



STOMACH ACID



Science in your stomach!

When we eat food, it travels down our throat and into our stomach, where the stomach acid helps to break it all down. Once broken down here, food is ready to pass into our large intestine, where nutrients are extracted.

When you shook the bag in this experiment, you might have noticed a change in the contents. You should see that after a few minutes of shaking and squishing the bread in the bag that it gets soggy, squishy, then starts to break apart. You might also notice that the soda water started off clear but then turned a bit brown.

Soda water is actually an acid, so in this experiment, the soda water breaks down the bread just like the acid in our stomach does. The bag that you shook is like the stomach of someone without coeliac disease.

People with coeliac disease may have a sore tummy! Sometimes, our intestines and stomach don't work properly. Inside our small intestine are lots of tiny structures called 'villi' which look like small fingers. The villi help to break down the food. In this experiment, your hands were acting like the villi. Usually, villi stand up and wiggle like your fingers can, but in people with coeliac disease, the villi stop wiggling and lie down flat, which means they aren't as good at breaking down and extracting nutrients from food. In this experiment, this is like the bread in the bag you didn't touch.

YOU WILL NEED

- 2 x re-sealable sandwich bag
- Soda water
- A piece of your favourite gluten-free bread
- Marker pen

INSTRUCTIONS

1. The bags represent your stomach and intestines. Find out what these look like, and draw them on both bags using the marker pen.
2. Break your piece of bread in half, and put each half in a different bag.
3. Add a few tablespoons of soda water to each bag, and seal them both tightly.
4. Put one bag to the side, and don't touch it.
5. Shake the other bag! Knead it, roll it, squish the bread using your fingers for a few minutes.
6. Look at both bags. What is different about the bread in each one?