

Epidermis Encyclopedia Article

Epidermis

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Epidermis

The epidermis is the outermost layer of skin on the body. As such, it is the first barrier to the entry of infectious organisms. The epidermal **tissue** layer also functions to seal in moisture.

The epidermis is composed of keratinocyte cell types. There are five layers, or strata, making up the epidermis. The deepest innermost layer is the stratum germinativum. Next comes the stratum spinosum, then the stratum granulosum. The fourth layer is the stratum lucidum. Finally, the uppermost layer is the stratum corneum.

The keratinocytes that make up the stratum corneum are continually sloughing off from the surface of the skin. This process is termed desquamation. New keratinocytes migrate up through the various layers to reach the stratum corneum, and then migrate through this outer layer to the external surface, a process that takes about three weeks. The skin cells visible on the surface are actually dead. This continual loss and replacement of the epidermal surface cells provides the body with a means to tolerate abrasions without causing long-term damage to the skin's generative surface.

This function occupies some 95% of the cells in the epidermis. The other 5% of the cells, located in the stratum germinativum, are involved in the production of a substance called melanin. The amount and distribution of melanin determines skin coloration. The darker the skin, the more melanin is present. The melanin-producing cells of the epidermis, in response to ultraviolet radiation, can increase the production of the compound, in order to help protect the skin from the harsh ultraviolet rays of the sun. This is the reason skin "tans" in the summer. It is also the melanin producing cells that are affected by skin **cancer**.

Another molecule found in the epidermis is keratin, a fibrous protein that is used as a building block for **hair**. Keratin's properties give the epidermis its firmness, elasticity, and strength. Keratin is produced in the stratum lucidum. The surface of the epidermis also houses the exit sites of **sweat glands**. These and other glands exude a slightly acidic oil, which protects the skin against some **bacteria**.