

Welcome to the celebration of Norecopa's 18th Birthday

14 October 2025

norecopa.no/18

established 10.10.07

Programme for the day

0900-0925: *Norecopa 18 years: What have we achieved and what more should we aim for?* (Adrian Smith, Norecopa)

0925-0950: *Experiences with the Danish 3R-Center* (Axel Kornerup Hansen)

1000-1200: 3Rs and Best Practice in Wild Terrestrial Mammal Research, organised by the National Committee

The meeting includes:

- *A presentation of the review paper: "The welfare and ethics of research involving wild animals: A primer"* – Prof. Carl Soulsbury, School of Life Sciences, University of Lincoln, Lincoln, UK
- *Welfare of wild terrestrial herbivores / carnivores used for scientific purposes. 3R considerations for capture-, handling-, and marking techniques as well as post-release behavior and data validity* – Prof. Jon Martin Arnemo, University of Inland, Norway

1200-1230 Lunch

1230-1255 *The role of ETPLAS, course modules, DOPs and SOPs* (Nuno Henrik Franco)

1300-1400 *Supporting Replacement in Academia* (Barney Reed, RSPCA)

1405-1430 *Refleksjoner over status og utfordringene knyttet til dagens dyreforsøk i Norge* (Gunvor Knudsen, Mattilsynet)

1425 -1500 Closing discussion

What have we achieved and what more should we aim for?

norecopa.no/18

The presentations will be available at this address

Annual Reports

norecopa.no/about/annual-reports



The Board from 20 May 2025



Regulators:

Janette Maria Carlsen
Mattilsynet
(head of Board)

deputy:

Gunvor Knudsen
Mattilsynet

Industry:

Rolf Hetlelid Olsen
Pharmaq

deputy:

Tone Sundal Haganes
Vaxxinova

Research:

Linda Andersen
ILAB

deputy:

Ewa Harasimczuk
Veterinærinstituttet

Animal welfare:

Karianne Muri
Dyrebeskyttelsen Norge

deputy:

Anton Krag
Dyrevernalliansen

**Updating the website,
especially the NORINA og TextBase databases**

Elisabeth Pagels

25 hours /month, funded by
the Nordic Society Against Painful Animal Experiments and
the Norwegian Society for Protection of Animals



Election Committee (elected for 2 years in 2024):

Regulators: Vera Klafstad Rodas, Mattilsynet

Research: Ingunn Sommerset, Veterinærinstituttet

Industry: Renate Johansen, FHF (leder)

Animal Welfare: Adeleid Haugen, Dyrevernalliansen

Norecopa's 3R Prize Committee (elected by the Board):

Regulators : Bjørn Groven, Mattilsynet

Research: Adam Lilicrap, NIVA

Industry: Christian Wallace, VESO

Animal Welfare: Torill Malmstrøm, Dyreetikk.no

Norecopa's accountant:

Jon Li Tjørsvaag, VESO

How it all began...

1990s: Promotion of the 3R concept by several large lab animal facilities, and development of the first 3R databases by the Laboratory Animal Unit at the Norwegian School of Veterinary Science

2000: The Norwegian Ministry of Agriculture appointed a Working Group to investigate whether Norway should establish a National Centre for the 3Rs (Replacement, Reduction, Refinement of animal experiments)

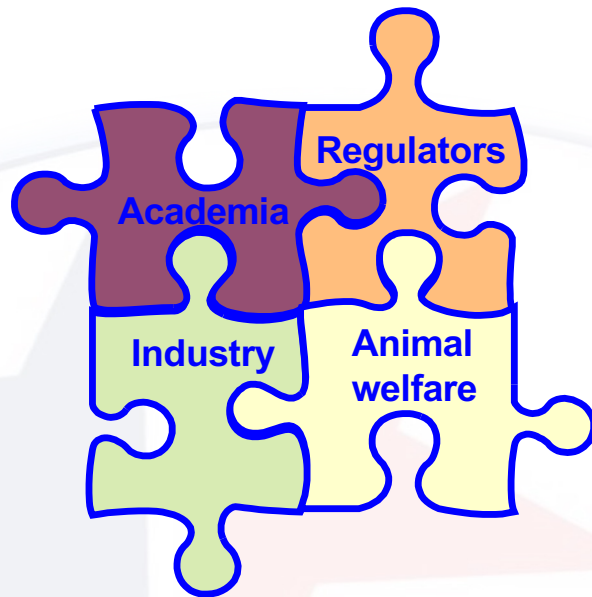
2001: The Working Group concluded 2001 that a Centre should be established, pointing out that 15 European countries already had a centre. In addition, state funds should be allocated for 3R research & development.



officially established 2 April 2004 after an initiative at the World Congress on Alternatives, Bologna, 1999

recognises national **consensus platforms** with all four stakeholders in their governing body

Finland, France, Germany, Italy, Norway, Spain, Switzerland



Norecopa: PREPARE for better Science

**Stortingsmelding *Om dyrehold og dyrevelferd*
St.mld. nr. 12 (2002-2003)**



Landbruksdepartementet vil derfor bidra til at det opprettes en nasjonal plattform, et kompetansesenter, for alternativer til bruk av dyr i forskning slik det nå gjøres i en rekke europeiske land.

Næringkomitéen var enig, og i tillegg anbefalte at det ble **øremerket midler til forskning på 3R** 'etter svensk modell' - det svenske forskningsrådet har øremerket 10-15 millioner årlig i flere tiår.

**Stortingsmelding *Om dyrehold og dyrevelferd*
St.mld. nr. 12 (2002-2003)**

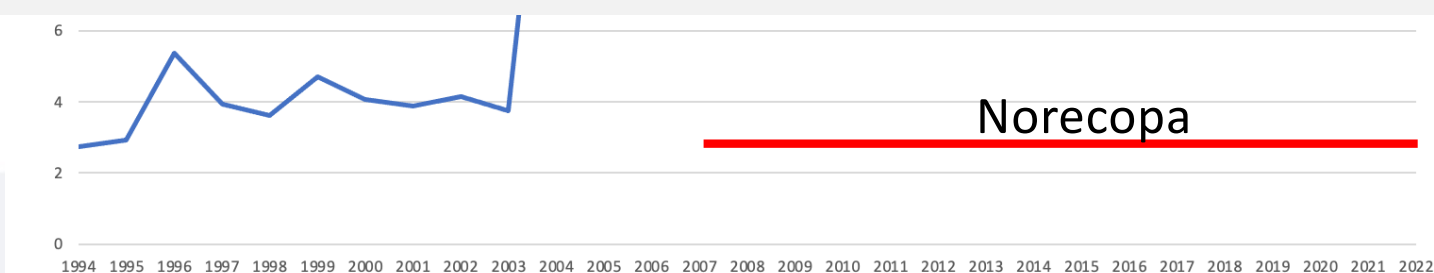


**2007: 'The national competence centre' was established as Norecopa
– with **half one position**...!**

Norecopa: PREPARE for better Science



The Swedish Research Council has earmarked 200 million SEK for alternatives in the period Norecopa has existed



<https://www.esv.se/statsliggaren/regleringsbrev/?rbid=22737> og tall fra Cecilia B rnestaf, Jordbruksverket

Attempts to increase funding...

Hours spent:

- *Lobbying*
- *Media*
- *Looking for sponsors*



Norecopa: PREPARE for better Science

Attempts to increase funding...

- > Innspill til Næringskomitéen om statsbudsjettet for 2010 den 2. november 2009: [presentasjon](#) og [notat](#)
- > Innspill til Næringskomitéen om statsbudsjettet for 2011 den 15. oktober 2010: [presentasjon](#) og [notat](#)
- > Innspill til Næringskomitéen om statsbudsjettet for 2012 den 18. oktober 2011: [presentasjon](#) og [notat](#)
- > Innspill til Næringskomitéen om statsbudsjettet for 2013 den 18. oktober 2012: [presentasjon](#) og [notat](#)
- > Innspill til Næringskomitéen om statsbudsjettet for 2014 den 7. november 2013: [presentasjon](#), [notat](#) og [brev etter den nye regjeringens tilleggsproposisjon](#). Innspill til [LMD](#) og [FKD](#) om statsbudsjettet for 2014. Lignende innspill er sendt til [Ap](#), [Sp](#), [SV](#), [H](#) og [FrP](#).
- > Innspill til Næringskomitéen om statsbudsjettet for 2015 den 3. november 2014: [presentasjon](#), [innlegg](#) og [notat](#)
- > Innspill til Næringskomitéen om statsbudsjettet for 2016 den 22. oktober 2015: [innlegg](#) og [notat](#) (presentasjoner ble ikke tillatt på grunn av tidsnød)
- > Innspill til Næringskomitéen om statsbudsjettet for 2017 den 18. oktober 2016: [innlegg](#), [video-opptak](#) (1:58:20 inn i opptaket) og [notat](#)
- > Innspill til Næringskomitéen om statsbudsjettet for 2018 den 26. oktober 2017: [innlegg](#), [video-opptak](#) (1:47:25 inn i opptaket) og [notat](#)
- > Innspill til Næringskomitéen om statsbudsjettet for 2019 den 16. oktober 2018: [innlegg](#) og [notat](#) (høringen ble ikke filmet). [Innstillingen om Norecopa \(Inst. 8S 2018-2019\)](#).
- > Innspill til Næringskomitéen om statsbudsjettet for 2020 den 15. oktober 2019: [innlegg](#), [video-opptak](#) (2:37:20 inn i opptaket) og [notat](#)
- > Innspill til Næringskomitéen om statsbudsjettet for 2021 den 15. oktober 2020: [innlegg](#), [video-opptak](#) (51:20 inn i opptaket) og [notat](#)
- > Innspill til Næringskomitéen om statsbudsjettet for 2022 den 25. oktober 2021: [innlegg](#), [video-opptak](#) og [notat](#)
- > Innspill til Næringskomitéen om statsbudsjettet for 2023 den 17. oktober 2022: [innlegg](#), [video-opptak](#) og [notat](#). En detaljert beskrivelse av Stortingets behandling av denne saken under finansdebatten den 19. desember 2022 finnes i Norecopas [nyhetsbrev nr. 7-2022](#).
- > Innspill til Utdannings- og forskningskomitéens høring om statsbudsjettet for 2023 ([notat](#)). Søknad om deltagelse på den åpne høringen den 24. oktober 2022 ble avslått.
- > Innspill til Utdannings- og forskningskomitéen om [stortingsmeldingen om Langtidsplan for forskning og høyere utdanning 2023-2032](#) ([notat](#)). Søknad om deltagelse på den åpne høringen den 5. januar 2023 ble avslått.
- > Innspill til Næringskomitéen om statsbudsjettet for 2024 den 17. oktober 2023: [innlegg](#), [video-opptak](#) og [notat](#)
- > Innspill til Næringskomitéen om statsbudsjettet for 2025 den 17. oktober 2024: [innlegg](#), [video-opptak](#) (med to spørsmål til Norecopa etter innlegget til Dyrevernalliansen) og [notat](#). [Referat fra stortingsbehandlingen](#) 18. desember 2024.

