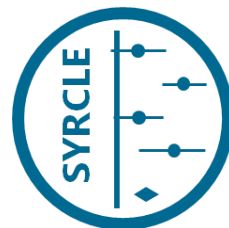


# Systematic reviews of animal studies

Towards more evidence-based  
pre-clinical research and translation

Judith van Luijk PhD  
NHMRC symposium 2018



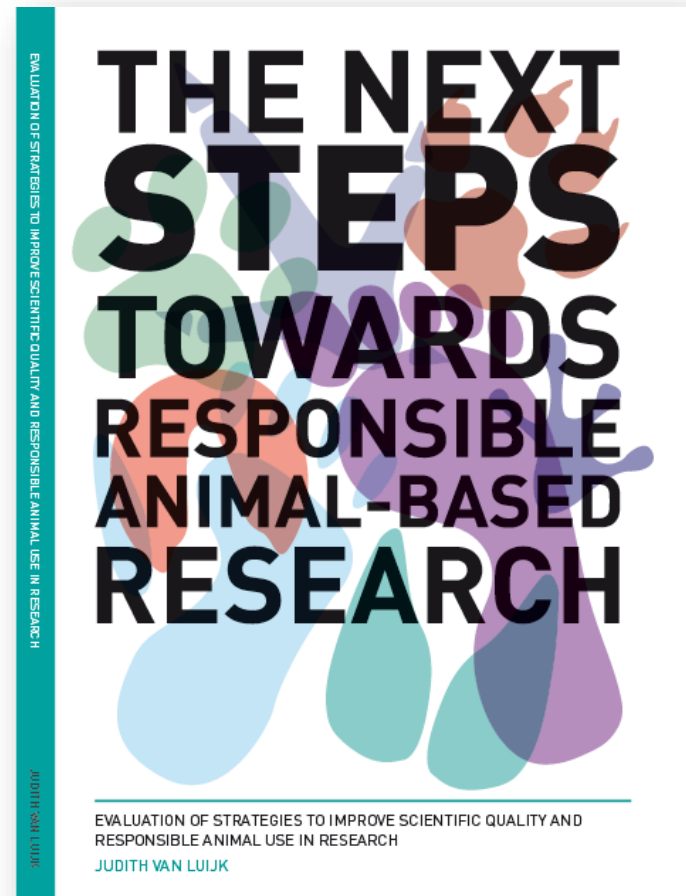
Radboudumc

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# Improving animal-based research

## Content:

- Evaluation of 3R implementation in the Netherlands
- Identification of future needs – role of systematic reviews
- Methodological evaluations of systematic reviews of animal studies
- Next steps - education



# About the 3Rs

- 3R principles: Replacement, Reduction and Refinement
- Introduced in 1959 by Russell and Burch
- Gained popularity in the 70's; incorporated in legislation
- **How are the 3Rs addressed in daily practice?**



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# Dutch 3R Questionnaires

## Main findings:

- No budget/time for specific 3R search
- Personal communication vs. literature search
- Relevant 3R information not found / not used
- Need for different strategy per “R”



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# Follow-up: 3R workshop

**Participants:**      *Researchers*  
                             *Animal Welfare Officers*  
                             *Animal Ethics Committee Members*

**Main outcome:**    Separate the 3Rs in daily practice  
                             “Replacement” & “Best Practice”

*Ways to improve:*

- Transparency & collaboration
- Sharing of data (negative results)
- Experimental design (education)



