The effect of temperature on the action of salivary amylase

The digestion of starch begins in the mouth, where it is mixed with saliva containing the enzyme salivary amylase, or Ptyalin. Starch, a long chain of repeating glucose subunits, is hydrolyzed first into shorter polysaccharide chains this is used as a continual mechanism to help the removal of good debris from the gingiva but has little effect on the breakdown of polysaccharides outside of the mouth. Eventually polysaccharides are converted into the disaccharide maltose, consisting of two glucose subunits, which loosens remains that occurs between the teeth. If chewing is continued for lengthy periods of time these changes will occur in the mouth under the influence of salivary amylase. Maltose, glucose, and other monosaccharides are known as reducing sugars.

What does the enzyme, amylase do? Enzymes cause various reactions in the body to happen, also called diastase. Things that we eat are broken down once in the mouth organ. What happens and how does it happen? Amylase is an enzyme that breaks down starch to sugar. The amylase in the mouth, salivary amylase, is called ptyalin. Ptyalyn can do digestive can work in the stomach for several hours.

Iodine and Benedict’s solution is used to recognize starch and sugar (maltose) in our saliva. The group experiment that was completed in class shows that it is accurate. How does amylase work? Amylase, like other enzymes, works as a catalyst. All catalysts are enzymes, but not all enzymes are catalysts. A catalyst is a substance that causes a chemical reaction to break down other substances, but the catalyst does not become a part of the end product of that reaction. Amylase digests starch by catalyzing hydrolysis, which is splitting by the addition of a water molecule.

Therefore starch plus water becomes maltose (which is equivalent to two joined glucose molecules). Body temperature is the optimal heat for the best reaction of amylase. This enzyme’s efficiency as well as many others’ is affected by certain factors. One of these factors is temperature. Read alsosalivary amylase experimentSaliva has important functions:* Cleanses the mouth due to the bactericidal action of lysozyme and IgA (immunoglobulin A “ one of the immune system’s antibodies”) plus the constant backward flow towards the esophagus* Creates a feeling of oral comfort by it’s lubricating action* Dissolve food chemicals so that they can stimulate the tongue’s taste buds* Help to form a bolus (ball of food) by the action of mucus thus facilitating swallowing* Contain a digestive enzyme called salivary amylase (ptyalin) which starts the process of breaking down complex starchy sugars