



Netherlands National Committee
for the protection of animals
used for scientific purposes

Synthesis of Evidence in laboratory animal research

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Laboratory animal research

- Is an important driver of progress in science and medicine
- But there are also many concerns

- Are you sure there is no alternative?
- Did you select the most relevant model for your research question?
- How good is your experimental design?

- An ethical testing system with checks and balances
- Transparent ethical justification -> societal acceptance



Synthesis of Evidence (SoE)

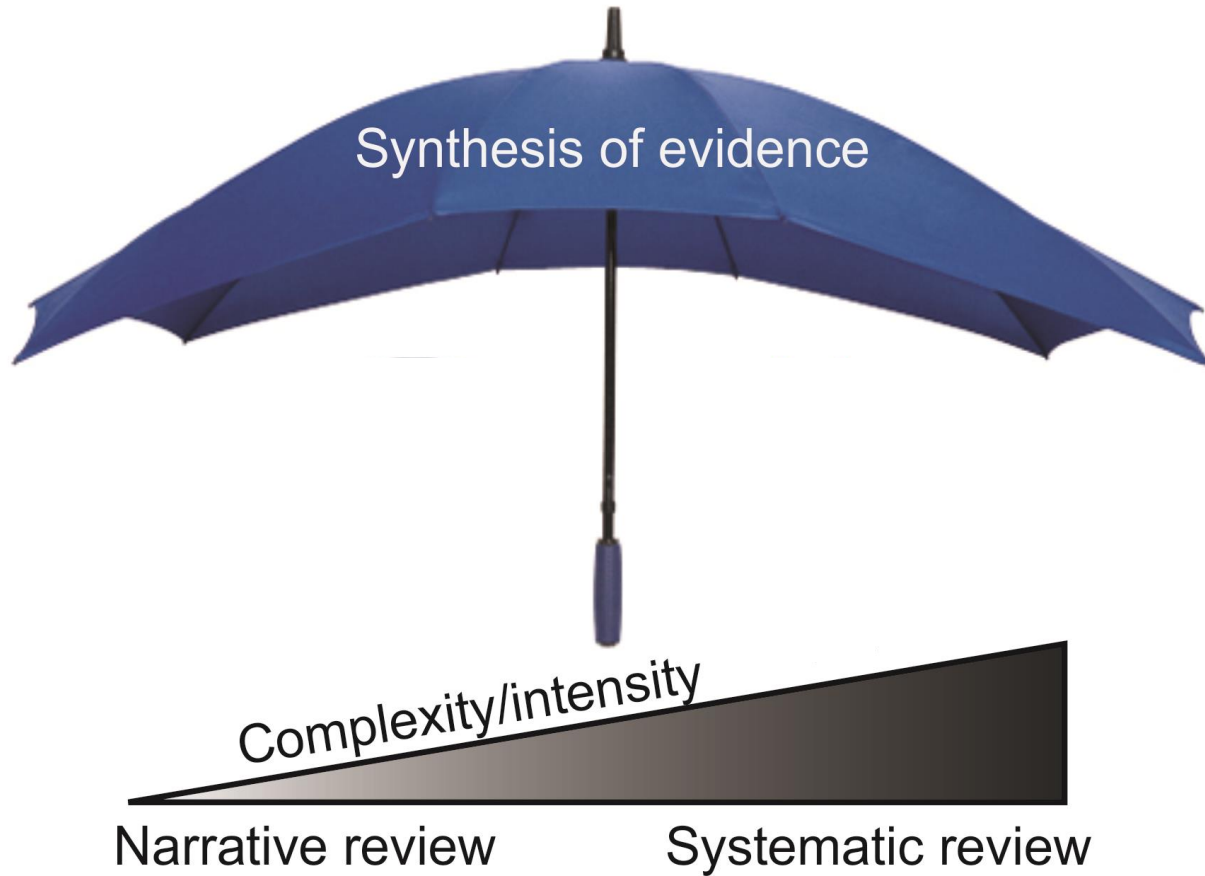
Synthesis of relevant literature and expertise *before research commences*

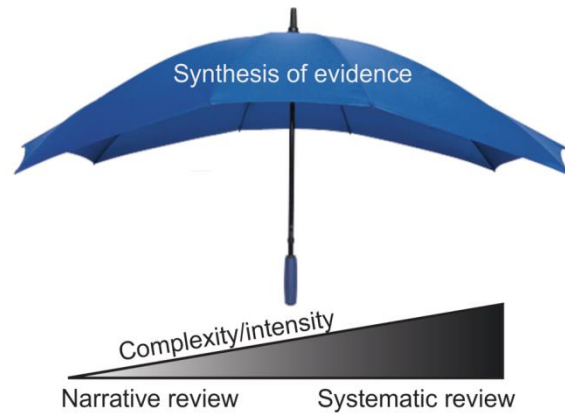
- > Choose relevant model
- > Prevent unnecessary duplication of research
- > Choice of correct experimental design
- > Transparency



Montreal declaration (2011: 8th world congress on alternatives and animal use in the life science)

Performing an SoE marks the start of the process of making a research proposal and aims to clarify what knowledge is and is not already available in order to enhance the quality of further research (Grimshaw, 2010). SoE can prevent the unnecessary repetition of laboratory animal studies that have already been conducted and contribute towards the transparency of translating the results of laboratory animal research and the proper design of clinical studies in human medicine. In this way, the SoE significantly contributes towards the implementation of the 3Rs.



