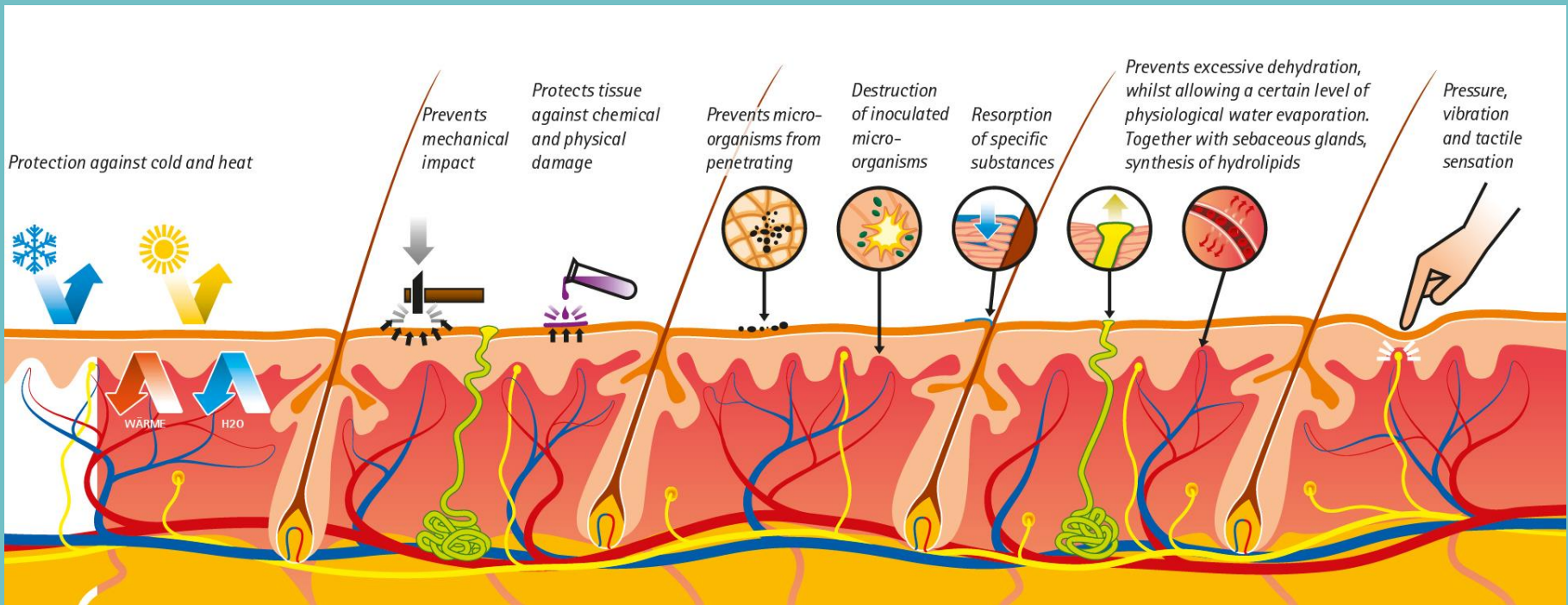


Skin

Functions of the skin



Layers and functions of the skin:

Functions of the skin

The skin has six functions:

