

Ingestion of food

Pharynx

Esophagus

Propulsion 

- Swallowing (oropharynx)
- Peristalsis (esophagus, stomach, small intestine, large intestine)

Chemical digestion 

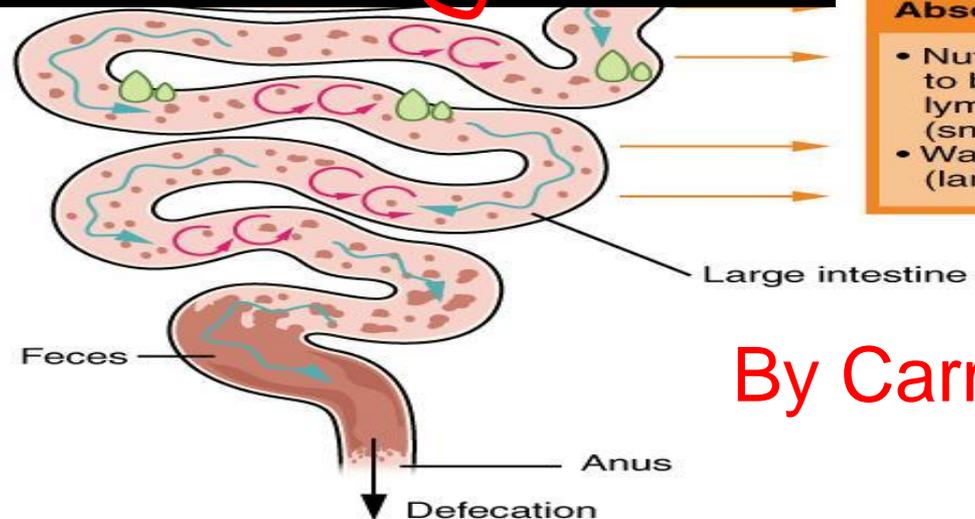
Mechanical digestion 

- Chewing (mouth)
- Churning (stomach)
- Segmentation (small intestine)

Food Digestion

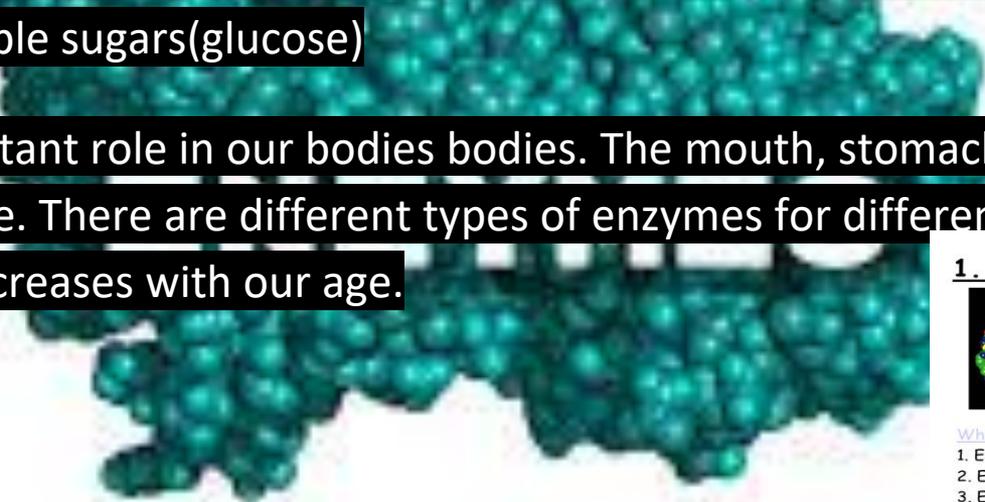
Absorption

- Nutrients and water to blood vessels and lymph vessels (small intestine)
- Water to blood vessels (large intestine)



By Carmen

Enzymes



Enzymes are biological catalysts which is a chemical digestion. Enzymes are found in food and the saliva of the mouth. It helps to control the reactions, Example; Starch is changed into sugar in the mouth with the help of the enzyme salivary amylase. It is part of cell metabolism. It helps

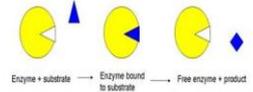
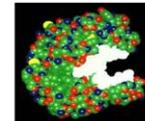
in Fats, Carbohydrates and Sugars. 1. Proteins = Amino acids 2. Fats = Fatty acids

3. Carbohydrates = Simple sugars (glucose)

Enzymes play an important role in our bodies. The mouth, stomach, pancreas and cells from the small intestine. There are different types of enzymes for different types of food.

