

H A P

## Human Anatomy Physiology

### Structure - Function

Definition → It is defined as the structure and function of human body.

Anatomy → It is the branch of biology which deals with the structure of different organ of human body.

Physiology → It is the branch of biology deals with the function of different organ of human body.

Scop of H A P →

Structure and function of human parts.  
Parameters of normal health or temperature  
PH, basic etc.

Pathology of disease  
Surgery techniques  
Human evolution and development

- (1) Molecular level  $\rightarrow$  It is a most basic level two or more atom molecules joint together form the cell.
- (2) Cellular level  $\rightarrow$  It is the basic structured and function unit of body two or more cell joined together and form tissue.
- (3) Tissue level  $\rightarrow$  There are group of cell which work together perform a particular function.
- (4) Organ level  $\rightarrow$  In this different-2 type of tissue combine together to form organ which do proper function of body.
- (5) Organ system level  $\rightarrow$  In this a group of organ combine together to form system example  $\rightarrow$  Digestive Resperator Cardiovascular system.
- (6) Organisms level  $\rightarrow$  It is hight level and a complete body made up voluntary ambit of all system.
- (7) Body System  $\rightarrow$  A system is a group of organ which combine together to perform proper functioning.



There are 11 type system in our body.

- (1) Nervous System (3)
- (2) Respiratory System (5)
- (3) Cardiovascular System (4)
- (4) Digestive System (8)
- (5) Urinary System (9)
- (6) Reproductive System (10)
- (7) Integumentary System (11)
- (8) Muscular System (2)
- (9) Skeletal System (1)
- (10) Lymphatic System (6)
- (11) Endocrine System (7)

(1) Nervous System  $\rightarrow$  It co-ordinate all the action of body. It is responsible for all voluntary and involuntary action and also for all signalling.  
ex- Brain, spinal cord etc.

(2) Respiratory System  $\rightarrow$  It involves in the respiration of body  
 $O_2 \rightleftharpoons CO_2$

(3) Cardiovascular System  $\rightarrow$  It is responsible for the circulation of blood in body, that's why it also known as circulatory system. Organ-blood vessels, heart blood.



- (4) Digestive System → It is responsible for the digestion of food and absorb nutrition from eat organ mouth stomach intestine etc.
- (5) Urinary System → It is responsible for the filtration of blood and also remove the waste material organ Urethra, bladder.
- (6) Reproductive System → It is the responsible of off springs  
Organ → Testes, ovary, fallopian tube ect.
- (7) Integumentary System → It also know as exocrine system, because it contain skin which provide protecting and also contain glands Organ → nails, ear, eye, nose.
- (8) Muscular System → It is responsible for the bone and movement of over body organ through muscle.
- (9) Skeleton System → It contain bones which maintain structure and provide protection to over body Organ skull, ribs, femur.
- (10) Lymphatic system → It also know as immune system it defence the body organism pathogen that may harm the body



This body system consist of network of fluete called lymph.

(11) Endocrine system → As system consists of different type of hormone glands which help function of body.

Basic life process → Human body perform difference function for its survival and growth, so all the living organisms have some specific life process.

(1) Metabolism

(2) Responsiveness

(3) Movement

(4) Growth

(5) Differentiation

(6) Reproduction

(7) Respiration

(8) Digestion

(1) Metabolism → It is the sum of all chemical process that occurs in the body out of two types.

(i) Catabolism → It is the breakdown of complex chemical substance in the simple compounds.

(ii) Anabolism → It is the building up of complex chemical substance from small compounds.



- (2) Responsiveness  $\rightarrow$  It is the ability of body to detect and respond to changes  
ex  $\rightarrow$  Cold sensitivity.
  - (3) Movement  $\rightarrow$  It includes motion of the whole body and individual organs.
  - (4) Growth  $\rightarrow$  It is the development of our body and also increase in the body size.
  - (5) Differentiation  $\rightarrow$  It is the development of cells from an unspecialized to our specialized.
  - (6) Reproduction  $\rightarrow$  It refers to the formation of new cells and also produce new offspring.
  - (7) Digestion  $\rightarrow$  It involves the digestion of food and the large molecules it is also responsible for the absorption of nutrients into blood.  
 $\rightarrow$  Hemostasis  $\rightarrow$
- $\rightarrow$  It means unchange standing of staying the same.
- $\rightarrow$  It is derived from two "greek" words
- $\rightarrow$  It is a condition when our internal environment is constant with respect to external environment.



⇒ It is condition that memory but remains constant.

### Hemostasis control mechanism

All the body organ coordinate with each other to remain hemostasis.

This condition mainly control by neuroendo-crine system.

Receptor → It is the types of sensor, which receive or detect changed or other process.

Control Center → It receive the stimulus from receptor and analysis it.

Effectors → If there are any change a place in the internal environment, then feedback system is take back in to its constant state or in hemostasis.

There are two types.

- i) Positive feedback system
- ii) Negative

Positive feedback system → when anything is decrease in our internal environment, then it is try to back into its normal situation by increasing it

Ex- during child birth it stimulate the release of ~~oxytocin~~ oxytocin which increase the contraction of the uterus to help in child birth

Negative feedback system →

When anything is increase in our internal environment then this system is try to back into normal condition by decreasing it is example →

