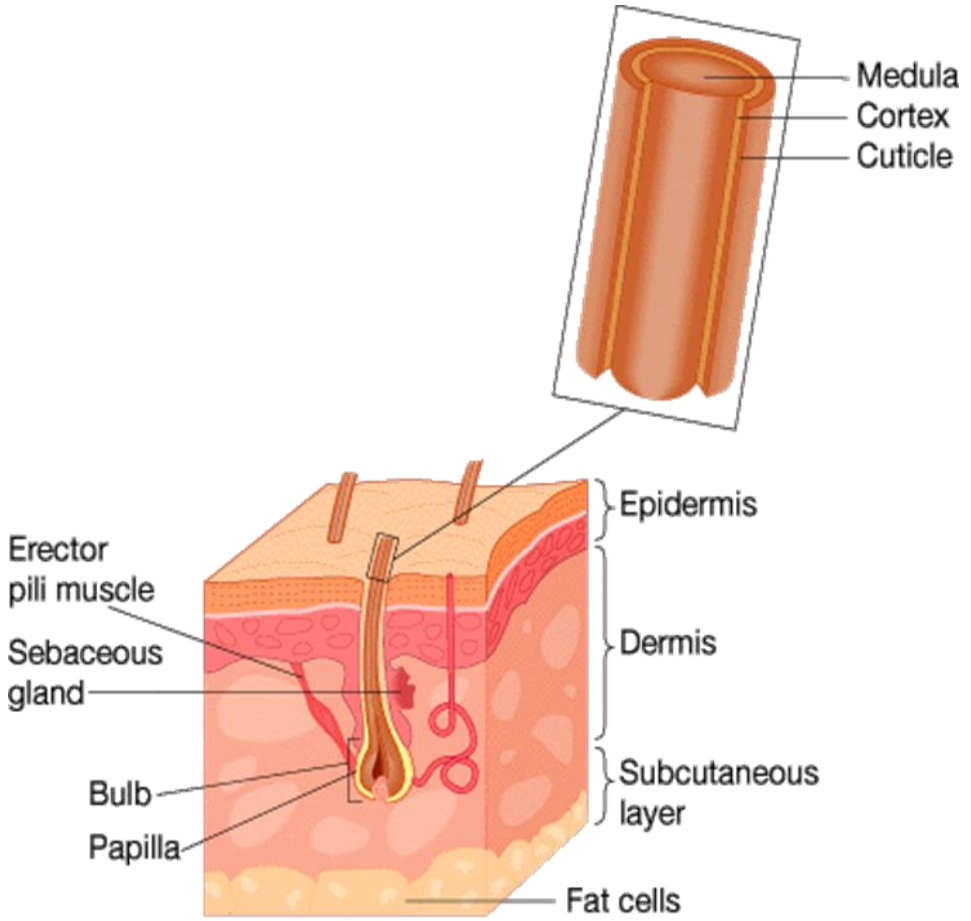
The Hair

The Hair Bulb

- The hair dead tissue composed of keratin and related proteins

- The hair bulb is a structure of actively growing cells which eventually produce hair. Cells continually divide in the lower part of the bulb and push upwards, gradually hardening. When they reach the upper part of the bulb they arrange themselves into six cylindrical layers.

- The three inner layers become the hair, made up of the **cuticle, the cortex and the medulla** – although the medulla isn't always present, especially in hairs with a thinner diameter. The outer three layers become the lining of the follicle and form the inner root sheath and basement membrane, around which lie undifferentiated cells. Specific cells in the hair bulb, called melanocytes, make the pigment called melanin that gives your hair its color.



The Human Hair

- Continuous formation of new hair cells push hair material upward, hardening and developing pigmentation in the process

  - Head hair: 0.35 mm per day; 3 - 5 years; 100,000-150,000 hairs
  - Beard hair: 0.38 mm per day
  - Eye brows: 0.16 mm per day

