Digestive System worksheet 1

1. Indicate which of the following statements describe **mechanical or chemical transformations.**

a) Teeth grind up ingested food M

b) Muscle contractions push food from esophagus to stomach M

c) Enzymes in the stomach change protein into amino acids C

d) Stomach churns food and changes it into chime M

e) Saliva changes starch into glucose C

f) Bile allows for the emulsion of fats M

g)Saliva softens food M

1. Fill out the following table:

|  |  |  |
| --- | --- | --- |
| Part of Digestive Tract | Mechanical Transformation | Chemical secretion |
| Mouth | Mastication | Salivary amylase |
| Esophagus | peristalsis | none |
| Stomach | churning | Gastric acid/juices |
| Liver | Bile | none |
| pancreas | none | Pancreatic juices |
| Small intestine | peristalsis | Intestinal juices |
| Large intestine | peristalsis | none |

1. Name the four stages of digestion.

Ingestion, digestion, absorption, elimination

1. Define the following terms:
2. Digestion: the breakdown of food
3. Absorption: taking up of nutrients

When do the roles of the liver and the pancreas enter the digestive tract? What do they do? Small intestine.

Liver: Produces Bile which helps digest fats by physically separating fat molecules.

Pancreas: Secretes pancreatic juices into the small intestine which contains enzymes that chemically digest fats, proteins and carbohydrates

1. What do we call the transport of nutrients from the digestive tract to the blood and lymph? Explain where this process takes place and how. Absorption.

Small intestine: carbs, proteins, fats.

Large intestine: water, minerals, vitamins

1. Why does digestion take place?

To break down food into nutrients that our bodies need to survive.

1. **A)** Name the **enzymes that act on carbohydrates, lipids and proteins.** Intestinal juices

**B) Where** does the chemical breakdown of these nutrients take place? Small intestine

**C)** What are the **simple nutrients** that are formed through digestion? Glucose, amino acids, fatty acids and glycerol

1. When food passes through the digestive system, it undergoes two types of transformations. Name the two types. Explain what happens to the food during these two types of digestion.

Mechanical (alters the look of it but not it’s nature) and Chemical (creates a new substance)

10. Identify the glands and organs described below:

1. produces bile liver
2. runs along the vertebral column and is connected to the stomach esophagus
3. produce saliva salivary glands
4. entrance to the digestive tract mouth
5. last section of the digestive tract ending at the anus rectum
6. J-shaped pocket located on the left side of the abdomen stomach
7. Glands dispersed throughout the inner surface of the stomach gastric glands
8. Organ common to the digestive and respiratory tract pharynx
9. Leaf shaped, located beneath the stomach pancreas
10. A long tube that is folded several times and is located in the abdomen small intestine
11. Digestive glands located in the small intestine intestinal glands or villi

11. What happens during absorption of nutrients? Goes to the blood stream to be deliverd to the rest of the body.

12. Complete the following table:

|  |  |  |
| --- | --- | --- |
| **Food** | **Digestive enzymes that break this food down** | **Nutrient obtained** |
| Bread contains:  carbs | * salivary enzymes * \_\_\_gastic juices\_\_\_\_\_\_ * \_\_intestinal juices\_\_\_\_ | Glucose |
| Steak contains  protein | * pancreatic enzymes (insulin) * intestinal enzymes * \_gastric juices\_\_\_\_\_\_\_\_ | Amino acids |
| Mayonnaise contains \_\_\_fats\_\_\_\_\_\_\_\_ | * intestinal enzymes * \_\_pancreatic juices\_\_\_\_\_ | Glycerol and \_\_\_fatty acids\_\_ |

1. Explain the difference between a chemical and a mechanical breakdown. \_\_\_\_\_\_\_

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1. What are the glands of the digestive system?

Salivary, gastric, intestinal, pancreatic.

1. Fill in the table by describing the **physical** breakdown occurring in each area.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mouth | Esophagus | Stomach | Small intestine | Large intestine |
| chewing | peristalsis | churning | peristalsis | peristalsis |

1. Fill in the table by stating all the chemical breakdowns that occur for each nutrient.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Where 1st bd begins | Gland responsible | Enzyme secreted | Nutrient becomes |
| Carbs. | mouth | salivary | saliva | glucose |
| Protein | stomach | gastric | Gastric juices | Amino acids |
| Fat | Small intestine | intestinal | Intestinal juices | Glycerol and fatty acids |

1. Explain how the liver and pancreas play a role in digestion. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_they excrete their enzymes into the small intestine to help with digestion of the nutrients.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What is the function of bile? \_\_\_\_digest fats by physically separating fat molecules
2. What is the difference between a carbohydrate, a glucose molecule and a simple glucose molecule? \_\_as they get broken down they become more simple forms of what they were before. Carbohydrate 🡪 glucose 🡪 simple glucose.
3. Why can protein only be absorbed in the small intestine and not the stomach?

\_\_\_\_\_\_\_The villi are the active part in the small intestine that do the absorption of digested nutrients. \_\_\_

1. What structure is common to both the respiratory and digestive system? \_\_\_\_\_\_\_\_pharynx\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_