

Get ratios the right way up

You have come here because you have got a ratio backwards.

Whenever we say what is the “Relative risk”, “Odds Ratio” or “Hazard Ratio” in one group A compared with another group B, we always, ALWAYS, mean it as

$$\frac{A}{B}.$$

Did I remember to say “always”? Please see next pages for examples.

Revision Question 1

Having just read your test score, my chance of dying of disappointment would be 30%. But if you complete this extension exercise, I am less unhappy and only have a 15% chance of dying of disappointment.

What is the relative risk of me dying of disappointment, if you complete the extension exercise, compared with if you don't?

Is it:

3.0

2.0

1.5

1

0.5

Say out loud your chosen answer! Don't do it mentally, or you will just cheat.

Chosen? Once chosen, go to the next page.

Answer

The question was “What is the relative risk of me dying of disappointment, if you complete the extension exercise, compared with if you don’t?”

Risk of dying WITH EXTENSION EXERCISE

“Compared with”, i.e. Divided by,

Risk of dying without

This is

15

--

30

= 0.5

If you said “2”, slap yourself in the face, hard!

Go to next page for next question.

Revision Question 2

Implanting the Francistronics Cyloverter[*] into the body, in cardiogenic shock, reduces the odds of death.

WITHOUT the cycloverter, odds of death is 67/33, i.e. about 2.

WITH the cycloverter, odds of death is 49/51, i.e. about 1.

What is the odds ratio of death, provided by the cycloverter?

Choose from:

4

2

1

0.5

0.25

Once you've said the answer out loud, go to the next page.

[*] Investigational device not available for clinical use in USA or any other country. Available for thought experiments only.

Answer

“What is the **odds ratio** of death, **provided by** the cycloverter?”

Means

$$\begin{aligned} & \frac{\text{Odds WITH cycloverter}}{\text{Odds withOUT cycloverter}} \\ &= \text{approx } \frac{1}{2} \\ &= 0.5 \end{aligned}$$

Hopefully this makes sense. If not, please DM me at @ProfDFrancis.

Remember, it is always

$$\frac{\text{Probability, odds or whatever WITH the thing}}{\text{Probability, odds or whatever WITHOUT the thing}}$$

Summary sheet

“the (odds ratio, risk ratio, hazard ratio or whatever) for (whatever endpoint) with (whatever treatment)” is always calculated:

With

Without

Final hint:

Need a mnemonic (sigh)?

“The bigger word is heavier, and so goes on the bottom.”

I am sad if you need to resort to this, but better to be propped up with a mnemonic than to fall over.