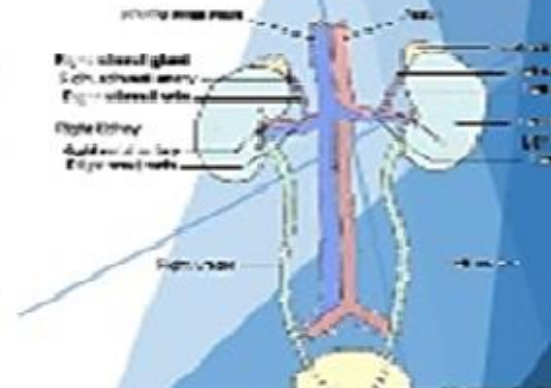
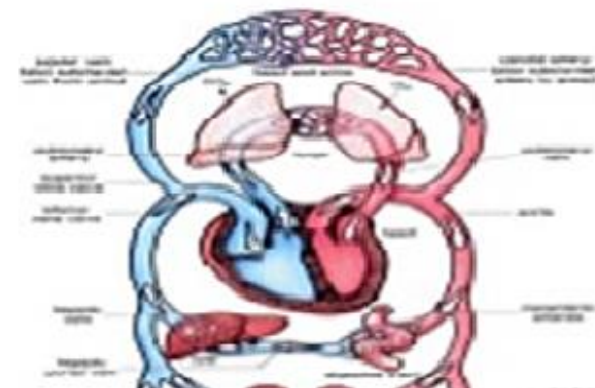
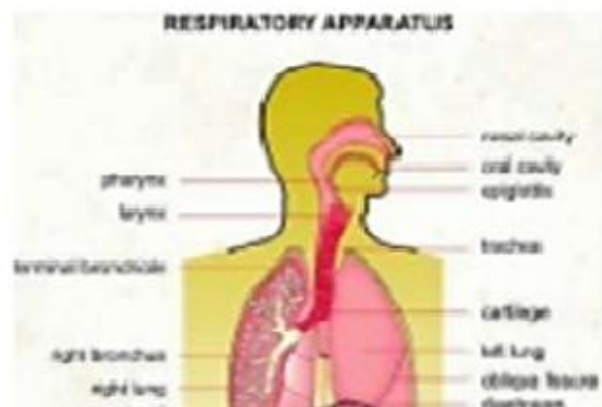
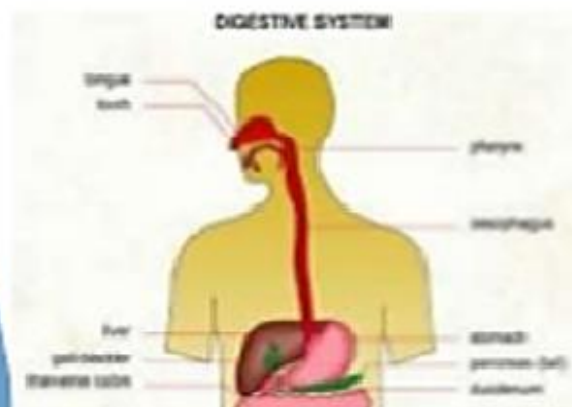
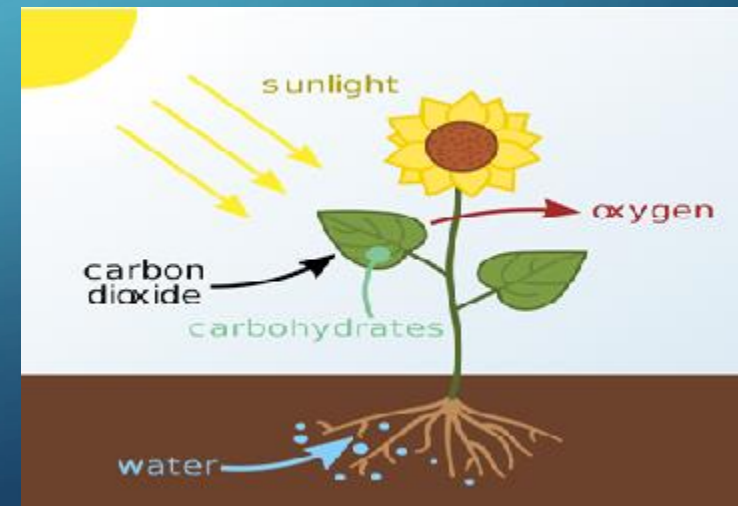
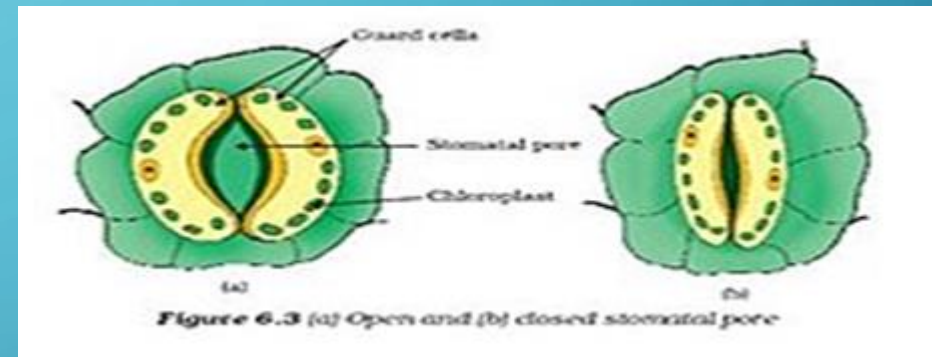
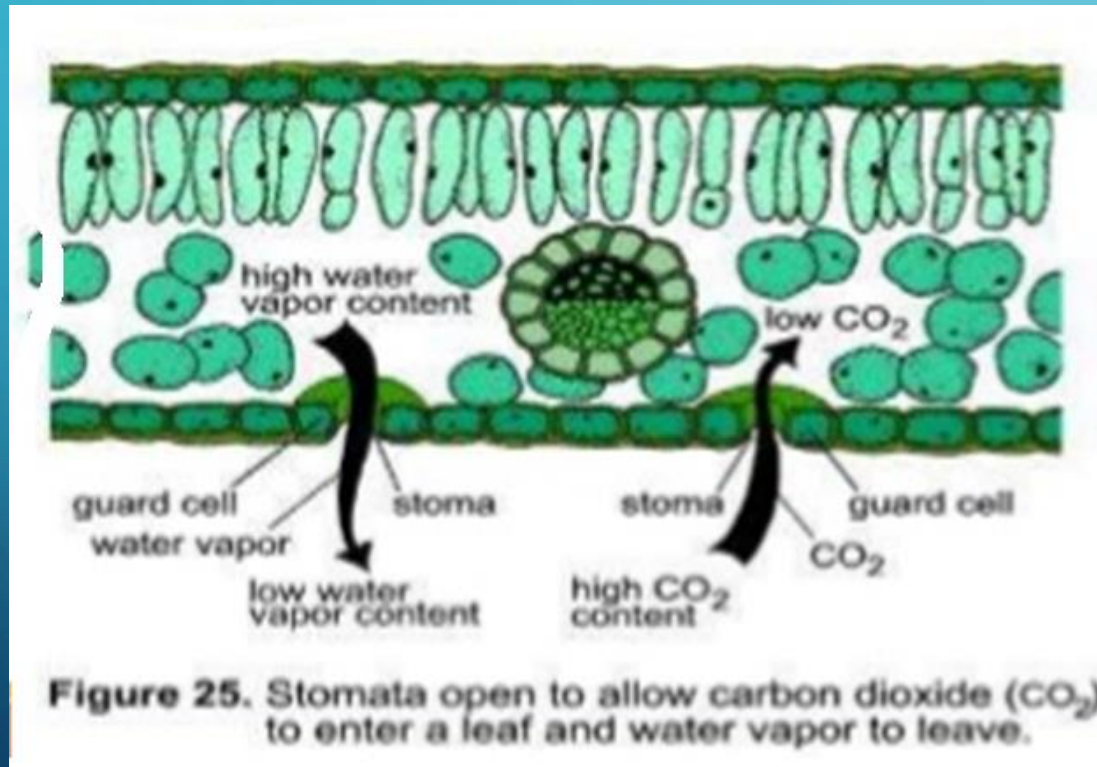


