



# VITAMIN C

Explore how antioxidants work with a vitamin C tablet and an apple.

## YOU WILL NEED

- An apple
- Vitamin C tablets
- A zipper food storage bag
- A rolling pin
- A plate



## WHAT YOU DO

### Step 1

Take three vitamin C tablets and place them in the zipper food storage bag. Take the rolling pin and roll it over the tablets inside the bag until you have a fine vitamin C powder.

### Step 2

Skin the apple and cut it in half.

### Step 3

Sprinkle the vitamin C powder all over one of your apple halves and place it on one side of the plate.



This experiment must be done under the **supervision of an adult** to ensure safety when using a knife.



### Step 4

Take the remaining apple half and place it on the other side of the plate. Try to make sure that no vitamin C powder from the other apple half touches it.

### Step 5

Wait for about an hour and then return to compare your pieces of apple.

## THE SCIENCE BEHIND IT

You will find that the piece of apple that is covered in vitamin C powder still looks fresh and white. However, the piece of apple on its own will have turned brown. This is because you cut the apple open and exposed the apple's cells to oxygen in the air, which was then able to get inside the apple's cells and cause chemical reactions. These reactions are called oxidation reactions, and they make the surface of the apple brown. This could be considered 'apple rusting', because it's similar to how iron rusts - oxidation by oxygen in the air!

However, it is possible to stop this happening, and that's what you did! By sprinkling vitamin C over the apple you were able to prevent oxidation because vitamin C is an antioxidant, and this helped stop the apple going brown by reacting with the oxygen in the air around the apple, meaning that oxygen could not get past the layer of vitamin C powder and into the apple's cells. This is why it's important to eat lots of fruit and vegetables, because even though you need oxygen to live, when you breathe oxygen in it can also cause damage by oxidation. And so, all of the antioxidants in fruits and vegetables prevent the oxygen you breathe in from oxidising you!



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