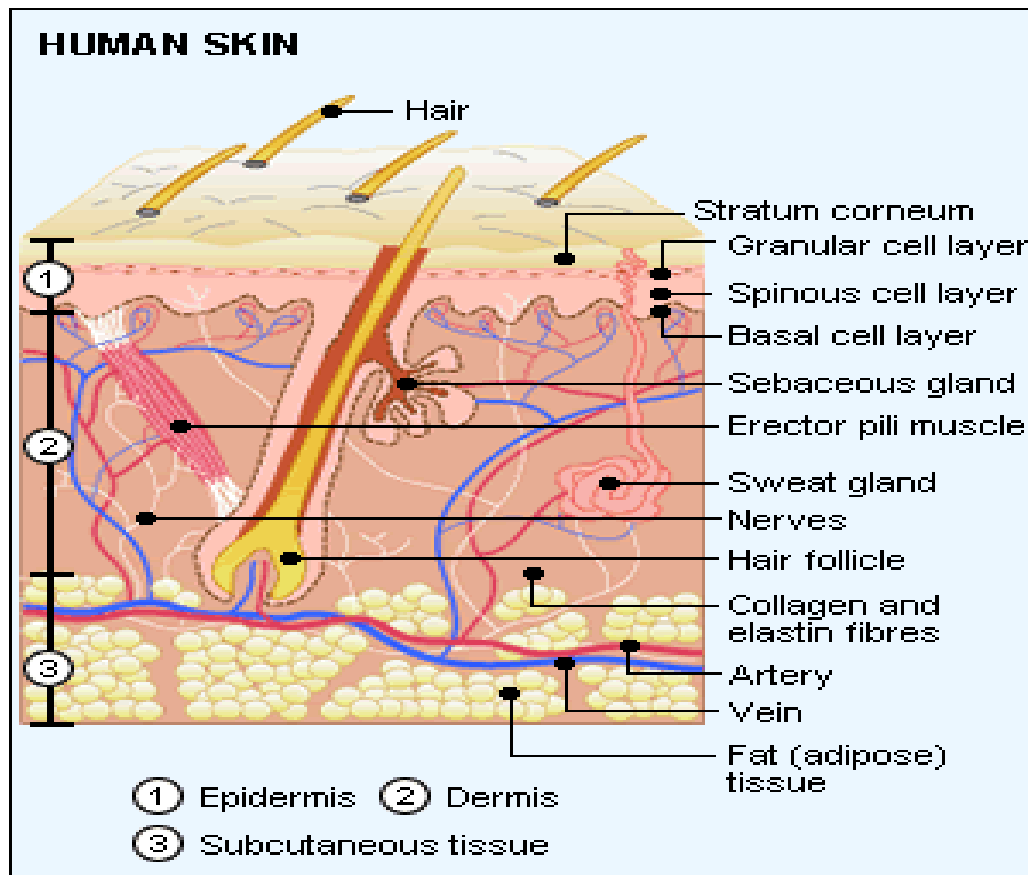


# Understanding your skin

- Your skin is your body's largest organ, and one of the most hardworking. Comprising of 20 square feet in most adults and weighing anywhere from six to ten pounds, it's washable, stretchable, tough and waterproof. When treated with care your skin is beautiful.

