

Measures of Association

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1. Introduction

- Measures of association quantify the strength of the relationship between an exposure and an outcome.
- They help judge whether an exposure increases or decreases disease risk.

2. Relative Risk

- **Risk ratio:** the ratio of disease risk in the exposed group to that in the unexposed group.
- A value above one suggests increased risk, while below one suggests protection.

3. Odds Ratio

- **Odds ratio:** the ratio of the odds of exposure in cases to the odds in controls.
- It is the main measure used in case-control studies and approximates risk ratio for rare diseases.

4. Attributable Measures

- **Attributable risk:** the difference in risk between exposed and unexposed groups.
- These measures estimate the disease burden that could be prevented by removing the exposure.

5. Interpretation

- Confidence intervals show the precision of an estimate and statistical significance.
- Association does not by itself prove causation; bias and confounding must be excluded.

6. Summary

- Measures such as risk ratio, odds ratio, and attributable risk express the strength and impact of exposure-disease associations in epidemiological studies.