain. On the face it is up to one-fiftieth of a millimeter tender, on the soles of the feet on the other hand it grows up to one-millimetre thickness and more. The skin is exposed to particularly high stress with even stronger horny skin: cornea and calluses.

3.3.1 Horn cells: wear out layer on the outside

The epidermis consists of two layers: the germ layer and the horny layer above. New skin cells grow continuously in the germ layer: they form the prickle cell layer. These regrowing cells slowly push their predecessors outwards - and are soon pushed outwards by the following cells themselves. On their way to the outside, they incorporate protein into their cell walls in order to become properly robust. Finally, they die and form the protective horny layer on the skin surface.

The horny layer wears out according to plan: some horn cells recede at every touch, washing or rubbing on textiles. But new ones will grow back. In this way, the epidermis renews itself within about a month.



3.3.2 The dermis

The name says it all: The dermis (leather skin), just below the epidermis, provides stability and elasticity. The elastic fibers inside are responsible for flexibility and elasticity. They pull the skin back into its normal position after it has been removed from its shape by movement or external forces. The problem is that over time their performance deteriorates.

Elastic fibers and collagen for smooth, firm skin.

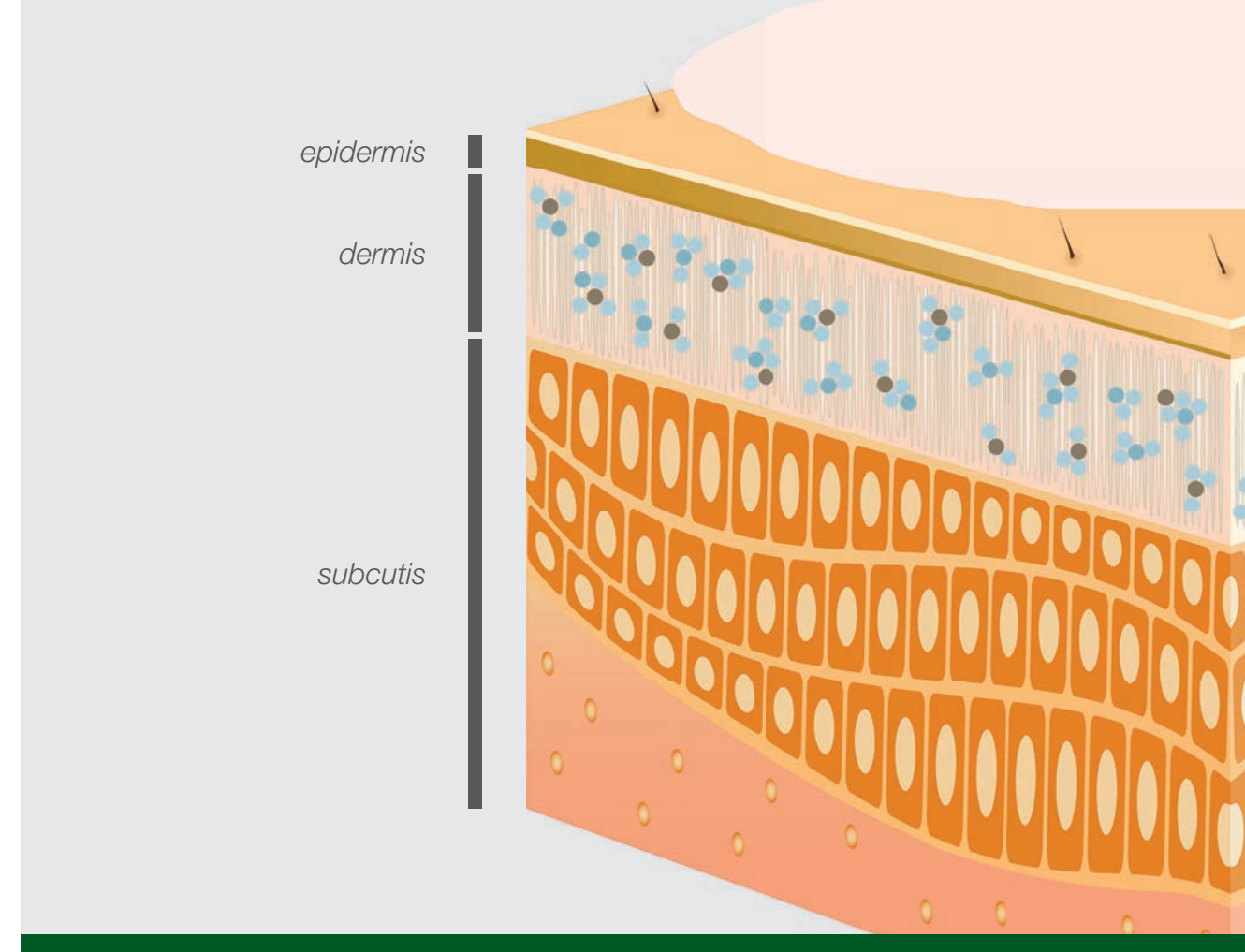
The majority of the dermis, however, consists of collagen fibers: they ensure the firmness of the skin. Collagen binds water and gives the skin a smooth and firm appearance. However, the storage capacity decreases over time. As a result, the skin loses its elasticity over time and wrinkles can appear.

3.4 The subcutis - not only the body pantry

The subcutis contains storage cells that can store 20 kilos and more of fat together. The hordes of hunters and gatherers probably appreciated this storage capacity, as it helped them survive in bad times. Today, this function of the subcutis mainly leads to new diet concepts and expensive „light“ foods.

But the subcutis not only causes grief, it also brings practical benefits today: Its structure makes it possible to move and shift the skin. Otherwise, the skin would overstretch with every movement. And fat cells are not the same as fat cells: the body has different types of fat cells. Fat cells are also called adipocytes and lipocytes. White fat cells: The normal fat cells are called white fat cells. Their job is to store fat as energy for bad times.

Brown fat cells: The task of the brown fat cell is to produce heat. People who spend a lot of time in the cold have more brown fat



cells to keep the body sufficiently warm without shaking.

Abdominal fat: Other fat cells lie on sensitive parts of the body to distribute the pressure better. For example, the feet, especially the heels, are protected with a layer of fat so that the heels do not hurt when walking. Other organs such as the kidneys also have a thin layer of fat to protect them.