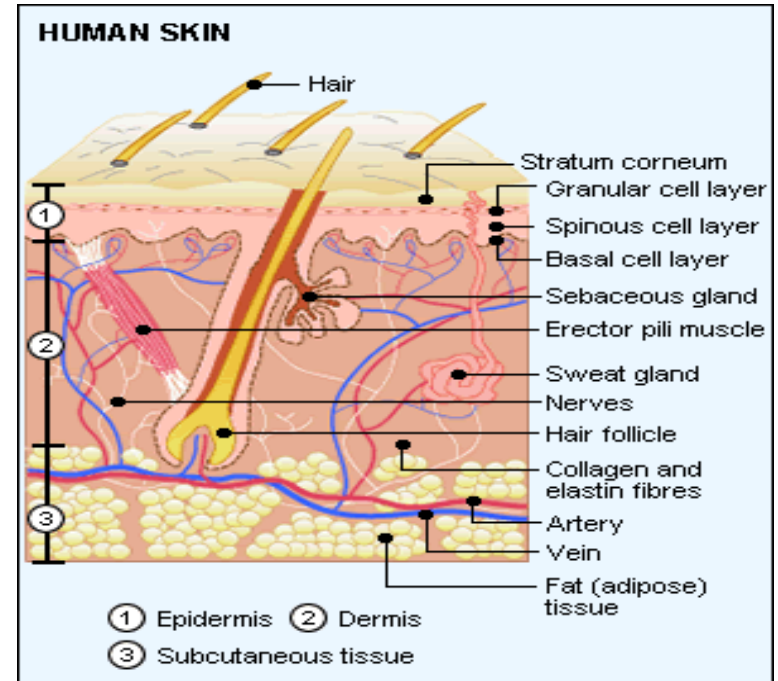


# Understanding your skin

- The three layers of your skin

- 1. The Epidermis

- This is the surface of your skin. It's the area that you touch, feel and see. The thickness of your epidermis depends on a number of factors, including your age, your sex and the location on your body. For example, the skin on the bottom of your foot can be up to 30 cell-layers thick, while the skin on your eyelids is tissue-thin.
    - The bottom section of the epidermis is called the basal layer. Basal cells are responsible for maintaining the epidermis by continually renewing the cell population. The cells in the basal layer also contain melanocytes which produce the melanin that gives skin its colour.



- What the epidermis does:

- Deflects damage from sun, dirt and bacteria.
    - Helps regulate body temperature.
    - Prevents moisture loss.

