



# Health H.A.C.C.

How to assess claims critically



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# Review of Module 1

- Health claims include an **intervention** and **outcome**.
- Health claims vary in **quality**. Don't be fooled by them!
- Consider the **evidence** behind the claim.
- Before making a health decision, consider the **pros and cons** of the intervention.
- Watch for **danger words** and misleading use of scientific terminology.



# Module 2:

## Information types and study types



## Student Booklet: Activity 4

Types of information used in health claims

# Types of information used in health claims

## Testimonials and Endorsements (and the opinion of experts)

- **Testimonial:** a statement that someone from the public makes to confirm that the intervention has helped them.
- **Endorsement:** a testimonial from a celebrity, or someone recognised and admired for some reason, in order to make the testimonial seem more reliable.

## Anecdotes

For health claims, a short story about an experience with a health intervention:

- Describes a health problem, and how the person used a health intervention, and whether their health problem improved or not.
- An anecdote can be used as a type of testimonial

# Types of information used in health claims

## Assumptions / hopes / beliefs

When a person believes a health intervention will work based on reasons other than evidence.

For example:

- used by others for many years
- popular brand
- expensive – perceived better quality
- believe strongly enough, it will work

## Explanation about HOW the intervention works

A detailed description of how an intervention works:

- How the intervention causes the claimed health results
- May sound logical and convincing, however, the description may not be accurate for many reasons.

## Activity 4 answers

Information example	Information type
Someone from the public is quoted saying, “I used to have foot pain all the time, but then I started wearing Best-Science* brand gel-inserts, and I have not suffered from foot pain since I started wearing them.”	
A friend, who wears Best-Science* brand gel-inserts, tells you that the gel-inserts work really well and suggests you try them for yourself.	
Someone purchased the most expensive gel-inserts to be certain that they would get relief from their foot pain.	
A famous athlete tells everyone that their Best-Science* brand gel-inserts make them run faster, and that’s why they run in record-breaking time.	
“Charlie3000”* has posted on a discussion board: “I recommend Best-Science*brand gel-inserts to all my friends, they really work!”	
Someone is keen to use Best-Science* brand gel-inserts, because they looked them up on the internet and the website looked professional, with detailed scientific descriptions of how the inserts work.	
Dr Harvey is shown in an advertisement for Best-Science* brand gel-inserts and states “9 out of 10 sports medicine doctors recommend this brand”.	
<b>Extra question – not in student booklet:</b> The active components in the cream absorb into the deepest skin layers, where they aggressively rejuvenate the cellular components, making your skin more youthful and blemish free.	



