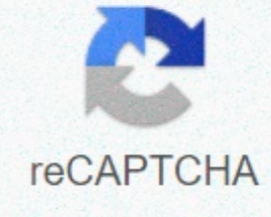




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## Deepest layer of the epidermis is called

The skin is the soft outer coating of vertebrates that guards the underlying muscles, bones, ligaments and internal organs. Identify skin layers Key Takeaways Key Points The outer layer of skin, epidermis, provides waterproofing and acts as an obstacle to infection. The middle layer of the skin, the dermis, contains blood vessels, nerves, and glands that are important for the function of our skin. The inner layer of the skin, subcutis, contains fat that protects us from trauma. Key Terms Epidermis: The outermost layer of the skin. subcuts: The inner layer of the skin also known as a hypodermis or subcutaneous layer. Dermis: The middle layer of the skin. Cutaneous Membrane: The formal name for the skin. The cutaneous membrane is the technical term for our skin. The primary role of the skin is to help protect the rest of the body's tissues and organs from physical damage such as abrasions, chemical damage as detergents, and biological damage from microorganisms. For example, while the skin harbors many permanent and transient bacteria, these bacteria cannot enter the body when healthy, intact skin is present. Our skin is made of three general layers. In order from most superficial to deepest they are the epidermis, dermis, and subcutaneous tissue. Epidermis Epidermis is a thin layer of skin. It is the most superficial layer of skin, the layer you see with your eyes when you look at the skin somewhere on your body. Features of the epidermis include touch sensation and protection against microorganisms. This skin is further divided into five, separate layers. In order from most superficial to deepest, they are those: Stratum Corneum Stratum Lucidum Stratum Granulosum Stratum Spinosum Stratum Basale Stratum Corneum This layer is composed of the many dead skin cells that you throw into the environment—as a result, these cells are found in dust throughout your home. This layer helps to repel water. Stratum Lucidum This layer is found only on the palms, fingertips, and soles of the feet. Stratum Granulosum This is the layer where part of keratin production takes place. Keratin is a protein that is the main component of the skin. Stratum Spinosum This layer gives the skin strength and flexibility. Stratum Basale This is where the skin's main cells, called keratinocytes, are formed before they are moved up to the epidermis surface and thrown into the environment as dead skin cells. This layer also contains melanocytes, the cells that are largely responsible for determining the color of our skin and protecting our skin from the harmful effects of UV radiation. These harmful effects include short-term burns and cancer in the long term. The dermis under the epidermis lies the dermis. Dermis contains: Blood vessels that nourish the skin with oxygen and nutrients. Blood Also allow immune system cells to come to the skin to fight an infection. These vessels also help to transport waste products away. Nerves that help us convey signals coming from the skin. These signals include touch, temperature, pressure, pain, and itching. Different glands. Hair follicles. Collagen, a protein that is responsible for giving skin strength and a bit of elasticity. The Subcutaneous Tissue The deepest layer of skin is called the subcutaneous layer, subkuteterna or hypodermis. Like the dermis, the layer contains blood vessels and nerves for much the same reason. Importantly, subcutis contains a layer of fat. This layer of fat works alongside the blood vessels to maintain an appropriate body temperature. The fat layer here acts as a pillow against physical trauma to internal organs, muscles and bones. In addition, the body will turn to this fat in times of starvation to provide power to its various processes, especially brain function. Layers of cutaneous membranes (skin): This image details features in the epidermal and dermal layers of the skin. Skin structure: The epidermis epidermis comprises five main layers: stratum lucidium, stratum granulosum, stratum spinosum, and stratum germinativum. Describe the layers of epidermis Key Takeaways Key Points Epidermis provides a protective waterproof barrier that also keeps pathogens in check and regulates body temperature. The main layers of the epidermis are: stratum corneum, stratum lucidium, stratum granulosm, stratum spinosum, stratum germinativum (also called stratum basale). Keratinocytes in stratum basale multiply during mitosis and daughter cells move up strata, changing shape and composition as they undergo several stages of cell differentiation. Keratinocytes: The dominant cell type in the