Sensation

Heat regulation

Absorption

Protection

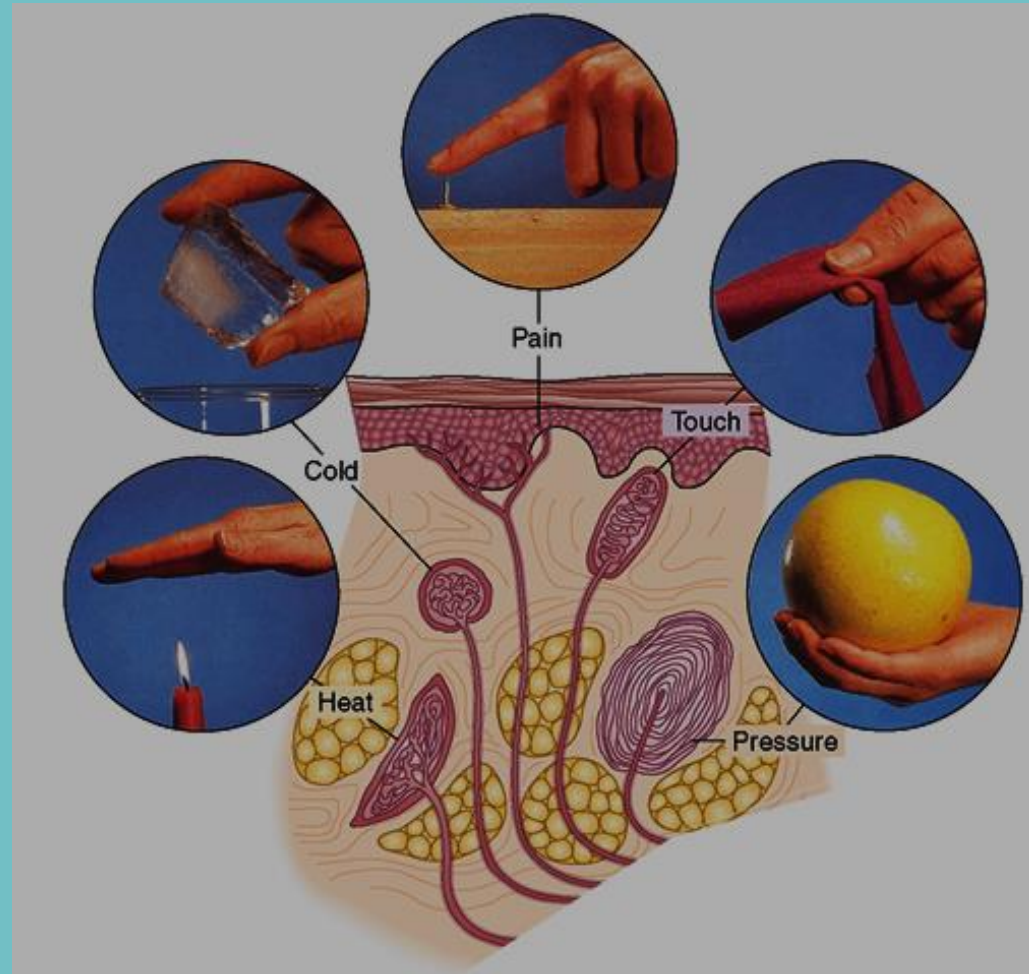
Excretion

Secretion

Layers and functions of the skin:

S is for Sensation

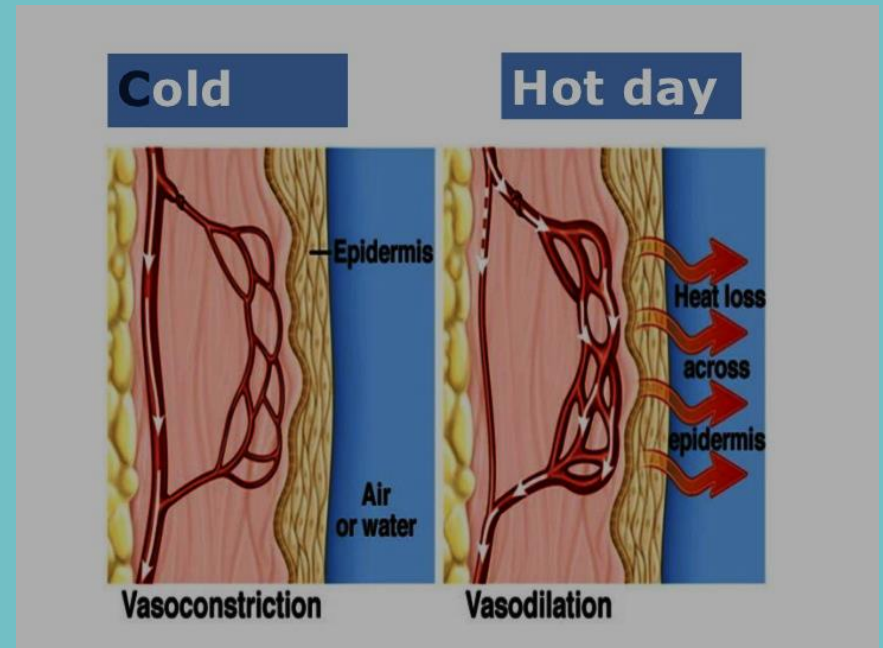
- The nerve endings within the skin allow you to identify sensations such as:
 - pain
 - touch
 - heat
 - cold
 - pressure.