Life processes :-

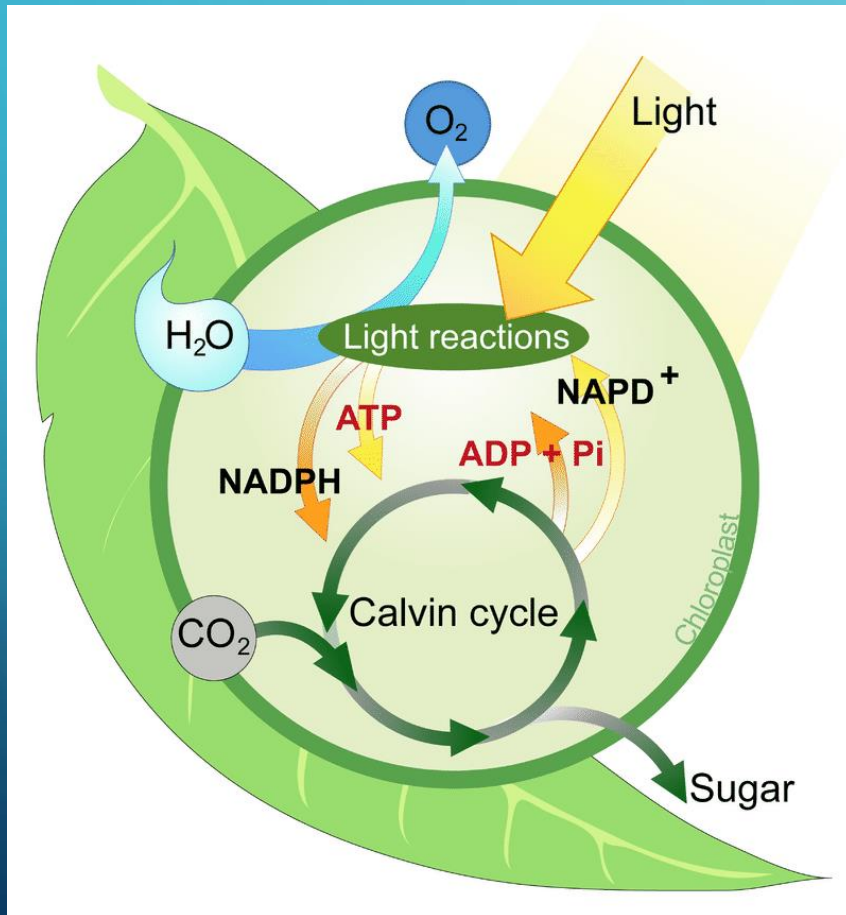
- Life processes are the basic processes in living organisms which are necessary for maintaining their life. The basic life processes are – nutrition, respiration, transportation, and excretion.
- i) Nutrition :-** is the process of taking food by an organism and its utilization by the body for life processes.
- ii) Respiration :-** is the process by which food is burnt in the cells of the body with the help of oxygen to release energy.
- iii) Transportation :-** is the process by which food, oxygen, water, waste products are carried from one part of the body to the other,
- iv) Excretion :-** is the process by which waste products are removed from the body.



AUTOTROPHIC NUTRITION - PHOTOSYNTHESIS



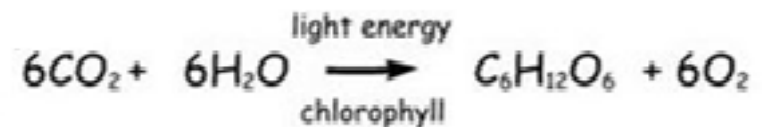
Process of Photosynthesis



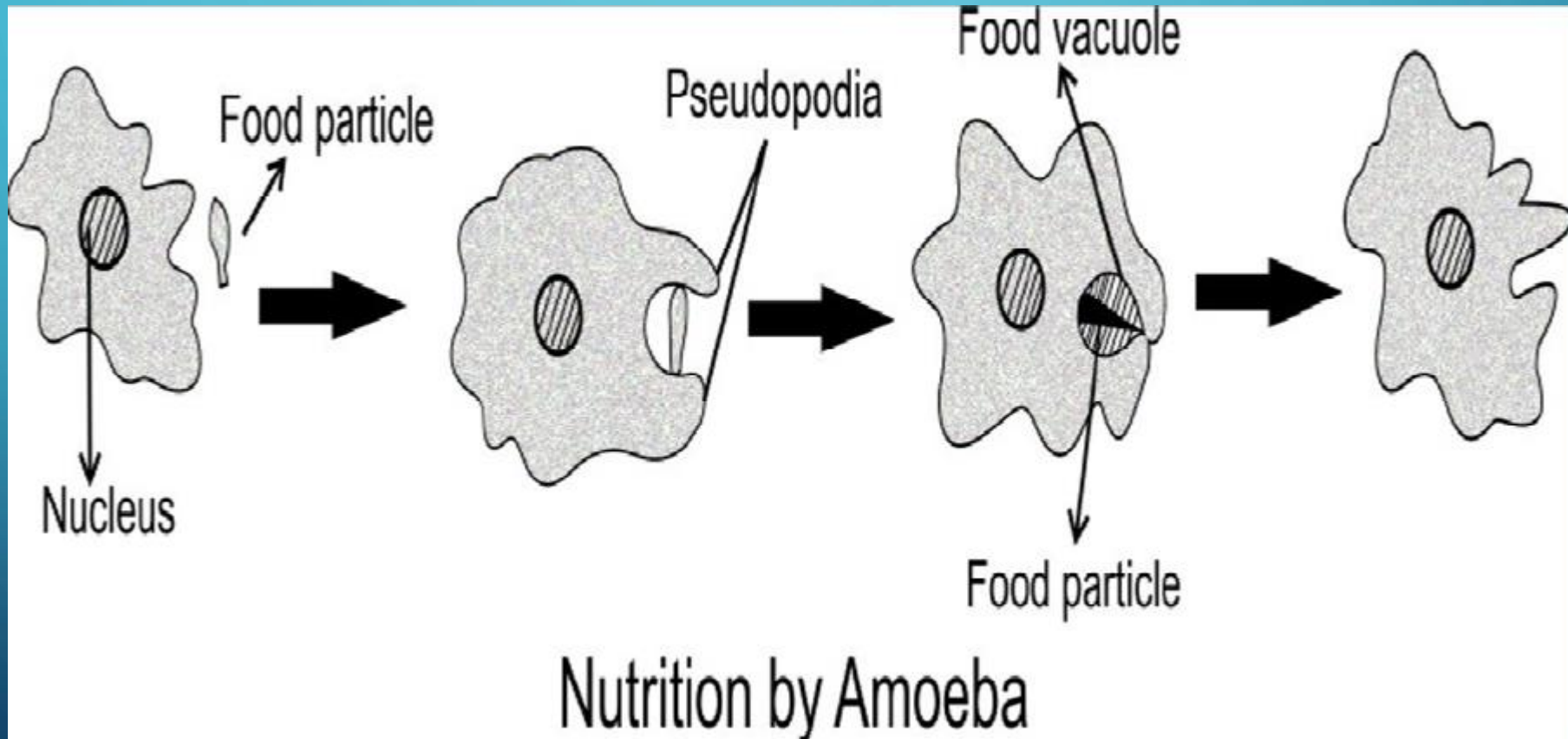
The following events occur during this process –

- (i) Absorption of light energy by chlorophyll.
- (ii) Conversion of light energy to chemical energy and splitting of water molecules into hydrogen and oxygen.
- (iii) Reduction of carbon dioxide to carbohydrates.