Attempts to increase funding...

[Sammen om dyreforsøk](#) (Dagbladet, 30. november 2007)

[Er det politisk interesse for alternativer til dyreforsøk?](#) Innlegg i Rana Blad av styrelederen og sekretæren, 2. mai 2008.

[Er det politisk interesse for alternativer til dyreforsøk?](#) (24. april 2008, ikke antatt)

[Halvhjertet forsøkssatsing](#) (Nationen, 20. oktober 2008)

[Ny lov om dyreforsøk](#) (Nationen, 27. mai 2009)

[Bryr vi oss om dyreforsøk?](#) (Adresseavisen 25. juni 2010, publisert med tillatelse)

[Dyrevelferd på sparebluss](#) (Aftenposten, 28. juni 2010)

[Forbedringer i fiskeforsøk?](#) (Nationen, 4. desember 2010, publisert med tillatelse)

[Alternativer til dyreforsøk](#) (Nationen, 5. desember 2011, publisert med tillatelse)

[Alternativer til dyreforsøk](#) (Dagsavisen, 16. desember 2011, publisert med tillatelse)

[Nye tider for forsøksdyrene?](#) (Nationen, 19. januar 2013, publisert med tillatelse). Publisert også på [forskning.no](#), i Kragerø Blad (17.1.13, kommentert av [Miljøpartiet De Grønne](#) 25.1.13), i Rogalands Avis (21.1.13) og i Harstad Tidende (30.1.13)

[Blåblå politikk for forsøksdyr?](#) (Nationen 21.10.13, publisert med tillatelse)

[Forsker bekymret for framtida til forsøksdyrene](#) (Nationen 14.11.13, publisert med tillatelse)

[Hvem er det som snakker om fisken?](#) (Nordlys 07.12.13, publisert med tillatelse)

[En norsk forsøksdyrvisjon](#) (Nationen 10.12.14, publisert med tillatelse)

[Dyreforsøk: ut av skyttergravene!](#) (Aftenposten 02.10.15, publisert med tillatelse)

[Fiskens kår i Norge](#) (Nationen 10.08.21, publisert med tillatelse)

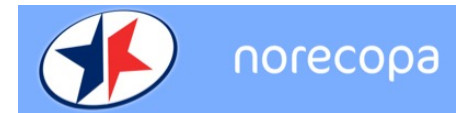
[Et hav av muligheter - også for forsøksfisken?](#) (Fiskeribladet 03.09.21, publisert med tillatelse og [på nettet](#) fra 04.09.21)

[Norges bruk av forsøksdyr på Europa-toppen](#) (Nationen, 26.08.22, publisert med tillatelse)

[Vi trenger et senter for forbedring, reduksjon og erstatning av dyreforsøk](#) (Nationen, 05.09.22, og 17.09.22 på nettet)

[Norge bruker over 2 millioner forsøksdyr i året](#) (Dagens Næringsliv, 08.10.22, publisert med tillatelse)

Vi trenger alternativer til dyreforsøk (Nationen, [på nettet 17.12.22](#) og i [papirutgaven](#) 20.12.22)



Thanks to Norecopa's sponsors

Standing Committee on Business Affairs, Norwegian Parliament
Norwegian Ministries of Agriculture and Fisheries
Research Council of Norway

Aivero
Architect Finn Rahn's Legacy
Laboratory Animals Ltd.
Nordic Society Against Painful Experiments (NSMSD)
Norwegian Society for Animal Protection (Dyrebeskyttelsen Norge)
Norwegian Animal Protection Alliance (Dyrevernalliansen)

Novo Nordisk
PHARMAQ
Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Sanofi
Scand-LAS
Scottish Accreditation Board (SAB)
Stiansen Foundation
Universities Federation for Animal Welfare (UFAW)
US Department of Agriculture (USDA)



**Replacing
Animal
Research**



Dyrevernalliansen



20.000 euros (kr. 235,000) from the German Agriculture Ministry's 3R prize,
22 April 2025



- 2014: Stiansen Stiftelsen, sculpture and NOK 50,000
- 2017: Sir Patrick Moore award, RSPCA
- 2018: Scand-LAS Award of Honour (Gold Medal)
- 2021: Charles River Excellence in Refinement Award
- 2025: Nominated for the Fish Welfare Prize 2025 (Havforskningsinstituttet, Veterinærinstituttet og Norsk Fiskeoppdrett)

Dyrevelferdsmeldingen, December 2024

A step backwards:

Regjeringen vil utrede hvordan arbeidet med reduksjon, forbedring og erstatning av forsøksdyr (3R) kan organiseres, herunder om ressursene i eksisterende strukturer som Forsøksdyrkomitéen og Norecopa kan utnyttes bedre ved organisering i et nasjonalt 3R-senter.

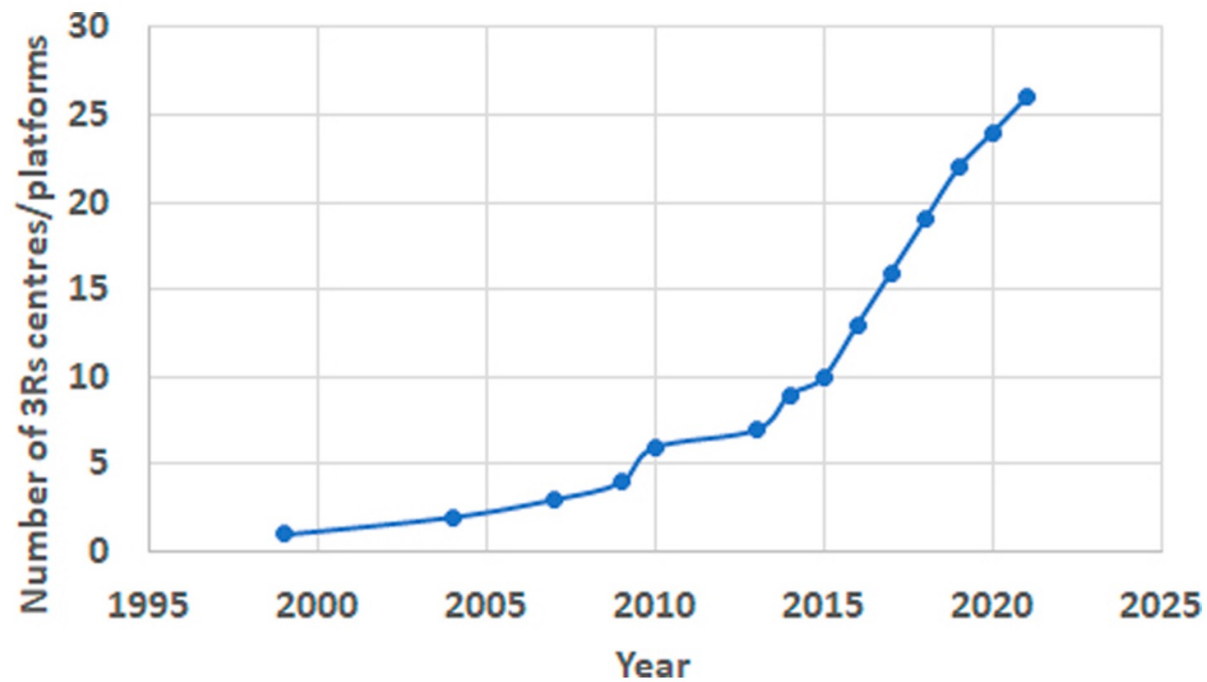
I utredningen vil det gjøres en nærmere vurdering av økonomiske og administrative virkninger ved en eventuell etablering av et 3R-senter i Norge.

Veterinærforeningens innspill til statsbudsjettet 2026 – Landbruks- og matdepartementet

Midler til utredning og oppstart av 3R-senter (Kap. 1112, Post 50)

Norge er ansvarlig for nesten en femtedel av antallet forsøksdyr i hele EU. Hovedmengden av forsøksdyrene er fisk. Veterinærforeningen mener at det må bevilges midler til opprettelse av et 3R-senter i Norge. Med et 3R-senter kan man systematisk begynne å jobbe for å redusere antall dyr i forsøk (reduction), erstatte dyreforsøk med alternative metoder (replacement), og forbedre nødvendige forsøk slik at dyrene utsettes for minimalt med ubehag og smerte (refinement). I dag er det norske 3R-arbeidet for reduksjon, forbedring og erstatning av dyreforsøk priggitt den enkelte forsker og institusjonene som fasiliterer forsøkene. I den nye fremlagte Dyrevelferdsmelding peker regjeringen på at utviklingen i Europa går mot at land etablerer nasjonale 3R-senter, og da må også Norge ta sitt ansvar mener Veterinærforeningen.

Regjeringen sier i meldingen at de vil utrede hvordan 3R-arbeidet kan organiseres. Veterinærforeningen er positive til at det gjøres en utredning, men viser til at det er gjort utredninger også tidligere og at det må ikke forsinke opprettelsen av et slikt senter. Veterinærforeningen mener at det haster å etablere et 3R-senter og ber om at det for 2026 settes av 10 millioner til utredning og oppstart.

