

# The Integumentary System

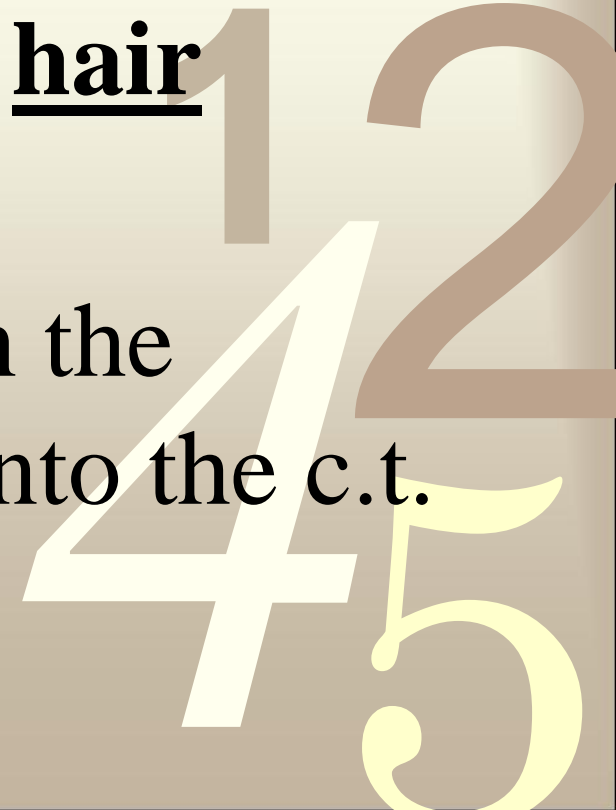
Hair & Nails



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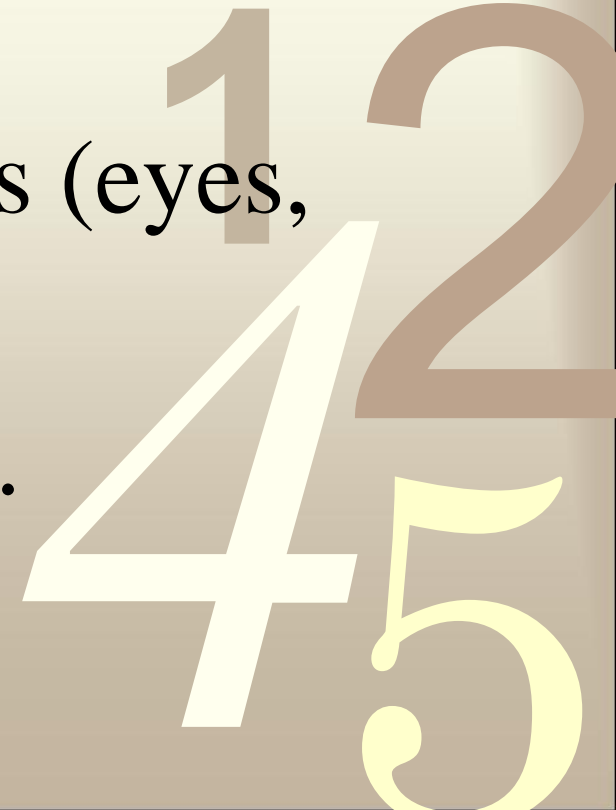
# Location of Hair

- 5 million hairs on the body.
- Only 2% are on the head.
- Grow from organs called **hair follicles**.
- Hair follicles are found in the dermis projecting down into the c.t. layer.



# Functions of Hair

- On the head: UV light protection, insulate the skull, cushion blow to head.
- Filter out foreign particles (eyes, ears, nose).
- Increased skin sensitivity.



# Functions of Hair (con't)

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- Arrector pili muscles to increase hair loft for intimidation and heat insulation.



