Norecopa: *what's in it for me?*

marksandspencer.com

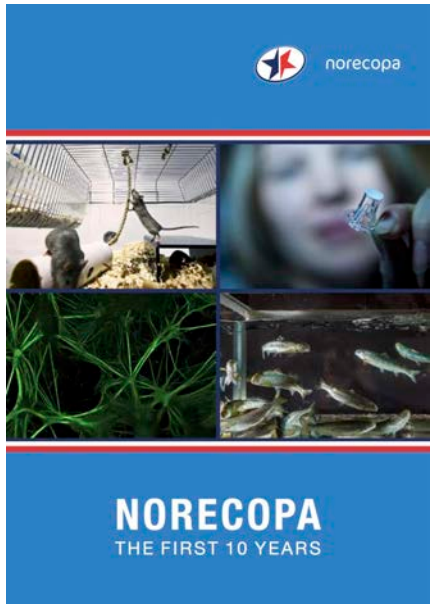
adrian.smith@norecopa.no

Norecopa

Norges konsensus-plattform for erstatning, reduksjon

og forbedring av dyreforsøk

Tilstreber å være en kilde til globale 3R-ressurser



Stiftet i 2007

https://norecopa.no

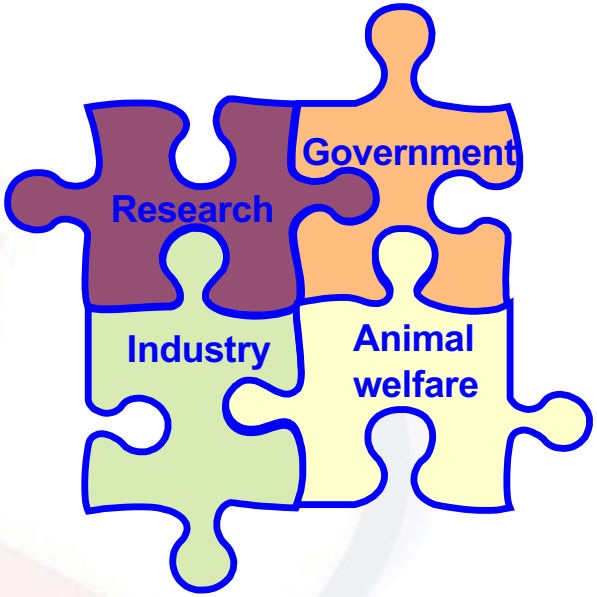
Norecopa: PREPARE for better Science

European Consensus-Platform for Alternatives

ecopa.eu

ecopa støtter nasjonal plattformer som har representanter for alle de 4 store interessepartene i sitt styre:

Opprettet i 2003:
Danmark
Finland
Frankrike
Italia
Norge
Spania
Sverige
Tyskland



Styret:

- ***Bente Bergersen**, Mattilsynet, styreleder*
  vara: Gunvor Knudsen, Mattilsynet

- ***Chris Noble**, Nofima Tromsø*
  vara: Siri Kristine Gåsnes, Veterinærinstituttet

- ***Kristian Straume-Lie**, Biomark*
  vara: Ingebjørg Sævareid, Salmon Group

- ***Susanna Lybæk**, Dyrevernalliansen*
  vara: Birgitte Fineid, Dyrebeskyttelsen Norge

Norecopa er ikke

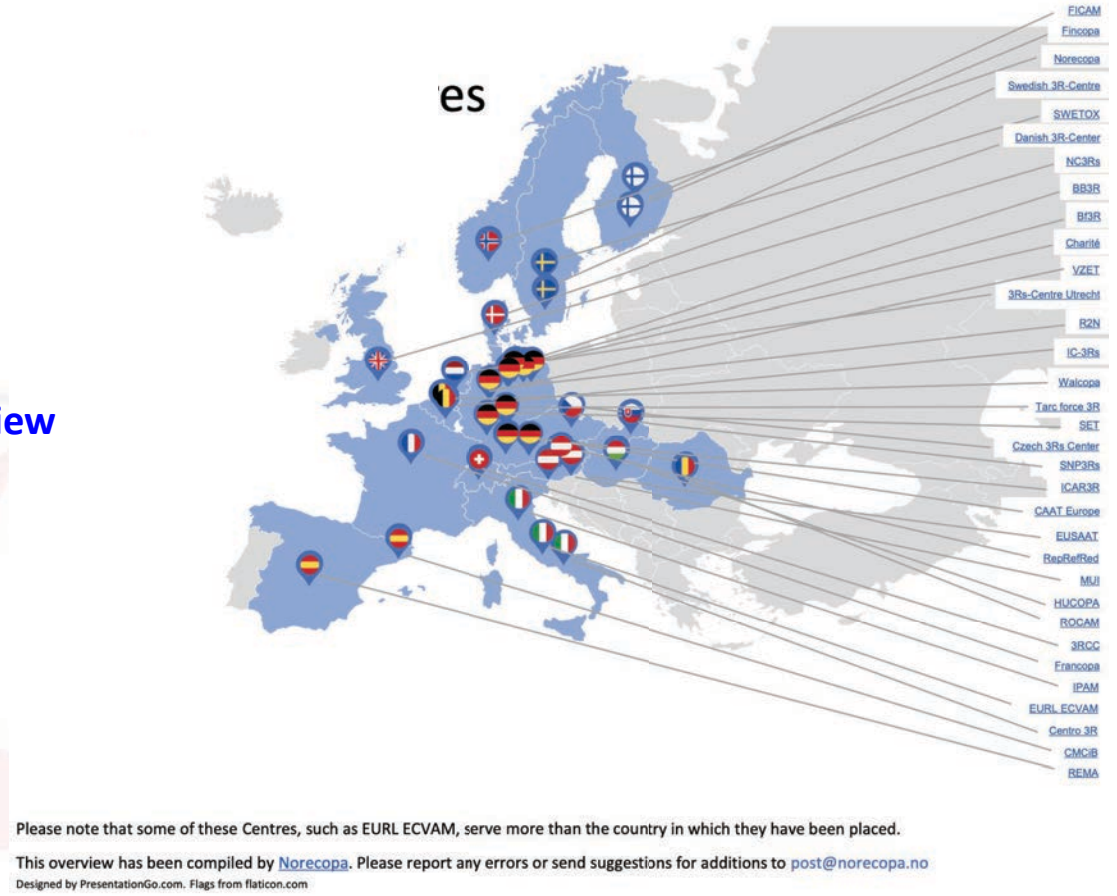
- **en dyrevernorganisasjon**
- **et forvaltningsorgan**
- **en forskerforening**

