

More Knowledge with Fewer Animals programme

Motivating Systematic Reviews

Erica van Oort, Catherine Schuttevaer, Rob Diemel, Urmila Gangaram Panday, ZonMw, The Netherlands Organisation for Health Research and Development

Abstract

The More Knowledge with Fewer Animals (MKMD) programme, is developed by the Netherlands Organisation for Health Research and Development (ZonMw).

The programme aims to:

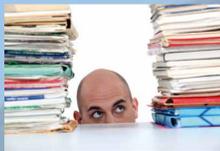
- Reduce the use of animal testing, without impairing the quality of scientific research and the safety of developed products.

The MKMD programme is subdivided into modules with varying focus, aiming at developing 3R methods across a broad spectrum. Three modules are commissioned:

- The Animal -Free research techniques module,
- The Life Sciences and Health module and,
- **The Amendment 21 module, involving 3Rs infrastructure in the Netherlands**

The focus on the 3Rs infrastructure (Amendment 21 module) is divided into two parts:

- I. Stimulating the performance of a synthesis of evidence (Systematic review) by biomedical researchers, before animal experimentation;
- II. Stimulating the publication of solid negative results of animal experiments. The use of the 'Gold Standard Publication Checklist' ¹ is obliged.



This ZonMw initiative offers a unique opportunity to increase and imbed the knowledge of systematic reviews in laboratory animal science in the Netherlands.

Stimulate and embed a synthesis of evidence (Systematic Review) in laboratory animal science.

Why stimulate synthesis of evidence in laboratory animal science?

- Insight into which animal model is the most suitable and avoid unnecessary repetition;
- Increase the quality and knowledge of the research field; and it can yield new knowledge (meta-analysis);
- Translation to human beings in a more responsible manner ²

Legal rules oblige biomedical researchers to explore the possible use of the 3Rs before starting a new project. In practice, only 1 to 3 hours per project is spent to explore those possibilities. As a result, 3Rs are not used to optimal effect. Conducting a good synthesis of evidence (Systematic Review) is in practice, more difficult than expected.



Second hands-on training in Synthesis of evidence in animal experimentation from information to knowledge through systematic reviews 21st June 2013 Nijmegen.

Experience shows that many researchers miss lots of important information by failing to conduct their search in the proper manner (i.e. knowing what to look for and where to look)^{3,4}. To improve and imbed the knowledge of conducting a good synthesis of evidence (Systematic Review) in animal experimentation, ZonMw organises in collaboration with SYRCLE, six (almost free of costs) hands - on workshops for all interested biomedical researchers in the Netherlands.

Open access publication of solid negative (or neutral) results involving animal experimentation.

Why promote the publication of negative results?

- Increasing the awareness and understanding of the importance of the publication of negative data;
- Reducing the use of test animals (unnecessary repetition can be prevented);
- Improving the quality of publications involving experimental animal research by promoting the use of the 'Gold standard publication checklist';
- Improving the input and therewith, the quality of the synthesis of evidence (Systematic Reviews).

To encourage the publication of properly conducted research involving the use of test animals with a negative or neutral outcome, ZonMw offers biomedical researchers extra time to publish these results and to refund any publication costs. The project manager of a research project involving experimental animal research can apply for an extra month's appointment for a research trainee, postdoc or senior researcher. The costs of open access publication can, under certain conditions, be refunded via the Incentive Fund Open Access of the Netherlands Organisation for Scientific Research (NWO). Eligible publications must meet the 'Gold standard publication checklist', a checklist that is more extensive than ARRIVE⁵. Publications should, by preference, appear in open access journals.

Background information other two MKMD modules



Animal-Free research Techniques Module
This module emphasis on the development and application of replacement methods. The focus is on changing the mind set: the goal is not so much to replace existing animal tests as to avoid animal tests by generating knowledge of the human system. The call was open for the development of innovative replacement methods and the application of new and existing replacement methods in the field of Human Diseases. In total 3.6 M € was available and transdisciplinary or public-private partner ships were stimulated. A second call by invitation was open for a consortium in the field of pharmacokinetic modelling, datamining and integration. In total 0.8 M € was available for this consortium combined with an equal amount of matching from public and private partners.



Life Sciences and Health Module
This module emphasis on the development of innovative 3R methods or application of new or existing 3R methods in the field of drug development for human use. A broad-based, strategic consortium offers more likelihood that results will be validated and used in practice. Life Sciences and Health (LSH) is one of the nine Dutch Topsectors. Since replacement, reduction and refinement of animal testing is a responsibility shared by both public and private parties this initiative was given a financial boost based on the Dutch Topsectors policy.

References

- ¹ Hooijmans CR et al. ATLA 2010, *A gold standard publication checklist to improve the quality of animal studies, to fully integrate the Three Rs, and to make systematic reviews more feasible.*
- ² Pound P. et al. BMJ 2004, *Where is the evidence that animal research benefits humans?*
- ³ Hooijmans CR et al. Lab Anim. 2010, *Enhancing search efficiency by means of a search filter for finding all studies on animal experimentation in PubMed.*
- ⁴ de Vries RB et al. Lab Anim. 2011, *A search filter for increasing the retrieval of animal studies in Embase.*
- ⁵ Hooijmans CR et al. Lab Anim. 2011, *The Gold Standard Publication Checklist (GSPC) for improved design, reporting and scientific quality of animal studies GSPC versus ARRIVE guidelines.*

ZonMw – the Netherlands Organisation for Health Research and Development.

ZonMw aims to improve prevention, cure and care in the Netherlands by supporting projects in research, development and implementation. It operates between health research, health care practice and policy. ZonMw is mainly governed by the Ministry of Health Welfare and Sport and the Dutch Organisation for Scientific Research (NWO). This programme was commissioned by the Ministry of Economic Affairs, Dutch Society for the Replacement of Animal Testing (stichting Proefdierrij) and the Dutch Organisation for Scientific Research (NWO).
PO BOX 93245, 2509 AE The Hague, The Netherlands, www.zonmw.nl/mkmd/
Erica van Oort, T +31 70 3495326 e.oort@zonmw.nl