*Don't be fooled by false health claims!*





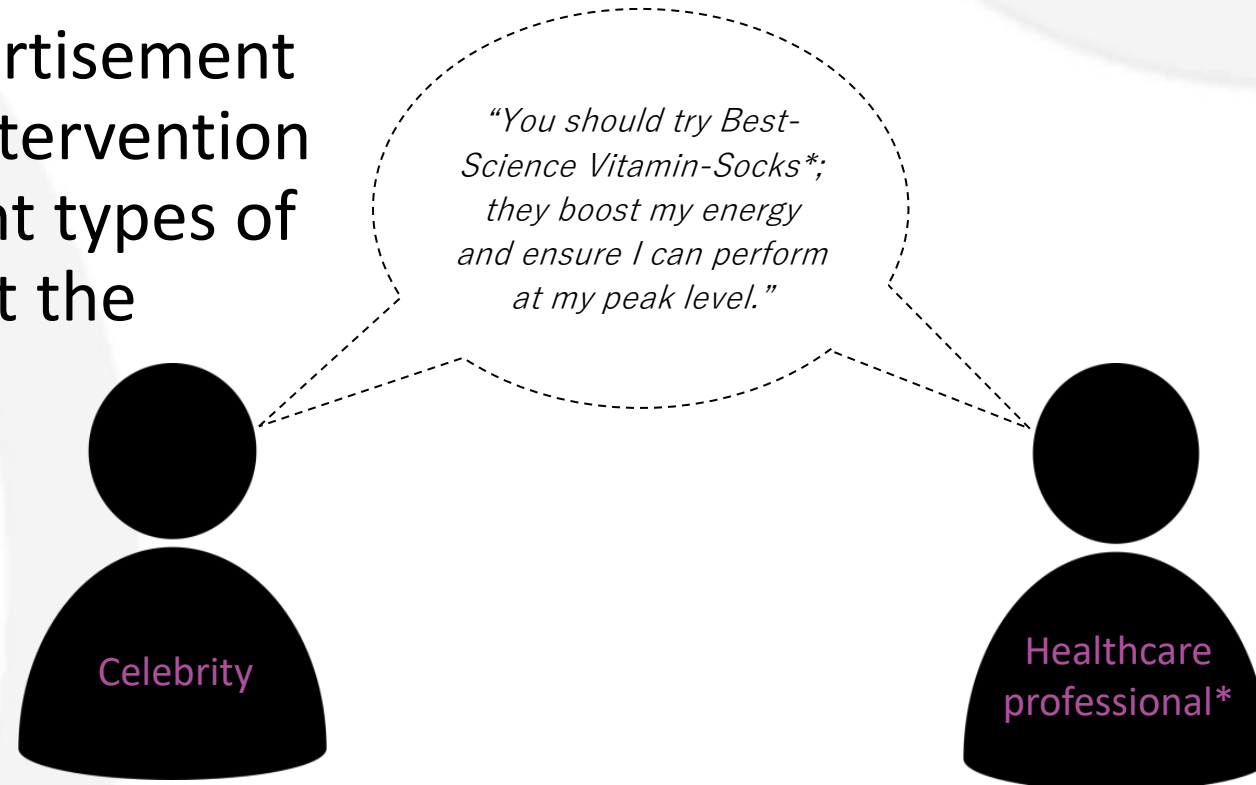
## Discussion Question 7

- Are endorsements likely or unlikely to provide reliable health information? Why?



## Discussion Question 8

Consider an advertisement about a health intervention that uses different types of people to present the information:



*\* Someone who is presented as a healthcare professional, either by introduction, or by inference from their attire, or their placement within a healthcare environment.*

- Are you likely to believe one of these examples over the other? Why?



## Discussion Question 9

- Would an endorsement from a member of the public be more convincing? Why?

No sources of anecdotes, testimonials or endorsements are more reliable than others. Unless the information is based on appropriate research, it cannot be considered reliable.



*Don't be fooled by false health claims!*

Watch out for claims of causation





## Class Activity A

Association is not the same as causation

# Explain the relationships between these two variables



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# Longer words in spelling-bee finals angers venomous spiders?



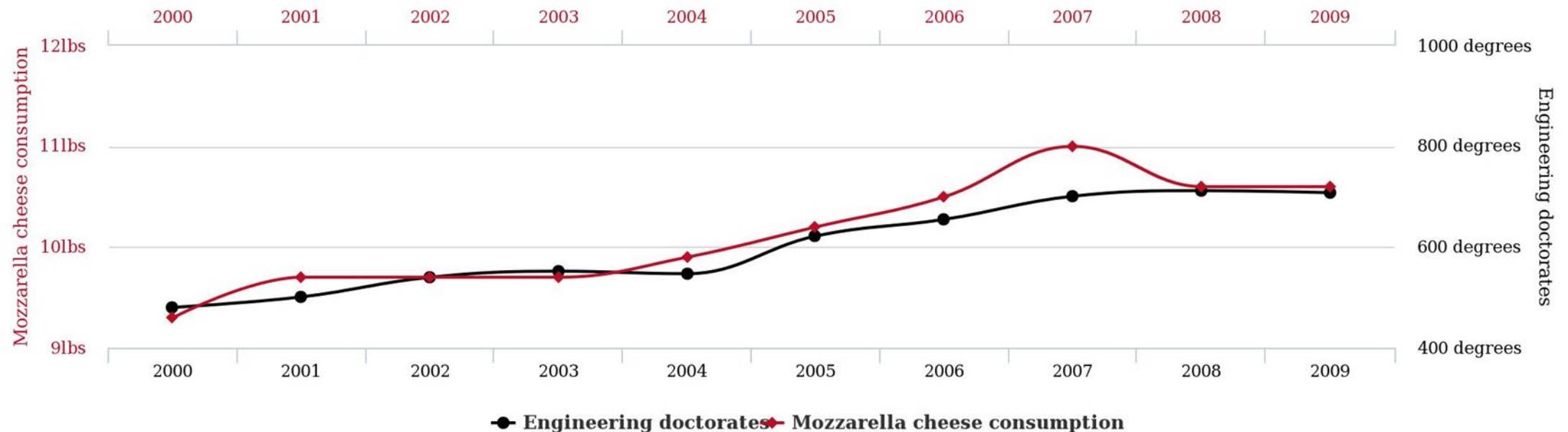
*Supercalifragilisticexpialidocious*





# Explain the relationships between these two variables

**Per capita consumption of mozzarella cheese**  
correlates with  
**Civil engineering doctorates awarded**



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# Mozzarella enhances engineering skills?





*Don't be fooled by false health claims!*



## Discussion Question 10

- What is the difference between association and causation?

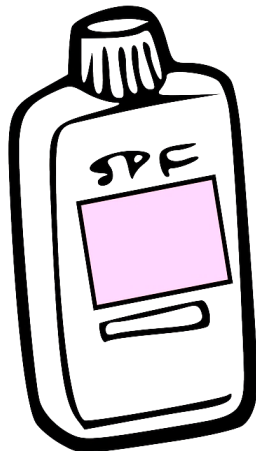
The relationship between two variables does not necessarily imply a causal relationship.

A relationship between two variables is often **correlation** (also known as **association**) rather than **causation**.