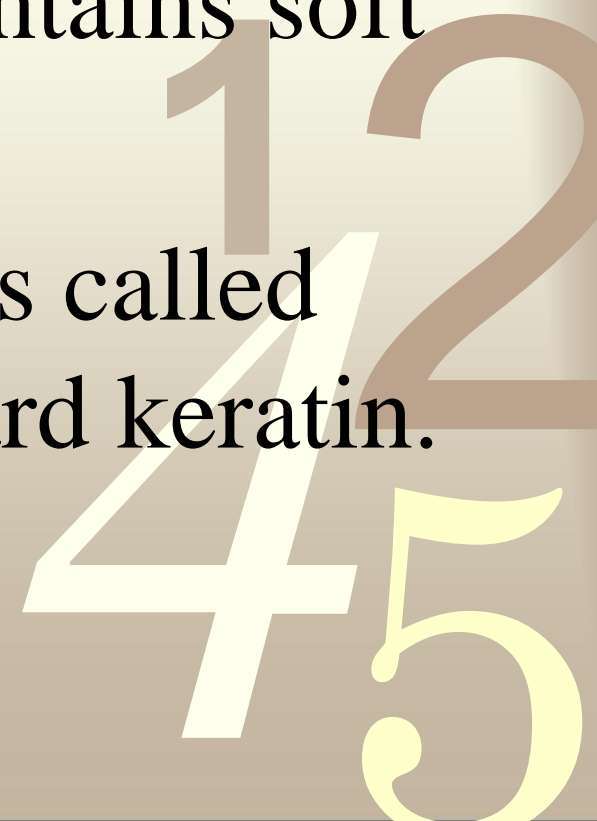
# Hair Growth

- The base of the hair follicle contains the hair papilla which contains the blood supply and nerves.
- The hair bulb is epithelial cells that surround the papilla. These cells divide and produce the growing hair.

# Hair Anatomy

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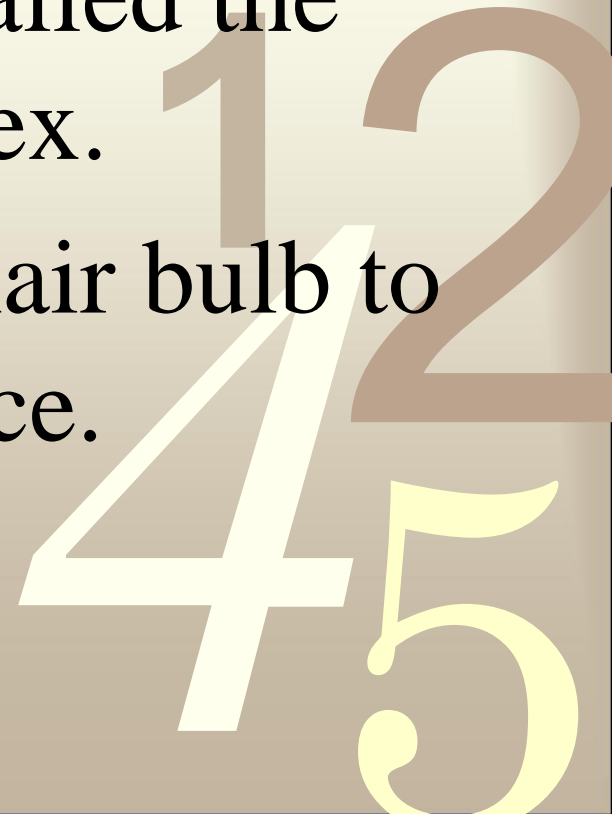
- The center of the hair shaft is called the medulla. It contains soft keratin.
- The outside of the shaft is called the cortex. It contains hard keratin.

