

TENDER HEART HIGH SCHOOL

CLASS - VIII

DATE - 13.01.2025

SUBJECT - BIOLOGY

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CHAPTER 13 SKIN - The Jack of all Trades.

Good morning students

This lesson is of Class 8 for the subject of Biology, topic - Epidermis of Skin which is covered in Chapter - 13 'Skin - The Jack of all Trades' starting on Page no 127 of your text book titled - Concise Biology - Selina Publications and is being submitted to you on 13.01.2025

So dear children let us start with the general discussion about the skin first

Skin belongs to integumentary system of our body. It is the largest organ of our body. It is defined as the outermost protective covering of the body, stretched all over it in the form of layer that provides protection to the underlying tissues. It is a remarkable body armour as it is almost impermeable - no germs or anything can enter the body through the skin.

Let us discuss the functions of the skin -

i. Protection - Skin protects the body -

- by protecting underlying tissues from injuries
- by preventing excessive loss of body fluids by evaporation
- by preventing entry of harmful germs in body
- by protecting us from UV rays of sun.

2. Sensation Skin contains numerous sense organs

which are sensitive to temperature touch pain

The organism thus is made aware of the changes in its surroundings.

Temperature regulation Skin helps to keep the body temperature constant - preventing loss of heat in cold weather and facilitating loss of heat in hot weather.

Storage of food Skin stores reserved food in form of a layer of fat contained in special cells.

Excretion Elimination of water and salts takes place during sweating through the skin.

Synthesis of Vitamin D Skin can synthesise vitamin D when exposed to sunshine.

Grip Skin on human fingers and toes shrivels up when we soak in water. Wrinkly fingers, thus formed, improves our grip.

Now let us discuss the 'Structure of Skin'

Main two layers of the skin are -

- i) Epidermis - which further is made up of -
 - a) Cornified, granular and germinative layers.
- ii) An Inner Dermis layer - which contains elastic fibres, blood vessels, nerves etc.

Before discussing these layers of the skin let us take a short recap of what we have learnt so far. Answer the following questions -

- Q-1 To which body systems does skin belong to?
- Q2 Name the largest organ of the body?
- Q3 Name the vitamin synthesized by the skin in presence of sunlight

You may pause the lesson for 3 min to write the answers to these questions in your notebooks.

Break is over children. first listen to the correct answers of the questions being asked to you.

A1 Integumentary system

A2 Skin is the largest organ of the body

A3 Vitamin D is synthesized by the skin in presence of sunlight

Now let us resume the topic with discussion of Epidermis

Epidermis consists of stratified epithelium

It consists of three regions -

Outermost cornified layer - Stratum corneum

Middle granular layer.

Inner malpighian layer - Germinal layer.

Epidermis is thick and hard on palms, soles & heels. Also it is devoid of blood vessels.

Let us discuss the 3 regions of epidermis in detail now -

i) Stratum corneum or Cornified layer.

- The cells in this region are dead and are made of a horny protein called Keratin
- The cells of this layer are continually worn away and are replaced by cells from beneath by those arising from deeper malpighian layer.
- This layer forms a tough outer coat which prevents mechanical damage, does not allow the entry of germs into the body and reduces the loss of water by evaporation

ii) Granular layer - a thin middle layer

- It consists of 2-3 sublayers of flattened living cells
- Towards the outside; it gives way gradually to the cornified layer.

iii Malpighian Layer or Stratum malpighi or Germinative layer.

The cells in this innermost region of epidermis divide constantly and the cells so produced are pushed above towards the skin surface to replace the worn out cells of the outer cornified layer.

Melanin pigment which determines skin colour is present in this layer. Melanin acts as a screen against UV rays of sun, protecting the inner parts of the body from its harmful effects which can cause skin cancer.

ABNORMAL CONDITIONS OF SKIN PIGMENTATION

i Leukoderma or Vitiligo

In leukoderma skin pigmentation i.e. melanin is lost from smaller or larger patches at different regions of the body.

Exact cause of this disease is not yet known.

ii Albinism.

In albinism there is complete loss of pigmentation of the skin all over the body including hair, eyebrows, eyelashes and even the iris.

The skin of the affected individuals appears pinkish due to underlying blood capillaries.

Albinism is a genetic disease which is inherited to the offsprings.

Let us stop our discussion here. You all are required to do the following home assignment.

HOME ASSIGNMENT questions are as follows -

Q1 Review Questions [Page No 134]

A Multiple Choice Type Q No 2, 3 & 5

C Short Answer Type Q No 1 & 3