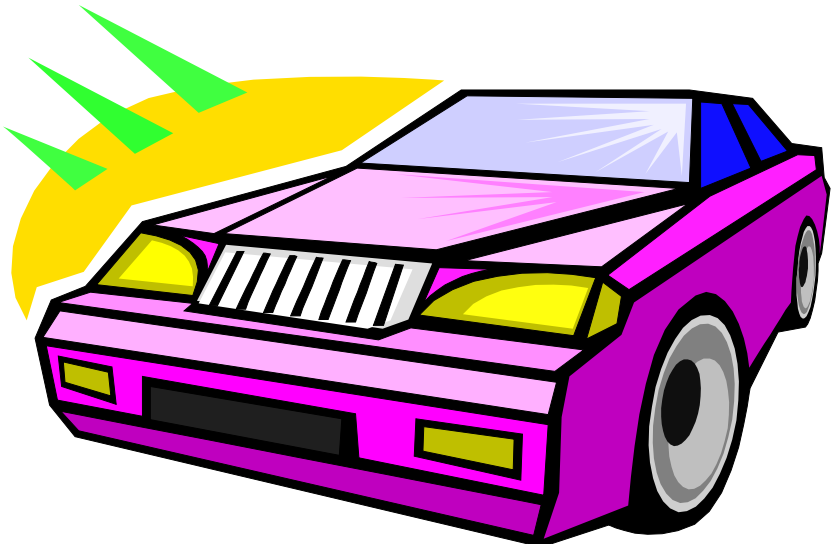
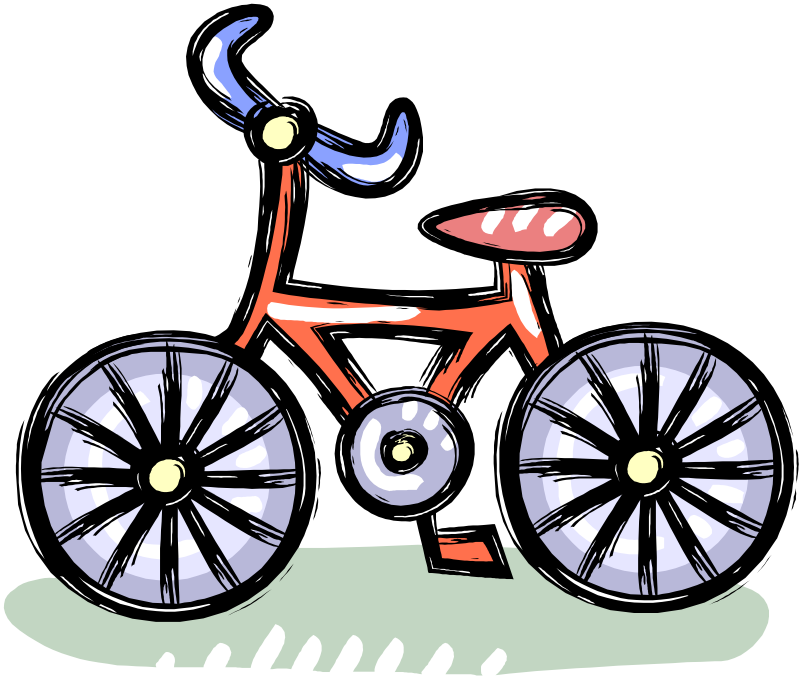
Risk and odds

- Sometimes, I travel to work by car….



Risk and odds

- Sometimes, I travel to work by bike….



Risk and odds

- It seems to rain more often…

  when I go

  by bike!



Risk and odds

	RAIN	SUN	TOTAL
CAR	20	80	100

What is the risk of it raining if I go by car?

Answer: 20 / 100 = 0.2

This is also the probability

Risk and odds

	RAIN	SUN	TOTAL
CAR	20	80	100

What are the odds of it raining if I go by car?

Answer: 20 / 80 = 0.25

Risk and odds

	RAIN	SUN	TOTAL
BIKE	40	60	100

What is the risk of it raining if I go by bike?

Answer: 40 / 100 = 0.4

This is also the probability

Risk and odds

	RAIN	SUN	TOTAL
BIKE	40	60	100

What are the odds of it raining if I go by bike?

Answer: 40 / 60= 0.66

Risk and odds

	RAIN	SUN	TOTAL
BIKE	40	60	100
CAR	20	80	100

What is the Relative Risk of it raining if I go by bike?

Answer: $\frac{40 / 100}{20 / 100} = \frac{0.4}{0.2} = 2$

This is also called the Risk Ratio

Risk and odds

	RAIN	SUN	TOTAL
BIKE	40	60	100
CAR	20	80	100

What are the Relative Odds of it raining if I go by bike?

Answer: $\frac{40 / 60}{20 / 80} = \frac{0.66}{0.25} = 2.64$

This is also called the Odds Ratio

Risk ratio and odds ratio

- How strong is the association between exposure and outcome?

- Like RRR, ARR and NNT these measures give a guide to the clinical significance of a study – how important an effect is*

(*please note, cycling does not make it rain!)