Equation of photosynthesis is as follows:-



NUTRITION IN ANIMALS



main digestive enzymes found in our body

S.NO	Digestive organ	Enzyme/juice	Food acted upon	Substances produced.
1.	Mouth (salivary glands)	Salivary amylase	Starch	Maltose (sugar)
2.	Stomach	Gastric juice - Pepsin	Proteins	Peptides (fragments of protein)
3.	Pancreas	Pancreatic juice: •Amylase •Trypsin •Lipase	•Starch •Proteins •Fats (lipids)	•Maltose (sugar) •Peptides (very small fragments) •Fatty acids+ glycerol
4.	Small intestine	•Lipase •Maltase •Sucrase •Peptidase	•Fats •Maltose •Sucrose •Peptides	•Fatty acids+ glycerol •Glucose •Glucose and fructose •aminoacids

HOW DOES THE PROCESS OF DIGESTION TAKES PLACE INSIDE THE HUMAN BODY

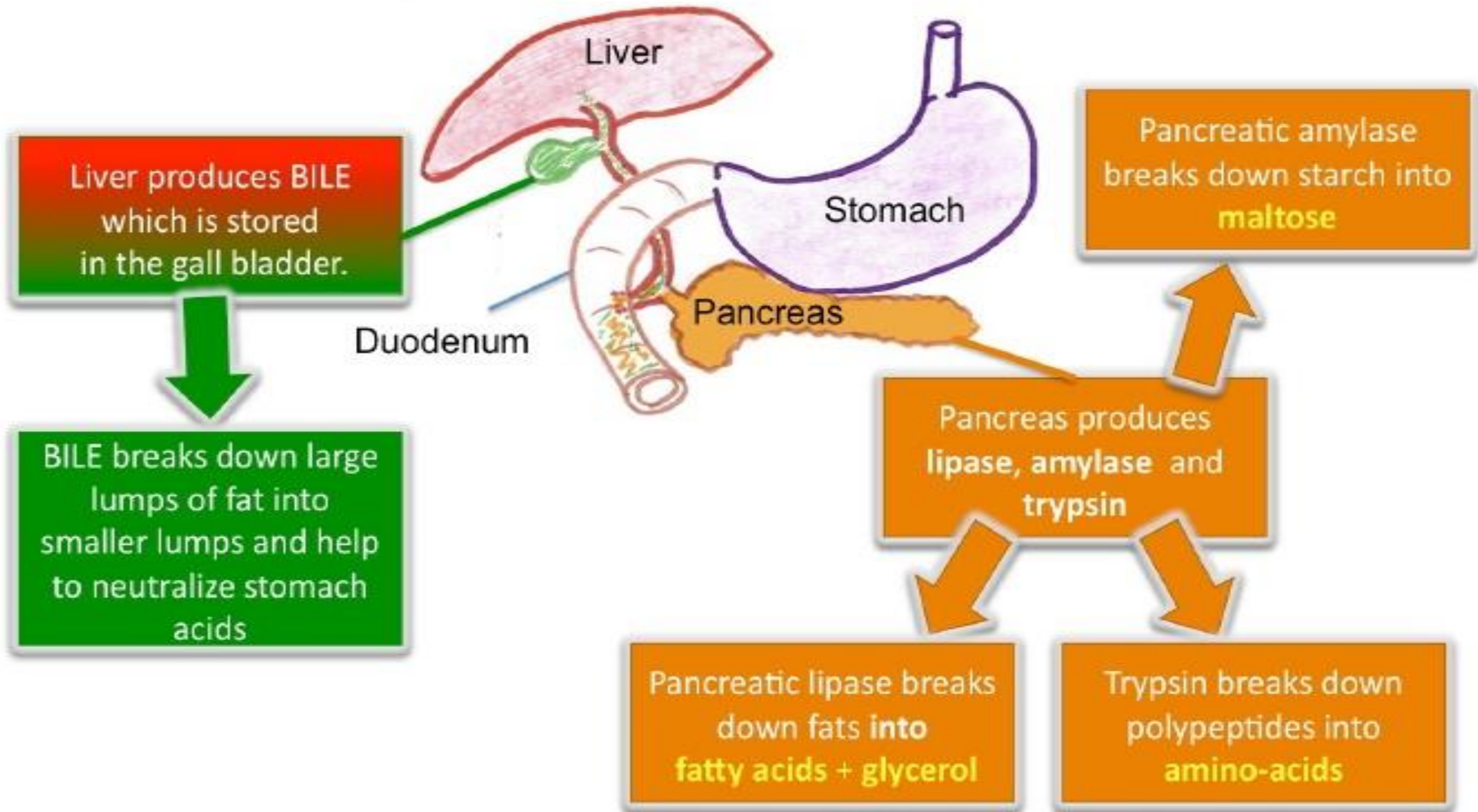
Mouth-

- The mouth is the beginning of the digestive tract. In fact, digestion starts here as soon as you take the first bite of a meal. Chewing breaks the food into pieces that are more easily digested, while saliva mixes with food to begin the process of breaking it down into a form your body can absorb and use.

Oesophagus-The oesophagus is a muscular tube extending from the pharynx to the stomach. By means of a series of contractions, called peristalsis, the oesophagus delivers food to the stomach. Just before the connection to the stomach there is a "zone of high pressure," called the lower oesophageal sphincter; this is a "valve" meant to keep food from passing backwards into the oesophagus.

Stomach-The stomach is a sac-like organ with strong muscular walls. In addition to holding the food, it's also a mixer and grinder. The stomach secretes acid and powerful enzymes that continue the process of breaking down the food. When it leaves the stomach, food is the consistency of a liquid or paste. From there the food moves to the small intestine.

Small intestine-Made up of three segments, the duodenum, jejunum, and ileum, the small intestine is a long tube loosely coiled in the abdomen (spread out, it would be more than 20 feet long). The small intestine continues the process of breaking down food by using enzymes released by the pancreas and bile from the liver.



Large intestine-The large intestine, also known as the large bowel, is the last part of the gastrointestinal tract and of the digestive system in vertebrates. Water is absorbed here.

Rectum- It is the last part of large intestine. The remaining waste material is stored here as faeces before being removed by defecation.

Anus-The anus is the last part of the digestive tract. It consists of the pelvic floor muscles and the two anal sphincters (internal and external muscles). The lining of the upper anus is specialized to detect rectal contents. It lets us know whether the contents are liquid, gas, or solid. The pelvic floor muscle creates an angle between the rectum and the anus that stops stool from coming out when it is not supposed to. The anal sphincters provide fine control of stool. The internal sphincter keeps us from going to the bathroom when we are asleep, or otherwise unaware of the presence of stool.

RESPIRATION

The process of respiration is done in 2 steps in humans- Breathing and cellular respiration.