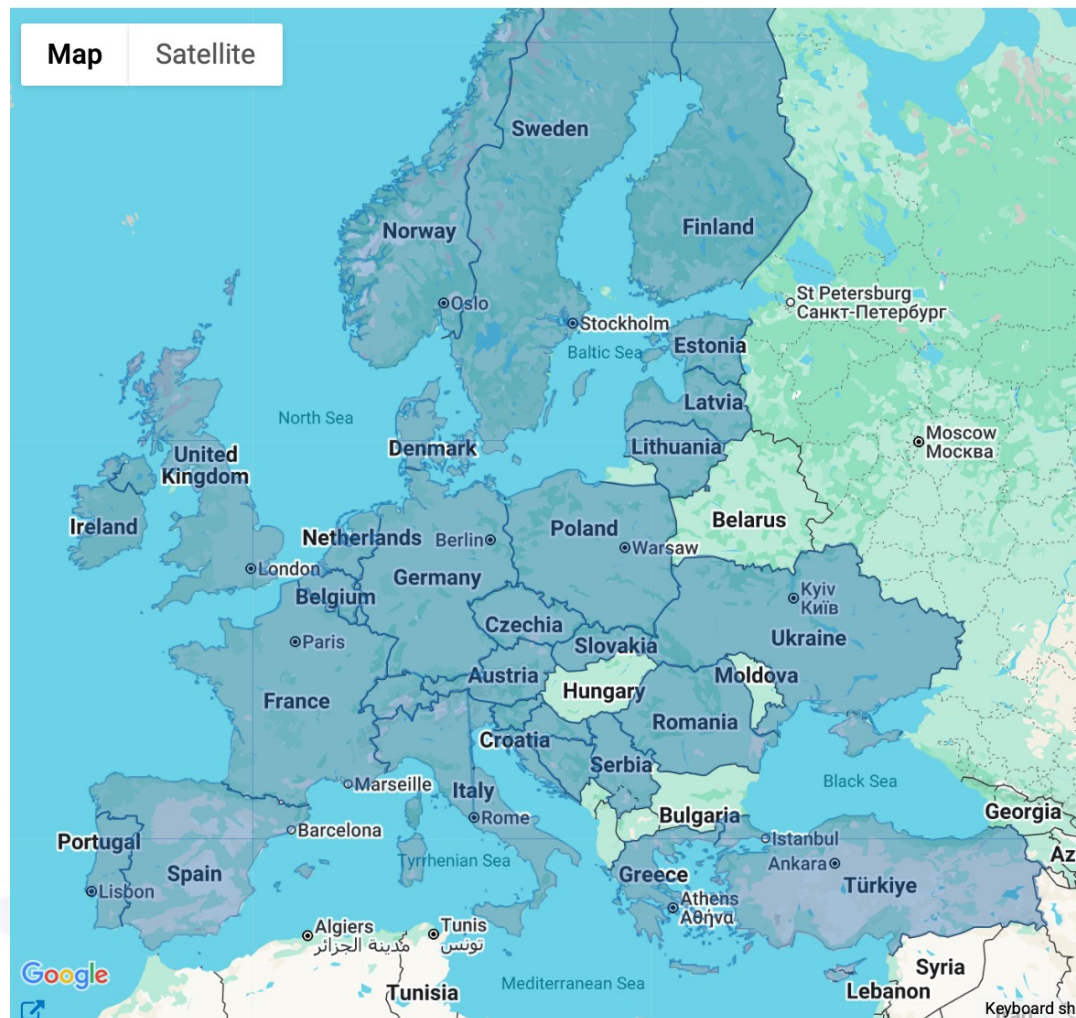


Neuhaus *et al.*, 2022

EUSAAT initiated the foundation of
EU3Rnet

norecopa.no/EU3Rnet

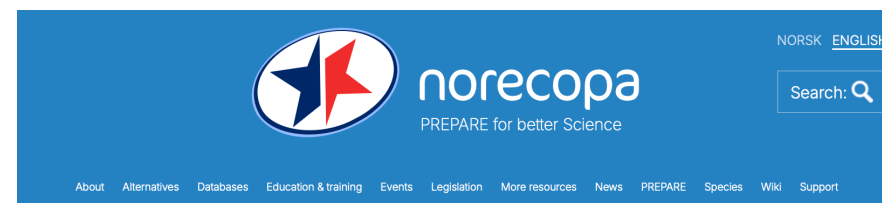
<https://journals.sagepub.com/doi/10.1177/02611929221099165>



norecopa.no/global3r



ecopa.eu



norecopa.no / [3R Guide](#) / [Danish 3R-Center](#)

Danish 3R-Center

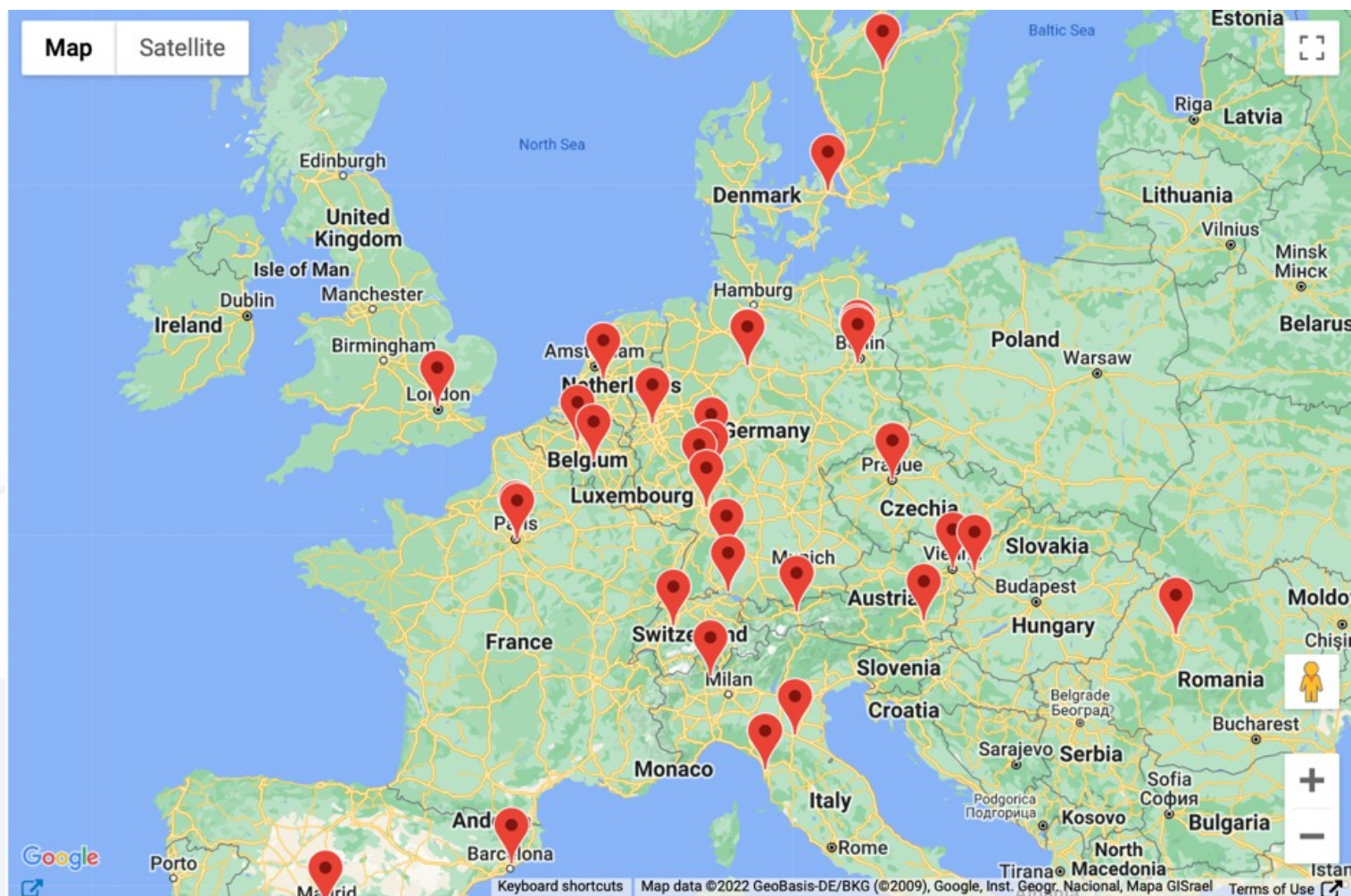
Record number: 6c462

Category: [3R Center](#)

Type:

Relevance: [Reduction](#) - [Refinement](#) - [Replacement](#)

The Danish 3R-Center was established in June 2013 by the Minister for Food, Agriculture and Fisheries, in collaboration with the pharmaceutical industry and animal welfare organisations.



<https://norecopa.no/global3r>



Centres

- ☐ [Replacement](#) ⁱ
- ☐ [Reduction](#) ⁱ
- ☐ [Refinement](#) ⁱ
- ☐ [ecopa](#) ⁱ

Associations

- ☐ [ACURET](#) ⁱ
- ☐ [AFLAS \(includes South Korea\)](#) ⁱ
- ☐ [Concordat on Openness](#) ⁱ
- ☐ [Culture of Care Network](#) ⁱ
- ☐ [ecopa](#) ⁱ
- ☐ [ENAWB](#) ⁱ
- ☐ [EU-NETVAL](#) ⁱ
- ☐ [EU3Rnet](#) ⁱ
- ☐ [FELASA](#) ⁱ
- ☐ [FESSACAL](#) ⁱ
- ☐ [ICLAS \(includes South Korea\)](#) ⁱ
- ☐ [Scand-LAS](#) ⁱ
- ☐ [Presentations by Norecopa](#) ⁱ

Norecopa: PREPARE for better Science

norecopa.no



Aim and Claim:

“The most comprehensive and best updated website for global 3R resources”

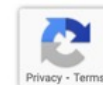


[Anaesthesia and analgesia](#) | [Animal facilities](#) | [Animal welfare organisations](#) | [Blood sampling](#) | [Culture of care](#) |
[Email discussion lists](#) | [Environmental enrichment](#) | [Ethics](#) | [Experimental design and reporting](#) | [Harm-Benefit Assessment](#) |
[Health and safety](#) | [Health monitoring](#) | [Humane endpoints](#) | [Humane killing](#) | [Journals](#) |
[Literature searches and systematic reviews](#) | [Organisations](#) | [Reporting guidelines](#) | [Severity classification](#) | [Suppliers](#)

[norecopa.no](#) / [More resources](#) / [Experimental design and reporting](#)

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).