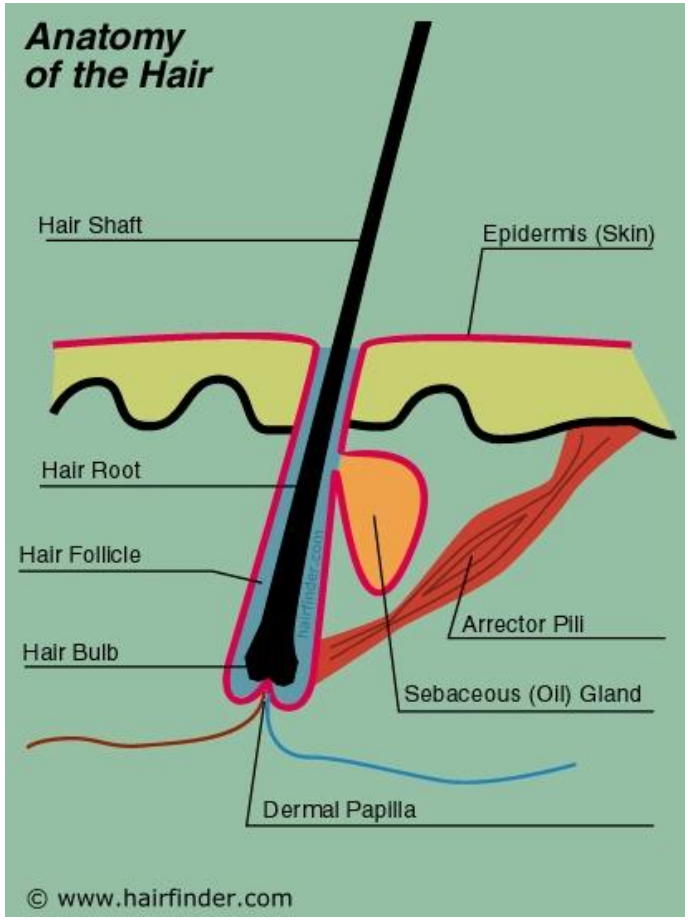
Hair Color

- Hair color: melanin pigments
- Eumelanin: brown to black
- Phaeomelanin: yellowish-blond, ginger and red colors
- Absence of pigment white/gray hair

The Hair Shaft

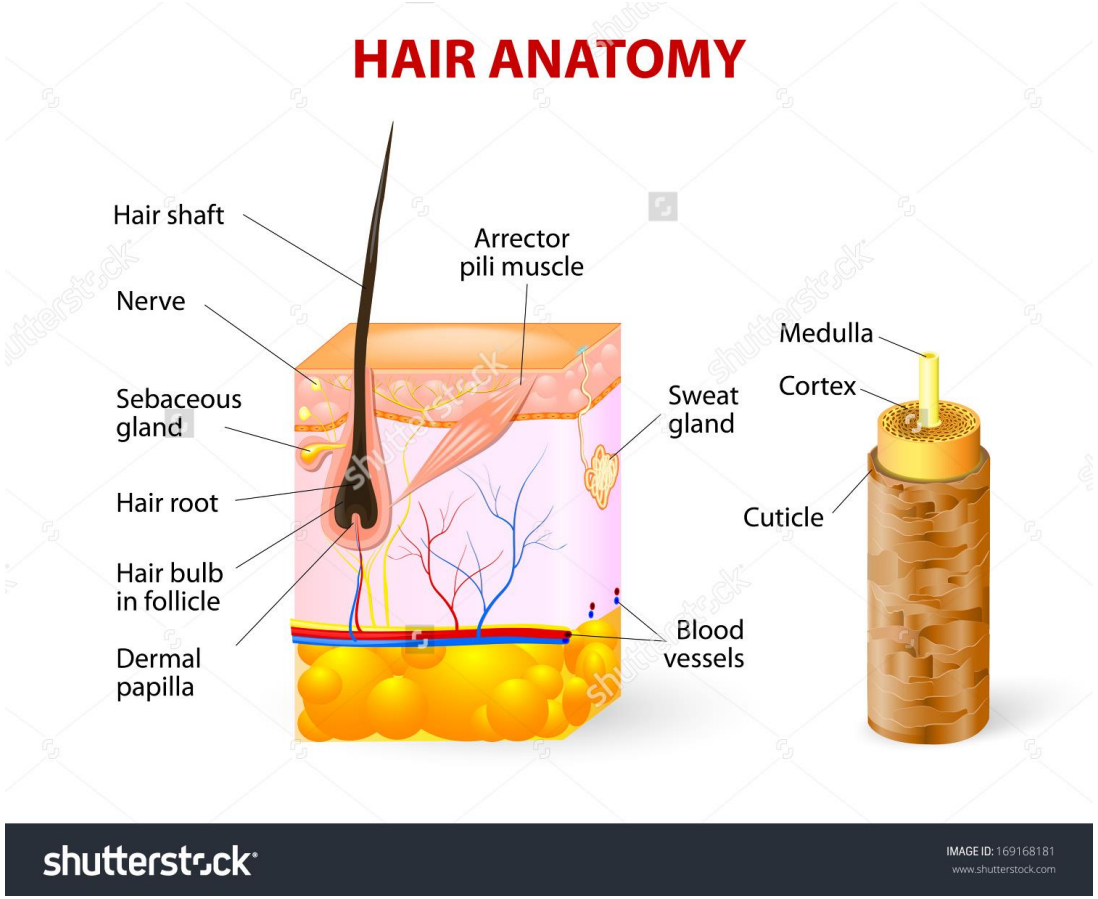
- is the part of your hair that can be seen above scalp. It's made of a protein called keratin, compacted and cemented together. Keratin is a remarkably strong protein, which is very resistant to wear and tear. It is in fact the same material that feathers, claws, nails and hoofs are composed of!
- Keratin is a sulphur-rich protein, with strong disulphide bonds holding the protein strands together. This plays an important role in any chemical processing like perming and relaxing, as these break disulphide bonds and reset them to a different configuration to change the shape of your hair.