In unicellular organisms only cellular respiration takes place.

It involves taking in oxygen (of air) into the cells, using it for releasing energy by burning food, and then eliminating the waste products (carbon dioxide and water) from the body.

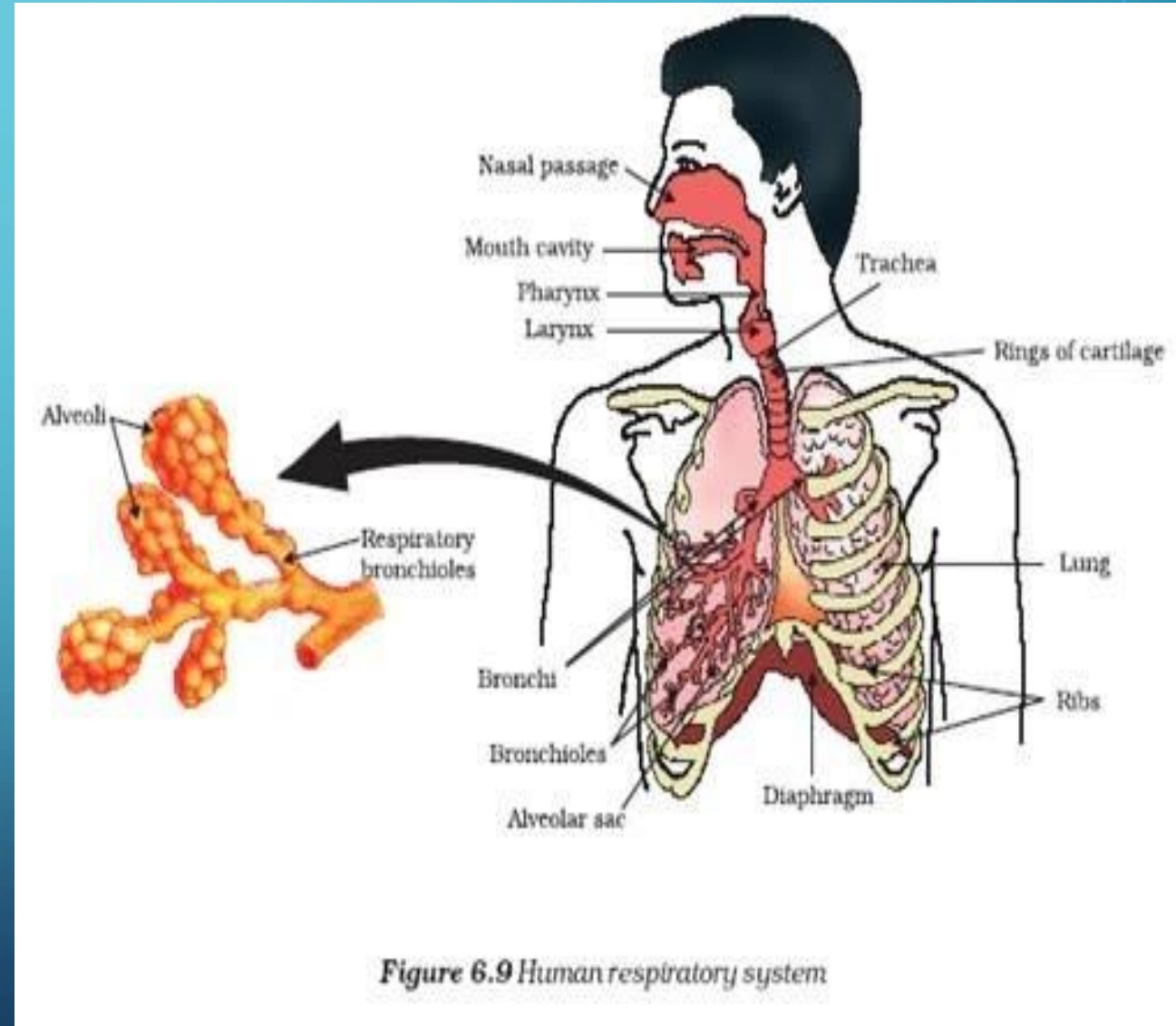


Figure 6.9 Human respiratory system

Types of Cellular Respiration

Aerobic

Respiration-

Takes place in presence of Oxygen.

Anaerobic

Respiration -

Takes place in absence of Oxygen.

