



Transition to non-animal research. About the possibilities for phasing out animal procedures and stimulating innovation without laboratory animals

Marjolein Schilders-van Boxel, Henriëtte Bout, Jan-Bas Prins, Herman Koëter, Coenraad Hendriksen, Wim de Leeuw, Reineke Hamelers, Pieter Roelfsema, Leane van Weereld

World leader in innovations without laboratory animals by 2025. That is the aim of the Dutch Minister for Agriculture, Martijn van Dam. In March 2016, the Minister asked the Netherlands National Committee for the protection of animals used for scientific purposes (NCad) to draw up a schedule for the phasing out of animal procedures. Initially, this request caused consternation among those involved with animal procedures. The use of animals for research and education is a highly complex issue, particularly given the diverse and at times conflicting interests involved. Although there is scientific, economic and social potential for innovations without laboratory animals, according to the NCad, these are currently not being sufficiently exploited to promote and accelerate the transition process. Only with a broad-ranging and coordinated effort by the ministries involved and other stakeholders can significant progress be made in reducing the use of laboratory animals in research. This advisory report by NCad contains specific recommendations for accelerating the transition from animal procedures to innovative non-animal research methods.



In December 2016, the advisory report 'Transition to non-animal research – About the possibilities for phasing out animal procedures and stimulating innovation without laboratory animals' was presented to Dutch Minister of Agriculture Martijn van Dam by members of the NCad. (from left to right: Coenraad Hendriksen, Henriëtte Bout, Reineke Hamelers, Minister Van Dam, Herman Koëter, Jan-Bas Prins, Wim de Leeuw. Not included in the picture: NCad-member Pieter Roelfsema)

Methods

- Desk research
 - 2 Workshops for invited experts
 - Individual consultation of experts and chain partners from the Netherlands and beyond
 - Social media and online consultation of experts from the Netherlands and beyond
 - Consultation of community groups that have an interest in animal procedures and the possibilities offered by the 3Rs (scientific institutions, umbrella and industry organisations, animal welfare organisations and anti-animal experimentation organisations).
- The recommendations from the organisations that were present during this meeting are listed in the advisory report, along with whether or not the NCad included these in its opinion



Transition objectives

If we are to make the transition to non-animal research methods, we must make a paradigm shift away from existing mindsets and practices. That way we can focus heavily on innovations without laboratory animals in a number of fields in the period up to 2025.

Regulatory research

In the following fields of regulatory required animal testing, laboratory animal use can be phased out by 2025, whilst maintaining the existing safety level:

- safety testing of chemicals, food ingredients, pesticides and (veterinary) medicines
- release of biological products, such as vaccines

Fundamental scientific research

Opportunities for a substantial reduction in the use of laboratory animals vary from one field to another. The NCad recommends the development of a ten-year target vision for each area of fundamental scientific research (or for each cluster of disciplines) in consultation with the public and the scientific community. These target visions must include clear transition objectives that are linked to the core focus of the area of research concerned. They must also give an insight into the potential of innovations without laboratory animals in these areas.

Applied and translational research

More rapid progress can be made than is being made at the present time. There is a great deal of innovative potential that could be better exploited. The NCad advises the Minister for Agriculture to focus more heavily on innovations without laboratory animals, amongst others in the field of the development of human models for human diseases and by promoting cross-sectoral and multidisciplinary collaboration on innovation policy. That way, the Netherlands can be an international leader in the field of innovations without laboratory animals in this area of research by 2025.

Laboratory animal use in education and training

Laboratory animal use can be significantly reduced in this field, by promoting alternative teaching models and ethical reflection, i.e. changing the mindset of young professionals with regard to the use of animals. The use of laboratory animals in training professionals involved in the field will continue to be necessary to a certain extent, but here too, cultivating a mindset that does not rely on laboratory animals will help keep the number of animal procedures to a minimum.

Recommendations

The transition to non-animal research methods will not happen on its own; it will require management and focus. By promoting innovations without laboratory animals and exploiting them to the full, the use of laboratory animals can be reduced. In order to achieve the transition to non-animal research methods, it will be necessary to move away from existing mindsets and practices within the many research domains that use laboratory animals – a so-called paradigm shift. The government and society will have to change their approach to risk.

The NCad recommends that the Minister play a guiding role in this process and also involve other ministries in order to ensure that a consistent and coherent policy is developed at the national level. In order to accelerate the transition, the NCad advises that the Minister work at the international level to bring about a revision of the current regulatory risk assessment process. Major international collaboration involving all stakeholders is the key to success. In addition, a more chain-oriented approach to innovation policy will promote multidisciplinary collaboration, making it easier for innovations without laboratory animals to progress from development to application.

Furthermore, the transition process could be speeded up by:

- Investing in the valorisation and acceptance of non-animal testing methods, e.g. through backward validation studies;
- Ensuring that better use can be made of data from human subject research;
- Monitoring, evaluating and disseminating knowledge around innovation without laboratory animals and 3R alternatives. And by creating an Innovations Without Laboratory Animals Index in collaboration with other countries, along the lines of the Access to Medicine Index.

Follow-up

The minister of Agriculture has embraced the opinion of the NCad. As a follow-up, the NCad will facilitate the development of ten-year visions for animal-free innovation in each of the three research fields (fundamental research, applied scientific research and education), in consultation with the (international) scientific community and the public. These visions will identify clear transition objectives that are linked to the core focus of the area of research concerned. The NCad will undertake this assignment under the direction of the Netherlands Ministry of Agriculture, in collaboration with the Netherlands Organisation for Health Research and Development (ZonMw), the Royal Netherlands Academy of Arts and Science (KNAW) and the National Institute for Public

Health and the Environment (RIVM). In parallel, the RIVM was asked to work out a roadmap for innovation without laboratory animals in regulatory research. A national kick-off conference for these follow-up activities was organized by the co-operation organizations in June 2017, and international activities have been started up as well. Please contact NCad to help in speeding up the transition to non-animal research internationally.

The full report 'Transition to non-animal research' is available on the NCad website:

<https://english.ncadierproevenbeleid.nl/latest/news/16/12/15/ncad-opinion-transition-to-non-animal-research>



Contact

Netherlands National Committee for the protection of animals used for scientific purposes (NCad)
The Hague, Netherlands
NCad@minez.nl
<https://english.ncadierproevenbeleid.nl/>

About the NCad

In 2014, The Netherlands National Committee for the protection of animals used for scientific purposes (NCad) was appointed by the Minister of Agriculture for the protection of animals used for scientific and educational purposes. NCad aims to make a significant contribution to minimizing laboratory animal use, both at national and international level. This will involve giving (policy) advice, exchanging knowledge, and developing both national and international networks. The ethical review of animal procedures is of pivotal importance in this regard, as are the 3Rs (Replacement, Reduction and Refinement).