Enzyme production decreases with our age.

1. What are enzymes?

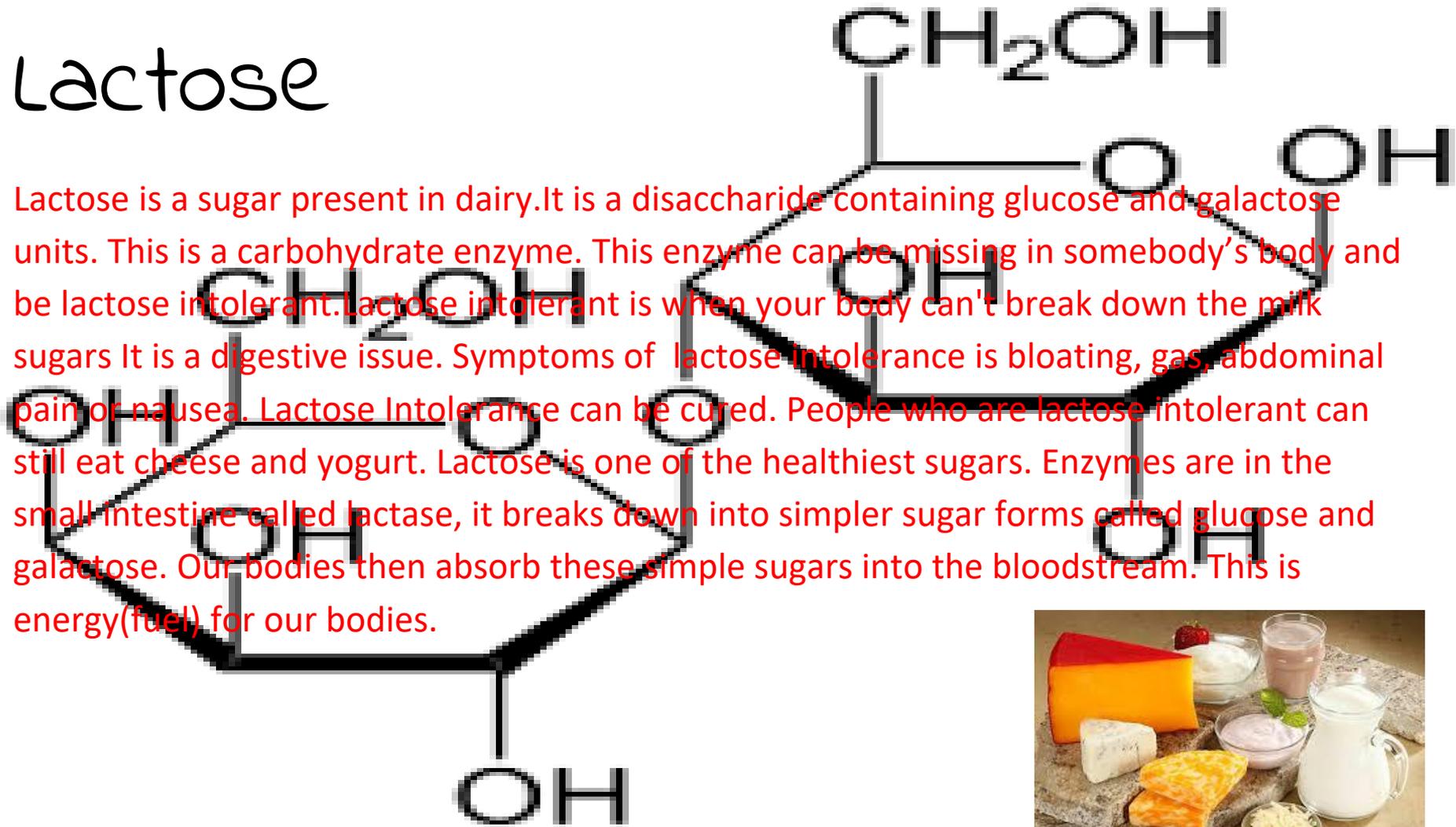


[What are enzymes \(short video clip\)](#)