Norecopa: PREPARE for better Science

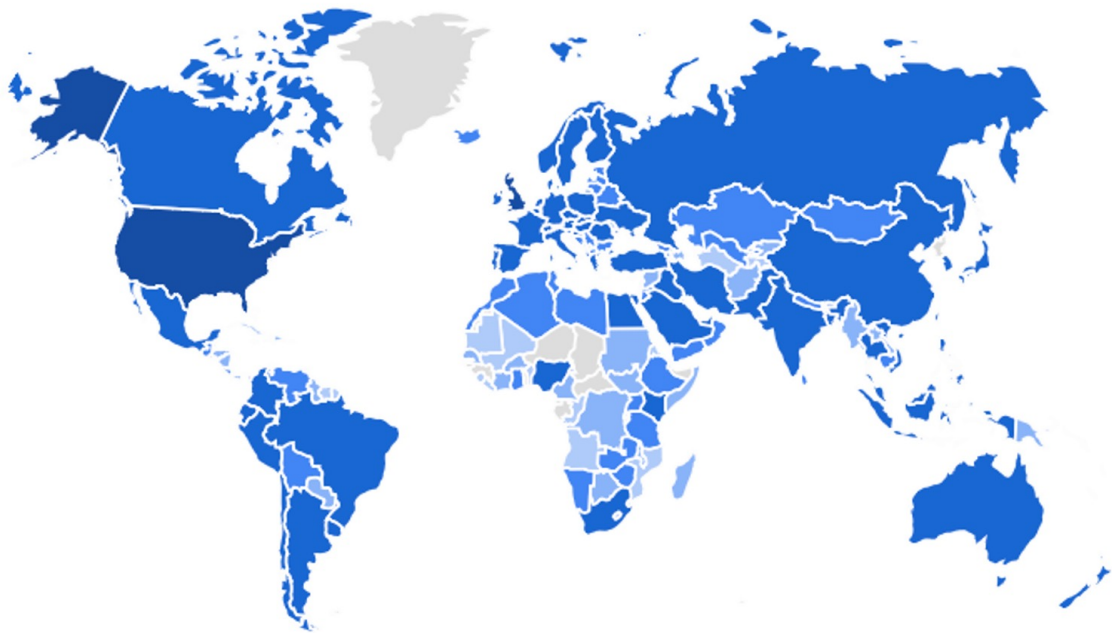
norecopa.no



The statistics from Google Analytics for the last 4 months of 2024 indicate that the website is in use in most of the world's countries, with the United States and the United Kingdom at the top of the list:

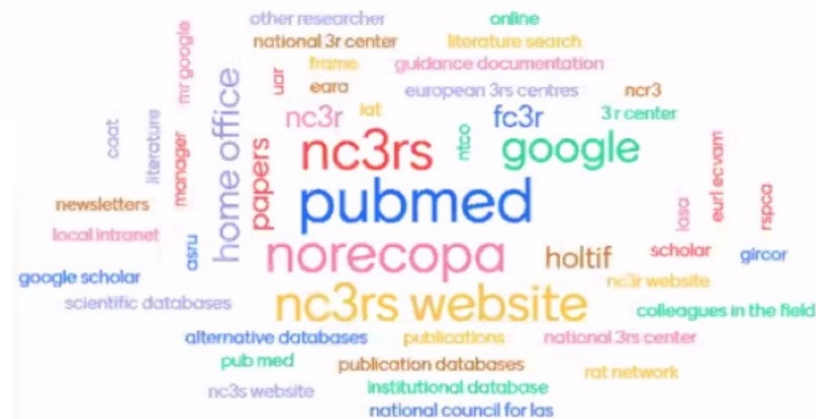
Over 10,700 pages
Nearly 1,000 hits per day
+ Vimeo channel (videos)

7-8 detailed newsletters per year



Norecopa: PREPARE for better Science

84 responses



Norecopa: PREPARE for better Science

3-Ethical issues, harm-benefit assessment and humane endpoints	
3a	Construct a lay summary.
3b	In dialogue with ethics committees, consider whether statements about this type of research have already been produced.
3c	Address the 3Rs (Replacement, Reduction, Refinement) and the 3Ss (Good Science, Good Sense, Good Sensibilities).

5. Have the experiments been carried out before, and is any repetition justifiable?
6. What [approaches to reduce distress](#) have been considered?

3a Construct a lay summary.

General principles

For fish researchers

1. Have national or local research ethics committees already produced statements relevant to the research being planned? Consideration should also be paid to the broader context of the research. For example, research directed at increasing the productivity of farming at the expense of (or without improving) individual animal welfare, or wildlife research whose primary aim is population management.

Links to quality resources about all the topics related to Replacement, Reduction and Refinement of the use of animals in science

3f	Discuss the learning objectives, if the animal use is for educational or training purposes.
3g	Allocate a severity classification to the project.
3h	Define objective, easily measurable and unequivocal humane endpoints.
3i	Discuss the justification, if any, for death as an end-point.
4-Experimental design and statistical analysis	

should be allocated to this point, since two of the three S's are highly subjective, but equally important. The use of commonsense and critical anthropomorphism are justifiably part of the work to assess the impact of research on animals, not least when a scientific evidence base does not exist.

4. Does the proposed study have a clear rationale and scientific relevance, and what will be the next step if the hypothesis is supported or rejected?
5. Have the experiments been carried out before and is any repetition justifiable?
6. What [approaches to reduce distress](#) have been considered?
7. Will the project undergo [pre-registration](#) and will negative results be published, to avoid publication bias?

Many more [links to resources on ethics are available here](#).

Details about pre-registration of animal studies and reporting of critical incidents are to be found in the section on [Experimental Design and Statistical Analysis](#).

Harm-Benefit Assessment



PREPARE



The PREPARE Guidelines Checklist

Planning Research and Experimental Procedures on Animals: Recommendations for Excellence

Adrian J. Smith*, R. Eddie Clutton*, Elliot Lilley*, Kristine E. Aa. Hansen* & Trond Bratteli†

*Norecopa, c/o Norwegian Veterinary Institute, P.O. Box 750 Sentrum, 0106 Oslo, Norway; †Royal (Dick) School of Veterinary Studies, Easter Bush, Midlothian, EH25 9RG, U.K.; *Research Animals Department, Science Group, RSPCA, Wilberforce Way, Southwater, Horsham, West Sussex, RH13 9RS, U.K.; †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; †Division for Research Management and External Funding, Western Norway University of Applied Sciences, 5020 Bergen, Norway.

PREPARE* consists of planning guidelines which are complementary to reporting guidelines such as ARRIVE†.

PREPARE covers the three broad areas which determine the quality of the preparation for animal studies:

1. Formulation of the study
2. Dialogue between scientists and the animal facility
3. Quality control of the components in the study

The topics will not always be addressed in the order in which they are presented here, and some topics overlap. The PREPARE checklist can be adapted to meet special needs, such as field studies. PREPARE includes guidance on the management of animal facilities, since in-house experiments are dependent upon their quality. The full version of the guidelines is available on the Norecopa website, with links to global resources, at <https://norecopa.no/PREPARE>.

The PREPARE guidelines are a dynamic set which will evolve as more species- and situation-specific guidelines are produced, and as best practice within Laboratory Animal Science progresses.

Topic	Recommendation
(A) Formulation of the study	
1. Literature searches	☐ Form a clear hypothesis, with primary and secondary outcomes. ☐ Consider the use of systematic reviews. ☐ Decide upon databases and information specialists to be consulted, and construct search terms. ☐ Assess the relevance of the specific questions with the least suffering. ☐ Assess the reproducibility and transferability.
2. Legal issues	☐ Consider how the research is affected by animal transport, occupational health and safety. ☐ Locate relevant guidance documents (e.g. EU guidance on project evaluation).
3. Ethical issues, harm-benefit assessment and humane endpoints	☐ Construct a lay summary. ☐ In dialogue with ethics committees, consider whether statements about this type of research have already been produced. ☐ Address the 3Rs (replacement, reduction, refinement) and the 3Ss (good science, good sense, good sensibilities). ☐ Consider pre-registration and the publication of negative results. ☐ Perform a harm-benefit assessment and justify any likely animal harm. ☐ Discuss the learning objectives, if the animal use is for educational or training purposes. ☐ Allocate a severity classification to the project. ☐ Define objective, easily measurable and unequivocal humane endpoints. ☐ Discuss the justification, if any, for death as an end-point.
4. Experimental design and statistical analysis	☐ Consider pilot studies, statistical power and significance levels. ☐ Define the experimental unit and decide upon animal numbers. ☐ Choose methods of randomisation, prevent observer bias, and decide upon inclusion and exclusion criteria.

Topic	Recommendation
(B) Dialogue between scientists and the animal facility	
5. Objectives and timescale, funding and division of labour	☐ Arrange meetings with all relevant staff when early plans for the project exist. ☐ Construct an approximate timescale for the project, indicating the need for assistance with preparation, animal care, procedures and waste disposal/decontamination. ☐ Discuss and disclose all expected and potential costs. ☐ Construct a detailed plan for division of labour and expenses at all stages of the study.
6. Facility evaluation	☐ Conduct a physical inspection of the facilities, to evaluate building and equipment standards and needs. ☐ Discuss staffing levels at times of extra risk.
7. Education and training	☐ Assess the current competence of staff members and the need for further education or training prior to the study.
8. Health risks, waste disposal and decontamination	☐ Perform a risk assessment, in collaboration with the animal facility, for all persons and animals affected directly or indirectly by the study. ☐ Assess, and if necessary produce, specific guidance for all stages of the project. ☐ Discuss means for containment, decontamination, and disposal of all items in the study.
(C) Quality control of the components in the study	
9. Test substances and procedures	☐ Provide as much information as possible about test substances. ☐ Consider the feasibility and validity of test procedures and the skills needed to perform them.
10. Experimental animals	☐ Decide upon the characteristics of the animals that are essential for the study and for reporting. ☐ Avoid generation of surplus animals.
11. Quarantine and housing	☐ Discuss the animals' likely health status, any needs for transport, quarantine and isolation, and housing conditions, in collaboration with expert staff.
12. Animal care and welfare	☐ Discuss the animals' likely health status, any needs for transport, quarantine and isolation, and housing conditions, in collaboration with expert staff.
13. Experimental procedures	☐ Develop refined procedures for capture, immobilisation, marking, and release or rehoming. ☐ Develop refined procedures for substance administration, sampling, sedation and anaesthesia, surgery and other techniques.
14. Humane killing, release, reuse or rehoming	☐ Consult relevant legislation and guidelines well in advance of the study. ☐ Define primary and emergency methods for humane killing. ☐ Assess the competence of those who may have to perform these tasks.
15. Necropsy	☐ Construct a systematic plan for all stages of necropsy, including location, and identification of all animals and samples.

