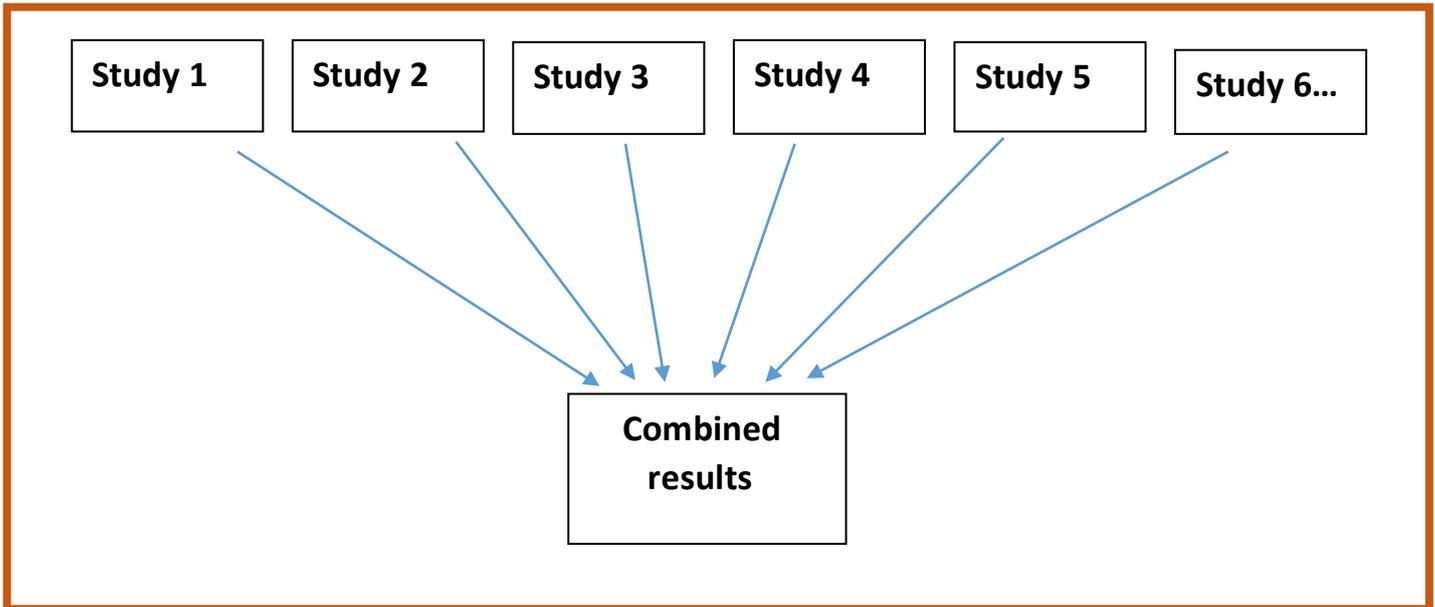


All you need to know about: Systematic Reviews



Definition:

A review that summarises the evidence on a clearly formulated review question according to a predefined protocol, using systematic and explicit methods to identify, select and appraise relevant studies, and to extract, analyse, collate and report their findings. It may or may not use statistical techniques, such as meta-analysis.

NICE Glossary : <https://www.nice.org.uk/glossary?letter=s>)

Key Features:

- * Is a Secondary research design
- * Uses a systematic approach to identify comparable studies
- * Has clearly stated criteria for the inclusion/exclusion of studies
- * When appropriate, combines results using statistical analysis

Strengths:

If correct methodologies used-

- * Assesses and synthesises large amounts of information, providing one bottom line result.
- * Minimises bias by using pre-determined criteria for the identification and inclusion of studies.
- * Increases the precision in estimating an effect.
- * Can assist decision making.

Weaknesses:

- * Time consuming.
- * Difficulty in finding all appropriate papers to include.
- * More than one researcher required to ensure against bias.
- * Risk of statistically analysing studies that are not similar enough to combine.

Examples:

“A systematic review of total wrist arthroplasty compared with total wrist arthrodesis for rheumatoid arthritis.”

“A systematic review of the safety and efficacy of fully implantable middle ear hearing devices: the carina and esteem systems.”

“Topical anaesthetic or vasoconstrictor preparations for flexible fibre-optic nasal pharyngoscopy and laryngoscopy. Cochrane Database of Systematic Reviews, 2011”



Associated Terminology:

You may come across the following terms while reading a Systematic Review

- **Meta-Analysis:** *is a method often used in systematic reviews to use statistical methods to combine results from several studies of the same test, treatment or other intervention to estimate the overall effect of the treatment.*
- **Heterogeneity :** *is a term used in meta-analyses and systematic reviews to describe when the results of a test or treatment (or estimates of its effect) differ significantly in different studies. Such differences may occur as a result of differences in the populations studied, the outcome measures used or because of different definitions of the variables involved. It is the opposite of homogeneity.*
- **Forrest Plot/Blobbogram:** *is a graphical display of estimated results from a number of scientific studies addressing the same question, along with the overall results. It was developed for use in medical research as a means of graphically representing a meta-analysis of the results of randomized controlled trials.*
- **Quorum and Prisma Statement** are an evidence-based minimum set of items for reporting in systematic reviews and meta-analyses. PRISMA supercedes the older Quorum statement and focuses on the reporting of reviews evaluating randomized trials, but can also be used as a basis for reporting systematic reviews of other types of research, particularly evaluations of interventions.
- **Inter-rater Reliability:** *is a measure of reliability used to assess the degree to which different judges or raters agree in their assessment decisions.*

Further resources:

- **CASP Checklist for Critically Appraising Systematic Reviews :**
http://media.wix.com/ugd/dded87_a02ff2e3445f4952992d5a96ca562576.pdf
- **“How to Read a paper: The Basics of Evidence-Based Medicine”** by Patricia Greenhalgh. 4th Edition, 2010 published by Wiley-Blackwell. ISBN: 9781444334364
- **“Epidemiology, evidence-based medicine and public health: lecture notes”** by Y. Ben-Shlomo et al. 6th Edition, 2013 published by Wiley-Blackwell. ISBN: 9781444334784
- **“Systematic reviews: CRD's guidance for undertaking reviews in healthcare”** 2009, published by the Centre for Reviews and Dissemination. ISBN: 9781900640473
- **NICE Glossary:**
<https://www.nice.org.uk/Glossary?letter=A>
- **Centre for Evidence Based medicine:**
www.cebm.net

Further training and assistance:

If you would like to learn more about Critical Appraisal, please contact the Library and Knowledge Service. We can arrange training sessions tailored to your needs, at a time and location that is convenient to you.

website: <https://library.merseywestlancs.nhs.uk/>

email: library@merseywestlancs.nhs.uk

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