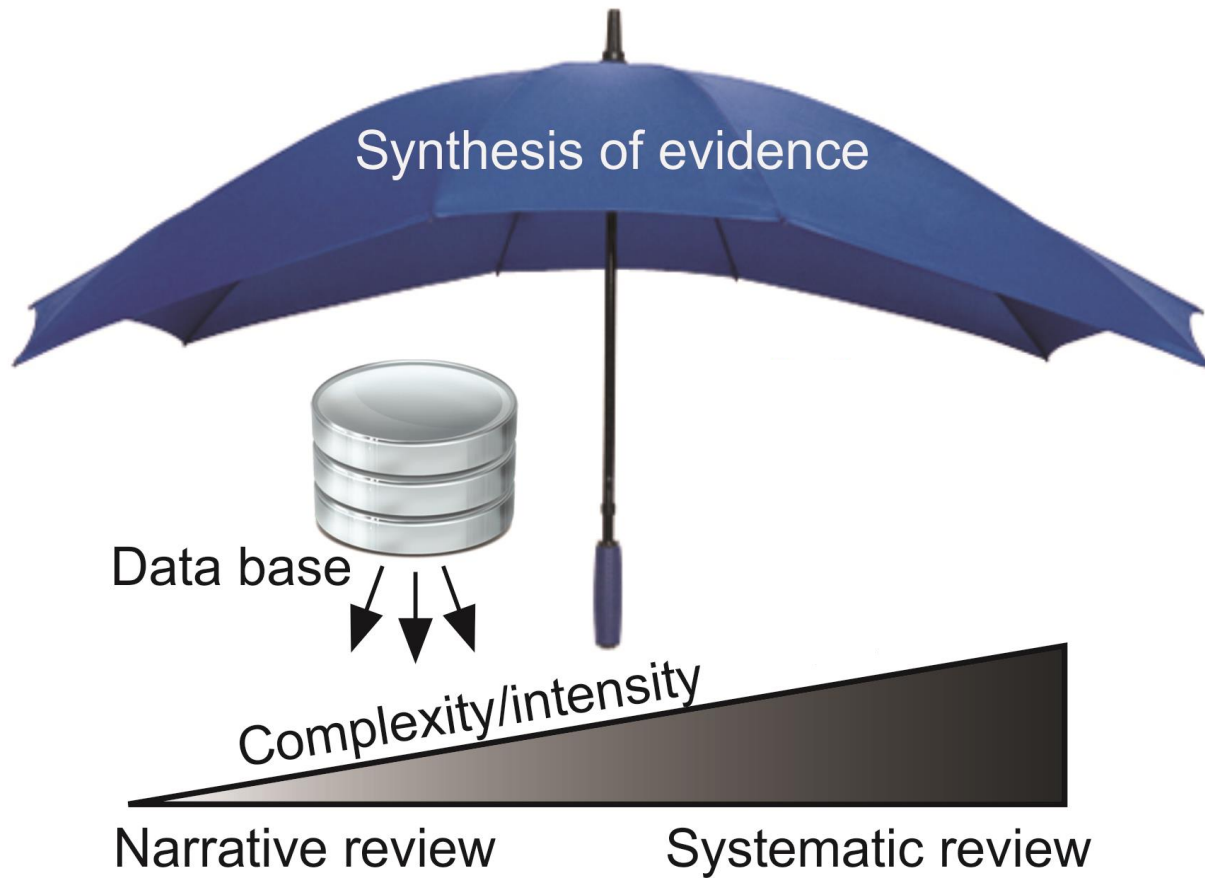


Narrative review

- Widespread
- Flexible
- Applicable if little information is available
- Selection method of studies usually not documented

Systematic review

- Restricted, well-defined question
- Systematic -> reproducible
- Description of literature search
- Evaluation of studies
- Sometimes **meta-analysis**
- Works if sufficient publications on the topic are available
- Is time consuming
- Close to clinical application





Challenges

- Scope and depth of the SoE depends on the available knowledge regarding the research question and the field
- There is often a lack of essential information relating to the experimental design
- Negative results are often not published
- Results not published because they are important for IP

Some partial solutions

- Journals that focus on replication studies and negative findings
- Guidelines for publishing (e.g. ARRIVE)
- Open data



Recommendations by NCad 1/2

- Encourage SoE before research starts
- Promote grants for the full spectrum of SoE
- Animal Ethics Committees, Competent Authorities and Animal Welfare Bodies



Recommendations by NCad 2/2

- Publish negative results and replications of earlier studies (e.g. training of researchers)
- Make a CoP



Thank you