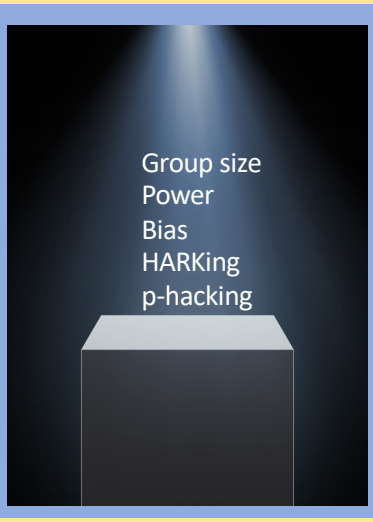
# *PREPARE for better Science:* guidelines for animal research

**Adrian J Smith[1], R Eddie Clutton[2], Elliot Lilley[3], Kristine EA Hansen[4] & Trond Brattelid[5]**

*[1]Norecopa, Oslo, Norway (adrian.smith@norecopa.no); [2] Royal (Dick) School of Veterinary Studies, Easter Bush, Midlothian, EH25 9RG, U.K.; [3]Research Animals Department, Science Group, RSPCA, Wilberforce Way, Southwater, Horsham, West Sussex, RH13 9RS, U.K. ; [4]Section of Experimental Biomedicine, Department of Production Animal Clinical Sciences, Faculty of Veterinary Medicine, Norwegian University of Life Sciences, P.O. Box 8146 Dep., 0033 Oslo, Norway; [5]Division for Research Management and External Funding, Western Norway University of Applied Sciences, 5020 Bergen, Norway.*

The present debate about the so-called "reproducibility crisis" within preclinical studies has been dominated by eloquent papers focusing on the very real, but more "mathematical" issues. These are only part of the problem.

The solution to this crisis must involve greater attention to the animal-related issues and the facilities in which they are kept. These issues may be less obvious to those who have not worked in an animal unit, but they constitute by far the greatest potential source of variation in preclinical studies.



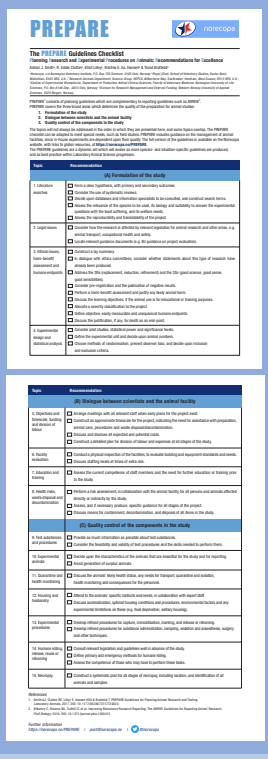


To make matters worse, it is frequently stated that the solution lies in better ***reporting*** of animal studies. An experiment cannot be improved by describing it. Our firm belief, after many years of working within animal facilities, is that the clue lies in closer collaboration between all parties from day one of planning. In this way, specialists in laboratory animal science, statisticians and scientists can attend to the many factors which will determine the outcome of the study: both its validity and the animals' welfare.

The PREPARE Guidelines have been written to solve this challenge. They are based on experiences over the last 30 years in conducting and supervising preclinical research.

PREPARE consists of a 2-page checklist, in 20 languages, and, importantly, webpages with guidance on each of the 15 topics on the checklist. The PREPARE webpages are part of the Norecopa website, which contains over 8,500 pages of resources designed to attend to the 3Rs: Replacement, Reduction and Refinement of animal research.

**norecopa.no/PREPARE**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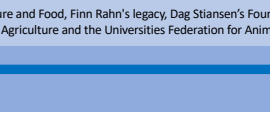
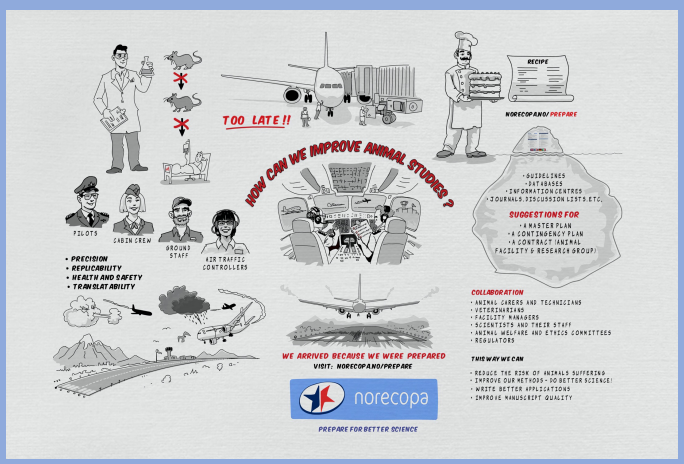
The PREPARE Guidelines Checklist

Planning Research and Experimental Procedures on Animals: Recommendations for Excellence






We have produced a 3-minute cartoon film to illustrate this, using the aviation industry as an analogy with its impressive ability to ensure quality and reproducibility, despite variable traffic conditions and the risk of human errors.

https://norecopa.no/PREPARE/film

Norecopa gratefully acknowledges financial support from the Norwegian Ministry of Agriculture and Food, Finn Rahn's legacy, Dag Stiansen's Foundation, Laboratory Animals Ltd., the Nordic Society against Painful Animal Experiments (NSMSD), the Norwegian Society for Protection of Animals, Novo Nordisk, the Scottish Accreditation Board, the US Department of Agriculture and the Universities Federation for Animal Welfare (UFAW). Stock photos: colourbox.com