Layers and functions of the skin:

H is for Heat regulation

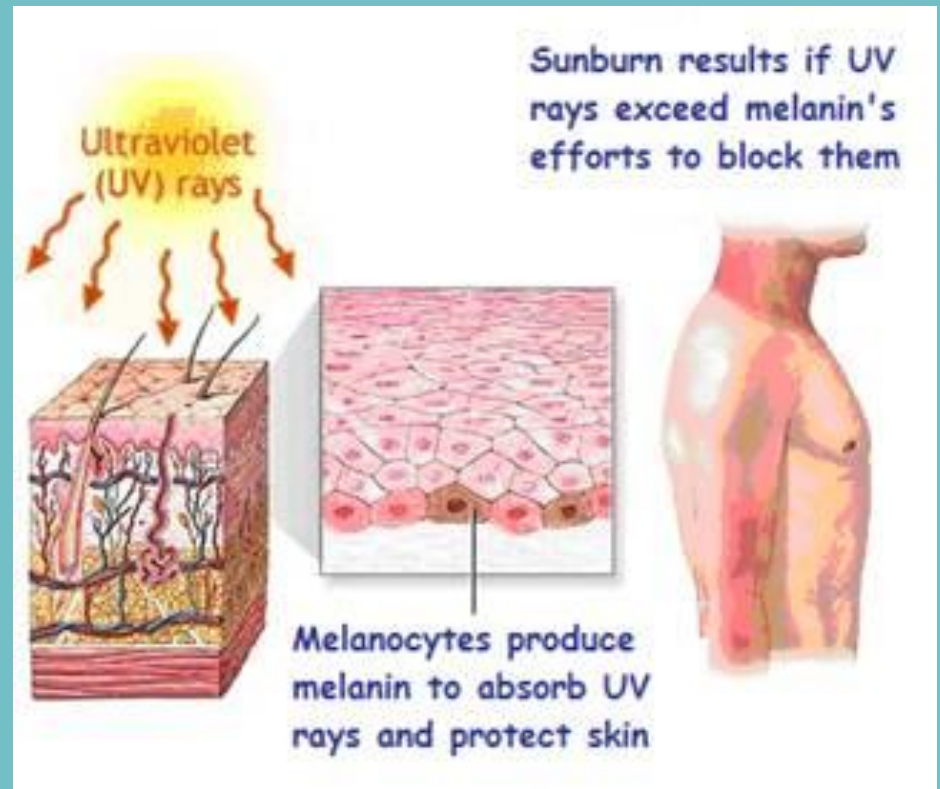
- The skin helps regulate body temperature in several ways:
 - Sweat is produced when the body needs to lose heat. As the sweat evaporates from the skin, the body is cooled.
 - Shivering causes the hairs to stand on end. This closes the pores, preventing sweat loss and allows a layer of air to become trapped, which warms the body.
 - Blood vessels close to the skin's surface dilate when the body is hot. This allows heat to leave the body. Blood vessels also contract, which keeps the heat inside the body.
 - [Heat regulation visual aid](#)