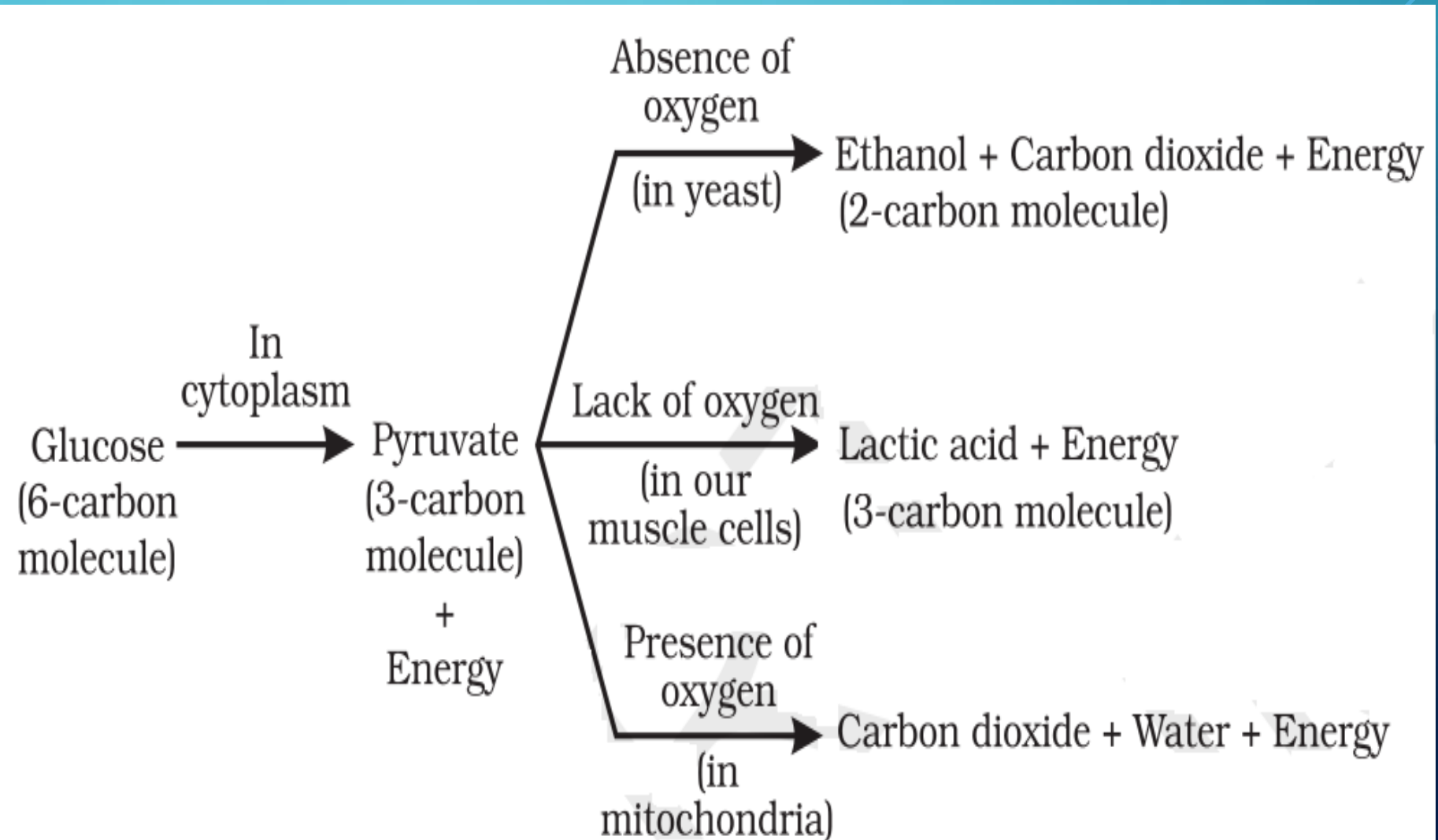
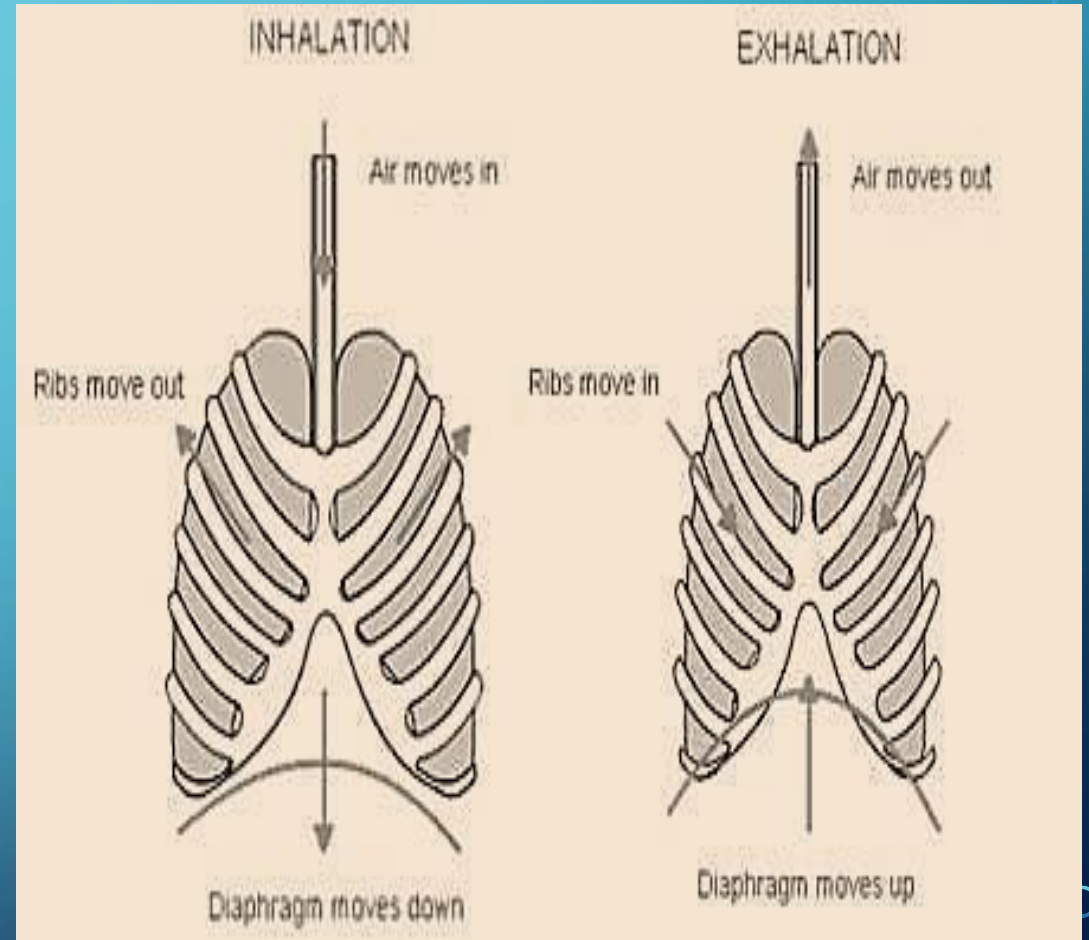


Fig: Break-down of glucose by various pathways

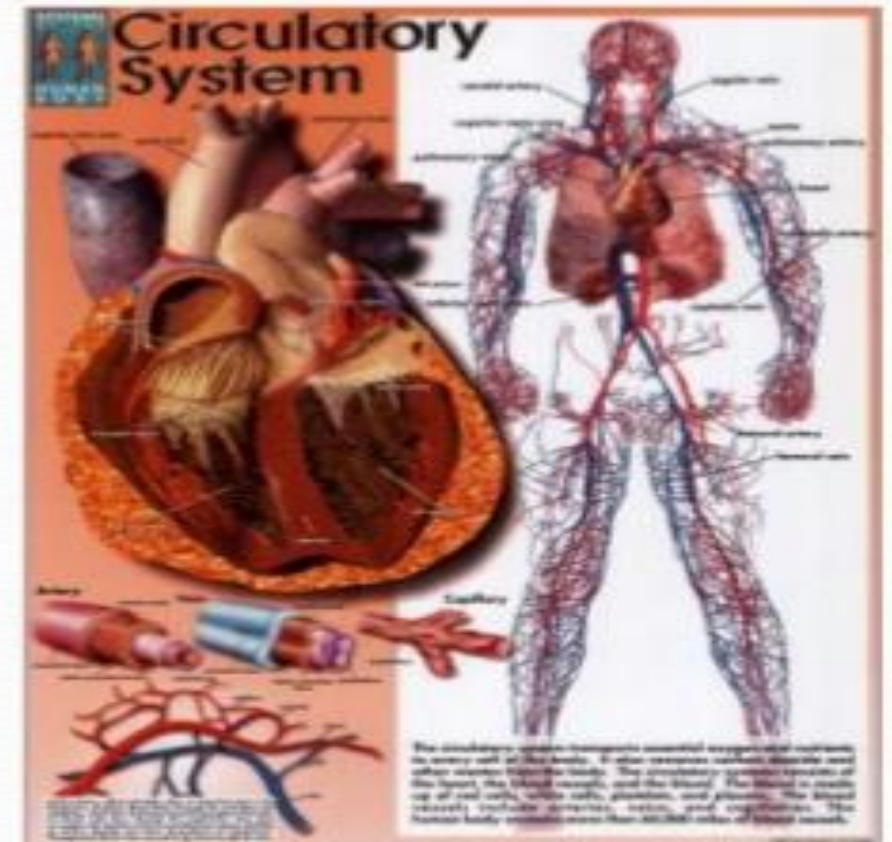
Structures of the Respiratory System

- **Nose/Mouth**—warms, moisten, filters inhaled air
- **Pharynx**—food and air together here, passage to trachea
- **Larynx** (voice box)—location of vocal cords
- **Trachea** (wind pipe)—structure to keep airway open, lined with cilia to filter air
- **Bronchi**—(2 of them) one branch to each lung
- **Lungs** (that have bronchioles (smaller branches off bronchi) and alveoli (air sacs where gas exchange occurs))
- **Diaphragm** (muscle at base of rib cage that helps to fill lungs with air)