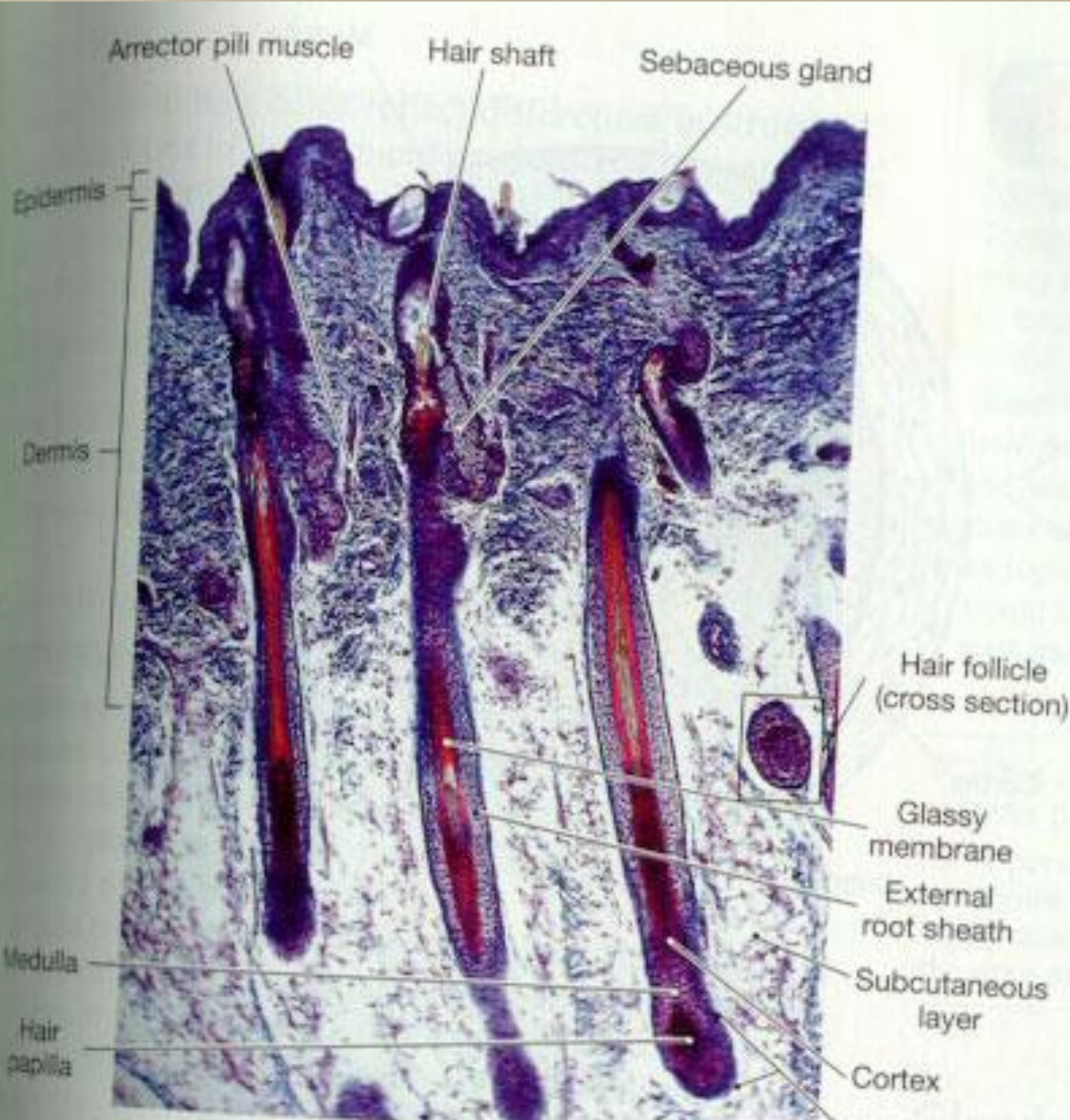


# Hair Anatomy

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- Dead, keratinized cells called the cuticle surround the cortex.
- The root goes from the hair bulb to halfway to the skin surface.







