

Epidemiology — Data Analysis, Treatment Outcomes and Study Evaluation

Use this worksheet after reading the lesson to practise the key ideas and prove you can meet the success criteria.

Name _____

Date _____

Class _____

1. Key Ideas

A new cancer drug reduces mortality by 50% — sounds dramatic. But if the baseline risk was 2%, the absolute reduction is only 1 percentage point. Understanding the difference between relative and absolute risk is what separates critical reading of medical evidence from being misled by statistics.

- How to calculate relative risk, absolute risk reduction, and NNT from trial data
- Why relative risk reduction can be misleading without absolute risk context

2. Success Criteria

By the end, you should be able to:

- How to calculate relative risk, absolute risk reduction, and NNT from trial data
- How to read and interpret a basic survival curve
- The hierarchy of evidence from case reports to systematic reviews

3. Key Terms

Study design:

is the right design for the question? (RCT for intervention; cohort for long-term exposure; case-control for rare diseases)

Sample size:

is it large enough to detect a real effect? Small samples are underpowered — they may miss real effects (false negative) or

Control group:

is there an appropriate comparison group? Placebo vs active control vs no treatment — the choice affects what conclusions can be drawn

the absolute reduction

is only 1 percentage point

relative and absolute risk

what separates critical reading of medical evidence from being misled by statistics

terms of what it

means for an individual patient?

4. Activity: Build the Lesson Map

Use the lesson to complete the table. Keep answers brief but specific.

Prompt	Your answer
Main concept	
Important example	
Common mistake to avoid	
How this links to the next lesson	

5. Short Answer Questions

1. Explain this lesson goal in your own words: "How to calculate relative risk, absolute risk reduction, and NNT from trial data". Use one specific example from the lesson.

BAND 3 **2 MARKS**

2. Apply this idea to a new example: "How to read and interpret a basic survival curve". Show your reasoning clearly.

BAND 4 **3 MARKS**

3. Analyse why this idea matters for understanding Epidemiology — Data Analysis, Treatment Outcomes and Study Evaluation: "The hierarchy of evidence from case reports to systematic reviews".

BAND 5 **4 MARKS**

6. Extend: Apply the Idea

BAND 5/6

5 MARKS

A student gives a memorised answer about Epidemiology — Data Analysis, Treatment Outcomes and Study Evaluation but does not use evidence or reasoning.

Improve the answer by writing a stronger response that uses accurate terminology, a relevant example and a clear explanation.

7. Multiple Choice

1. What is the best first step when answering a question about Epidemiology — Data Analysis, Treatment Outcomes and Study Evaluation?

- A. Identify the key concept being tested
- B. Write every fact from memory
- C. Ignore the command word
- D. Skip examples and evidence

2. Which answer would show stronger understanding of Epidemiology — Data Analysis, Treatment Outcomes and Study Evaluation?

- A. An answer with accurate terms and reasoning
- B. A copied definition only
- C. A single-word response
- D. An answer with no example

3. What should you do if a question asks you to explain?

- A. Link the idea to a reason or cause
- B. List unrelated facts
- C. Only draw a diagram
- D. Write the shortest possible answer

8. Success Criteria Proof

Finish with evidence that you can do each success criterion.

SUCCESS CRITERION 1

Prove that you can: How to calculate relative risk, absolute risk reduction, and NNT from trial data

BAND 3 **2 MARKS**

SUCCESS CRITERION 2

Prove that you can: How to read and interpret a basic survival curve

BAND 4 **3 MARKS**

SUCCESS CRITERION 3

Prove that you can: The hierarchy of evidence from case reports to systematic reviews

BAND 5 **4 MARKS**

One thing I still need help with:
