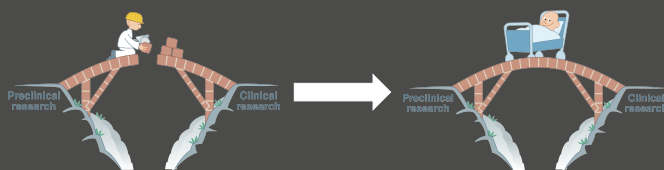


INVESTIGATION AND ANALYSES OF INTERNAL VALIDITY IN DANISH PRECLINICAL RESEARCH



1

INTERNAL VALIDITY

...the extent to which the design and conduct of an experiment eliminate the risk of introducing bias...
van der Worp et al, 2010

Risk of bias:

.. The overall risk that we over- or underestimate the true effect of an intervention

Different examples of bias:

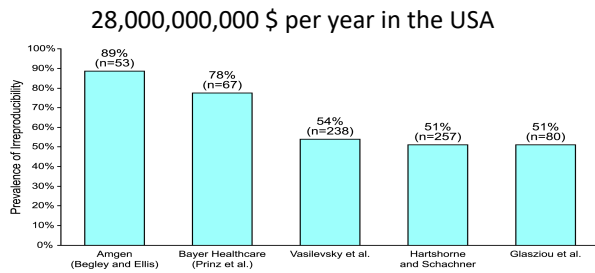
Selection

Detection

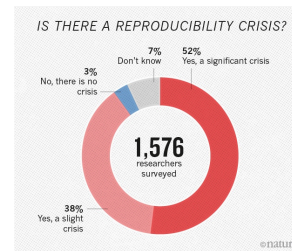
Attrition

2

THE REPRODUCIBILITY CRISIS IN SCIENCE



Freedman et al, 2015



Monya Baker

3

doi:10.1038/nature11556

nature International weekly journal of science

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NATURE | NEWS

Poorly designed animal experiments in the spotlight

High-status journals or institutions no guarantees of carefully-reported trials.

Robert H. Hughes¹, John Huguenard^{2,3}, John Malcolm R. Macleod^{2,3}, John D. Porter⁴, Oswald Steward⁵

4



5

AIM & METHOD

AIM:

....to convey the interval validity of a random sample of papers from 2009 / 2018.

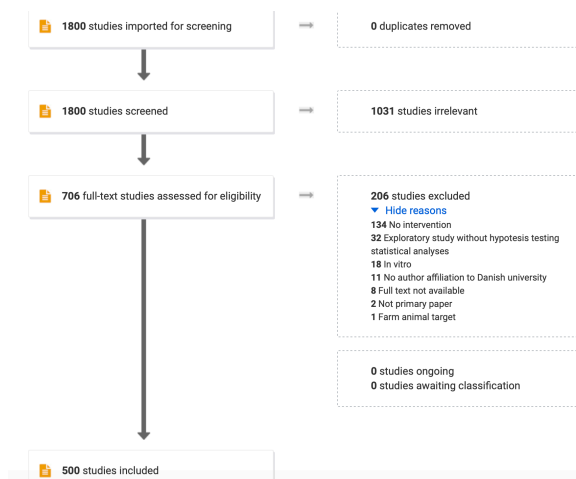
...assess compliance with legislation and the 3Rs

METHOD:

...use a modified quality assessment tool

6

STATUS



7

PERSPECTIVES

...a responsible step in the identification of plausible deficits in implementing reduction in Danish research

...quantification will be an impetus to researchers to plan and report ongoing and future studies in a manner that improves internal validity and thus corroborates the implementation of reduction

...limit bias, better clinical translatability, more reliable effect sizes and reduce the number of animals wasted in poorly conducted experiments

8

ACKNOWLEDGEMENTS



AU Library



Collaborative Approach to Meta-Analysis and
Evidence Synthesis
C·A·M·A·R·A·D·E·S
Centre of Animal Data Trial Experimental Studies

Danish 3R-Center
RRR
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THE DANISH 3R-CENTER SYMPOSIUM | BIRGITTE S. KOUSHOLT
12 NOVEMBER 2019 | VETERINARIAN, PH.D.



9

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