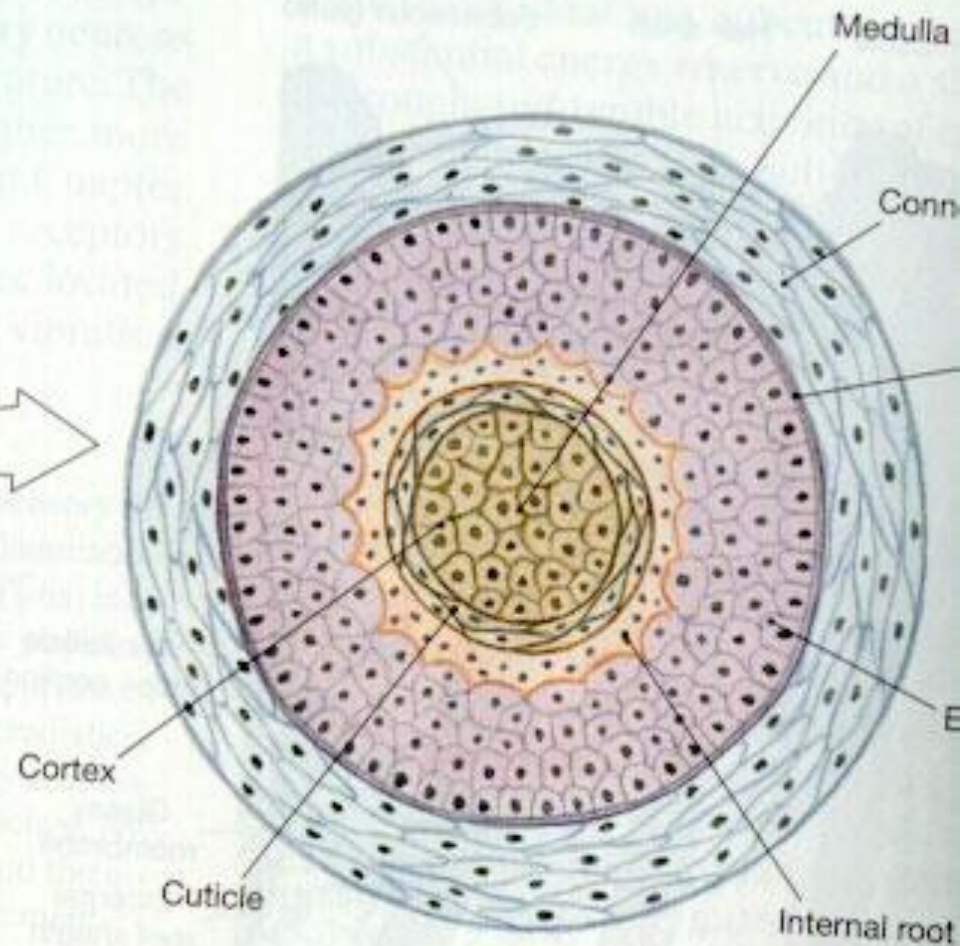
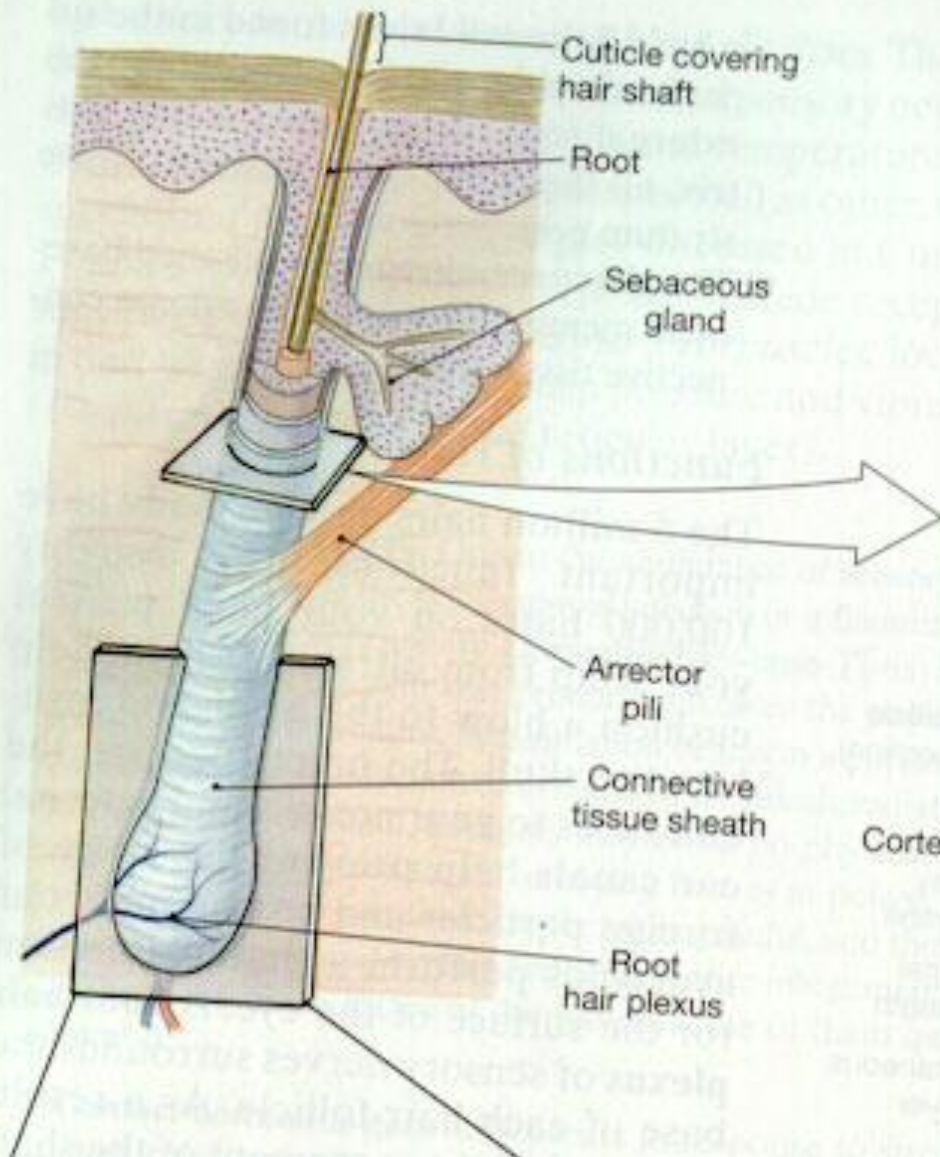
# Around the Hair

