



Publication Bias in the Cochrane Library of Systematic Reviews

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Cochrane Library

Database of high-quality, systematic reviews in clinical science.

Currently $\sim 8,000$ reviews, prepared by independent groups.

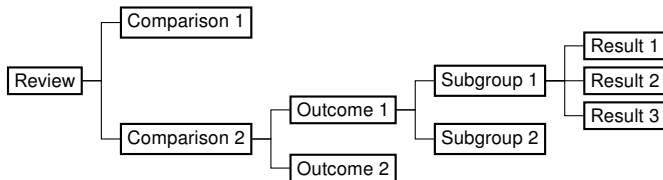
Reviews are peer-reviewed and prepared after guidelines.



Cochrane Library Dataset



Dataset structure





Review Example

Study	Comparison	Outcome
Bohn 1989	Barbiturate vs no barbiturate	Death at the end of follow-up
Bohn 1989	Barbiturate vs no barbiturate	Death or severe disability at the end of follow-up
Eisenberg 1988	Barbiturate vs no barbiturate	Uncontrolled ICP during treatment
Eisenberg 1988	Barbiturate vs no barbiturate	Hypotension during treatment
Perez-Barcena 2008	Pentobarbital vs Thiopental	Death at the end of follow-up (6 months)
Perez-Barcena 2008	Pentobarbital vs Thiopental	Death or severe disability at the end of follow-up (6 months)
Perez-Barcena 2008	Pentobarbital vs Thiopental	Uncontrolled ICP during treatment
Perez-Barcena 2008	Pentobarbital vs Thiopental	Hypotension during treatment
Schwartz 1984	Barbiturate vs Mannitol	Death at the end of follow-up (1 year)
Schwartz 1984	Barbiturate vs Mannitol	Uncontrolled ICP during treatment
Ward 1985	Barbiturate vs no barbiturate	Mean ICP during treatment
Ward 1985	Barbiturate vs no barbiturate	Mean arterial pressure during treatment
Ward 1985	Barbiturate vs no barbiturate	Mean body temperature during treatment

Study	Comparison	Outcome	Events	Total	Events_c	Total_c
Bohn 1989	Barbiturate vs ..	Death at ..	11	41	11	41
Ward 1985	Barbiturate vs ..	Death at ..	14	27	13	26



Pooling studies

Studies of the same outcome, comparison and subgroup can be pooled by meta analysis.

Evidence synthesis - more reliable results.

Different methods - f.ex. random or fixed effects meta-analysis.



Publication bias

Selection of studies with treatment effects.

Stronger selection for smaller studies - small study effect.

Distort findings of meta-analyses.



References

Harris, G., Thompson, W. D., Fitzgerald, E., and Wartenberg, D. (2014). The association of pm2.5 with full term low birth weight at different spatial scales. *Environmental Research*, 134:427 – 434. Linking Exposure and Health in Environmental Public Health Tracking.