***Are Systematic Reviews the way to go?***

# Benefits of preclinical SRs



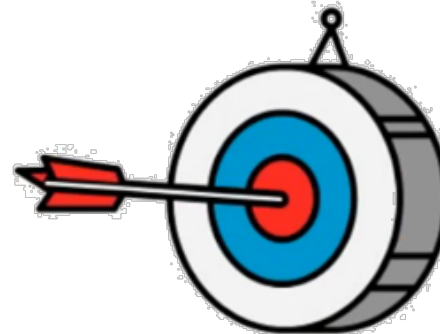
PROVIDE OVERVIEW OF AVAILABLE EVIDENCE

IDENTIFY KNOWLEDGE GAPS

CRITICAL APPRAISAL OF STUDY QUALITY

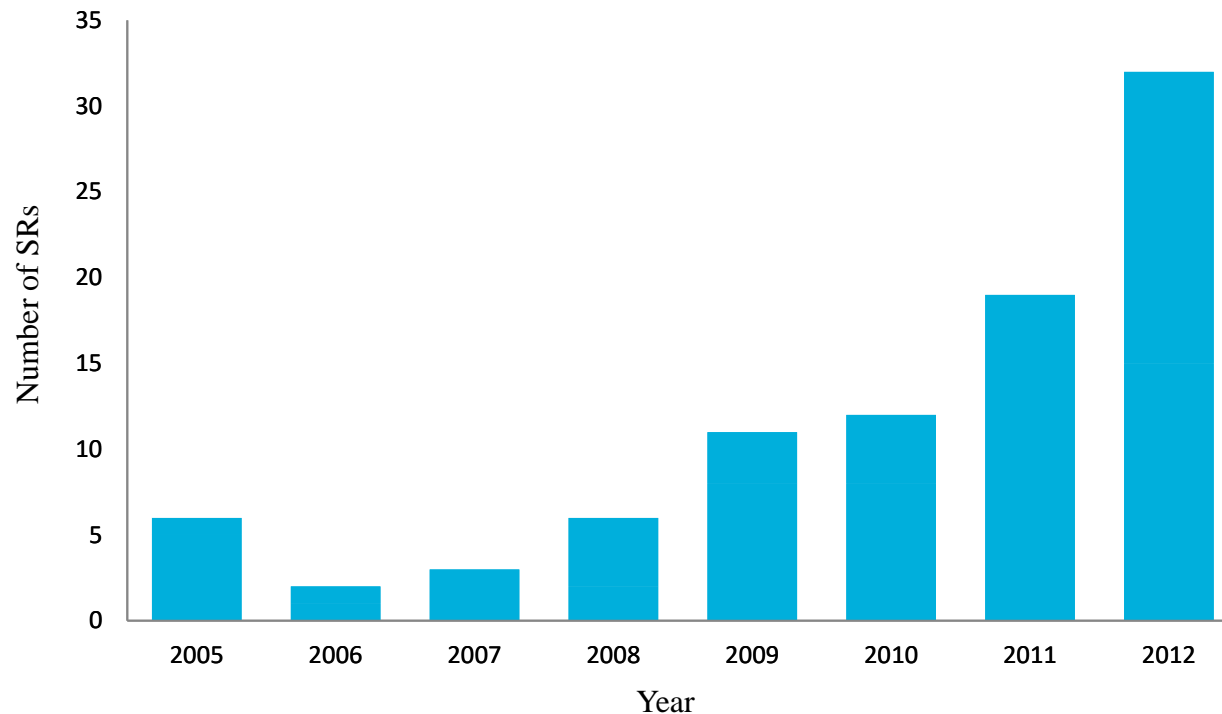
IDENTIFY FACTORS INFLUENCING TREATMENT EFFICACY