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Surrounding the hair are the following layers:

- Internal root sheath
- external root sheath
- glassy membrane
- connective tissue sheath





(a)



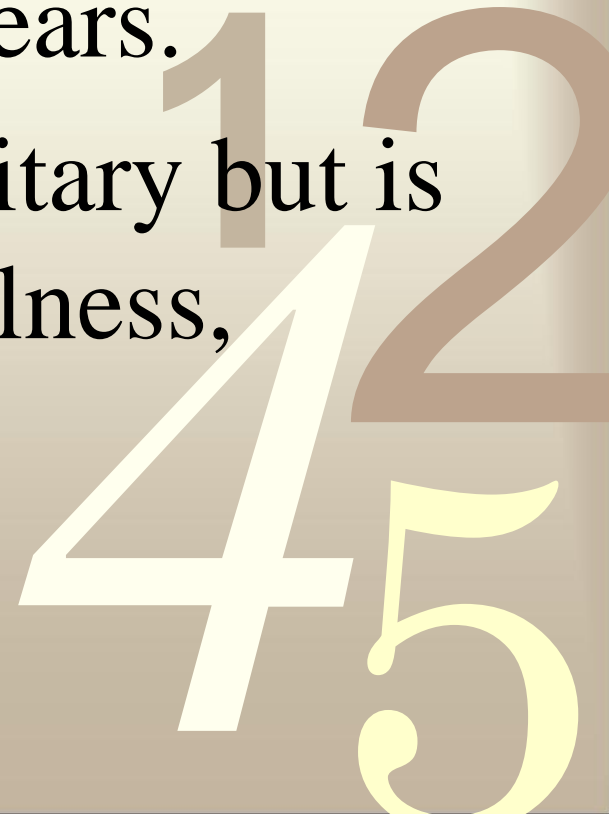
# Hair Color

- Hair is colored by melanin.
- As you get older melanin production slowly drops so your hair gets lighter in color.
- White hair is hair without melanin and air bubbles in the medulla of the hair (the hair becomes hollow).

# Growth of Hair

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- Grows 0.33 mm per day.
- Each hair can last 2 - 5 years.
- Hair loss is mostly hereditary but is affected by drugs, diet, illness, stress, hormonal factors.