- The hair shaft also consists of hydrogen bonds, which help to give the hair its flexibility. They are weaker and more numerous than disulphide bonds and are easily broken with the application of water allowing us to temporarily change the natural configuration of our hair with heated styling aids after washing.



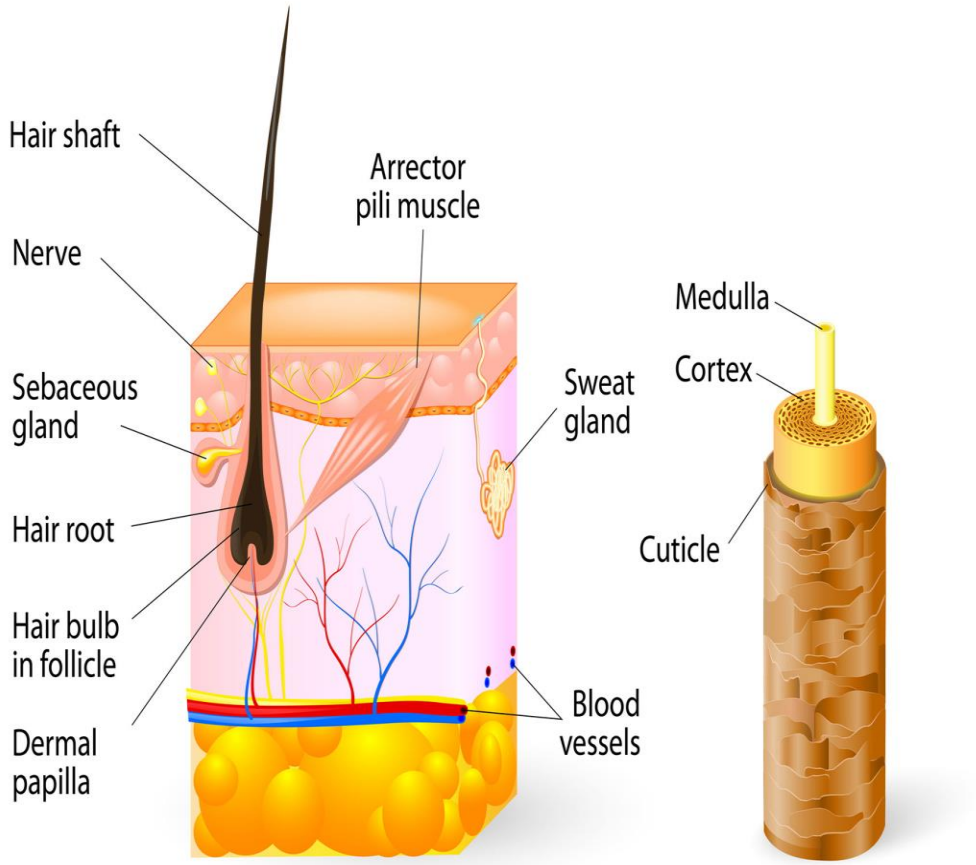
Three parts of the hair shaft

- Cuticle - A protective layer composed of overlapping cells, like fish scales or roof tiles, but facing downwards. The outer cuticle holds the hair in the hair follicle by means of a Velcro-like bond. It also minimizes the movement of water (moisture) in and out of the underlying cortex. However, chemical processes and weathering can lift the cuticle and disrupt this balance. When healthy, i.e. smooth and intact, the outer cuticle gives the hair shine and protects the inner layers from damage.