epidermis, the outermost layer of the skin, which makes up 95% of the cells present there. These keratinocytes found in the basal layer (stratum germinativum) of the skin are sometimes called basal cells or basal keratinocytes. stratum germinativum: The basal layer—sometimes called stratum basale—is the deepest of the five layers of the epidermis. Stratum Corneum: The most superficial layer of the epidermis from which dead skin sheds. epidermis: The outermost layer of skin. Stratum Lucidum: A layer of our skin found on the palms and soles of our feet. Epidermis is the outermost layer of our skin. It's the warehouse we see with our eyes. It contains no blood supply of its own-which is why you can shave your skin and not cause any bleeding despite losing many cells in the process. Assuming, that is, you don't nick your skin to depth, where the blood supply actually exists. The epidermis itself is divided into at least four separate parts. A fifth occurs in some areas of Body. In order from the deepest layer of the epidermis to the most superficial, these layers (strata) are those: Stratum basale Stratum spinosum Stratum granulosum Stratum lucidium Stratum corneum Skin overview: Skin layers, of both hairy and hairless skin. Stratum Basale Human Skin: This image details the parts of the integumentary system. Stratumbasale, also called stratum germinativum, is the basal (base) layer of the epidermis. It is the layer closest to the blood supply that lies beneath the epidermis. This layer is one of the most important layers of our skin. This is because it contains the only cells in the epidermis that can divide through the process of mitosis, which means that skin cells germinate here, hence the word germinativum. In this layer, the most numerous cells in the epidermis, called keratinocytes, arise thanks to mitosis. Keratinocytes produce the most important protein in the epidermis. This protein is appropriately called keratin. Keratin makes our skin tough and gives us much needed protection against microorganisms, physical damage, and chemical irritation. Millions of these new cells occur in stratum basale on a daily basis. The newly produced cells push older cells into the upper layers of the epidermis over time. When these older cells move up towards the surface, they change their shape, nuclear and chemical composition. These changes are partly what give strata their unique properties. Stratum Spinosum and Granulosum Layers of epidermis: The epidermis consists of 95% keratinocytes but also contains melanocytes, Langerhan cells, Merkel cells, and inflammatory cells. Stratumbasale consists mainly of basal keratinocyte cells, which can be considered as epidermis stem cells. They divide to form the keratinocytes in the stratum spinosum, which migrate superficially. From the stratum basale, the keratinocytes move into the stratum spinosum, a layer so-called because its cells are jagged-shaped cells. Stratum spinosumet is partly responsible for the strength and flexibility of the skin. From there the keratinocytes move into the next layer, called stratum granulosum. This layer gets its name from the fact that the cells located here contain many granules. The keratinocytes produce a lot of keratin in this layer—they become filled with keratin. This process is known as keratinization. The keratinocytes become flatter, more brittle, and lose their nuclei in the stratum granulosum as well. Stratum Lucidum When the keratinocytes leave the stratum granulosum, they die and help form stratum lucidium. This death occurs largely as a result of the distance the keratinocytes find themselves from the rich blood supply the cells of the stratumbasale lying at top of. Without nutrients and oxygen, keratinocytes die when pushed towards the surface of our skin. It is lucidium is a layer that derives its name from the lucid (clear/transparent) appearance it sheds under a microscope. This layer is only easy to find in some hairless parts of our body, namely the palms and soles of the feet. Meaning, the places where our skin is usually the thickest. Stratum Corneum From stratum lucidium, the keratinocytes enter the next layer, called the stratum corneum (the layer filled with cornified cells). This is the only layer of skin we see with our eyes. The keratinocytes in this layer are called cornealocytes. They miss almost all their water and they completely lack a core at this point. They are dead skin cells filled with the tough protein keratin. Essentially, they are a protein mass more than they are a cell. The corneocytes act as a hard protective layer against environmental trauma, such as abrasions, candles, heat, chemicals, and microorganisms. The cells of the stratum corneum are also