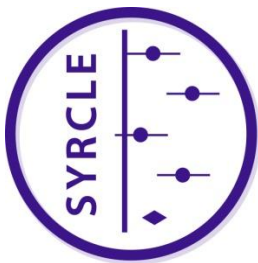


The Search Strategy

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SYstematic
Review
Centre for
Laboratory animal
Experimentation

*3rd international Symposium on Systematic Review and
Meta-Analysis of Laboratory Animal Studies
13-14th November 2014*

Radboudumc

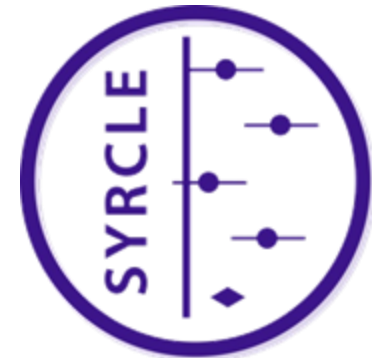
SYRCLE

SYstematic **R**eview **C**entre for **L**aboratory animal **E**xperimentation:

*“Improving animal science
through systematic reviews”*

Main activities:

- Tools and guidelines
- Education programs
- Conduct and coaching



Systematic steps:

1. Phrase the research question
2. Define in- and exclusion criteria
3. Search systematically for ALL original papers
4. Select relevant papers
5. Assess study quality and validity
6. Extract data
7. Analyze results (when possible perform MA)
8. Interpret and present data

Step by step search guide

Published online on 28 October 2011 Lab Anim, doi: 10.1258/la.2011.011087

Review Article

A step-by-step guide to systematically identify all relevant animal studies

Marlies Leenaars¹, Carlijn R Hooijmans¹, Nieky van Veggel^{1,2}, Gerben ter Riet³, Mariska Leeflang⁴, Lotty Hooft⁵, Gert Jan van der Wilt⁶, Alice Tillema⁷ and Merel Ritskes-Hoitinga¹

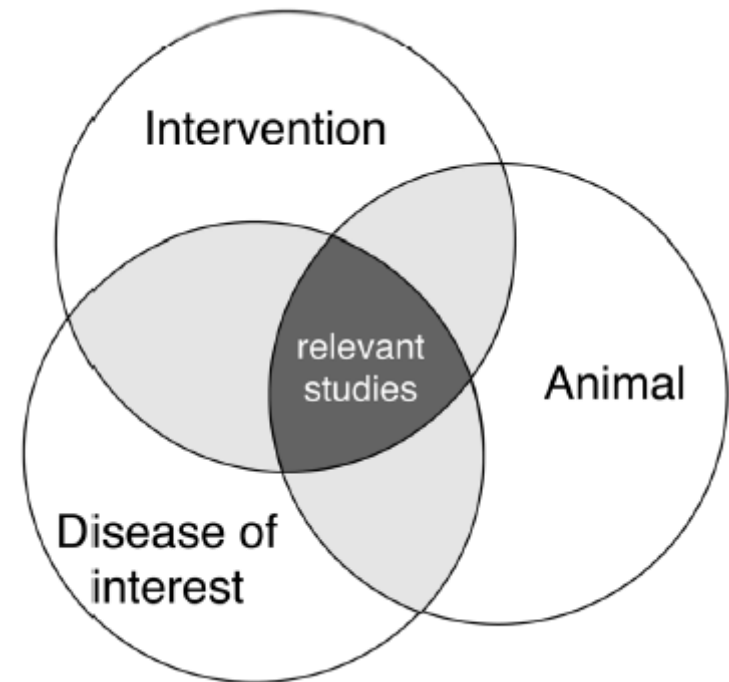
Why?