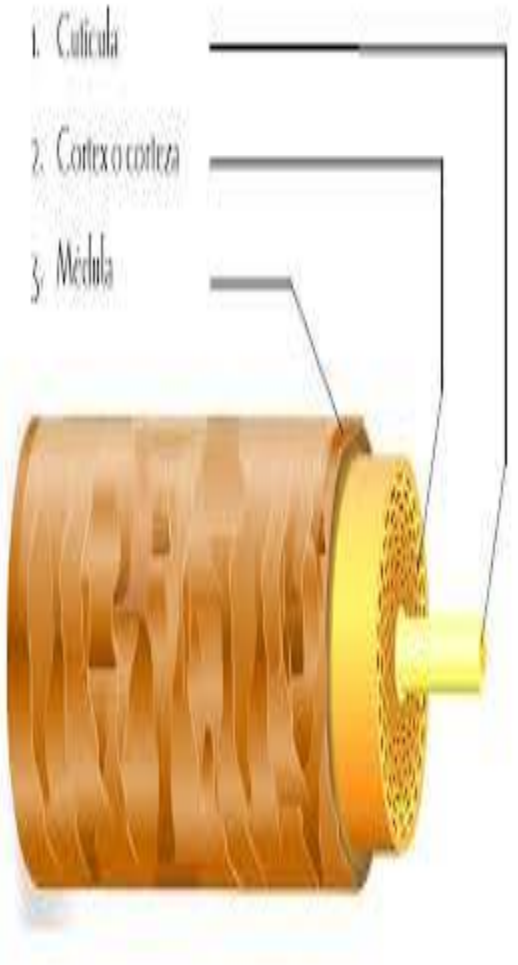
The Cortex

- Forms the hairs' main bulk and pigment (color). It consists of long keratin filaments, which are held together by disulphide and hydrogen bonds. The health of the cortex depends largely on the integrity of the cuticle protecting it.



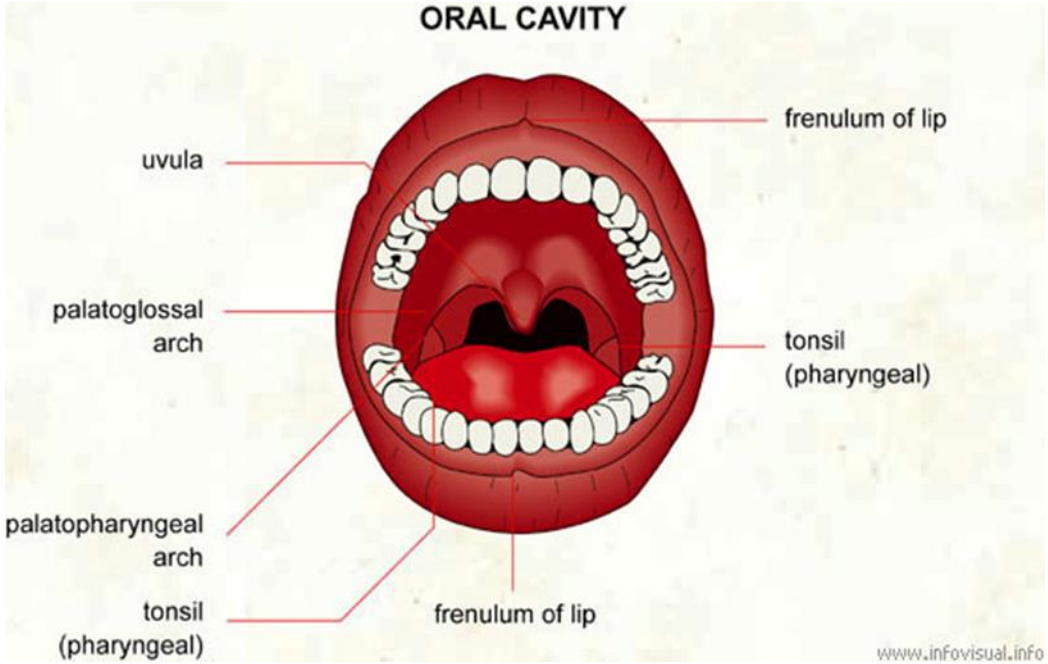
The Medulla

- If present, this consists of a thin core of transparent cells and air spaces.



The Oral Cavity

- The mouth serves a number of roles because of its unique components
- The mouth's receptor structures receive and process stimuli
- Role in the digestive system of the body from salivation which triggers the release of the digestive juices, tactile responses of the tonque in swallowing , and the sense of taste.
- The role of the teeth in mastication



Oral Tissue Structure

- Teeth

-Enamel

-Dentis

-Cementum

- Periodontium (soft and hard tissues)

-Gingiva

- Mucuous membrane (mucosa) 3 categories based on functions

Masticatory muscle: forward area of the jaws, hard palate

Lining mucosa: inside the lips, cheeks, vestibule, soft palate, floor of the mouth

-Specialized mucosa : tongue surface

Oral Environment

- Perfect living conditions for bacteria: warm , damp environment, glycoproteins from the saliva
- 300 strains in tooth plaque, static and solid deposit
- Spherical bacteria, trichobacteria, rod bacteria, and spiral bacteria