Part 8: Risk and Relative Risk

Risk is the probability of something happening. **Relative Risk** is the two risks compared.

Risk is often associated with things that have a *risk*, or are negative, however it can be used for any situation, positive or negative. You can have the "risk" of winning a major prize, or getting an excellent result in a test.

Example:
Aspirin is thought to be beneficial in preventing heart attacks. In order to test this a group of 1000 doctors were split into two even groups, and they either took aspirin daily or not at all, and recorded if they had a heart attack or not. The table below shows the results

	Aspirin	No Aspirin	Total
Heart Attack	5	12	17
No Heart Attack	495	488	983
Total	500	500	1000

The **risk** of having a heart attack = 17 / 1000 = 0.017
The **risk** of a heart attack if taking aspirin is 5 / 500 = 0.01
The **risk** of a heart attack if not taking aspirin is 12 / 500 = 0.024

We can see just from comparing the probabilities you are more likely to have a heart attack if you are not taking aspirin. To work out the **relative risk** we divide one probability by the other.

Therefore the **relative risk** of having a heart attack if you are not taking aspirin (compared to if you are) is 0.024 / 0.01 = 2.4

Therefore you are 2.4 times as likely to have a heart attack if you are not taking aspirin compared to if you are.

Note: this data in this question is fictional, and there are benefits and risks of taking aspirin daily. If you are concerned about the risk of either yourself or someone else having a heart attack it is best to consult your health professional.