References

1. Smith AJ, Clutton RE, Lilley E, Hansen KEA & Bratteli T. PREPARE: Guidelines for Planning Animal Research and Testing. *Laboratory Animals*. 2017. DOI: 10.1177/0023677217724823.
2. Kilkenny C, Browne WJ, Cuthill IC et al. Improving Bioscience Research Reporting: The ARRIVE Guidelines for Reporting Animal Research. *PLoS Biology*. 2010. DOI: 10.1371/journal.pbio.1000412.

Further information

<https://norecopa.no/PREPARE> | post@norecopa.no | [@norecopa](https://twitter.com/norecopa)

A checklist in 37 languages

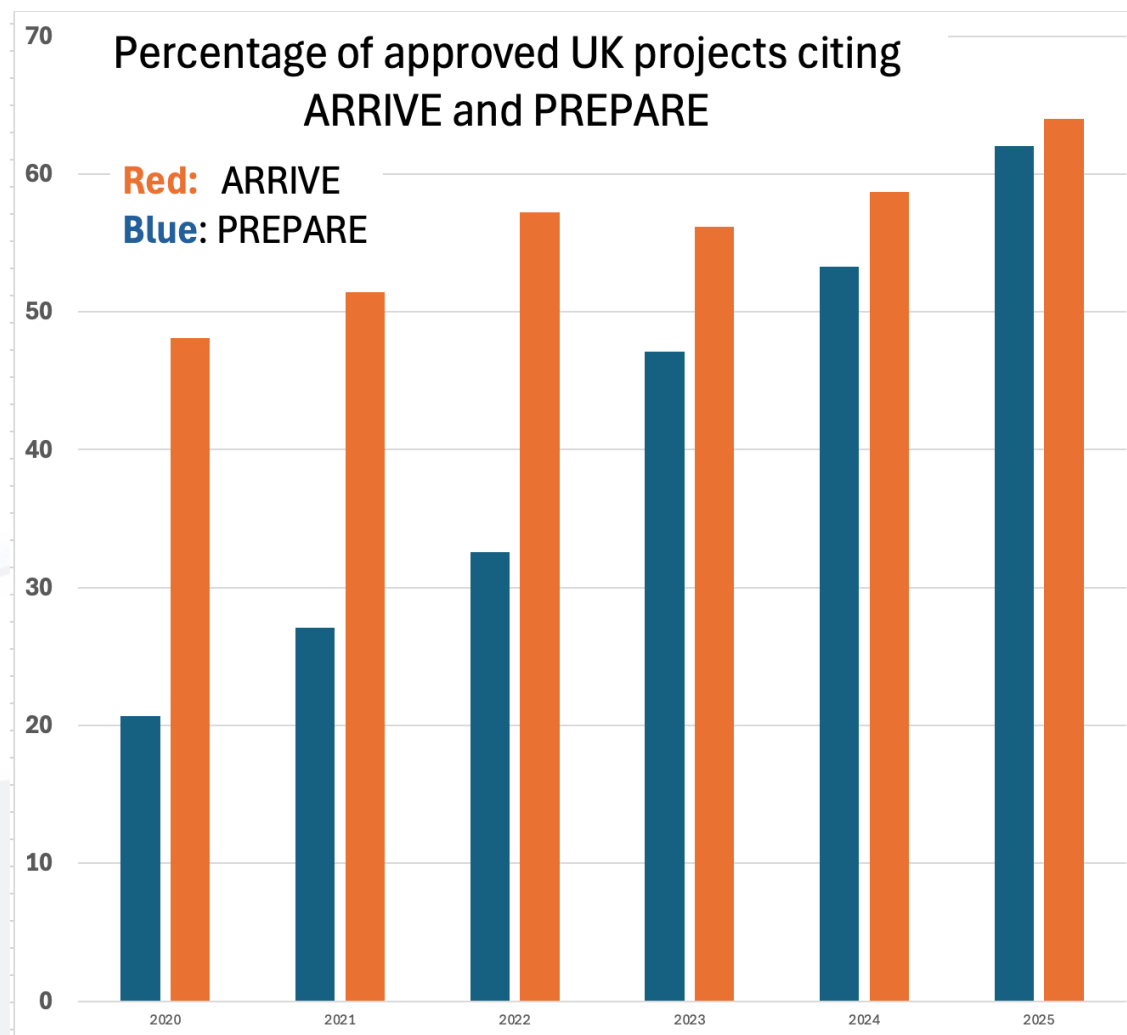
Norecopa: PREPARE for better Science

The principle: Begin the work of ensuring quality from Day 1 of planning



Norecopa: PREPARE for better Science

norecopa.no/PREPARE and ivd-utrecht.nl/en/news/better-animal-research-through-open-science-1



Norecopa: PREPARE for better Science

The Refinement Wiki



Susanna Louhimies

wiki.norecopa.no

Born from the knowledge that a lot of good ideas on refinement circulate on discussion forums, but never get published.

Designed to be

- a portal for rapid publication and dissemination of these ideas
- a place to identify experts on specific refinement techniques



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Clicker training

Clicker training is an operant conditioning based on positive reinforcement. When the animal offers the desired behavior, a *click* or another distinctive sound (secondary reinforcer) is delivered and within the following few seconds the reward is presented (primary reinforcer)^[1]. The *click* bridges the time between the desired behavior and the presentation of the reward^[1]. A target stick providing a visual guide for the animal can be used for the training.

Animals are usually trained individually, though it is also possible to perform clicker training in a groups, e.g. in mice, rats, and rabbits. For rats, it was demonstrated that they learned tasks by observing the clicker training of their cage mates^[2].

Clicker training can be used to train animals in a stress-free way. The following behaviours are examples for what this technique can be used for:

Mice: entering a tunnel, following a target stick, climbing on the palm of the hand^[3]

Rats: following a target stick, voluntarily change to a cage, observational learning^[2]

Rabbits: following a target stick, rearing/standing up to inspect the abdomen, approaching a human, being touched and lifted by a human, trimming nails, coming on command

Pigs: Pigs can be easily trained to cooperate if they are treated empathetically and desired behavior is reinforced by providing food stuff in form of treats and apple juice^[4].



Clicker training with mice using a target stick. *Left:* The mouse is following the target stick and is climbing on the experimenter's hand. If the hand is lifted, the mouse will remain on the palm of the hand. *Right:* The mice are trained in a group. Two mice are following the target stick on the palm of the experimenter's hand.

- ¹ ^{1.1} Feng, Lynna C.; Howell, Tiffani J.; Bennett, Pauleen C. (1 August 2016). "How clicker training works: Comparing Reinforcing, Marking, and Bridging Hypotheses". *Applied Animal Behaviour Science*. **181**: 34–40. doi:10.1016/j.applanim.2016.05.012. ISSN 0168-1591.
- ² ^{2.1} Leidinger, Charlotte Sophie; Kaiser, Nadine; Baumgart, Nadine; Baumgart, Jan (25 October 2018). "Using Clicker Training and Social Observation to Teach Rats to Voluntarily Change Cages". *JoVE (Journal of Visualized Experiments)* (140): e58511. doi:10.3791/58511. ISSN 1940-087X. PMC 6235608. PMID 30417890.
- ³ Leidinger, Charlotte; Herrmann, Felix; Thöne-Reineke, Christa; Baumgart, Nadine; Baumgart, Jan (6 March 2017). "Introducing Clicker Training as a Cognitive Enrichment for Laboratory Mice". *JoVE (Journal of Visualized Experiments)* (121): e55415. doi:10.3791/55415. ISSN 1940-087X. PMC 5408971. PMID 28287586.
- ⁴ "Positive Reinforcement Training in Large Experimental Animals" (PDF).

Experts for clicker training in mice and rats: [TARC](#), Mainz, Germany

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This page was last edited on 27 May 2020, at 11:23.

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c. 75 topics (October 2025)

- Alphaxalone
- Anaesthesia in neonates
- Analgesia
- Asepsis
- Blood sampling of hamsters
- Blood sampling of pigs
- Blood sampling of rainbow trout
- Breeding strategies for mice
- Clicker training
- Contingency plans
- Decapitation
- Dehydration
- Detecting early onset of clinical signs in the mouse model of Covid-19
- Detection of pain and distress in mice
- EMLA cream
- Embryo transfer
- Experimental Autoimmune Encephalomyelitis (EAE)
- Facial expression analysis
- Food crunchers
- Forced swim test
- General discussion on use of analgesics
- Genotyping mice
- Geriatric mice
- Habituation training
- Health monitoring
- High-fat diets
- Hot Bead Sterilisers
- Housing nude mice
- Housing research fish
- Humane endpoints
- Hydrodynamic gene delivery
- Intra-ocular injections
- Intranasal administration
- Intraperitoneal injection
- Intraperitoneal pentobarbitone
- Irradiation for haematology studies
- Ketamine and alpha-2 agonist combinations
- Lockbox enrichment
- Long-term anaesthesia in rodents
- Lumpfish
- MDA (micropipette-guided drug administration) Method
- Main Page
- Marble Burying Test
- Metabolic cages
- Microchipping rats and mice
- Minipumps
- Montanide adjuvant
- Mouse Grimace Scale
- Mouse handling
- Nest building material
- Non-invasive genetic sampling in wildlife research
- Oestrus suppression in ferrets
- Pneumocystis murina
- Recapping needles
- Refinement of oral gavage
- Rotarod Test
- Screening cell lines
- Sedation of cattle
- Splenectomy
- Sterilisation of instruments
- TTEAM and TTouch
- Tail vein injection
- Tamoxifen
- Tamoxifen information sheet V4.pdf
- The use of DMSO
- Tramadol
- Transport stress
- Tumour cell implant into mammary fat pad
- Ulcerative Dermatitis in Mice
- Water quality
- Xenopus laevis
- Zebrafish swabbing



Culture of Care

The International Culture of Care Network

norecopa.no/coc

A demonstrable commitment, throughout the establishment, to improving:

- animal welfare
- scientific quality
- care of staff
- transparency for all stakeholders, including the public



Communication and the Culture of Care

Penny Hawkins, RSPCA Research Animals Department
on behalf of the International Culture of Care Network*

Effective two-way communication between scientists and animal technologists is essential for a good Culture of Care
The European Commission suggests the 'development of formal and informal communication channels, for mutual benefit with respect to science and animal welfare'
Here are some examples from International Culture of Care network members

Regular meetings

Scheduled meetings for scientists, animal technologists, vets, unit managers and AWERB members