- Most scientist are not trained to build and conduct a comprehensive search strategy
- Specific knowledge per databases is needed
- Plenty of books and courses, but no compact guide

Building a search strategy

Short overview:

- Transform research question into search question
- Split into search components
- Build and combine search strings



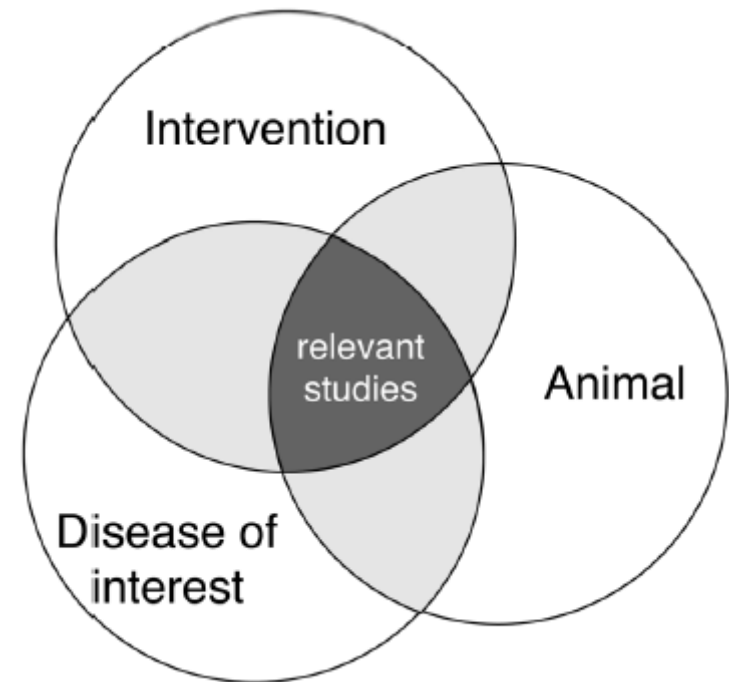
Comprehensive search strategy

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Building a search strategy

Short overview:

- Transform research question into search question
- Split into search components
- Build and combine search strings
- Evaluate search and fine-tune search
- Translate search for other databases
- Collect search results in reference software



Finding all available animal studies

Challenges in finding animal studies in PubMed:

- “Limit” animal studies is not suitable
- Excluding human studies is not suitable
- Errors in assigned “medical subject headings” (Mesh terms)
- Many different species, spelling and synonyms

Developed:

- Search filters for animal studies in PubMed and Embase

Short Report

Laboratory Animals 2011; 45: 268–270. DOI: 10.1258/la.2011.011056

A search filter for increasing the retrieval of animal studies in Embase

Rob B M de Vries¹, Carlijn R Hooijmans¹, Alice Tillema², Marlies Leenaars¹ and Merel Ritskes-Hoitinga¹

Original Article

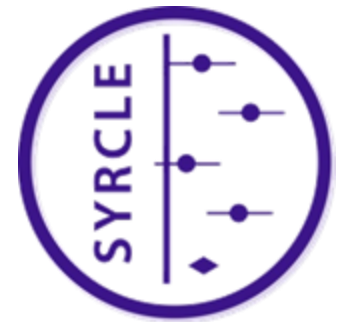
Laboratory Animals 2010; 44: 170–175. DOI: 10.1258/la.2010.009117

Enhancing search efficiency by means of a search filter for finding all studies on animal experimentation in PubMed

Carlijn R Hooijmans¹, Alice Tillema², Marlies Leenaars¹ and Merel Ritskes-Hoitinga¹

Current Study

- *How to search efficiently*
 - Which databases are mostly used?
 - What is the extend of overlap between these databases?
 - Which database yields the most unique records?



Preliminary results

Evaluation of 15 SRs (>2 databases)

- **Used literature sources**
 - PubMed (Medline) Embase, Web of Science, Biosis and 'hand search'
- **Contribution per database**
 - Embase 91,8%
 - Pubmed 89,7%
 - WoS 87,8%

Average overlap 85,4%

- **Number of unique records from Pubmed**
 - No unique records in 50% of the SRs
 - Other SRs vary between 1% – 6,8%

Preliminary conclusions

- Reporting of search strategy
 - All databases incl. platform/subscription and other sources
 - Search date and period per source
 - Used filters and/or restrictions
 - Full search incl. field labels
- Specific fine-tuning of search methodology for animal studies
- **Guidelines for SRs of animal studies**
- **Education programs on SRs of animal studies**

Education programs

- **Content:**
 - *Identifying and selecting relevant studies*
 - *Assessing study validity (risk of bias)*
 - *Data extraction and synthesis*
- One or two day(s) hands-on training
- One week program
 - Radboud University
 - Radboud Summer School 2015



Thank you!

