Nutrition Cheat Sheet

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Terms

A living cell needs supply of food to perform its various biological functions

The nutrients which are essentially required by the protoplasm to perform its different biological functions

Holozoic(Gr.Holo=Whole,zoikos=of animals)

holozoic nutrition consists of ingestion,digestion,absorption,assimilation and egestion

Ingestion: taking in of food into the cell and body

Digestion: It is a process of breaking down of complex or non-diffusible food into simple or diffusible molecules.

Absorption: The soluble molecules of food are absorbed by the digestive membreanes

Assimilation: The process of utilization of absorbed molecules during the metabolic process of cell is called assimilation

Egestion: The process of removal of undigested food from the cell\ body is called egestion

Intracellular digestion: The process of digestion take place inside the cell is called intracellular digestion

Terms (cont)

Extracellular digestion: the process of digestion take place outside of cell in their gut, the enzymes are released from secretory cell into gut where food is being digested and converted into simple food.

Chemical digestion: The digestion occurs due to enzymes.

Mechanical digestion: The digestion occurs due to the physically breaking down (such as mastication,churning etc)

Tube like digestive system: Animals have two openings in their digestive tract

Sac like digestive system: Animals have single opening.

Human Digestive System

Gastro-intestinal tract(G.I.T) with two openings, mouth and anus.

It begins with mouth and terminates on anus.

human digestive system consists of digestive tract and accessory glands.

The human digestive system consists of mouth,oral cavity-(buccal cavity),pharynx, esophagus,stomach,small intestine,large intestine and anus.

The gland associated with this are salivary gland, liver and pancreas.

Human Digestive System (cont)

The Mouth: It is the anterior opening of alimentary canal bounded by two fleshy lips, termed as upper and lower lips,respectly.

It is meant for ingestion of food.

Oral cavity: The mouth opens into a wide space called oral cavity.

It is consist of tongue,hard plate, soft plate and jaws which are lined with teeth.

Teeth is meant of mechanical digestion in oral cavity.

Teeth: Initially, we have deciduous or milk teeth (20) which are latter replaced by permanent teeth.

Among the 32 permanent teeth,-there are 8 incisors, 4 canines , 8 premolar and 12 molar.

Tongue: it is a muscular organ and its upper surface has numerous projections or papillae containing nerve ending for sense of taste.

The under surface of the tongue have a fold of mucous membrane is called frenulum.

Salivary Gland: they are three pair of salivary gland and they secrete the saliva which contains salivary amylase.

pharynx: It is common opening which is pathway for both food and air.

Esophagus: This tubular structure leads the bolus from pharynx to the stomach

Human Digestive System (cont)

It is part of digestive system where no digestion occurs.

stomach: It is a (J) shaped oragan which opens from cardiac sphincter and close on pyloric sphincter.

It is main part of digestive system where the processes of mechanical and chemical digestion occur.

It has 4 parts: the cardia, fundus ,corpus (body) and pylorus.

The end product of stomach is chyme.

Here mainly protein digested due to presence of pepsin.

Small intestine: stomach is followed by a long, coiled tube, the small intestine.

It has three regions: duodemun,-jejunum and ilium.

Duodenum: it is region where bile and pancreatic juice are enter and break down the chyme into simple molecules

Here is hormone, secretin which acts upon pancreas to secrete water and bicarbonate which decreases the ph.

pancreatic juice contains enzymes which convert protein into polypeptides and emulsified lipid into fatty acid and glyerol.

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Human Digestive System (cont)

Jejunum:It is part after duodenum which secretes maltase, sucrase, lactase and peptidase to digest maltose ,sucrose,lactose and small peptides.

ileum: it is part of small intestine where absorption of vitamin B12,bile salts and any product of digestion occurs.

Large intestine:it is the last segment of human digestive tract. its main function is reabsorption of water and nutrients.

Large intestine divided into following parts : caecum, colon, rectum and anal canal.

Caecum: it is a junction of small intestine and large intestine. it perform the function of reabsorption of water and salt.

Colon: The next region after caecum is colon. It consists of ascending colon ,transverse colon, descending colon and sigmiod colon

Its main function is reabsorption of water, salt and vitamins.

Rectum: The sigmoid colon opens into rectum.It is about 13cm long and terminate at anal canal.

ROLE OF ACCESSORY GLANDS

The accessory glands are those exocrine glands which upon appropriate stimulation secrete their secretions (juice) into the alimentary canal through specific ducts.

The accessory glands consist of salivary glands, liver and pancreas.

Salivary gland:It has three pair of salivary gland which secrete the salivary amylase.

Liver:it is largest gland in our body.it is present in the upper part of the abdominal cavity.

The main function of liver is supplies oxygenated blood while the other one is hepatic portal vein which brings nutrient rich blood from various region.

It is also secrete the bile and perform the metabolism and homeostasis. It is also synthesize plasma protein and also carried out by phagocytic kupffer cells.

Pancreas: It lies behind the stomach in horizontal line along the curve of duodenum.

As an exocrine gland, the pancreas secretes pancreatic juice containing enzymes that digest carbohydrates, proteins, and fats .

Digestive system disorders

1.Ulcer: Sore(a painful wound) which could be developed anywhere in body.

2.Food poisoning: caused by taking contaminated, spoilt or toxic food.

3.Dyspepsia: known as indigestion.Refers to the discomfort or pain that occurs in the upper abdomen followed by eating or drinking.

4.Obesity: Accumulation of excessive body fats.

5.Anorexia nervosa: psychological disorder in which the person has fear of gaining weight so refuse to eat appropriately.

6.Bulimia nervosa: Psychological disorder of gaining excessive body weight.

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