



How to read graphs

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In an era where information is readily available, graphs have become essential tools for conveying data in a visually appealing and concise manner. Understanding how to read them accurately is crucial for making informed decisions. However, graphs can be misleading if not interpreted correctly or are even made misleading on purpose at times. This infographic shows common cases of misleading graphs, including leaving out data, not labelling data properly or skipping numbers on the vertical axis. Here are some handy tips to help you identify misleading graphs.

HOW TO READ GRAPHS



Reading graphs correctly

Graphs are great tools for visually showing data. But they can be misleading if data is poorly presented, e.g., data is left out/badly labelled or axes are distorted.

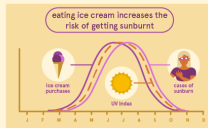
Understanding how to read them can help us better assess data and make informed decisions.



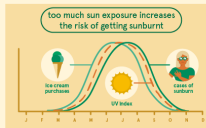
1 Misleading title

The title suggests two things are related, but no cause-and-effect relationship exists.

✗ misleading graph



✓ accurate graph

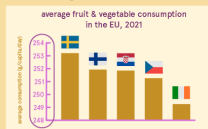


Example: "Correlation doesn't always mean causation." On sunny days, people are both more likely to eat ice cream and get sunburnt, but eating ice cream doesn't cause sunburns; the sun and too much exposure to UV light does!

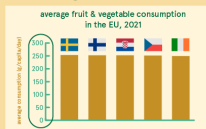
2 Incorrect scale

The vertical or horizontal scale is too big or too small, skips numbers or doesn't start at zero.

✗ misleading graph



✓ accurate graph

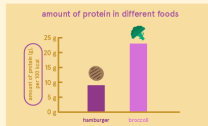


Example: Even though it seems that Sweden is doing well on their fruit & vegetable consumption in comparison to other countries, all countries have a similar consumption and are far from reaching the recommended minimum of 400 grams per day.

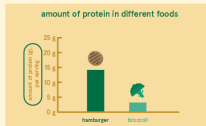
3 Misleading labels

The data is not properly labelled, or misleading labels are used.

✗ misleading graph



✓ accurate graph

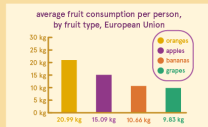


Example: Displaying the protein content of different foods per 100 kcal isn't a useful measure since it doesn't take regular portion sizes into account. To get 14 g of protein from broccoli, we would have to eat almost a whole head of it!

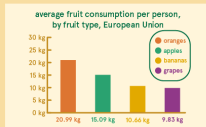
4 Unclear key or legend

Colours and symbols are not used properly.

✗ misleading graph



✓ accurate graph

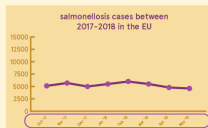


Example: At first, you might think bananas are the most consumed fruit because the highest bar is yellow and bananas are yellow. However, the key is misleading, and the yellow colour actually represents the oranges.

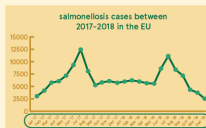
5 Data is left out

The graph doesn't show the full range of data we need to interpret it.

✗ misleading graph



✓ accurate graph



Example: In the left graph, it may seem Salmonellosis cases have stabilised. However, food poisoning increases in summer because bacteria spread faster in warm weather and handling food safely is harder when cooking outdoors. Showing data for the winter only gives an inaccurate picture.