

Name: \_\_\_\_\_ Date: \_\_\_\_\_



Imagine you are James Lind in 1747. You want to do an experiment to see whether eating different foods cures sailors of scurvy. Plan your experiment below, then record what you found out.

What are you trying to find out?

How will you carry out your experiment?

What do you expect the results will show you?

Results:

Group	Results

What have you found out from your experiment?

Name: \_\_\_\_\_ Date: \_\_\_\_\_



Read about James Lind's clinical trial in which he tried to find out whether different foods had an effect on sailors with scurvy. Answer the questions below.

Why was scurvy such a problem for sailors?

Why do you think James Lind was so keen to prevent cases of scurvy?

Why do you think he used two sailors for each group he tested instead of just one?

Why do you think he gave the sailors all the same diet apart from one item?

What do you think James Lind could have tested next after he found out that citrus fruits cured scurvy? Think of as many ideas as you can.

Which of the above experiments do you think Lind should have chosen to explore next and why?

How would you have carried out the next experiment if you were James Lind?

Name: \_\_\_\_\_ Date: \_\_\_\_\_



Read about James Lind's clinical trial in which he tried to find out whether different foods had an effect on sailors with scurvy. Think of another trial he could have done next to get a deeper understanding of how to cure scurvy. Plan the experiment, then describe what you think the results would have shown.

What do you already know about scurvy?

What are you trying to find out?

How will you carry out your experiment?

What will you need in order to carry out your experiment?

How long will you carry out your experiment for and why?

How will you make sure that your experiment is a fair test?

What do you expect the results of your experiment will show and why?

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Plan a clinical trial to try and find out about the effects different foods have on our bodies. Think of a question you want to find the answer to and how you will find the answer.



What question will you be investigating?

How will you carry out your clinical trial?

What will you need in order to carry out your clinical trial?

How long will you carry out your trial for and why?

How will you make sure that your clinical trial is a fair test?

What do you expect the results of your trial will show and why?

# Scurvy

## What is scurvy?

Scurvy is a disease caused by a lack of vitamin C in the diet. Vitamin C is also known as ascorbic acid. Scurvy became a particular problem for sailors from the 15th century when lots more ships went to explore the world. They were on the sea for months at a time without

any way of storing perishable food like fruit and vegetables. They had to live on salted meats and dry biscuits. This poor diet was the reason why so many sailors died from scurvy. People still suffer from scurvy today if they do not eat enough vitamin C but it is much more rare.

## What are the symptoms of scurvy?

Scurvy causes the gums to become soft, spongy and swollen. This can cause the person's teeth to fall out. Spots appear where the hair grows out of the skin, most often on the legs and thighs. It can cause your joints to swell painfully making movement difficult and wounds are unable to heal properly. It can also cause

bleeding behind the eyes, causing the person to have blurred vision. If left untreated, scurvy will cause the muscles in the heart to swell and cause a sudden death.

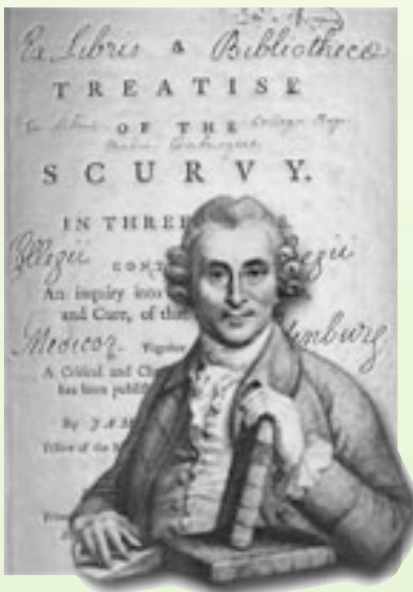
## Who was James Lind?

James Lind was born in Edinburgh in 1716. In 1731 he began to study medicine and in 1739 he entered the Royal Navy as a surgeon's mate. This meant that he was available as a doctor to all the men on the ship who needed treatment. Like all doctors at the time, he was aware of scurvy and knew that it killed a lot of men. According to Lind, more British sailors died from scurvy than from fights with the Spanish and French navies. He wanted to find out how to prevent scurvy.



## James Lind's clinical trial

In 1747 Lind undertook the world's first clinical trial. He took twelve sailors who had already been on a ship for two months and who all had scurvy. He divided the sailors into six groups of two and gave them each the same diet, apart from one extra item. One group was given cider, another sulphuric acid, another vinegar, one group had seawater, another had two oranges and a lemon, and the last group had spices and barley water. After six days, the two sailors who had been given the fruit were better and able to work again. There was no visible improvement in the other groups. This experiment suggested that citrus fruit could cure scurvy. We now know this to be true as citrus fruit has high levels of vitamin C.



**Does a cup of warm milk actually make you sleep better at night?**

**Does eating a large meal at lunch time make you concentrate better in the afternoon than a smaller meal?**

**Does the time you eat your evening meal affect how well you sleep?**

**How does eating sugar directly before exercising change your performance?**

**Does drinking fizzy drinks instead of water before, during and after exercise affect how well you perform?**

**How does cutting out all fruits and vegetables from your diet affect your mood?**

**How does eating the same food for every meal affect your body?**

**How does eating one extra meal a day affect your weight?**