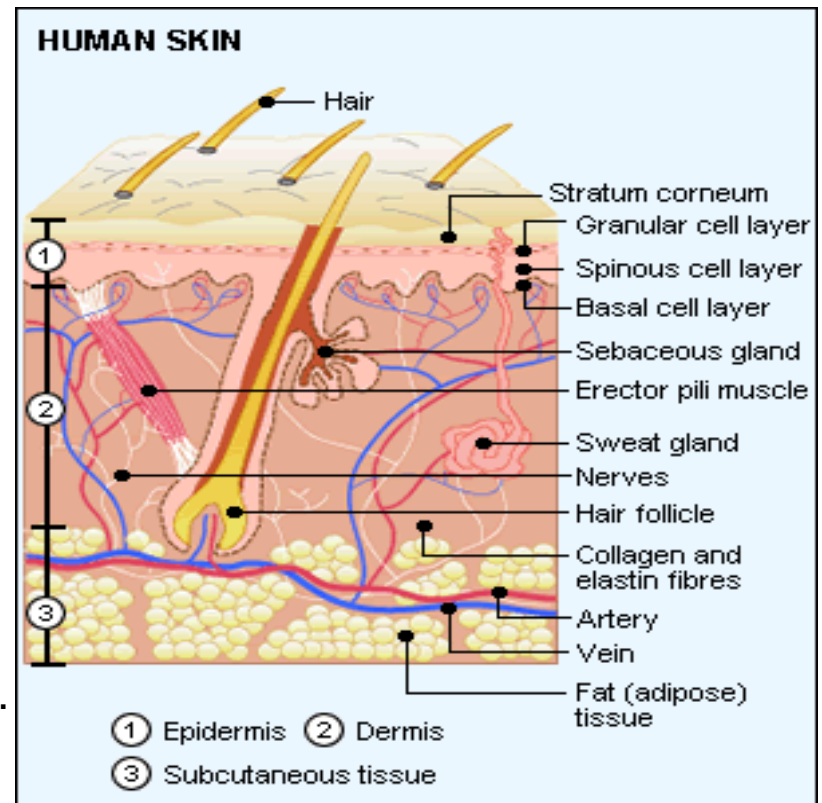
# Understanding your skin

## - 2. The Dermis

- The dermis lies beneath the epidermis, connected by a continuous membrane. The dermis is the thickest section of your skin. Here you will find blood vessels, white blood cells, nerve endings, hair follicles, sweat glands and sebaceous glands. Fibroblasts are the main cell type in the dermis. They manufacture collagen and elastin, the fibrous proteins which are the primary structural components of your skin. These proteins give your skin its resilience and elasticity.

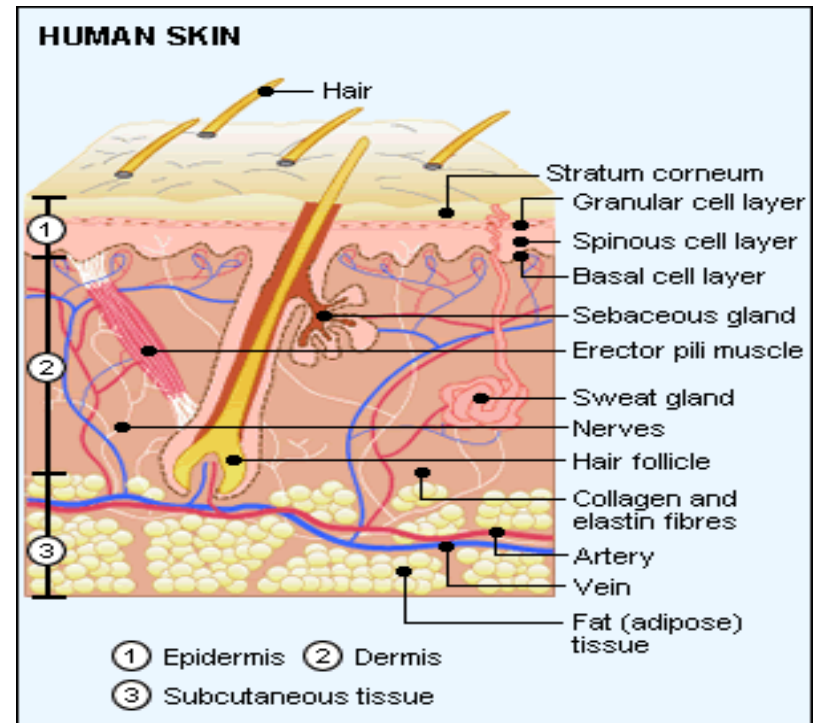
## - What the dermis does:

- Provides moisture to the epidermis.
- Produces the collagen which keeps skin firm.
- Produces the elastin which keeps skin flexible.
- Generates sebum which keeps skin supple and moist.



# Understanding your skin

- **3. The Subcutaneous Fat Layer**
  - Beneath the dermis is the subcutaneous fat layer. It's composed of an extensive network of connective tissue, laced with fat cells.
- **What the subcutaneous fat layer does:**
  - Gives skin its shape and contour.
  - Cushions the outer layers.
  - Connects skin to underlying tissues and muscles.



## Cell Renewal

Your skin is constantly renewing itself. Skin cell renewal occurs every 15 to 30 days. Here's how it works: Plump, fresh cells develop in the bottom or basal layer of the epidermis, then make their way up to the surface or stratum corneum. Eventually these cells dehydrate and flatten until they slough off and are replaced by new cells. As we age, this renewal process tends to slow.