INFORM EXPERIMENTAL DESIGN OF ANIMAL CLINICAL STUDIES



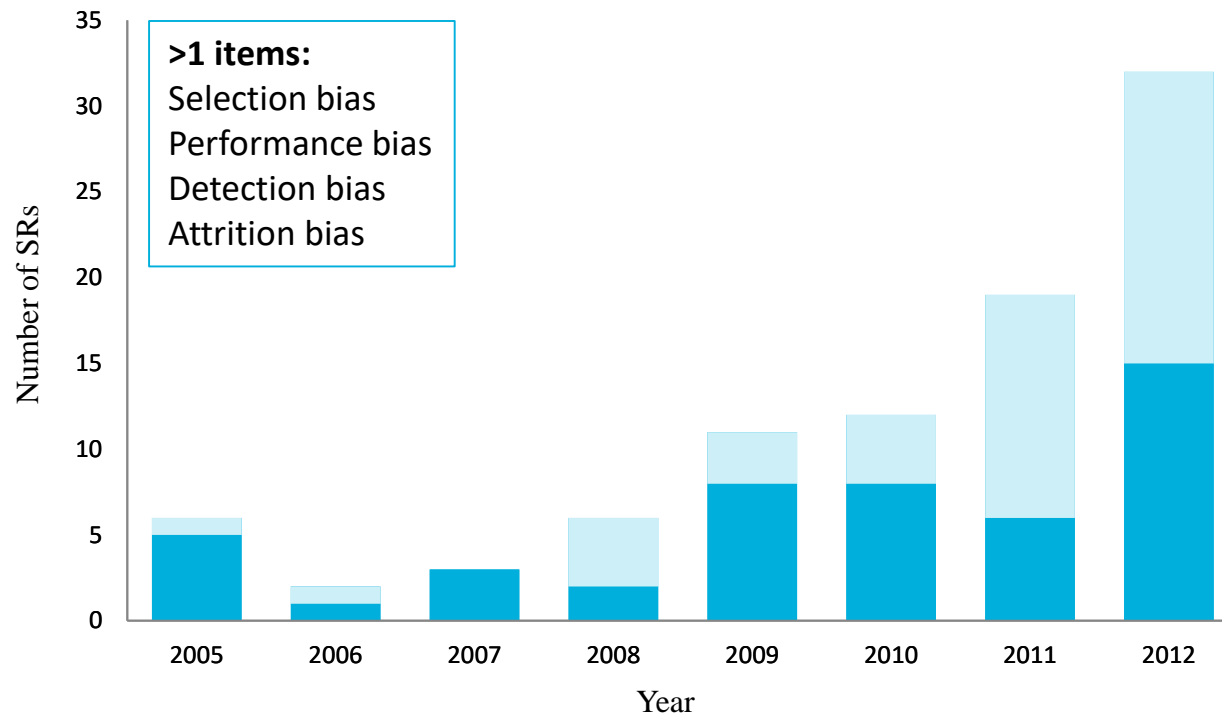
# Systematic reviews of animal studies

## Increase of systematic reviews on animal studies (Intervention studies, n=91)



# Risk of bias assessment

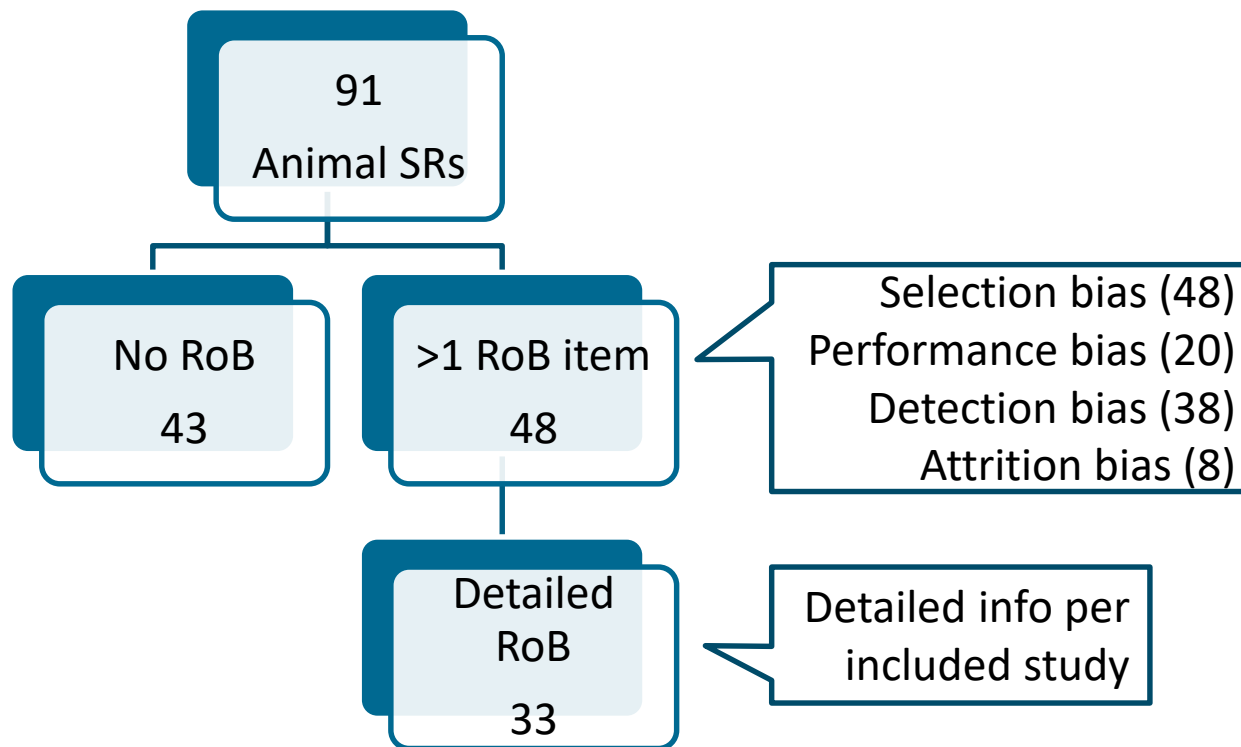
## Increase of systematic reviews on animal studies (Intervention studies, n=91)





