

Let's PREPARE together to ARRIVE in better shape: how to plan animal experiments

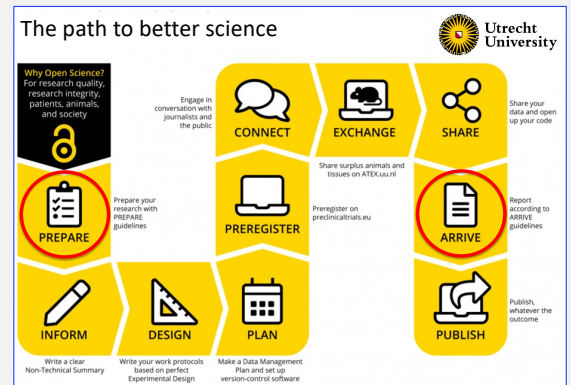
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What's the problem?

Preclinical *in vivo* research needs to be reproducible and translatable, while maximising the animals' welfare and replacing them with alternatives wherever possible. This can be summed up in the **3Rs** of Russell & Burch: **Replace, Reduce & Refine**.



Scientists are usually well aware of **reporting** guidelines when publishing research. These are important, but a sub-standard study, like a burnt cake, cannot be improved by a better description. Guidelines for **planning**, although not mandatory, are of great help in designing better experiments.



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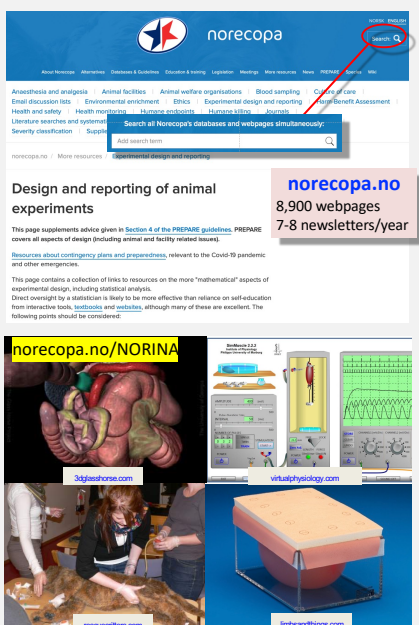
What can Norecopa offer?

Norecopa maintains a comprehensive database of resources for scientists, which include:



- 8,900 searchable webpages of quality 3R resources, with filters to facilitate searching
- the PREPARE guidelines for planning animal experiments, with a checklist in over 30 languages
- links to recordings of webinars covering all aspects of animal research
- an International Webinars & Meetings Calendar
- a collection of 400 guidelines for planning and conducting animal research
- an English-language newsletter with the latest developments within experimental design
- the NORINA database of alternatives to animal use in education and training
- a Refinement Wiki

Examples of Norecopa's resources:



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8,900 webpages
7-8 newsletters/year

norecopa.no/NORINA

Design and reporting of animal experiments

This page supplements advice given in Section 4 of the PREPARE guidelines. PREPARE covers all aspects of design (including animal and facility related issues).

Resources about contingency plans and preparedness, relevant to the Covid-19 pandemic and other emergencies.

This page contains a collection of links to resources on the more "mathematical" aspects of experimental design, including statistical analysis.

Direct oversight by a statistician is likely to be more effective than reliance on self-education from interactive tools, **toolsheets** and **checklists**, although many of these are excellent. The following points should be considered:

PREPARE covers:

- ✓ Formulation of a study
- ✓ Dialogue between scientists and the animal facility
- ✓ Quality control of the components in the study



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PREPARE

The PREPARE Checklist

1-Literature searches | 2-Legal issues | 3-Ethical issues, Harm-Benefit Assessment and humane endpoints | 4-Experimental design and statistical analysis | 5-Objectives and timescale, funding and division of labour | 6-Facility evaluation | 7-Education and training | 8-Health risks, waste disposal and decontamination | 9-Test substances and procedures | 10-Experimental animals | 11-Quarantine and health monitoring | 12-Housing and husbandry | 13-Experimental procedures | 14-Humane killing, release, re-use or re-homing | 15-Necropsy | Comparison with ARRIVE

Clicker training

Clicker training is a great learning tool for positive reinforcement. When the animal offers to be touched, touched or to take a positive stimulus (such as a pellet of food or a treat) the clicker is used to mark the behavior and the animal is rewarded with the positive stimulus. This is done by clicking the clicker and immediately giving the animal the positive stimulus. The clicker is used to mark the behavior and the animal is rewarded with the positive stimulus.



The Refinement Wiki
wiki.norecopa.no

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Toolbox graphic: colourbox.com