Regular refresher/update meetings for all organised by NTCO



Special events

Duo-talks: researcher talks about their science, and animal technologists talk about techniques and animal care within the project



ELH organises an **informal meeting** for all, in which anyone can raise welfare issues



Building communication into existing processes

Each study has a **pre-start** and **wash-up** meeting involving everybody



Three Rs improvements reported to AWERB & shared at external user meetings



Other ideas

A **'boxless' event:** anyone can submit 'out of the box' ideas to improve practice



A **staff survey** for all e.g. how much do you agree with statements such as 'in our group we listen to each others' ideas about animal welfare'



*norecopa.no/culture-of-care

ENAWB: European Network of National Networks of Animal Welfare Bodies



ENAWB

norecopa.no/ENAWB

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+ webpages for past meetings and recorded meetings

norecopa.no/meetings/meetings-calendar

[Fish 2005](#) | [Wildlife 2008](#) | [Fish 2009](#)

[Meetings Calendar](#)

- [Amsterdam, 11-14 October 2025](#)
- [Norecopa's 18th Birthday](#), online event, 14 October 2025
- > [Supporting Replacement in Academia](#), webinar (Barney Reed), 14 October 2025
- > [3Rs in Wild Terrestrial Mammal Research](#), online, 14 October 2025
- > [Basic Research Media Training - Neuroscience edition](#), EARA webinar, 14 October 2025
- > [Botulinum neurotoxin testing](#), webinar (Kathrin Herrmann), 14 October 2025
- > [Colony Management Webinars \(mice and zebrafish\)](#), LASA event, 14-16 October 2025
- > [Behind the Breakthroughs: Supporting the People in Laboratory Animal Science](#), webinar (Bert Mohr), 15 October 2025
- > [Scheduling of Animal Care Staff](#), webinar (Amy Laufenberg & Erika Swanson-Petro), 15 October 2025
- > [Animal happiness - understanding and assessment through behaviour, cognition and physiology](#), webinar (Laura Webb), 15 October 2025
- > [Why do we disagree so much about when animal experimentation is ethically acceptable?](#), webinar (Andreas Messer), 16 October 2025
- > [TPI.tv and BATI](#), ZonMW webinar, 16 October 2025
- > [Modeling Human Diseases In Vitro Using Advanced Microphysiological Systems](#), webinar, 16 October 2025
- > [Breeding genetically modified animals - when does animal testing require approval?](#), webinar (Klaus F. Gärditz), 16 October 2025
- > [Ethical and scientific aspects of managing old-age rodents](#), webinar (Esther Mahabir-Brenner), 17 October 2025
- > [InVEST 2025 \(International Veterinary Simulation in Teaching\)](#), Amarillo, 17-18 October 2025
- > [Responsible Aquatic Animal Research: Critical, Challenging and Creative Thinking](#), online course, 20-23 October 2025
- > [Interpretation of Animal Stress Responses](#), Aarhus, 20-23 October 2025
- > [Hands-on course in transgenesis and mutagenesis in zebrafish](#), Porto, 20-24 October 2025
- > [The Replacement Debate: Science, Limitations, and Public Trust](#), (for UK Establishment Licence Holders), London, 21 October 2025
- > [The NAMs Revolution: Smarter, Safer, More Ethical Drug Testing](#), webinar (Warren Casey), 21 October 2025
- > [Animal Welfare Beyond the Farm Gate: Latest developments in humane slaughter and transport of animals](#), Birmingham/online, 21-22 October 2025
- > [14th Annual Meeting of the American Society for Cellular and Computational Toxicology](#), Gaithersburg, 21-23 October 2025
- > [Fiskeri og havbruk på naturens premisser](#), Oslo, 22 October 2025
- > [UK Zebrafish Husbandry Meeting](#), Manchester, 22 October 2025
- > [Practical approaches and challenges for microbiological monitoring of rodents and zebrafish](#), Milan, 22-23 October 2025
- > [NAM life cycle using the example of the DNT IVB for regulatory application](#), webinar (Ellen Fritsche), 23 October 2025
- > [Development of an in vitro embryonic implantation model](#), webinar (Marta Barenys Espadaler), 23 October 2025
- > [Young TPI Conference: Connecting the Dots](#), Amsterdam, 23-24 October 2025
- > [Laboratory skills](#), hybrid event, start 24 October 2025
- > [Dyrevernkonferansen](#), Oslo, 24-26 October 2025
- > [68th ABSA Annual Biosafety and Biosecurity Hybrid Conference](#), Raleigh, 24-29 October 2025
- > [FIN3RC Annual Symposium](#), Turku, 27-28 October 2025
- > [Mastering NAMs Literature Searches](#), webinar (Rob Wright), 29 October 2025



Newsfeed

12 October 2025

[Forskare gör banbrytande upptäckt – ny metod kan bli nyckeln till att stoppa Alzheimers](#)

mot sjukdomen. En experimentell metod har visat lovande resultat i djurförsök och kan i framtiden förändra hur man behandlar Alzheimers. Det

12 October 2025

[Microfluidic Gradients Form Stem Cell CNS Model](#)

an in vitro representation of human neurons offers an attractive alternative to animal testing and can significantly accelerate the drug

11 October 2025

[Flere børn får astma end nogensinde: Nu har videnskaben fundet årsagen](#)

spiller en central rolle i kroppens forsvar mod allergier og inflammation. Dyreforsøg viste desuden, at tilsætningsstoffer som sødemidler og

10 October 2025

[Susi Søgaard](#)

4623 Lille Skensved Hvad er din primære beskæftigelse? Laboratory Animal Research Veterinarian (dyrlæge) Hvilke af de følgende politiske

Norecopa: PREPARE for better Science

English-language newsletters



norecopa.no/news/newsletters

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- [Urgent: Register now for our Summer School in Bergen!](#)
- [News of Norecopa](#)
- [Highlights from Norecopa's Annual Meeting](#)
- [Aurora Brønstad wins Norecopa's 3R Prize](#)
- [UFAW Handbook - new edition published](#)
- [Website of the Nordic Zebrafish Network](#)
- [Refinement of oral administration](#)
- [European Network of National Networks of Animal Welfare Bodies](#)
- [Mouse tail simulator for i.v. injection](#)
- [News of other 3R Centres and activities](#)
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Aurora Brønstad wins Norecopa's 3R Prize

We congratulate Aurora Brønstad, laboratory animal veterinarian at the University of Bergen, who was awarded [Norecopa's annual 3R Prize](#) on 4 June, after the annual meeting.

There were two nominees for this year's prize in addition to Aurora Brønstad:

- [Cesilie Røtnes Amundsen](#) at Nord University was nominated for her contributions to fish welfare, teaching and implementation of the 3Rs, including the initiative to start a [Nordic Zebrafish Network](#), of which she is the leader.



Website of the Nordic Zebrafish Network

In a previous newsletter we informed of the creation of a Nordic Zebrafish Network, founded in November 2023.

The Network has [started to build its website](#), which is hosted by the Karolinska Institutet in Stockholm.

The Network will arrange its second course on the husbandry and use of zebrafish in November, followed (like last year) by a Network meeting to discuss the way ahead.

Suggestions for resources to add to the website are very welcome.

The Nordic zebrafish network

The Nordic Zebrafish Network (NZN) was established as a result of a workshop meeting in Stockholm, with the aim to bring together scientists and animal caretaker staff to improve the quality of husbandry and science.

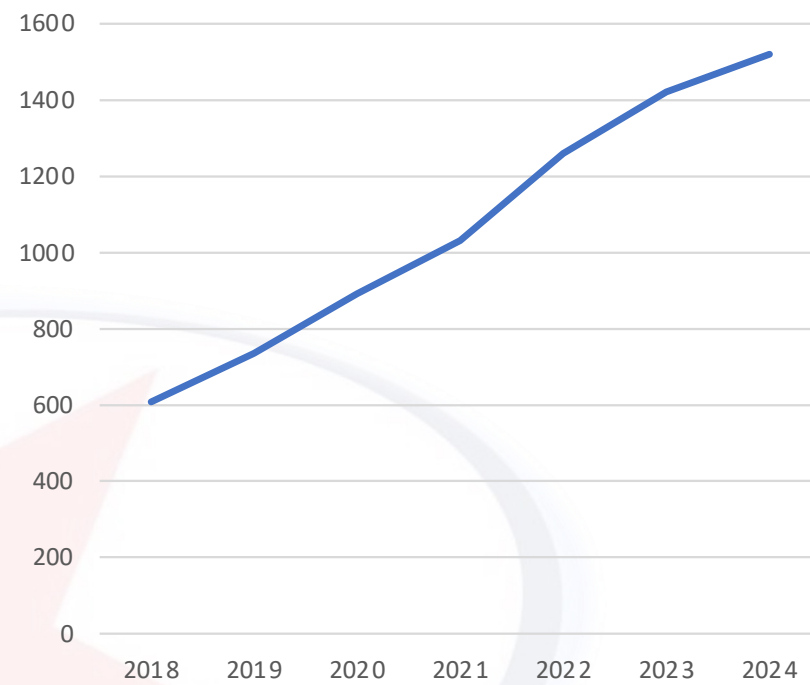
In November 2023, almost all zebrafish facilities from the Nordic countries met in Stockholm. For two days, animal caretakers, facility heads and scientists discussed how research in zebrafish and husbandry of this laboratory animal can be optimized and harmonized to facilitate animal welfare and improve the significance and reproducibility of scientific data.



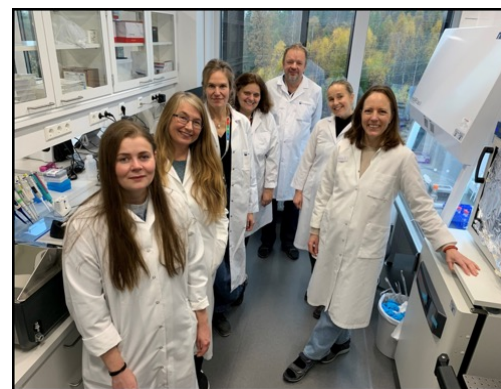
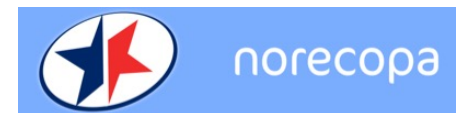
Photo: Getty Images



Subscribers to Norecopa's newsletter



3R Prize of NOK 30,000 - 14 times since 2010



Norecoba: PREPARE for better Science





norecoba

STRIDE-Lab & Norecoba Summer School

Systematic reviews of animal studies for evidence-based preclinical research

Dates
20th - 23rd August 2024

Accreditation
2 ECTS recommended

Register
[online here](#)

Location
Bergen, Norway

Price
NOK 2500
~ 215 €









Sponsorship: LAL Laboratory Animals Limited



Scand-LAS

Organizers
Adrian Smith, PhD
Norecoba
Marianna Rosso, PhD
Benjamin Victor Ineichen, MD PhD
University of Zurich
contact: marianna.rosso@uzh.ch
adrian.smith@norecoba.no
info: norecoba.no/en

Summer School: Systematic Reviews and Literature Searching, August 2024

15 students fra Finland, Germany, Italy, Latvia, Norway, Switzerland, UK & USA

Norecoba: PREPARE for better Science



Harmonisation of the Care and Use of Fish in Research (May 2005)

The meeting attracted 100 participants from 10 countries.