1. Enzymes are found in all living cells.
2. Enzymes are made of protein.
3. Enzymes are Biological Catalysts
4. Enzymes speed up reactions
5. Enzymes are unchanged by the reaction

Lactose

Lactose is a sugar present in dairy. It is a disaccharide containing glucose and galactose units. This is a carbohydrate enzyme. This enzyme can be missing in somebody's body and be lactose intolerant. Lactose intolerant is when your body can't break down the milk sugars. It is a digestive issue. Symptoms of lactose intolerance is bloating, gas, abdominal pain or nausea. Lactose Intolerance can be cured. People who are lactose intolerant can still eat cheese and yogurt. Lactose is one of the healthiest sugars. Enzymes are in the small intestine called lactase, it breaks down into simpler sugar forms called glucose and galactose. Our bodies then absorb these simple sugars into the bloodstream. This is energy (fuel) for our bodies.



Fructose

Fructose is a natural sugar in fruits and some vegetables (asparagus, zucchini and peas), honey, sugar cane and sugar beets. Fructose is a carbohydrate. It doesn't matter how many calories of sugar it has because it will always be the same (4 calories per gram). Fructose does not cause any health issues like obesity or diabetes etc. They are caused by multi-faceted. Fructose just increases fat production, increases appetite and weight gain on poor diet on fructose. Fructose is a source of energy for cells. Our bodies need fructose to break down glycogen, storage form of glucose, into its component parts of energy. Without fructose tolerance our blood sugar can drop dangerously and harmful substances can build up in our liver.



Gluten



Gluten is proteins found in grains(wheat,barley,spelt and rye). The two proteins in gluten are glutenin and gliadin. Gliadin is the cause for most negative health effects. People who can't tolerate gluten have celiac disease, gluten sensitivity, wheat allergy and some other diseases. There are over 200 medical conditions that gluten can either cause ,contribute or make worse.

Gluten can cause unexplained iron deficiency anemia. Gluten is a common cause of vitamin B12 deficiency. Gluten can cause asthma symptoms. Vitamin C can help heal inflammatory damage caused by gluten. Gluten can cause dizziness,loss of balance, seizures and migraine headache trigger. Gluten can contribute to testosterone problems in men. Gluten can cause thyroid disease, nerve pain, neuropathy, liver damage and 4 skin diseases.

Celiac disease

Celiac disease (coeliac) = Is the most severe form of gluten intolerance. It affects about 0.7%-1% of the population. It is an autoimmune disorder where the body treats the gluten as an invader. The immune system attacks the gluten and the lining of the gut. The damage to the gut wall can cause nutrient deficiencies, anemia, severe digestive issues, and an increased risk of many diseases.

The most common symptoms of this disease are digestive discomfort, tissue damage in the small intestine, bloating, diarrhea, constipation, headache, tiredness, skin rashes, depression, weight loss, and foul-smelling feces. Some people with the disease do not have digestive symptoms but may have other symptoms like tiredness or anemia.

It is very difficult to diagnose celiac, and 80% of people don't even know they are celiac.

Gluten sensitivity



This is when the people are not celiac but react negatively to gluten. Not many people have this condition but it is estimated that 0.5-13% have this condition. The symptoms of gluten sensitivity are diarrhea, stomach pain, tiredness, bloating and depression.

Some experts believe that this condition isn't real. They think the effects are imaginary or caused by substances other than gluten.

A study showed that 400 people were self-diagnosed with gluten intolerance and wanted to see if they have improved on a gluten-free diet. Only 26 were celiac and 2 had a wheat allergy. 27 of 400 were diagnosed with gluten sensitivity. 55(14.5) of the 400 had no problems with gluten.

wheat allergy

For about 1% of the population, a wheat allergy may be causing digestive issues after consuming gluten. Symptoms of a wheat allergy are hives/skin rash, stomach pain, diarrhea, vomiting, nausea, stuffy/runny nose, sneezing, headaches, asthma and anaphylaxis(life threatening reaction that can impair breathing and send the body to