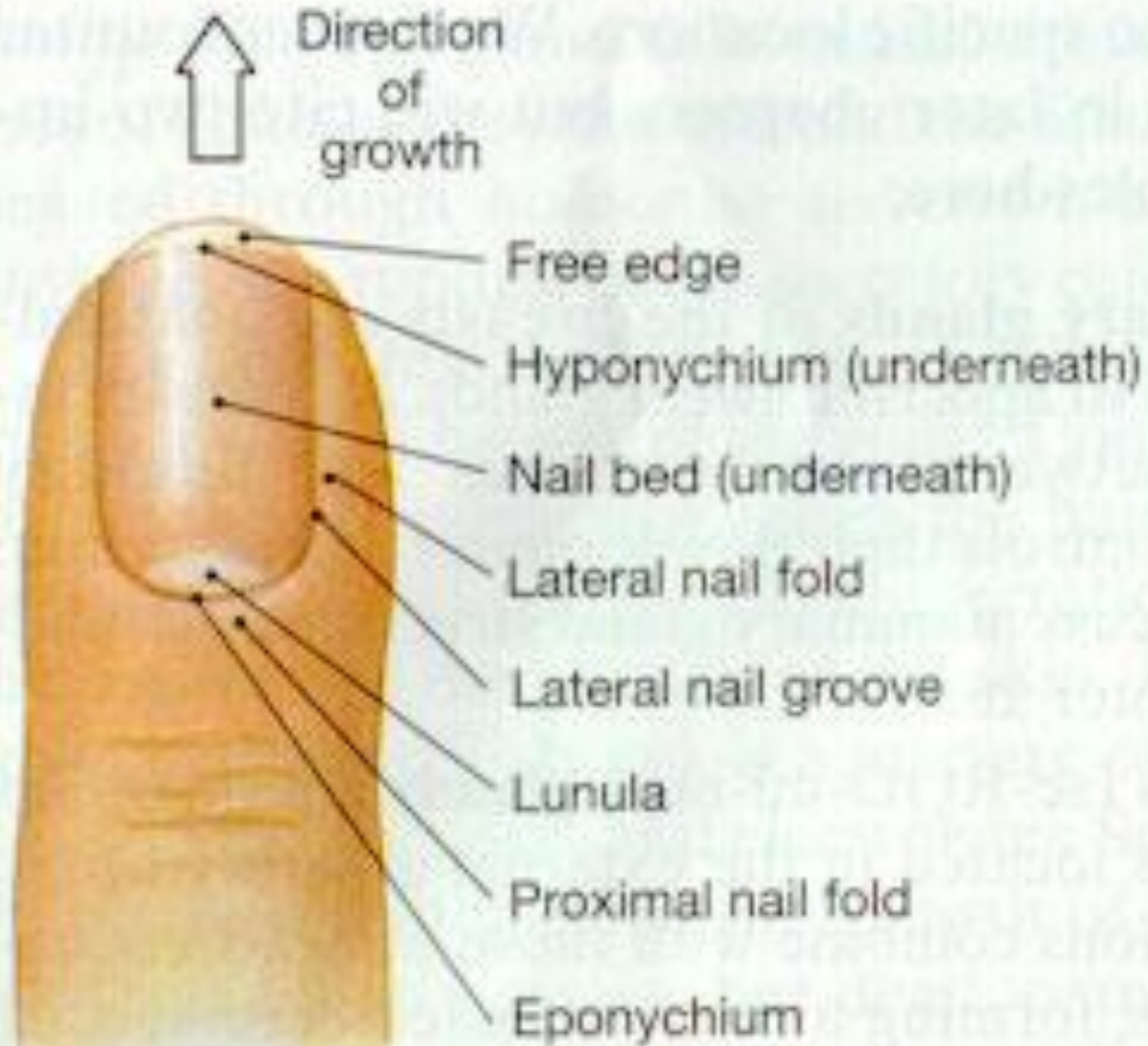


# Two Types of Hair

1. Vellus Hair - “peach fuzz” or baby fine hair.
2. Terminal Hair - heavy, pigmented hair like the hair on your head or arms.

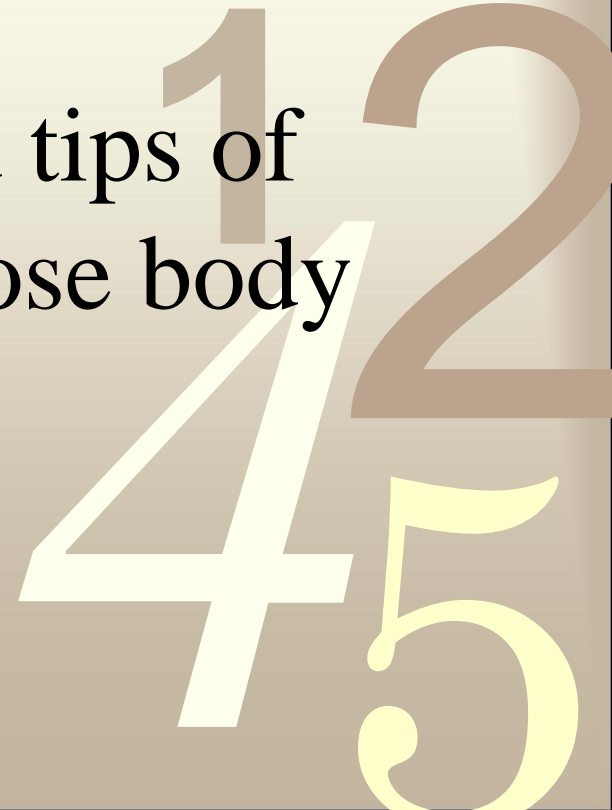


# Nails



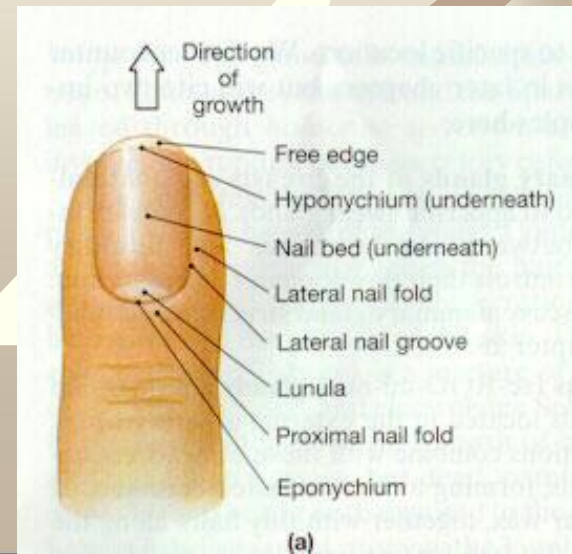
# Function of Nails

- Nails form at the tips of fingers and toes.
- They protect the exposed tips of fingers and toes when those body parts are used.