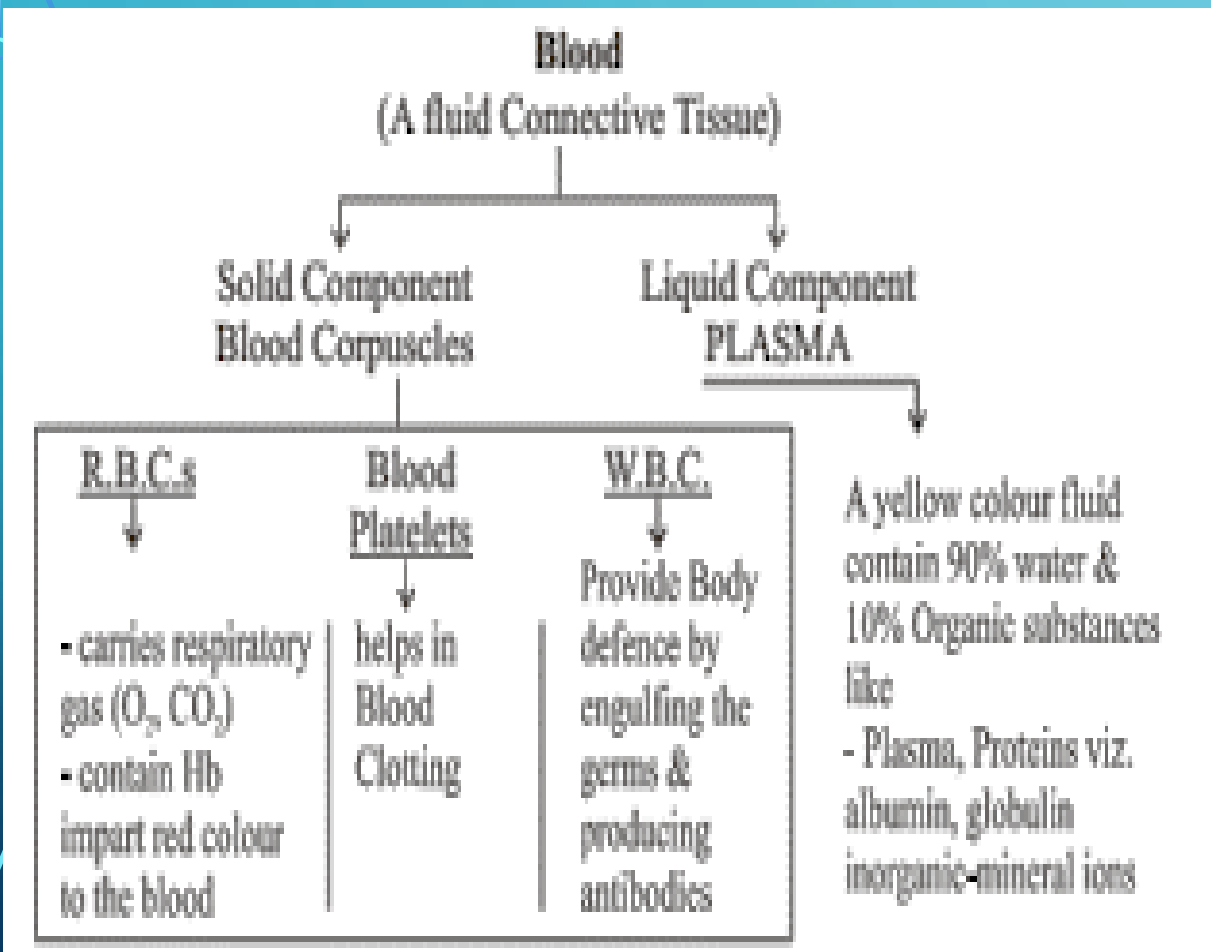


Transport System in Human

- Circulatory system is the main transport system in the human body.
- It consists of three parts:
 1. Heart – an organ which pumps blood around the body
 2. Blood – a liquid which transport materials
 3. Blood vessels – network of tubes which carry blood round the body



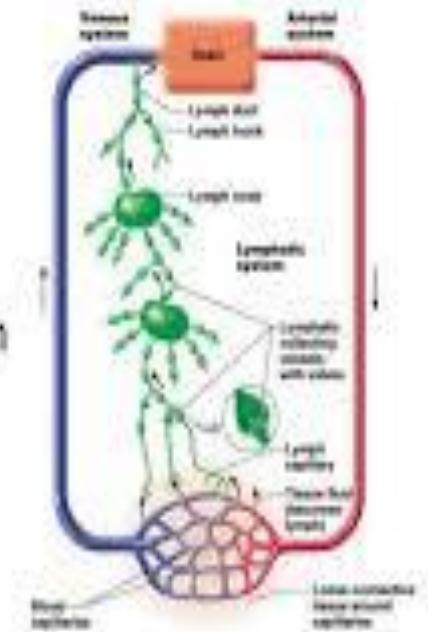
Components of blood and lymphatic system



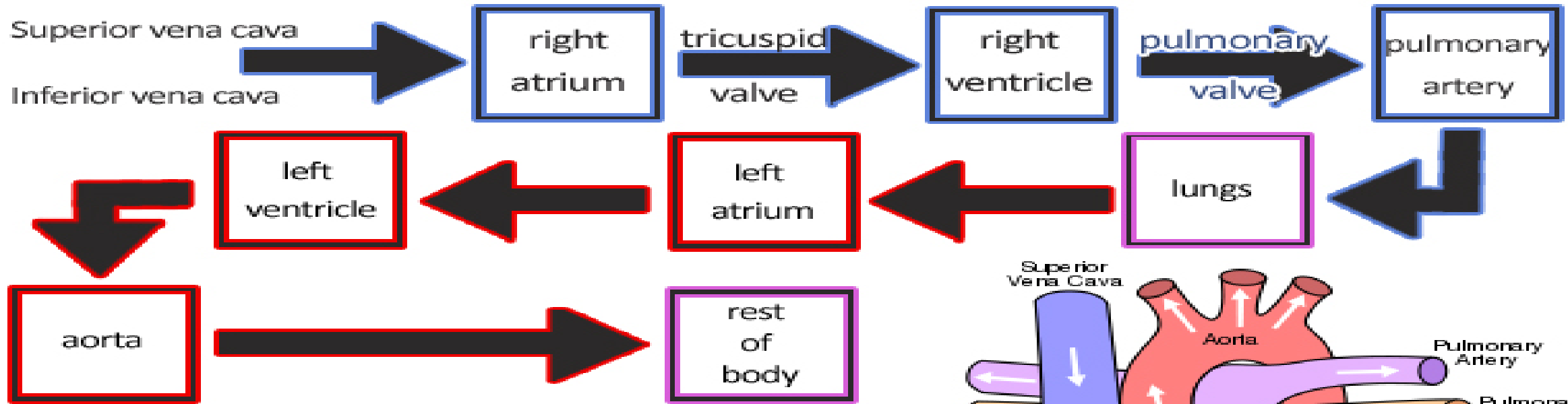
The Lymphatic System

• Lymphatic system functions:

