

Name:..... Date:.....

Vitamins

One of the most common claims made about vitamin C is that it helps when you have a cold. In this activity you can consider the evidence for this.

Task 1 Read the following and answer the questions.

Catching a cold?

Taking vitamin C prevents colds!

In 1970 a chemist called Linus Pauling published a book called 'Vitamin C and the Common Cold'. He claimed that taking large amounts of vitamin C helps prevent colds. Many people still think this is true today.

Here is part of many tables of data used by Linus Pauling to support his claim. A Swiss doctor working in a ski resort in 1961 collected the data from 279 skiers during two periods of five to seven days. The skiers were about the same age and had eaten similar diets. The study was *double-blind* (see **Key words: Clinical trials**). The skiers each took a tablet in the morning. The tablet contained either vitamin C or a placebo. The doctor examined the skiers for signs of colds. These are the results.

Data	Placebo group	Vitamin C group	% decrease
Number in group	140	139	-
Number of colds	31	17	-
Total days of illness	80	31	-
Total individual symptoms	119	42	-
Severity of colds	2.58	1.82	29
- from days of illness	3.84	2.47	36
- from individual symptoms per cold			

* Individual symptoms included sore throat, tonsillitis, cough, fever, earache, runny nose, aches in the muscles, headaches, pain in the stomach, vomiting, diarrhoea and general body weakness.

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Questions

1.
 - a) How many people took part in the study?
.....
 - b) How long did the study last?
.....
 - c) What medicines were given?
.....
 - d) How many participants were in the placebo and vitamin C groups?
.....
2. Why was it important that neither the skiers nor the doctor knew which tablet was being taken (that the study was double-blind)?
.....
.....
.....
3. Calculate the percentage difference between the placebo and vitamin C group for:
 - a) The numbers of colds.
.....
 - b) The numbers of symptoms.
.....
 - c) The numbers of days of illness.
.....

Use the formula:

$$\text{percentage decrease} = (1 - \text{number for vitamin C group} / \text{number for placebo group}) \times 100$$

4. Explain why Linus Pauling said the data shows that vitamin C helps to protect people from getting colds
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.....
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Task 2 Work in your group.

- Compare your answers with the other members.
 - Agree answers to the next questions.
5. Now look for the weaknesses in the study
- a) From the list of symptoms - find those which might not be due to a cold.
-
-
-
- b) We are told what is similar about the two groups of people - but what could be different?
-
-
- c) What are we not told about the medicines? What difference might this make?
-
-
-
6. How confident are you that the data shows vitamin C protects people from getting colds?
Very confident / confident / not confident. Explain your choice.
-
-
-
-
-
-
-
-
7. Plan another investigation that might give a clear answer to the question, Does vitamin C help prevent colds?

