

26. EP.1 · Epidemiology and clinical evidence

Starter Quiz ·

GRE Subject Test · GRE Psychology

Name: _____ Score: _____

1. At a census date, 200 of a town's 40,000 residents have the defined condition. What is point prevalence per 1,000 residents?

2. In a hypothetical comparison over one year, treatment lowers the same adverse-event risk from 4% to 2% versus the comparator. What is NNT over that year?

3. Forty first onsets of a defined condition occur among county residents during a stated year. What kind of numerator is described?

☐ an incidence event count
☐ a number needed to treat
☐ a relative risk
☐ a prevalence figure
4. A 50% relative reduction in the same one-year adverse-event risk can correspond to a small absolute reduction.

☐ True ☐ False
5. A study that starts with people who have a condition and compares their past exposures with controls is a

☐ meta-analysis
☐ cohort study
☐ randomised trial
☐ case-control study
6. During complete one-year follow-up, 20 of 1,000 initially unaffected people develop the condition. What is the one-year risk as a percentage? Give the percentage number.

7. A different study records twenty new cases over 500 at-risk person-years. Which expression is correct?

☐ 4 new cases per 100 person-years.
☐ A point prevalence of 4%.
☐ 4% risk in every year for every participant.

8. Proper randomisation guarantees that every baseline characteristic is exactly identical between the groups in a single trial.
- ☐ True ☐ False
9. Researchers define all workers employed in a factory in a past year, classify their recorded exposure, and compare later recorded outcomes. Which description best fits?
- ☐ Necessarily a case-control study because records are old.
- ☐ A randomised trial because everyone is included.
- ☐ A retrospective cohort study.
10. Under the worked screening assumptions, there are 180 true positives and 990 false positives. Which fraction gives positive predictive value?
- ☐ $990 / 19,800$
- ☐ $180 / 200$
- ☐ $180 / (180 + 990)$

1. **5**

$200 / 40,000 \times 1,000 = 5$ per 1,000 at the stated census date.

2. **50**

$ARR = 0.04 - 0.02 = 0.02$; $NNT = 1 / 0.02 = 50$ over one year for one additional event prevented on average. The outcome, comparator and period are part of the interpretation.

3. **an incidence event count**

This is a count of new defined events in a period. A risk or rate still requires the corresponding at-risk population or person-time denominator.

4. **True**

For example, a change from 2% to 1% is a 50% relative reduction and a one-percentage-point absolute reduction, with NNT 100 over that year under the stated comparison.

5. **case-control study**

Selection begins with outcome status, followed by comparison of exposures. Using historical records alone does not define a case-control design; a cohort can also be retrospective.

6. **2**

$20 / 1,000 = 0.02 = 2\%$ over the stated year. The initially at-risk population is the denominator.

7. **4 new cases per 100 person-years.**

$20 / 500 \times 100 = 4$ per 100 person-years. A person-time rate is not itself a risk percentage or a snapshot prevalence.

8. **False**

Random allocation balances prognostic factors on average. Chance imbalances can remain in a realised trial, and other sources of bias also need evaluation.

9. **A retrospective cohort study.**

The group is defined as a cohort and subsequent outcomes are compared by exposure, even though the relevant period is already in the past.

10. **$180 / (180 + 990)$**

Predictive value asks about the condition among all positive results. The denominator is 1,170 positive tests, rather than the 200 cases or 19,800 non-cases.