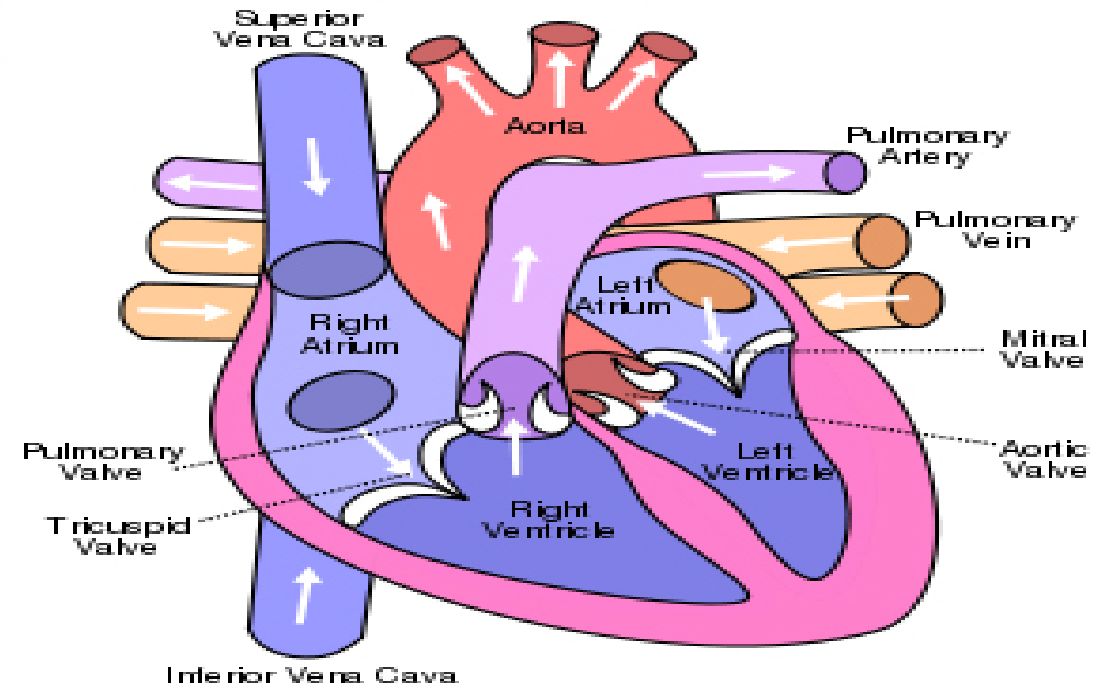
- Transport clean fluids back to the blood
- Drains excess fluids from tissues
- Removes "debris" from cells of body
- Transports fats from digestive system



