

# James Lind

1716–1794

In 1747, a Scottish doctor called James Lind carried out experiments on sailors who were suffering from a condition called scurvy.

Scurvy killed at least two million British sailors between the 15th and 18th centuries.

## The symptoms of scurvy

Sailors with scurvy suffered from many distressing symptoms. They were tired, their joints and muscles were weak and achy, and they felt irritable and miserable. Their gums bled and many lost teeth. They had itchy rashes on their legs and found it hard to catch their breath. Many sailors with these symptoms eventually died.

## James Lind's theory

James Lind was determined to help British sailors who suffered from scurvy. As he researched the disease, he realised that sailors on Dutch ships suffered less from scurvy. The Dutch ships carried barrels of fresh fruit so James began to wonder if eating citrus fruit could cure scurvy.

## How did James Lind test his idea?

James realised he had to design a fair test to make sure that any results he gathered were accurate. So he chose to test six different 'cures' on 12 men who were equally ill with scurvy. He housed them all in the same room and gave them the same food to eat. The only thing he changed was the cure. Two sailors were given cider every day. Others were given vinegar, seawater, sulfuric acid, a mustard mixture or two oranges and one lemon. As the days passed, some of the sailors remained very ill, but some of them became better.



### Who got better?

After six days, James Lind checked on his patients. Most of the sailors were still ill. The sailors who were given cider were a little better but the sailors who ate the citrus fruit were much better. One was fit enough to go back to work, and the other felt well enough to act as a nurse to the other sick sailors.

By carrying out a fair test, James Lind had discovered that eating citrus fruit could cure scurvy!

He wrote about his findings in a book called *A Treatise on the Scurvy* and suggested that sailors should eat citrus fruits during voyages. Unfortunately, more than 40 years passed before the British Navy acted on Lind's recommendations and began to provide lemon or lime juice for sailors at sea.

### Vitamin C

When James Lind carried out his test, he didn't know that citrus fruits contained vitamin C. He only knew that they had cured the sailors. Scientists didn't discover vitamin C until 1932, nearly 200 years after James Lind's experiment.

Today, we know that scurvy is caused by a lack of vitamin C. Vitamin C is an important part of our diet because it helps our bodies to maintain healthy tissues and organs and heal wounds. It also protects our cells and keeps them healthy.

Despite knowing the cure, scurvy is still widespread in areas of the world where people are short of food.

