Primary Prevention/
Risk Reduction for
Integumentary Disorders
(Pattern A)

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ANATOMY

The skin is one of the largest functioning organs of the body.\(^1\)-\(^3\) The skin offers protection from the environment, in particular bacteria. The skin prevents the loss of body fluids, synthesizes vitamin D, and assists in temperature regulation. Other functions of the integument include its function as an excretory organ and a sensory organ.\(^4\) Finally, the skin offers a component of one’s identity.\(^3\)

The skin is a layered system comprised of the epidermis, the dermis, and the subcutaneous layers (Figure 1-1). The epidermis, the thinner outermost layer of the skin, is made of the following layers. The stratum corneum, also known as the horny layer, is the outermost layer of the skin. This layer is composed of keratinocytes that have completely elongated and lost their nuclei. This layer is important for protection and acts as a barrier to external threats, such as bacteria. Keratinocytes reproduce continually and are responsible for the production of keratin, a protein that is insoluble in water. These cells prevent loss of water and offer protection from irritants and microorganisms.\(^2\),\(^4\) The next layer is the stratum lucidum. This layer contains a few layers of flattened, dead keratinocytes.\(^2\) The stratum granulosum or granular layer is found beneath the stratum lucidum. This layer also contains flattened keratinocytes and significant amounts of keratin.\(^3\) The next layer is the stratum spinosum or spinous layer. This layer contains mature keratinocytes that appear “spiny” when observed under a microscope.\(^3\),\(^4\) The final layer found is the stratum basale or basal cell layer. This layer is a cell layer of keratinocytes that are continually dividing and migrating upward to form the outer functional layers of the epidermis.\(^3\),\(^4\) The stratum basale is attached to the dermis by the basement membrane.\(^3\) Additional microscopic components of the epidermis include melanocytes and Langerhans’ cells.\(^1\),\(^4\) Melanocytes are found near the base of the epidermis. These cells synthesize and secrete melanin.1-4 Melanin is the pigment one sees when observing the skin. Langerhans’ cells are immune cells, are present throughout the epidermis, and initiate an immune response if the integument is disrupted, thus acting as a defense mechanism against the environment.\(^4\)

The second layer of the skin is the thicker layer in comparison to the epidermis and is referred to as the dermis or dermal layer.\(^5\) The dermis is further differentiated into the papillary dermis and the reticular dermis. The papillary dermis consists of a gel-like substance, also known as ground substance. The papillary dermis assists the basement membrane in creating the epidermal-dermal junction. The deeper reticular dermis is a connective tissue composed of fibroblasts that secrete collagen and elastin.\(^5\) This gives the skin its elasticity and durability. This layer contains a significant...