Layers and functions of the skin:

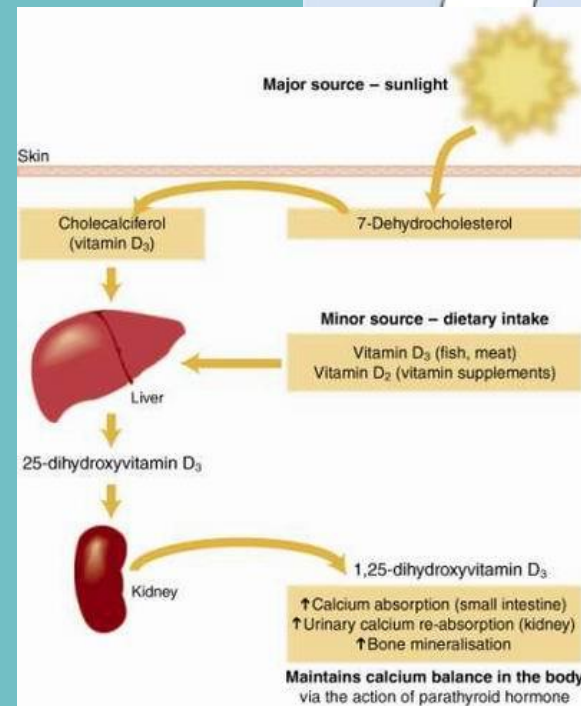
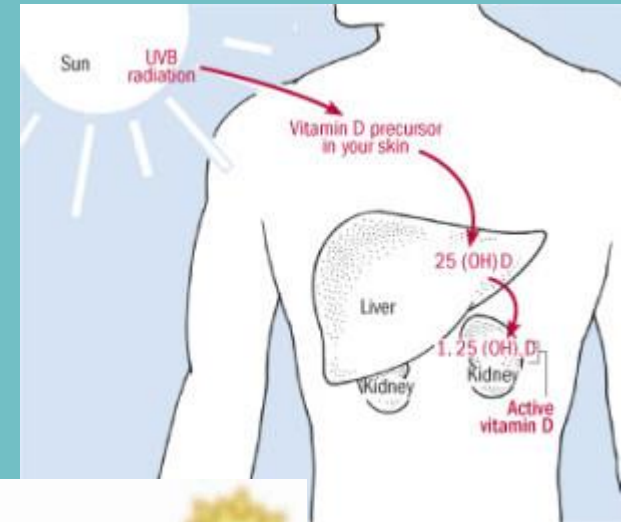
A is for Absorption

- The skin has limited powers of absorption, but certain types of medicinal creams are absorbed through the skin.
- Ultra-violet light is absorbed by the layers of the skin. This helps to form vitamin D, which we need to form strong and healthy bones and for good eyesight.



Functions of the skin: Vitamin D production

- Vitamin D is produced in the skin. This happens through exposure to UVB rays. Cholecalciferol is produced and taken to the liver where it is made into calcidol and stored as vitamin D
- Vitamin D helps build strong bones and teeth as well as helps the immune system