# Nail Parts

1. Nail body: the actual nail.
2. Nail Bed: behind the nail body.
3. Nail Root: growing point of the nail body.
4. Cuticle: part of the stratum corneum.



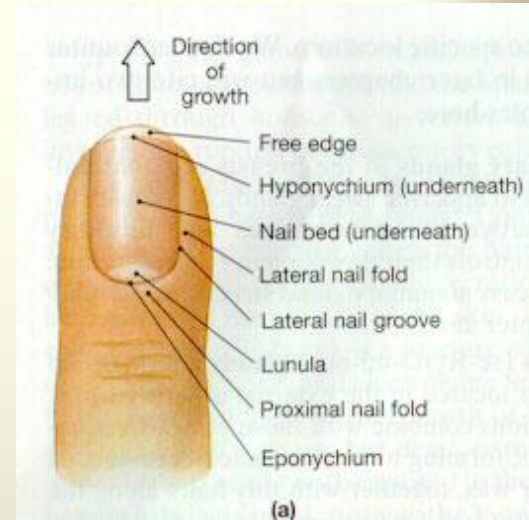


# Nail Parts

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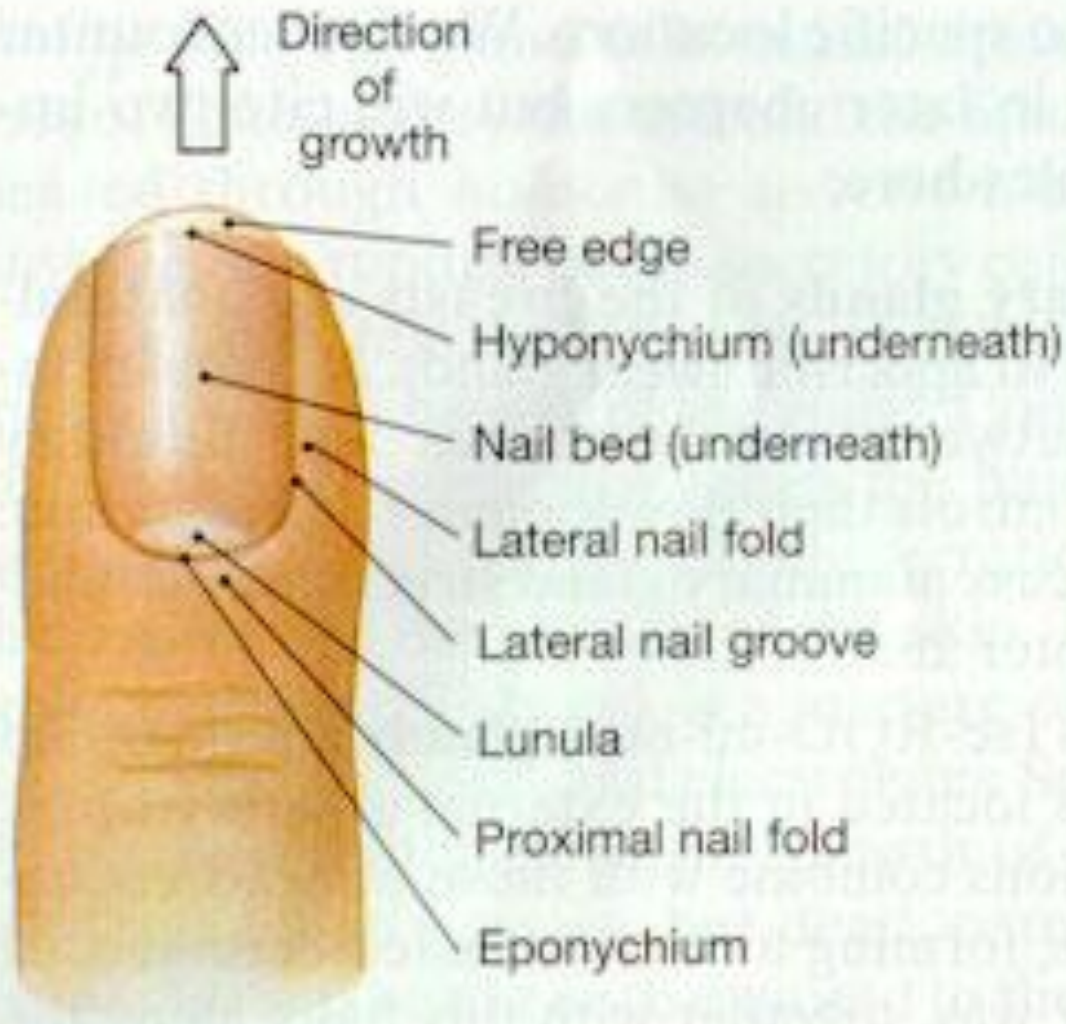
5. Lunula: the moon shaped area at bottom of nail (no function, the color from blood vessels are blocked giving it a white color).

