

9. What do the authors say about power/sample size of the study? Is the power adequate to answer the study question?

10. Are the study groups' characteristics comparable at baseline?

11. What statistical tests/methods are used in the analysis of the results? Is the "intention to treat" principle maintained (if the study is a clinical trial)?

12. What are the results of the study?

13. Are the results statistically significant?

14. Are the results clinically significant?

15. What are the biases/limitations of the study that could cause you to question the author's conclusions?

16. Point out which limitations or biases are unique to the study design (see below), and discuss how these potential problems are addressed by the authors.

17. Comment on the overall internal validity of this article. Did the authors rule out **chance, bias, and confounding** as explanations for their findings?

18. Comment on external validity or generalizability of this study. Would these results change your practice? How do these results fit into what we already know about this subject? (Understand that to achieve internal validity discussed above researchers often sacrifice external validity)

19. How does this fit our current knowledge? (refer to current practice, previous beliefs, and/or previous studies)

Potential limitations/biases according to study design:

Cross-Sectional

No way to establish temporal relationship exposure and outcome measured at the same time.

Selection Bias

Self-Reporting Bias

Response Bias

Case-Control

Selection Bias (of cases and controls)

Recall Bias

Questionable Temporal Relationship (decrease exposure before outcome)

Cohort

Selection Bias

Loss to Follow up

Change in habits over time

Experimental Design

Selection Bias

Loss to Follow up

Improper or biased randomization procedures

Inadequate blinding of participants and investigators to exposure/treatment