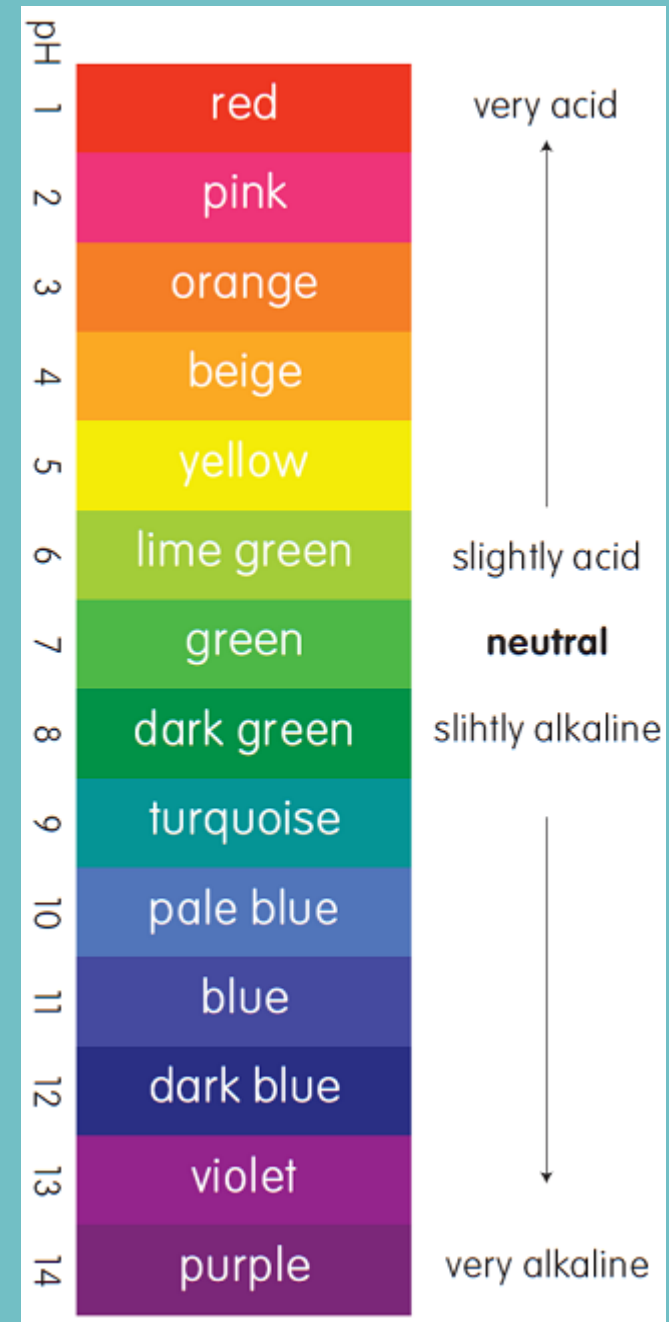


Protection experiment

pH testing

The skins pH is between 4.5-5.5

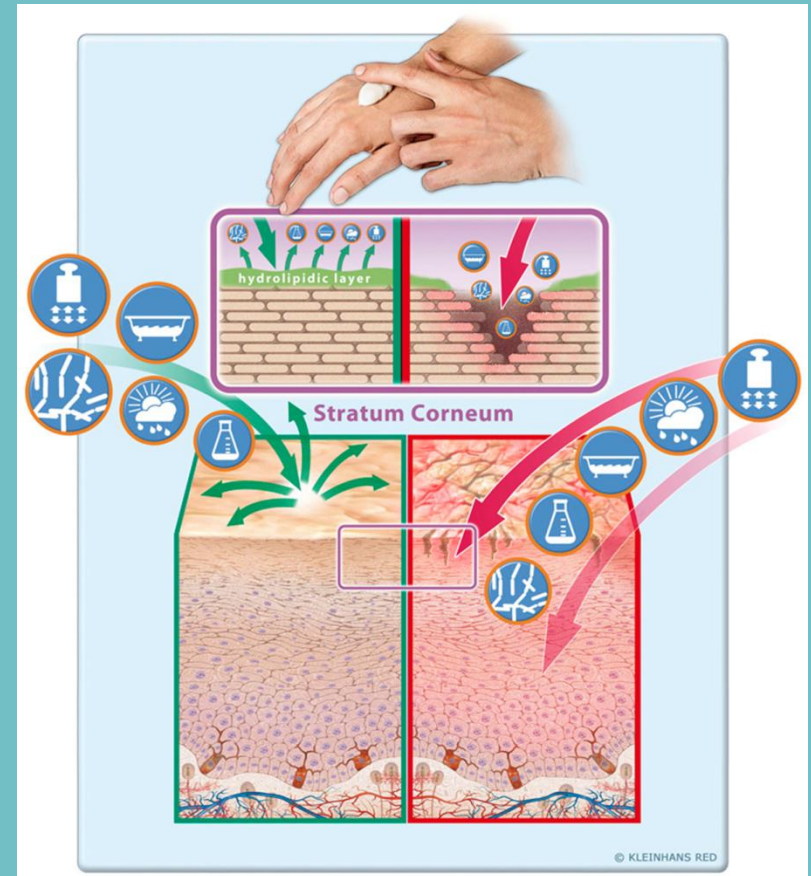
If this balance is not maintained the skin is susceptible to infection.



