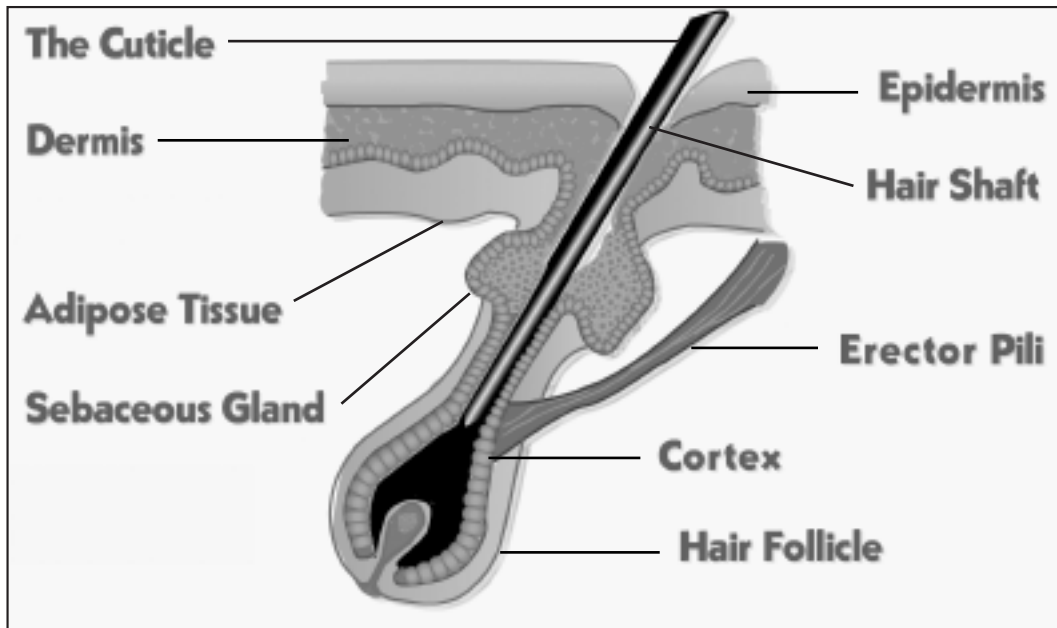


Hair



Dermis

Layer of connective tissue and nerve endings, sweat glands and hair follicles.

Adipose Tissue

Provides a store of fat and is an insulating layer.

Sebaceous Gland

The sebaceous gland, located above the attachment of the muscle, connects to the pilar canal through a duct – it releases oil (sebum), which helps to protect and waterproof the hair and skin.

The Cuticle

This is the outer protective layer of the hair. It is made up of 3 – 14 layers of translucent sheets of flattened scales of keratin. In normal healthy hair the cuticle scales are open when wet and closed when dry. As they are translucent they allow light to pass through and reveal the condition and natural hair colour (pigment) in the cortex. When the cuticles are damaged they reflect less light and so make the hair appear dull.

BAREFACTS

Epidermis

Outer layer of the skin.

Hair Shaft

The hair shaft is a very porous structure and softens rapidly with wetting.

The hair is most brittle when dry, a time when it is most susceptible to mechanical injury. Healthy hair when wet will stretch approximately 1/3 of its length without damage and retract again when dry. If these bonds are damaged, the hair will be limp and lifeless and will stretch more than a 1/3 but it will not bounce back (like overstretched elastic). If the moisture content is lost, the hair becomes brittle and easily damaged.

The hair shaft is made up of three layers:

- 1) An innermost layer or medulla which is only present in large thick hairs.
- 2) The middle layer known as the cortex. The cortex provides strength and both the colour and the texture of hair.
- 3) The outermost layer is known as the cuticle. The cuticle is thin and colourless and serves as a protector of the cortex

Erector Pili

A muscle is attached to the side of the follicle and runs to the upper dermis, forming an obtuse angle. When the muscle contracts, the hair rises resulting in 'goose bumps'.

Cortex

Fibrous proteins fill the cortical cells and are surrounded by a matrix protein and these are locked together by disulfide bonds. The hair shafts can be damaged by sunlight, especially lightly coloured hair, and by chemicals used to bleach or colour the hair. Reduction of disulfide bonds is commonly used to straighten or permanently curl hair. This results in cumulative injury and must be done with care to avoid breakage. The cortex forms the bulk of the hair. It is an absorbent, fibrous, cable-like structure held together by disulphide and hydrogen bonds, which give the hair its shape and elasticity. The cortex also contains the natural colour pigments of the hair.

Hair Follicle

Multiple layers with the outermost continuous with the epidermis. Positioned at an angle with its base in the subcutaneous fat. This is where the hair root is situated and the opening through which the hair grows.