Harmonisation of the Care and Use of Animals in Field Research (May 2008)

There were 50 participants from 5 countries at this meeting.

Harmonisation of the Care and Use of Fish in Research (September 2009)

There were 61 participants from 7 countries at this meeting.

Norecopa arranged the fourth international consensus meeting in September 2012:

Harmonisation of the Care and Use of Agricultural Animals in Research

There were 47 participants from 12 countries at this meeting.

Norecopa arranged the fifth international consensus meeting in October 2017:

Harmonisation of the Care and Use of Wild and Domestic Mammals and Birds in Field Research

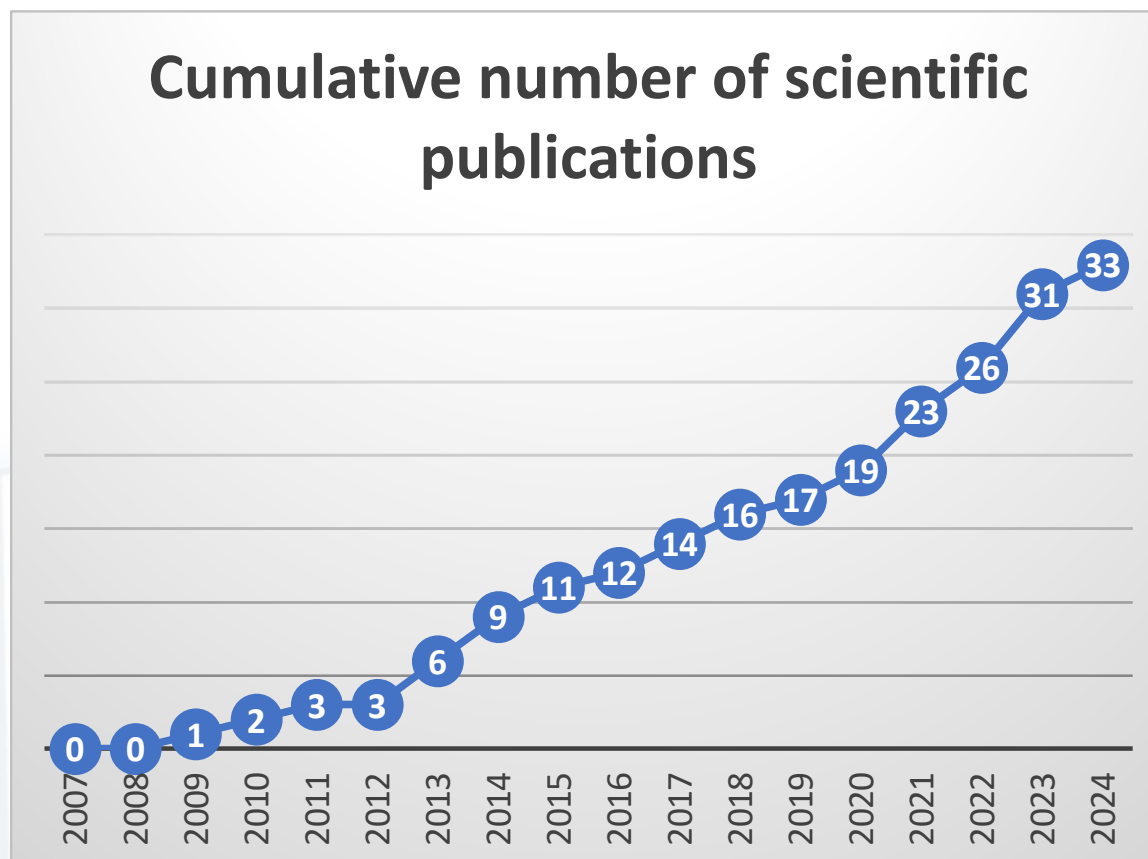
There were 31 participants from 4 countries at this meeting.

Norecopa has also been involved in three meetings arranged by the [RSPCA](#) and [AHVLA](#) (now called the APHA) in the UK. The reports from the first two meetings have been published in [Animal Technology and Welfare](#), published by the [Institute of Animal Technology](#), and are provided here with permission:

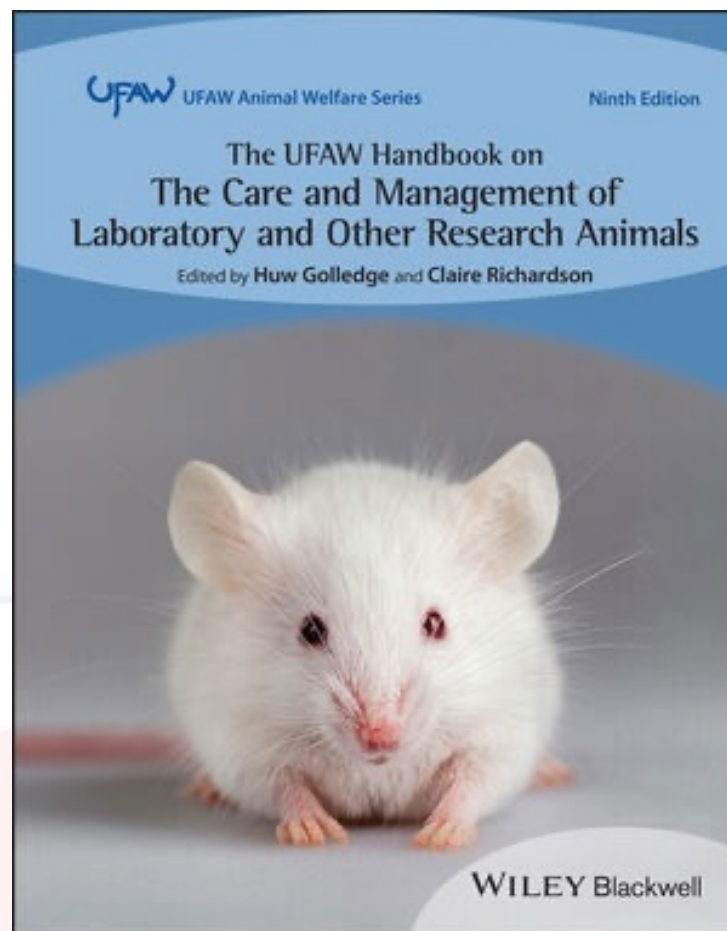
- > [Report of an RSPCA/AHVLA meeting on the welfare of agricultural animals in research: cattle, goats, pigs and sheep](#) (2013)
- > [Report of the second RSPCA/AHVLA meeting on the welfare of agricultural animals in research: cattle, pigs, sheep and poultry](#) (2014)
- > [RSPCA/APHA meeting on the welfare of wild animals used in regulated procedures](#) (2015)

A [World Congress on Alternatives and Animal Use in the Life Sciences](#) has been held approximately every 3 years since 1993. Norecopa's staff have attended 10 of the first 12 Congresses.

[FELASA Congresses](#) are held every 3 years, and [Scand-LAS symposia](#) are held annually except for years with a FELASA congress.



AJ Smith & J Richmond:
The Three Rs



The UFAW Handbook on the Care and Management of Laboratory and Other Research Animals, 9th Edition, 2024

Norecopa: PREPARE for better Science

Presentation of the 3R-concept - 40 Powerpoint-slides



The 3Rs of Russell and Burch:
Replacement, Reduction & Refinement

Adrian Smith
adrian.smith@norecopa.no
[@adrian_3r](https://twitter.com/adrian_3r)

With some material from:
Smith AJ & Richmond J (Forthcoming). The Three-Rs.
In: *The UFAW Handbook on the Care and Management of Laboratory and Other Research Animals*. 9th edition.
Richardson CA and Golledge HDR (eds).
Oxford: Wiley-Blackwell.

These slides are available at norecopa.no/3Rs

version 18.11.22 09.00 CET



Norecopa: PREPARE for better Science

English: 2022

Spanish & French: 2023

German and Czech: 2024

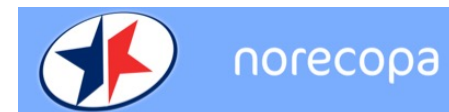
COMPILATION OF SEVERITY CLASSIFICATIONS ACROSS EUROPE

I Interventions on body systems and functions	II Induction of diseases	III Pharmacology, other external causes	IV Housing, environment and behaviour	V Fetuses and premature animals	VI Clinical signs
Substance administration	Heart & circulation	Physical impacts	Housing & Nutrition	1. Feeding 2. Surgical interventions 3. Reproductive toxicology	1. Condition of fur, grooming, body orifices 2. Breathing, heart rate 3. Body temperature 4. Behaviour & body posture 5. Reaction to artificial stimulation; handling behaviour; reaction to physical contact 6. Food & water consumption 7. Prostration 8. Self trauma 9. Body weight
Specimen collection	Infectious diseases	1. Irradiation & chemotherapy 2. Exposure to electricity 3. Exposure to heat 4. Exposure to cold 5. Exposure to acids & basis 6. Traumatization 7. Pressure change 8. Sound & ultrasound 9. Magnetic fields 10. Chronic hypoxia	1. Housing in general 2. Gnotobiology 3. Use of metabolic cages 4. Deprivation – water 5. Deprivation – food 6. Exposure to overstimulation		
1. Collection of body fluids 2. Tissue sampling	1. Infections in general 2. Gnotobiology 3. Bacterial infections 4. Viral infections 5. Mycotic infections	Generation of pain	Breeding & Reproduction		
Surgical interventions	Neurology & sensory organs	Pharmacological studies	1. Identification method and tissue sampling for genotyping 2. Germ cells		
1. Anaesthesia 2. Surgical interventions in general 3. Abdominal and chest cavity 4. Musculoskeletal system 5. Implantation of mini-pumps, transponders 6. Organ transplantation 7. Implanted probes 8. Others	1. Convulsions 2. CNS lesions 3. Ischaemias 4. Visual system	1. Toxicity studies - general 2. Acute toxicity 3. Sub-acute toxicity 4. Chronic toxicity 5. Reproduction toxicology 6. Pharmacokinetic studies 7. Batch testing	GA animals		
	Endocrine, nutritional & metabolic diseases		1. GA animal model in the experiment 2. Phenotype characteristics 3. Generation of GA animals 4. Tissue sampling for genotyping		
	1. Endocrinology 2. Bone metabolism 3. Glucose metabolism 4. Body weight loss		Behaviour		
	Neoplasms		1. Aversive learning, conditioned avoidance behaviour and conflict tests 2. Deprivation – social 3. Deprivation – sleep 4. Deprivation – motion & mobility 5. Pharmacologically induced behavior 6. Exercise 7. Specific behavior tests 8. External telemetry devices		
	Immunology				
	1. Transplantation 2. Cellular reactions 3. Autoimmune reactions 4. Immunisation 5. Immunity 6. Inflammation 7. Arthritis 8. Asthma				