surrounded by lipids (fats) that help ward off water as well. These corneal strains are eventually shed in the environment and become part of the dandruff in our hair or the dust around us, which dust mites easily munch on. This whole cycle, from new keratinocyte in stratum basale to a dead cell flaked into the air, takes between 25-45 days. Skin structure: The Dermis Dermis consists of a papillary and a reticular layer that serves to protect and suppress the body from stress and strain. Differentiate among the regions of the dermis and hypodermis Key Takeaways Key Points Dermis is divided into a papillary region and a reticular region. The primary function of the dermis is to relieve the body from stress and strain, and to also provide: elasticity to the skin, a feeling of touch, and warmth. The dermis contains hair roots, sebaceous glands, sweat glands, nerves, and blood vessels. The hypodermis lies beneath the dermis and contains a protective layer of fat. Key

Terms Reticular Layer: The deepest layer of the dermis. Hypodermis: A subcutaneous layer of loose connective tissue containing fat cells, located under the dermis. dermis: The skin layer under the epidermis. Papillary Layer: The most superficial layer of the dermis. Lying beneath the epidermis—the most superficial layer of our skin—is the dermis (sometimes called corium). The dermis is a tough layer of skin. It's the layer of skin you touch when you buy some leather goods. The dermis consists of two layers. They are the papillary layer (the upper layer) and the reticular layer (the lower layer). The papillary layer Human Skin: This image details the parts of the integumentary system. The papillary layer provides the layer above it, the epidermis, with nutrients to produce skin cells called keratinocytes. It also helps to regulate the temperature of our skin and thus the body that Whole. Both nutrition and temperature regulation are due to an extensive network of blood vessels in this layer. These blood vessels also help remove cellular waste products that would otherwise kill the skin cells if they got accumulated. The pink hue to the skin of light-skinned individuals depends on the blood vessels found here. In fact, when you blush, it is the aortic of these blood vessels that causes you to turn red. The uneven projections found in this layer, called dermal papillae, also form people's fingerprints and give this layer its name. The Reticular Layer The reticular layer serves to strengthen the skin and also provides our skin with elasticity. Elasticity refers to how our skin can spring back into shape if deformed by something resembling a pinch. The reticular layer also contains hair follicles, sweat glands, and sebaceous glands. The sweat gland can be either apocrine, such as those found in the armpits and groin area, or the eccrine glands, which are found all over the body. The former contribute to body odor (along with bacteria on our skin), and the latter help regulate our body temperature through the process of evaporation. The sebaceous glands found in the dermis secrete a substance called sebum that helps to lubricate and protect our skin from drying out. The dermis also contains: Nerve endings that transmit various stimuli such as pain, itch, pressure, and temperature. Lymphatic vessels that transport immune system cells, the cells that help destroy infectious organisms that may have found their way into our body via a scratch on the skin. Collagen, a protein that helps strengthen our skin, and elastin, a protein that helps keep our skin flexible. The Hypodermis Under the Dermis is the deepest layer of our skin. It is alternatively referred to as hypodermis, subcoast, or subcutaneous tissue. It contains many collagen cells as well as fat. Fat, in particular, helps insulate our body from the cold and act as a cushion for our internal structures (such as muscles and organs) when something hits us. Fat can also be prompted by the body in times of great need as an energy source. Given the alternative names for this layer, it should come as no surprise that this is the layer where subcutaneous injections are given to via a hypodermic needle. Skin sensory receptors: The nearest surface of the skin includes receptors that detect light pressure, temperature and vibration, as well as naked nerve endings (dendrites) that detect pain. Deeper in the dermis are naked dendrites that meander around the bases of hair follicles and detect movements of the hairs, as well as receptors like pacinian corpuscles that respond to strong pressure and vibration. Skin Color Skin color is largely determined by the amount of melanin pigment produced by melanocytes in the skin. Explain how degrees of pigmentation