Layers and functions of the skin:

P is for protection

- The skin is waterproof
- Sweat and sebum mix together on the skin to form the acid mantle, this makes the skin slightly acidic (pH 4.5-5.5) which prevents bacteria growing.
- Melanin in the skin acts as a natural sunblock absorbing and reflecting UV rays
- The subcutaneous layer acts as a cushion to protect the underlying tissues also it is an insulator to keep the heat in



Recap..

Which gland is active when the body is hot?

How many types of sweat gland do we have?

What are the names of the two types of sweat gland?

What is the technical/latin name for a sweat gland?

Recap..

Sweat Gland

2

Eccrine (everywhere)

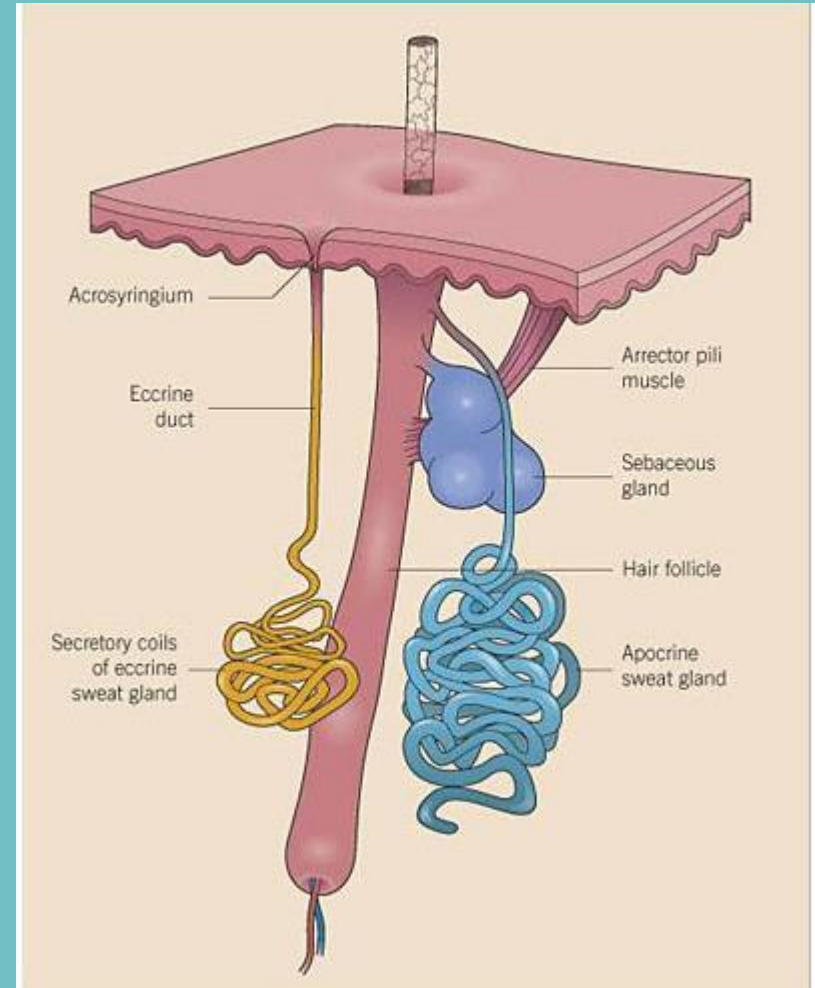
Apocrine (hairy areas)

Sudoriferous Gland

Layers and functions of the skin:

E is for Excretion

- Waste products and toxins are eliminated from the body in sweat, from the sweat glands (also known as the sudoriferous glands).
- There are two types of sweat glands:
 - eccrine glands
 - Apocrine adolescent glands.



