REFERENCES


Science of Skin: Skin Through the Ages

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Skin is the boundary between who we are and what we present ourselves to the world. As such, it is critical to the insults that we experience in our day-to-day existence. Skin is the largest organ in the body and, as such, it is critical to the maintenance of our body’s hydration balance. In order to understand the functional aspects of skin, we have to understand the parts of skin and its layers.

The stratum corneum is thin, no thicker than a sheet of paper, and acts as the first line of defense against bacteria causing disease. The stratum corneum is also a sensitive barrier to fluid loss. While the cells of the stratum corneum may be approximately 5.0 cells thick, they are only about 10 microns thick. Fluid balance in the skin is important to skin health. Moisture loss occurs through the stratum corneum, which contains layers of desquamating cells. In the stratum corneum, it is the desquamating cells that are the barrier that is breached with the use of medical technology. Antiseptics are agents whose composition reflects scientific and development so that these agents can reduce the number of bacteria on the skin while avoiding damage to the skin in the form of irritation. Proper antiseptics require proper technique and proper antiseptics require an in-depth understanding of the science of skin. Reducing the number of bacteria on the skin is known to reduce the risk of infection following any type of disruption of the skin barrier. Surgery on the placement of vascular catheters or other devices results in the formation of a primarily immune system. The living portion of the epidermis that lies beneath the stratum corneum has the capacity to monitor for bacteria invasion and to respond with mediators that destroy bacteria. There is no such system in the skin. The epidermis has a natural ‘wave-like’ structure that flattens over time. As considered earlier, the dermis lies beneath the epidermis and this band is involved in the control of the skin. The physical properties of skin are required for proper adhesion and protection. The stratum corneum is a dynamic layer in the skin.”

Our ability to have our skin to too much fluid is one possibility. However, more commonly, most skin injury occurs when the adhesive containing device is removed. The number of bacteria in the environment is much lower than the number of bacteria on the skin, but over the entire course of treatment with a vascular or other invasive device that engages the skin, the number of bacteria that lay on the skin increases. The understanding of the science of skin is critical in order to allow for the successful development of technologies that require the successful development of technologies that require the successful treatment of underlying disease. The skin is subjected to a wide range of environmental stress from sunlight need not result in sunburn. However, extended exposure to sunlight results in detrimental changes to the skin that can take years to appear. Damaged skin will be less resilient because of an accelerated loss of a particular protein-elasticin. We lose elasticity naturally so that even with the best efforts there are changes that occur over time that present science and technology cannot seem to prevent. Aging over a period of decades will result in a series of well-documented changes. If not properly managed, these changes to the skin. The epidermis has a natural ‘wave-like’ structure that flattens over time. As considered earlier, the dermis lies beneath the epidermis and this band is involved in the control of the skin. The physical properties of skin are required for proper adhesion and protection. The stratum corneum is a dynamic layer in the skin.”

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