



# What Does Spit Do?

How does saliva help digest food you eat?

## Description

Some animals can swallow food whole, but humans have to chew. What does saliva do while you're chewing, besides just making your food wet? Observe what your saliva does chemically to food before you even swallow.

Age Level: 10 and up



How does saliva help digest food you eat?

## Materials

- Pinch of cornstarch
- Pinch of granulated sugar
- Cracker
- Resealable plastic bag (sandwich size)
- Cup of water
- 4 small spoons
- 4 small cups
- Set of measuring spoons
- Small bottle of iodine
- Masking tape
- Marker



## Time

Preparation: 15 min  
Activity: 30 min  
Cleanup: 15 min

## Step 1

Starches and sugars are two types of human food. You can test to see if a food is a starch or sugar by using iodine. The iodine will turn yellow if the food is a sugar, or purple if the food is a starch. Put 5 ml (1 teaspoon) of water and a pinch of sugar in a small cup labeled “sugar.” Put 5 ml (1 teaspoon) of water and a pinch of cornstarch in a small cup labeled “starch.” Mix each cup with its own spoon.



## Step 2

Place 3 drops of iodine into each cup and mix the ingredients in each cup. What color did each mixture turn?



## Step 3

Now test what your saliva does to a cracker. Put 5 ml (1 teaspoon) of water in a cup labeled “water.” Spit into another cup, labeled “saliva,” to collect about 5 ml of saliva.



## Step 4

Put the cracker into a resealable plastic bag. Using your fingers, mash up the cracker until it's a fine powder. This is similar to what your teeth do when you chew food—you pulverize food and break it into smaller pieces. Tip: you can also use the bottom of a drinking glass or jar to help you crush the cracker.



## Step 5

Place two pinches of cracker powder into the water cup and two pinches into the saliva cup. Use a separate spoon to mix each cup well. Let these sit for about 5 minutes.



## Step 6

After 5 minutes, place 3 drops of iodine into each cup and mix with separate spoons. What color did each mixture change to? Observe the color of the mixture for 10 minutes. Which cup do you think contains sugar, and which cup contains starch?



## Optional Step

Try this same experiment with other types of foods.  
What happens with breakfast cereal compared to the cracker?



## What's Going on?

"Saliva or spit in your mouth is mostly water, but also contains other chemicals. Some of these are enzymes—chemicals which make certain chemical reactions happen, or go much faster. One enzyme in saliva called amylase helps turn foods made of starches into sugars, which are easier for your body to absorb.

The crackers you used were made of wheat flour, which contains starches. Iodine is a chemical that turns purple when mixed with starches, and orange when mixed with sugars. When you mixed saliva with the cracker, amylase in your saliva broke down some of the cracker's starches into sugars, making the iodine less purple and slightly yellow."

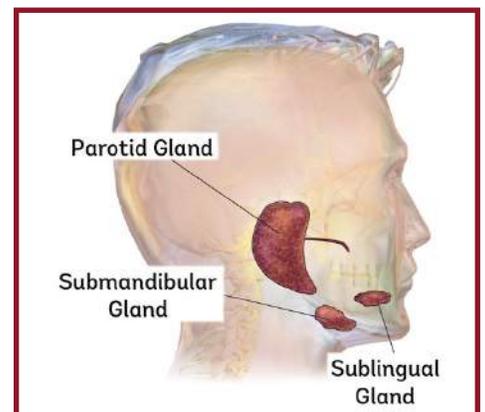


## Salivary glands

"Saliva did not turn all the cracker's starches into sugars. That's why the saliva-cracker sample may still have looked a little purple.

You might think your stomach does all the digesting of foods you eat. Digestion actually begins in your mouth when you chew. While you are chewing, enzymes in saliva start to break some complex molecules (like starches) into simple molecules (like sugars) that you can absorb into your blood. Saliva also helps to wet dry food (like crackers) so it's easier to swallow.

Saliva is made in salivary glands inside your mouth. Your glands produce 1 to 2 liters of saliva every day!"



## Learn More



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[LawrenceHalofScience.org/do\\_science\\_now/diy\\_human\\_body](http://LawrenceHalofScience.org/do_science_now/diy_human_body)

## Credits



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