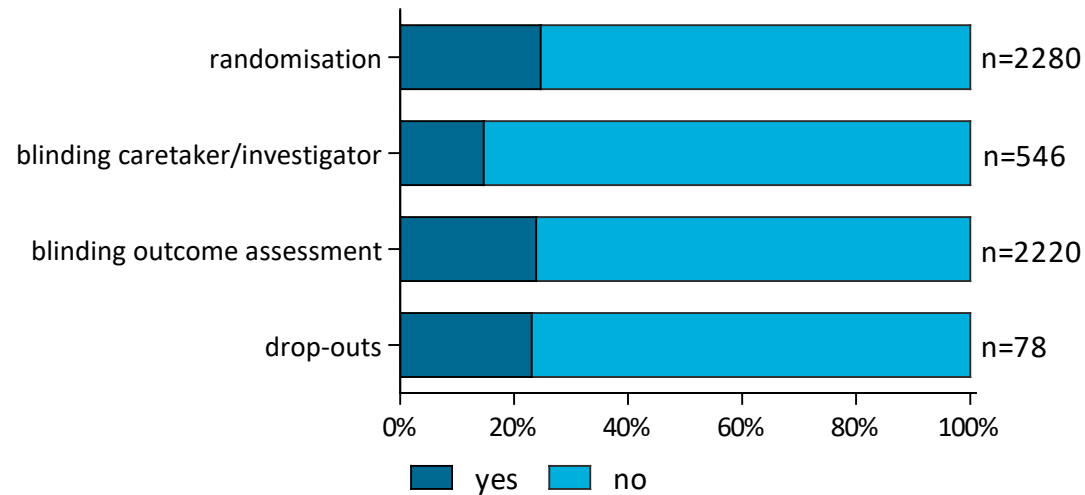
# Risk of bias assessment

## Survey among 91 SRs of animal studies



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# Risk of Bias primary studies

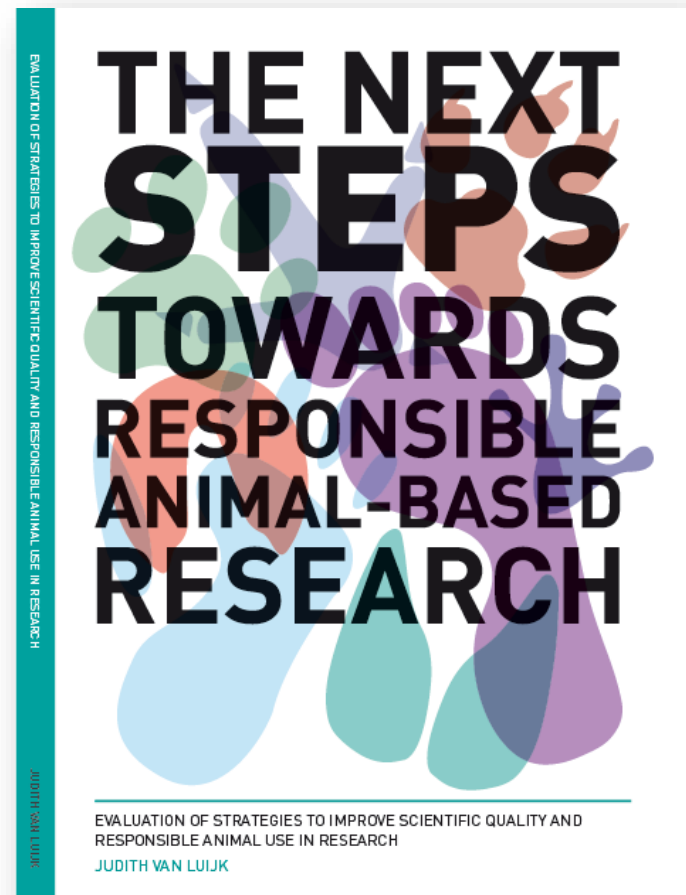


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# Recommendations

## Main outcome:

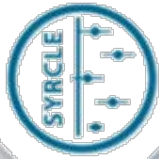
- Room for improvement:
  - Primary studies
  - Systematic review
- Training and education



# Educational programme SYRCLE

- Introductory: lectures and e-learning module
- One-day workshops
  - *(Netherlands and abroad)*
- Longer courses
  - *(including Radboud Summer School & SR trainings for EFSA)*
- Coaching of the conduct of SRs





## Systematic Reviews of Animal Studies



**START**



<https://syrcle.ekphost.nl>

Registration code: syrcle

<https://vimeo.com/142124487>

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