Layers and functions of the skin:

Eccrine glands

- These glands are found all over the body, but are dense on the palms of the hands and soles of the feet.
- They produce sweat, water and urea (a waste product).
- They regulate body temperature, remove toxins and, with sebum, form the acid mantle.

Layers and functions of the skin:

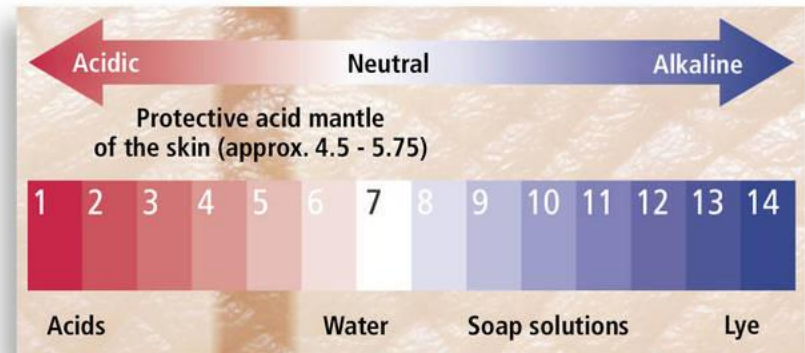
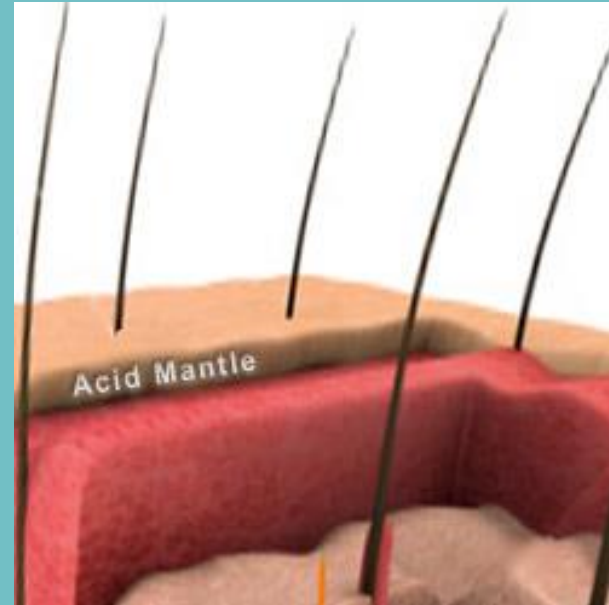
Apocrine glands

- These sweat glands become active after puberty.
- They are only found in the hairy areas of the body – underarm, nipples, anal and genital regions.
- There are fewer apocrine glands than eccrine glands.
- They are under control of the nervous system and respond to sexual attraction, emotional demands and psychological factors.

Layers and functions of the skin:

S is for Secretion

- Sebum is secreted from the sebaceous glands.
- Sebum keeps the skin soft, lubricated and helps to keep it waterproof.
- Sweat combines with sebum to form the acid mantle, which acts as a protective barrier and maintains the correct pH of the skin.



Layers and functions of the skin:

S	Sensation	Nerve endings
H	Heat regulation	Sweating, hairs stand up, blood vessels dilate and constrict
A	Absorption	Some creams and ultra-violet light
P	Protection	From ultra-violet light, acid mantle from germs
E	Excretion	Waste products from sweat glands (eccrine and apocrine)
S	Secretion	Sebum