- Example: when sales of icy-poles and ice creams increase, so too does the sale of sunscreen. Does that mean we get sunburn from eating icy-poles and ice-cream?

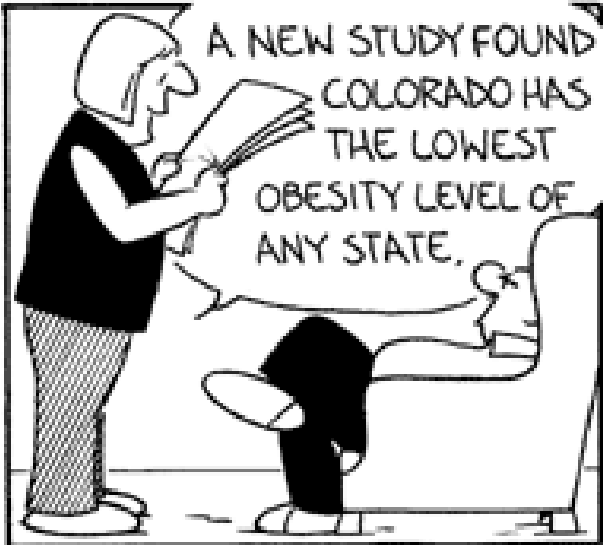
**Causation:** an association between two variables where a change in one variable **causes a change** in the other variable.

E.g. as the number of people who apply sunscreen before playing a game of outdoor tennis increases, the number of people who become sunburnt during the activity decreases.



More people applying sunscreen **causes** less people to become sunburnt.





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When studies find an  
**ASSOCIATION**  
between two things



it does **not** mean one thing  
**CAUSED**  
the other one to happen.





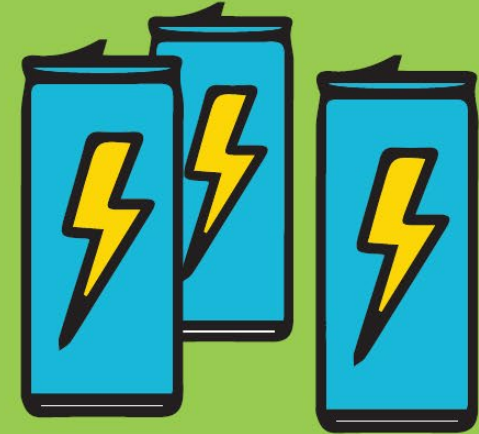
*Don't be fooled by false health claims!*



# Student Booklet: Activity 5

## Conflicts of interest and bias

Consider a study that was conducted to assess the effects of an energy drink which claimed to **improve athletic ability.**



Which process (A or B) is more likely to be fair?

*(and therefore, more likely to produce a more reliable result)*

## Activity 5 answers

Study details	Options	A or B
The study is funded and performed by:	<p>A. an organisation whose interest is in scientific fact, public health, and how to improve healthcare.</p> <p>B. the company who has created the drink.</p>	
To assess the effects of the drink, a large group of students:	<p>A. use the drink and measure their athletic ability.</p> <p>B. split into two groups: one group use the drink while the other group doesn't, and both groups then measure their athletic ability.</p>	
To separate the total group of students into two groups:	<p>A. the students are told to separate themselves into two groups.</p> <p>B. students are asked to each take a sealed envelope – inside is a note to indicate a group.</p>	
The students in the two comparison groups:	<p>A. know if they are using the energy drink or not (maybe they can see or taste a difference).</p> <p>B. don't know if they are using the energy drink or not (both drinks look and taste very similar).</p>	
An assessor will measure athletic ability. The assessor:	<p>A. is told whether the person has been using the energy drink or not.</p> <p>B. is not told whether the person has been using the energy drink or not.</p>	



*Don't be fooled by false health claims!*



# Two broad categories of health intervention studies

## Observational Studies

- where the researcher **observes**, but does not alter what occurs

## Experimental Studies

- where the researcher **intervenes**, and watches what occurs as a result of their intervention over time



# Student Booklet: Activity 6

## Introduction to study types

## Activity 6a answers

Study description	Study type
<p>1. A questionnaire was sent to households across Australia to collect data about who experienced regular headaches and who did not. People were also asked on the questionnaire about how often they exercise to assess if there was a connection between exercise and headaches.</p>	






## Activity 6b answers

Based on only the information given, which of these studies is likely to produce the most reliable results and why?

- **Experimental studies** are more likely to be reliable, because they try to control “**variables**”.

## Activity 6c answers

What are some variables, other than the energy drink, that might be **confounding variables** and impact on the results?



*Potential differences  
between the two groups*

- Potential differences between the two groups include:
  - Age (e.g. students in one group may be older)
  - Fitness level /general athletic ability (e.g. one group may be more athletic)
- These are “**variables**” which may “**confound**” (confuse) the results (outcome).



# Health H.A.C.C.

## End of Module 2



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