# Skin ageing

- There are two distinct types of skin-ageing
  - Intrinsic (Internal)
  - Extrinsic (External)
- Intrinsic skin ageing
  - The natural ageing process
  - Continuous process normally begins in Mid 20's
  - Collagen production slows, elastin has less spring
  - Dead cells do not shed as quickly & turnover of new cells decreases
- The signs
  - Fine lines & wrinkles
  - Thin & transparent skin
  - Loss of underlying fat leading to hollow cheeks/eye sockets & loss of firmness – skin sagging

# Skin ageing

- **Extrinsic Ageing**

- Caused by environmental factors
- Acts together with normal ageing process to prematurely age our skin

- **Environmental factors**

- **The sun**

- Photoageing – ageing caused by exposure to the sun's rays.
  - UV irradiation of the skin increases Reactive Oxygen Species (ROS) and decreases anti-oxidant enzymes.
  - Ultraviolet exposure breaks down collagen and impairs the synthesis of new collagen. The sun also attacks our elastin.
  - Ultraviolet exposure increases melanin production resulting in patches of increased hyperpigmentation.
  - Without protection exposure over the years causes noticeable changes – freckles, age spots, spider veins, rough & leathery skin, fine lines & wrinkles, blotchy complexion and skin cancer.

# UVA, UVB, Sunscreens, SPF

- **UVA & UVB**

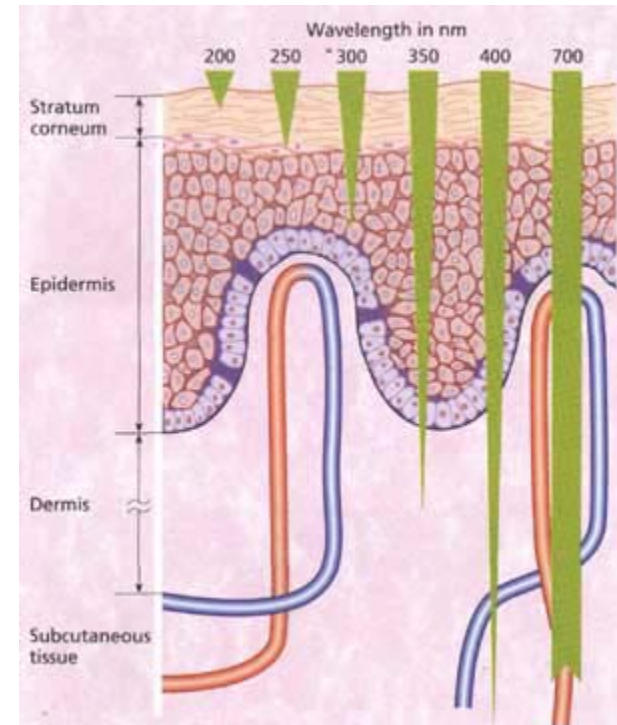
- **UVA**: More for **a**geing

- UVA irradiation affects the elastin in the skin and leads to wrinkles, leathery skin & brown pigmentation as well as skin cancer. UVA penetrates the skin more deeply than UVB.

- **UVB**: **b**urning

- UVA irradiation causes sunburn, which has strong links to skin cancer.

Dept of skin penetration



UVB mainly affects the epidermis, while UVA penetrates deeper into the dermis.



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# UVA, UVB, Sunscreens, SPF

- **Sunscreens** are generally divided into 2 types;
  - Chemical filters which absorb UV radiation
  - Physical filters which physically block UV radiation
- **SPF – Sun Protection Factor**
  - Amount of protection a sunscreen will provide against sunburn.
  - Normally shows the level of protection against UVB not protection against UVA.
    - e.g. an SPF of 20 means you should get 20 times the protection against burning.



# Skin ageing

- Other extrinsic factors include:
  - Facial Expression
    - Repetitive facial movements actually lead to fine lines & wrinkles
  - Gravity
    - Constantly pulls on our bodies causing eyelids to fall, ears to elongate, jowls to form, upper lip disappears while lower lip becomes more pronounced
  - Smoking
    - Causes biochemical changes in our bodies that accelerates ageing. Unhealthy yellowish hue to complexion
  - Sleeping positions
    - Resting your face on the pillow the same way every night leads to wrinkles (Sleep Lines)