

The Forgotten Organ: Our Skin

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By Dr. Derek Conte

What is the least respected organ of our bodies? It is the skin. Sounds funny doesn't it? You may think, "An organ should perform a very specific and indispensable function, like the heart or the brain". That is so and your thinking is correct, yet the skin is just as crucial to our survival and health as any organ. Though it seems like no more than a thin covering performing no critical role, the skin is a very, very complex and busy organ. It is also the biggest of all.

The eleven systems of the body are:

- 1) skeletal
- 2) muscular
- 3) circulatory
- 4) respiratory
- 5) nervous
- 6) digestive
- 7) integumentary*(skin, hair and nails)
- 8) endocrine (hormones)
- 9) immune (antibodies, T-cells, B-cells, macrophages)
- 10) reproductive
- 11) urinary

First, the skin acts as a barrier against the elements, like the Sun. But ultra violet rays activate Vitamin D in the skin to build strong bones and the immune system. The skin is also tough and elastic and repairs itself very quickly. Second, the skin acts as the primary defense against infectious invasion, stopping viruses, bacteria, fungi and allergens from entering deeply into the body. This is why large burns to the skin are treated as serious injuries. Third, the skin reduces water evaporation and thus, dehydration. It also holds water and fat stores for later use. The skin is made up of multiple layers. They grow from the bottom to the top and, as the top layer of cells is sloughed off, the subsequent layer replaces it like rows of shark's teeth.

The top layer is the epidermis (made up of dead, water-resistant cells) containing "free nerve endings" that convey pain and temperature sense and house the melanin cells for pigment which protect against the sun's rays. The next layer down is the dermis (made of living cells containing many smaller functional structures that protect, convey the different qualities of touch, and microscopically- tiny blood vessels

called capillaries which can release or hold body heat as needed; a phenomenon called “thermoregulation”.

Specifically, the structures of the dermal layer are nerves, nerve endings, oil glands, sweat glands, hair follicles and the very tiny muscles which make the hairs on your body “stand up” called, “erector pili”.

The variously-named nerve endings in the dermis are “encapsulated” (disc-shaped instead of the branch-shaped free nerve endings in the epidermis) and convey a wide range of qualities of touch like light touch, deep touch, light and deep pressure, vibration, bending of body hair, stretching of skin, perception of the texture and motion of objects against the skin and the ability to discriminate between shapes and one or multiple objects. These nerve endings are most concentrated in the lips, tongue, eyes, face, fingers, feet and genitals. The dermal layer also contains very small lymph vessels which drain away excess fluids and toxins to the veins for cleansing and purging.

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Below the skin are subcutaneous layers of fascia for strength, flexibility and shape, and the fat, for energy reserves and insulation. The subcutaneous layer also contains immune cells called macrophages, “big eaters”, which patrol the body to consume any microbial or allergic threats. Care of the skin is as vital to good health as a good set of teeth. Keep it clean and moist. Drink water and use lotion when needed to avoid cracking. As you can see, the skin is anything but a simple layer and it protects us every day, 24 hours a day, every day of our lives!

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