6. Hyponychium: thick stratum corneum at end of nail.



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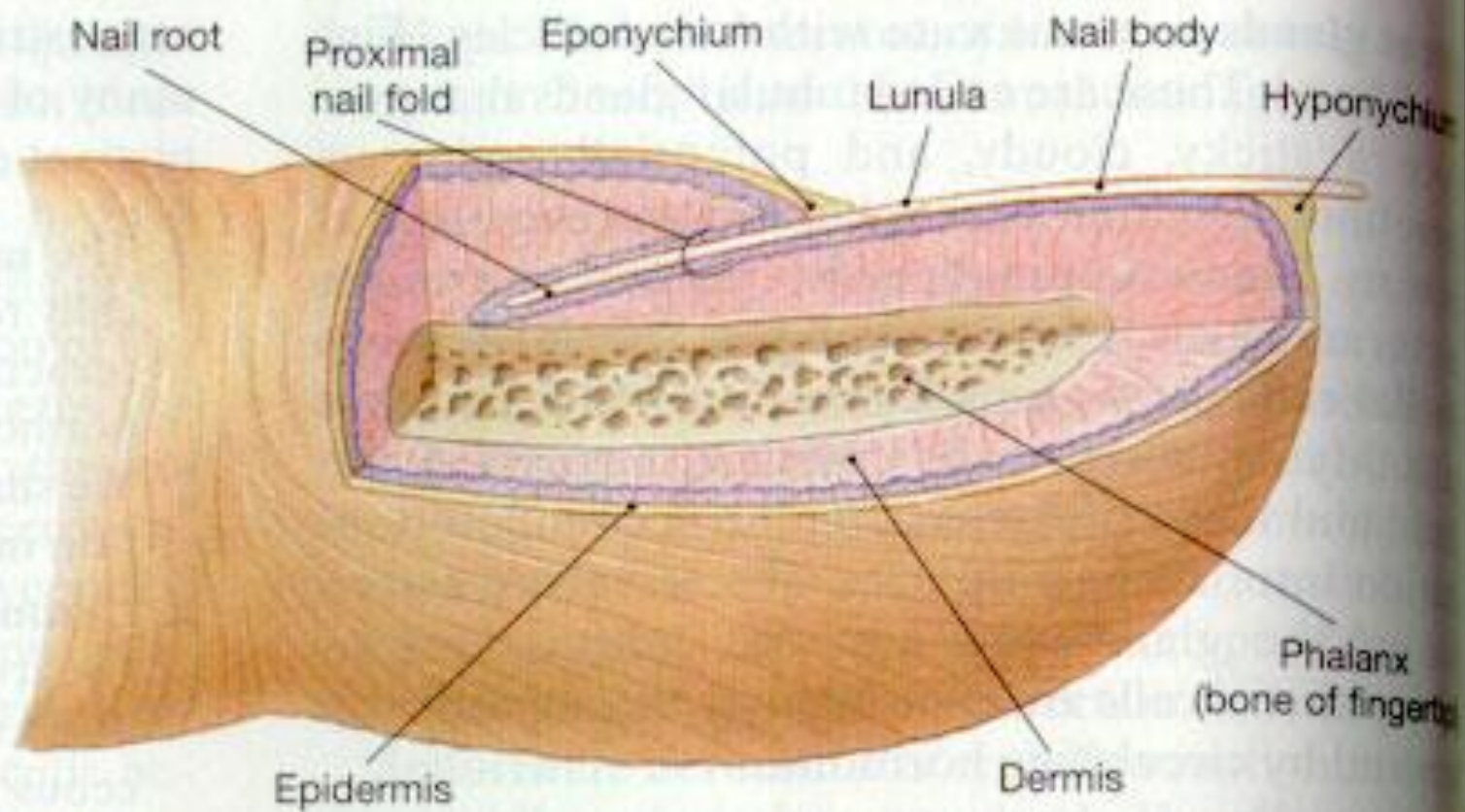
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(a)

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(b)