norecopa.no/severity

Collection of body fluids

Source	Non-harmful / below threshold / severity degree 0	Mild / severity degree 1	Moderate / severity degree 2	Severe / severity degree 3
Directive 2010/63/EU, Annex VIII			Frequent application of test substances which produce moderate clinical effects, and withdrawal of blood samples (> 10 % of circulating volume) in a conscious animal within a few days without volume replacement.	
Federal Food Safety and Veterinary Office FSVO (2018)	Sampling of blood, saliva or urine (non-invasive) without sedation, at intervals and frequencies or in volumes imposing no constraint on the animals (no prolonged restraining measures, no other interventions or previous administrations of test substances). Collection of body fluids, tissues, organs, or body parts under deep general anaesthesia directly followed by euthanasia in animals not previously subjected to any intervention. Examples: Collection of blood samples from the ear vein of the rabbit, twice with an interval of 14 days, 3 ml on each occasion. Single non-invasive swabs of body cavities.	Legitimate collection of blood, tissue, faeces or urine, with or without sedation, at intervals and frequencies imposing mild short-term constraint on the animals with non-toxic doses of test substances, slightly prolonged reduced housing conditions. Examples: Several blood samples from the tail vein, saphenous vein or sublingual vein in the mouse and rat within 24 hours. Skin biopsies. Perfusion of small rodents under terminal surgical anaesthesia.	Sampling of blood in volumes and at intervals and frequencies causing moderate short-term constraint on the animals; percutaneous urine collection, collection of tissue samples (cells or fluid), peritoneal washing of naive animals under general anaesthesia. Sampling of body fluids (in relatively large quantities, in relatively large numbers or at relatively short intervals) after administration of pharmacologically active substances (no toxic doses, no other interventions, no prolonged restraining measures). Examples: Repeated daily collection of blood samples from the tail vein in rats over five days to determine the course of hormone levels.	
Federal Food Safety and Veterinary Office FSVO (2018)		Collection of fluids or tissue resulting in mild impairment of the young animals' further development. Examples: Venous blood collection in premature calves	Collection of fluids or tissue resulting in moderate impairment of the young animals' further development.	Collection of fluids or tissue resulting in severe impairment of the animals' further development or death/abortion.
Working Group of Berlin Animal Welfare Officers (2010)		In small quantities and small numbers with only short-term compulsory measures and not combined with other procedures: Venipuncture, Foley catheter for larger animals.	In small quantities and small numbers with only short-term compulsory measures and not combined with other procedures.	With severe restrictions on motion and not combined with other procedures.



norecopa.no/severity

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Working Party Report

Guidance on the severity classification of scientific procedures involving fish: Report of a Working Group appointed by the Norwegian Consensus-Platform for the Replacement, Reduction and Refinement of animal experiments (Norecopa)

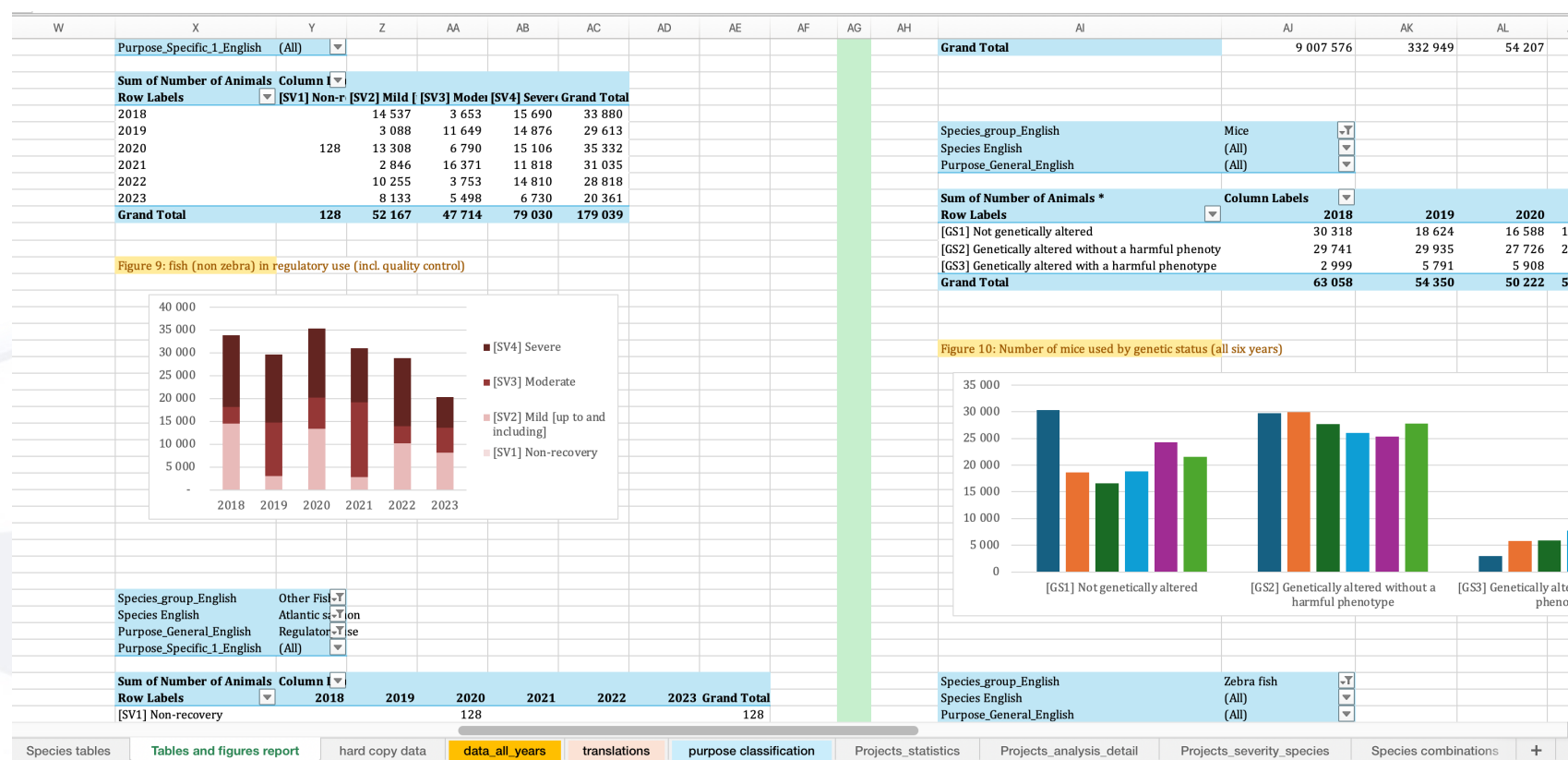
P Hawkins, (Convenor), N Dennison, G Goodman, S Hetherington, S Llywelyn-Jones, K Ryder, and A J Smith

Abstract

The severity classification of procedures using animals is an important tool to help focus the implementation of refinement and to assist in reporting the application of the 3Rs (replacement, reduction and refinement). The recently revised Directive that regulates animal research and testing within the European Union requires Member States to ensure that all procedures are classified as ‘non-recovery’, ‘mild’, ‘moderate’ or ‘severe’, using assignment criteria set out by the European Commission (EC). However, these are focused upon terrestrial species, so are of limited relevance to fish users. A Working Group set up by the Norwegian Consensus-Platform for the 3Rs (Norecopa) has produced guidance on the classification of severity in scientific procedures involving fish, including examples of ‘subthreshold’, ‘mild’, ‘moderate’, ‘severe’ and ‘upper threshold’ procedures. The aims are to complement the EC guidelines and help to ensure that suffering in fish is effectively predicted and minimized. Norecopa has established a website (www.norecopa.no/categories) where more information on severity classification for procedures using fish, including field research, will be made available.

2018-2023

We have compiled a file of all the national statistics for the use of animals for scientific purposes – sent to Mattilsynet.



Norecopa: PREPARE for better Science

Participation in Research Council projects and COST Actions

- ENRICH-Fish
- Welfare Severity Classification of Atlantic Salmon
- FishEnds-DIG
- SPHERTOX
- 3R-KART
- Fisk i forskning – miljøkrav og velferdsindikatorer
- COST - Laboratory Animal Science and Welfare
- COST - IMPROVE, and an application for its successor

International and national interest for Norecopa the last 5 years (2021-2025):

I have held 115 presentations in a total of 27 countries

84 of these were invited lectures from a total of 26 countries

Albania, Argentina, Australia, Belgia, Canada, Danmark, Estland, Finland, Frankrike, Hong Kong, India, Iran, Italia, Kroatia, Nederland, Nigeria, Norge, Portugal, Romania, Slovenia, Sri Lanka, Storbritannia, Sveits, Sverige, Tyskland, USA, Østerrike

But only 3 of these were invited lectures to Norwegian facilities

*What have we achieved and **what more should we aim for?***

- ***Continued improvement of Norecopa's existing resources***
- ***Strengthening Norecopa's infrastructure - staff***
- ***Establishment of a national 3R Centre in close cooperation with Norecopa, that can assist Norway's 80 research animal facilities in further implementation of all 3Rs***