Transportation in Humans

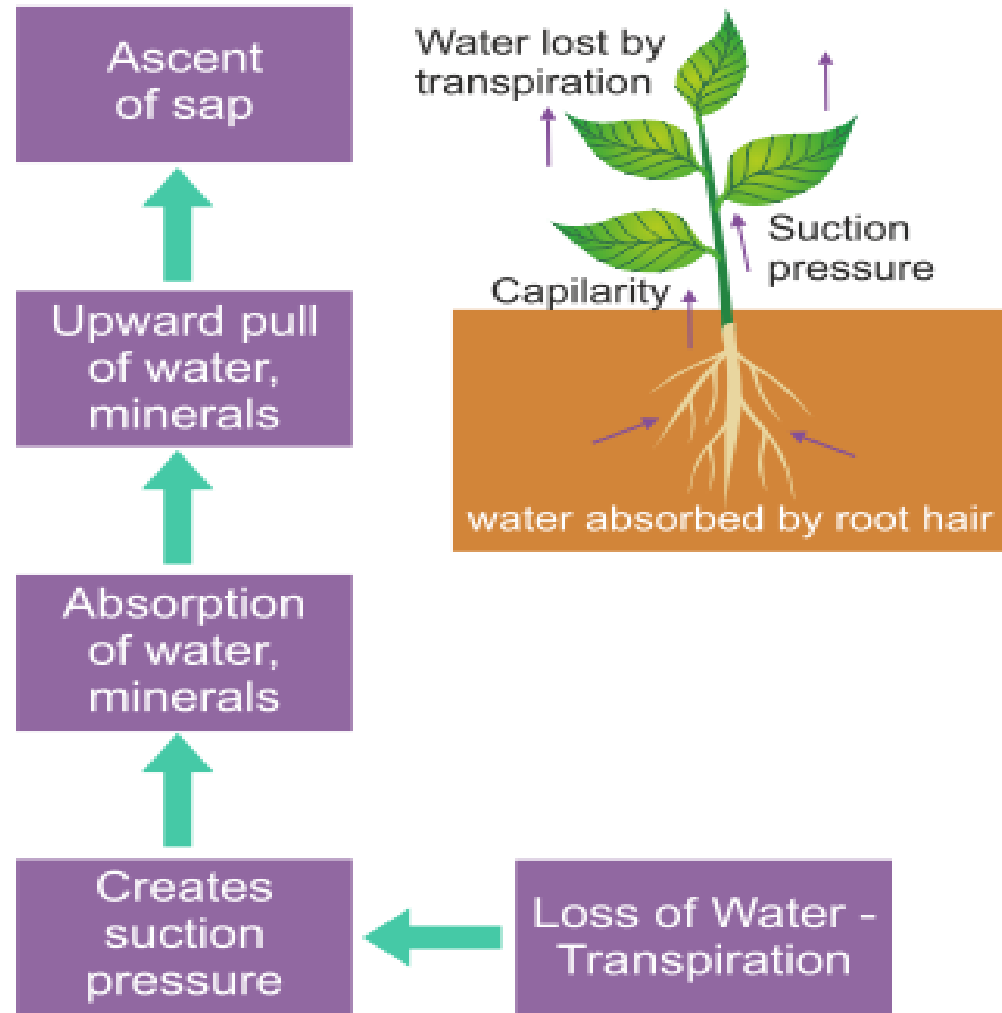


**Circulation of
Blood
Through the
Heart:**



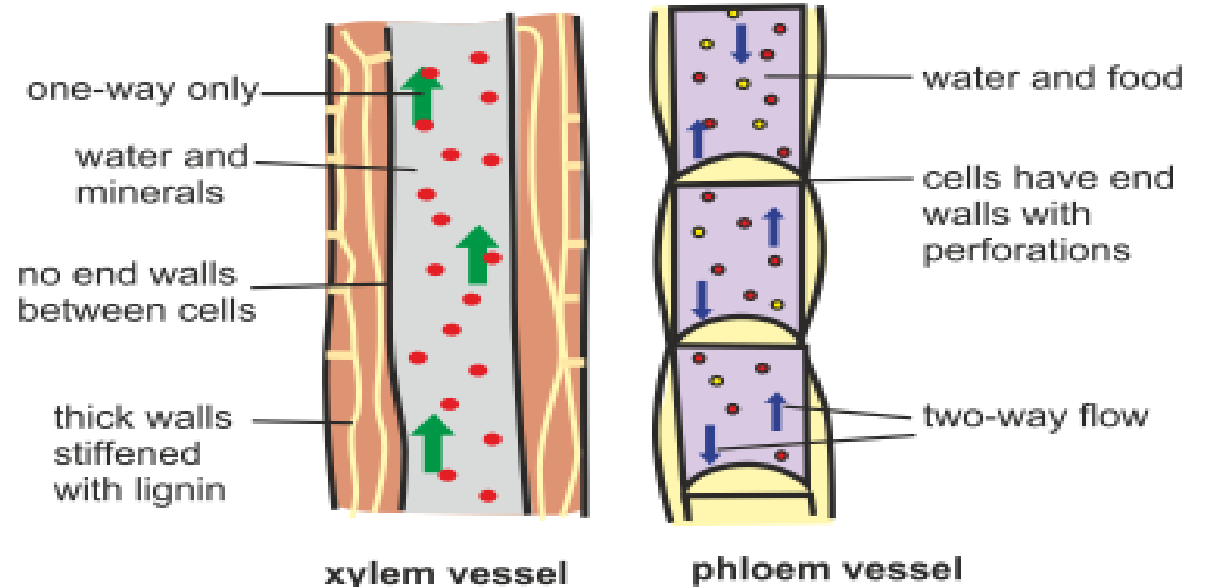
Transportation In Plants

Transpiration helps in transport of nutrients



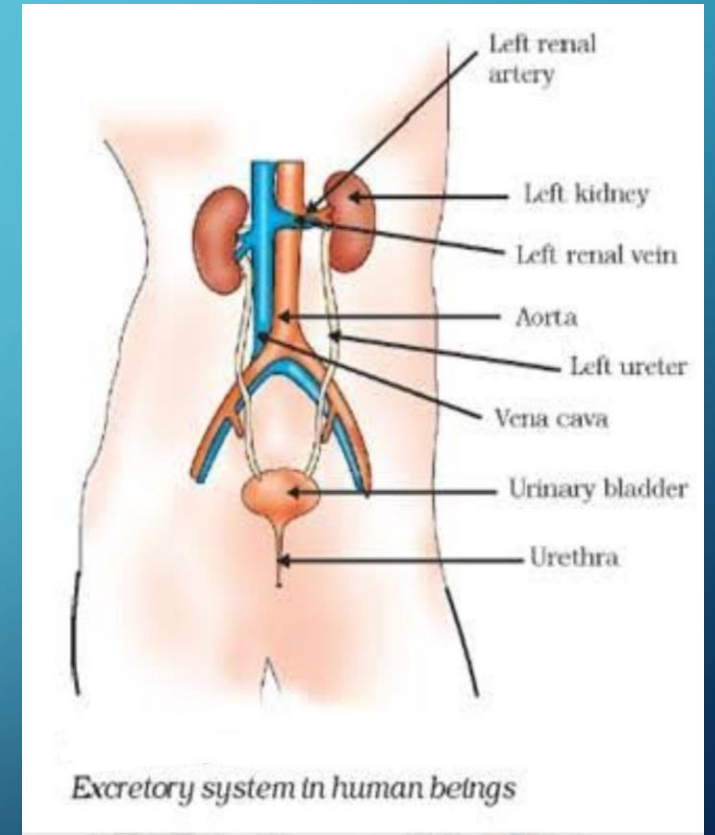
Xylem

Xylem tissue conducts water. Xylem cells are thick, hard, dead forms water channel System. Water is carried against gravity by the negative pressure that builds up through the process of transpiration, which is the evaporation of moisture in leaves



WHAT IS EXCRETION ?

THE BIOLOGICAL PROCESS INVOLVED
IN THE REMOVAL OF HARMFUL WASTES
FROM THE BODY IS CALLED EXCRETION



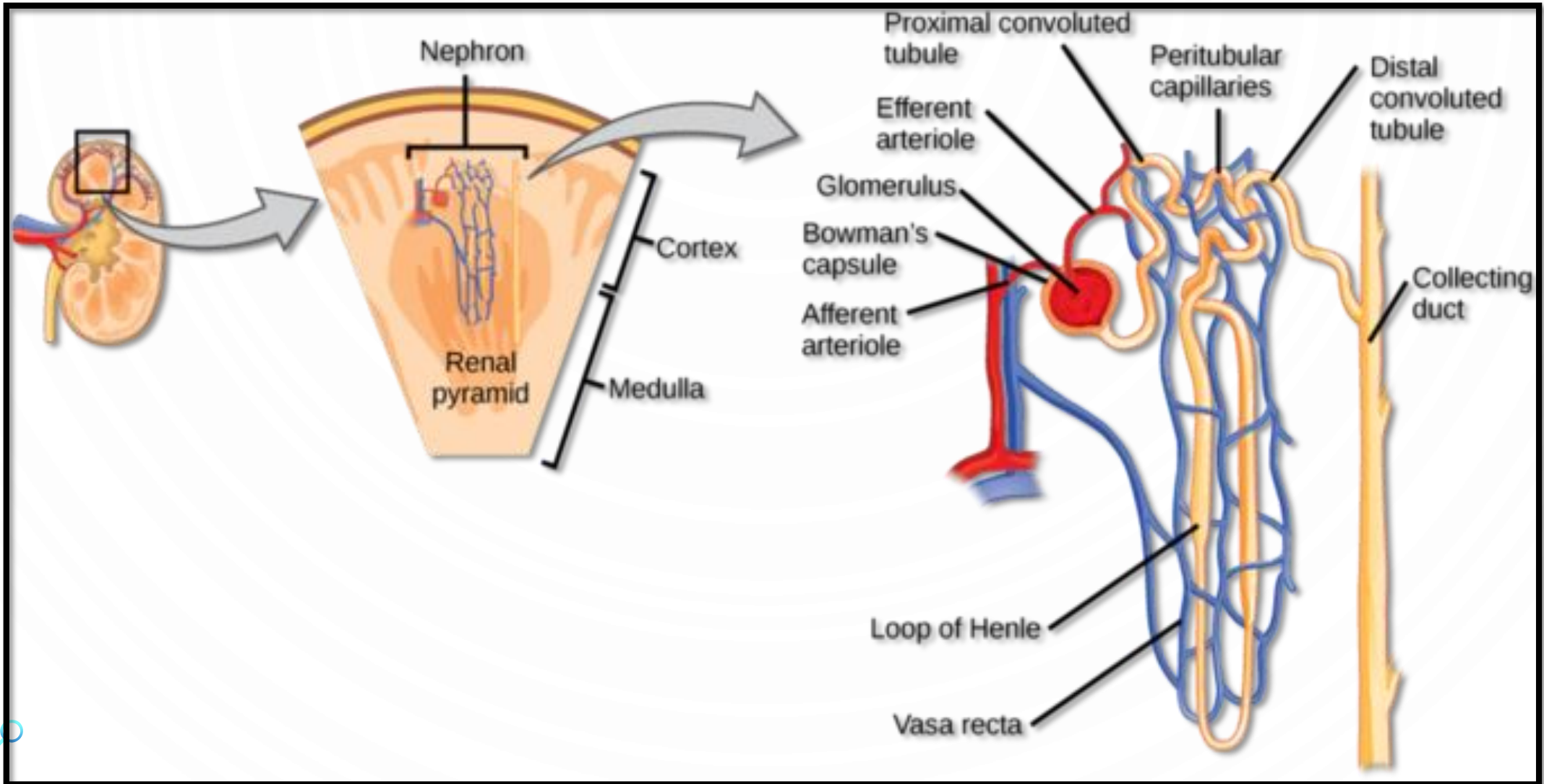
EXCRETION IN HUMAN BEINGS

- The excretory system of human beings includes a pair of kidneys, a pair of ureters, a urinary bladder and a urethra.
- Urine produced in the kidneys passes through the ureters into the urinary bladder where it is stored until it is released through the urethra. Urine is made to filter out nitrogenous waste such as urea or uric acid from the blood.
- Capillary cluster in the kidney is associated with the cup shaped end of a tube that collects the filtered urine. Each kidney has large numbers of these filtration units called nephrons.

EXCRETION IN HUMAN BEINGS contd...

- Some substances in the initial filtrate such as glucose, amino acids, salts and a major amount of water are re-absorbed
- The Urine forming in each kidney eventually enters a long tube ,the ureter, which connects the kidneys with the urinary bladder .Urine is stored in the urinary bladder until the pressure of the expanded bladder leads to the urge to pass it out through the urethra.

Structure of a Nephron



EXCRETION IN PLANTS

- Plants get rid of excess water by transpiration .Many plant waste products are stored in cellular vacuoles .
- Waste products may be stored in leaves that fall off.Other waste products are stored as resins and gums in old xylem
- Plants also excrete some waste substances into the soil around them.

** For providing clarity and better understanding some of the content has been taken from Internet*