produced Key Takeaways Key Points Skin color is determined primarily by a pigment called melanin. Melanin is produced by melanocytes through a process called melanogenesis. The difference in skin color between light and darkly pigmented individuals depends on their level of melanocyte activity; It does not depend on the number of melanocytes in their skin. Keytheme: One of a group of naturally occurring dark pigments responsible for skin color. Melanocytes: A cell in the skin that produces the pigment melanin. Keratinocytes: Cells that absorb and store melanin. eumelanin: The type of melanin that is mainly responsible for brown and black skin. Stratum Basale: The epidermal layer in which melanocytes are located. Skin color is largely determined by a pigment called melanin but other things are involved. Your skin is made up of three main layers, and the most superficial of these is called the epidermis. The epidermis itself consists of several different layers. Melanocytes: Cross-section of skin showing melanin in melanocytes The deepest of the epidermal layers is called stratum basale or stratum germinativum. In this layer lies important cells called melanocytes. Their names are derived from two parts: melano-, meaning black or dark, and -cyte, which means cell. Melanocytes are irregularly shaped cells that produce and store a pigment called melanin. The most abundant type of melanin is called eumelanin. This pigment is stored in organelles called melanosomes. Eumelanin is responsible for the brown and black pigmentation of human skin or the lack of such if little of it is produced. The production of melanin called melanogenesis-genesis means formation or development. How Skin Color is determined Regardless of background, each person has essentially the same number of melanocytes, but the genetics of each person is what determines how much melanin is produced and how it is distributed throughout the skin. For example, fair-skinned individuals may have darker places like nipples and moles. Conversely, dark-skinned individuals have a lighter tone to the palms of their hands. Another critical factor, exposure to sunlight, triggers the production of melanin as well. This is what gives us a tan. The melanin produced in response to the sun's rays protects our skin and the rest of the body from the harmful effects of sun burn and cancer-inducing U.V. radiation. The role of Keratinocytes People with darker skin have more active melanocytes compared to people with lighter skin. But the pigment in our skin also means the most abundant cells in our epidermis, the keratinocytes. While melanocytes produce, store, and release melanin, keratinocytes are the main recipients of this pigment. The transfer of melanin from melanocytes to keratinocytes occurs thanks to the long tentacles each melanocyte prolongs up to 40 keratinocytes. If a person cannot produce melanin, they have a condition called albinism. Other Skin Color Determinants Tanned Skin: Exposure to UV radiation by tanning causes changes in pigmentation of the skin by increasing melanin production. In addition to melanin, other factors play a role in general or local skin color. These include: The amount of carotene found in the stratum corneum of the epidermis and the deepest layer of skin, the hypodermis. Carotene is a yellow-orange pigment found in carrots. Your skin can turn this color if you eat very carotene-rich foods. The skin can turn yellow due to another factor, called icterus or jaundice, which occurs with severe liver disease. In this case, bile pigment is deposited in the skin and give a yellow color to it. The amount of oxygen-saturated hemoglobin found in the blood vessels in the middle layer of our skin, the dermis. Hemoglobin is the ferrous protein pigment in our blood cells. A lack of oxygen saturation adds a paler, grayer or bluer color to the skin. Skin may also become paler as a result of anemia (a decrease in the number of hemoglobin and/or red blood cells), low blood pressure, or poor circulation of blood. Conversely, light-skinned individuals (compared to dark-skinned ones) can have a bright effect on the skin thanks to the relatively more oxygen-rich hemoglobin that flows through the blood vessels of their dermis. Red-colored skin can also occur as a result of blood vessels in or near the skin dilating (expanding) due to embarrassment, fever, allergy, or inflammation. Finally, the skin may have red, black, blue, purple and green bruises—all as a result of the flight of blood in surrounding tissues. As the blood (namely, hemoglobin) decays and is processed and removed by different cells, it and the bruise change color over time. Time.

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