

# Evaluation of Evidence and Methods for Scientific Claims

**Evaluation = Make an appraisal by weighing up the strengths and limitations.**

**Evidence comes from research.**

**Some research is more scientifically valid than others.**

**Key questions to consider for the strengths are:**

- Is there a (negative or positive) correlation between intake of the lipid being investigated and rate of the disease or the health benefit?
- If instead mean values are being compared how different are they? Has this difference been assessed statistically?
- How widely spread is the data? This can be assessed by the spread of data points or the relative size of error bars. The more widely spread the data the smaller the significance can be placed on the correlation and/or the conclusion.
- Evidence for health claims comes from research. Some of this research is more scientifically valid than others.

**Key questions to consider for the limitations are:**

- Was the measure of the health a valid one? e.g. cholesterol levels in blood are more informative than body mass index.
- How large was the sample size? Larger samples are more reliable.
- Does the sample reflect the population as a whole or just a particular sex, age, state of health, lifestyle or ethnic background?
- Was the data gathered from human or animal trials? If only done of animals how applicable are the findings?
- Were all the important control variables, e.g. level of activity, effectively controlled?
- Were the levels and frequency of the lipids (or substance studied) intake realistic?
- How rigorous were the methods used to gather data? e.g. If only a survey was used how truthful were the respondents?