Norecopa er en selvstendig medlemsorganisasjon med egne meninger som tilstreber konsensus mellom partene

European network of 3R Centres (EU3Rnet)

Interaktivt kart:

norecopa.no/3REuropeOverview



Årsrapporten fra 2019: Grovfordeling av Norecopas inntekter

Omtrentlig fordeling av Norecopas inntekter i 2019 på de ulike kostnadspostene

LMD, NFD | Underforbruk fra 2018 | NSMSD | Rahns legat | Kontingent | Moms-kompensasjon | Dyrevern-fondet

Én stilling (sekretær i 100%, bestemmes årlig)
Driftsmidler (kr. 500 000 i 2020), bestemmes årlig
Medlemskap: 40 institusjoner/avdelinger à kr. 2.000
20 personer à kr. 200
Momskompensasjon
Tilfeldig støtte fra andre kilder

Lønn og overhead stipulert av Veterinærinstituttet – sekretær, 100% stilling

Administrasjon
Vedlikehold og utvidelse av Norecopas nettsider, og innlemmelse av EUs 3R-database

PREPARE-film

3R-Pris
Faglige møter

Refinement 'Wiki

LMD: Landbruks- og matdepartementet
NFD: Nærings- og fiskeridepartementet

NSMSD: Nordisk Samfunn Mot Smertevoldende Dyreforsøk

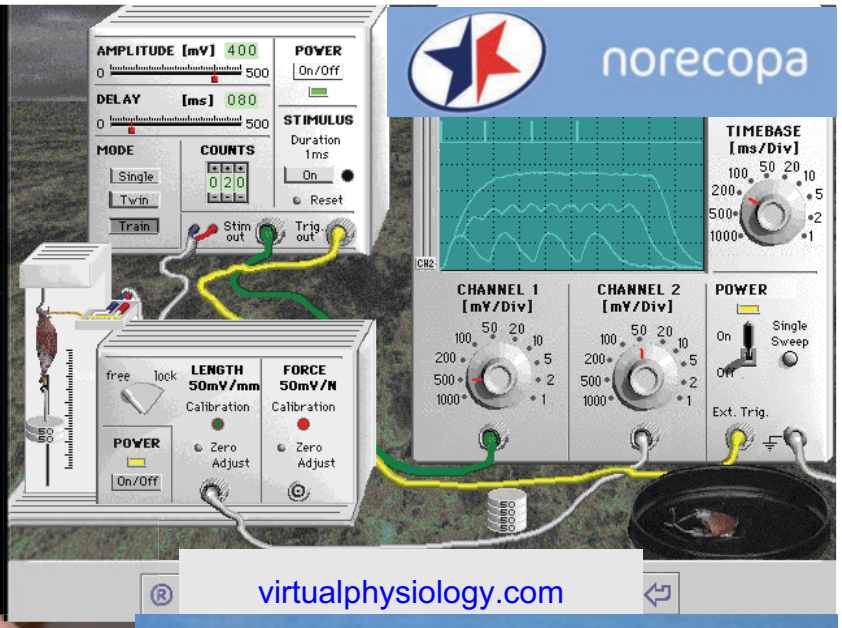
Er du eller din arbeidsplass medlem?

Norecopa: PREPARE for better Science

norecopa.no

over 9 000 nettsider
over 300 000 treff i 2020


norecopa.no/NORINA
3dglasshorse.com


AMPLITUDE [mV] 400
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0 500
MODE
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Train
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On/Off
STIMULUS
Duration
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On
Reset
Stim out
Trig. out
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lock
LENGTH
50mV/mm
Calibration
Zero Adjust
FORCE
50mV/N
Calibration
Zero Adjust
POWER
On/Off
norecopa
TIMEBASE
[ms/Div]
CHANNEL 1
[mV/Div]
CHANNEL 2
[mV/Div]
POWER
On
Single Sweep
Off
Ext. Trig.
virtualphysiology.com


rescuecritters.com


SutureTutor Plus
limbsandthings.com

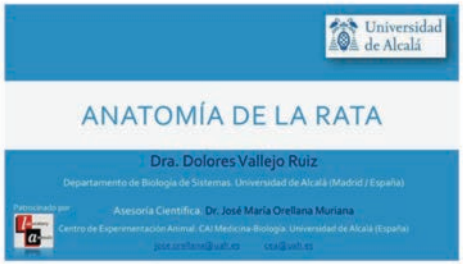
norecopa.no/education-training/films-and-slide-shows

Rat s.c. injection
Norecopa | 1,380 views

Rat i.p. injection (method 1)
Norecopa | 1,415 views

Rat i.p. injection (method 2)
Norecopa | 1,280 views

Anatomy of the rat
Norecopa | 1,310 views



Anatomia de la rata
Norecopa | 977 views

Blood sampling of the rat from the saphenous vein
Norecopa | 5,299 views

Fisk...?

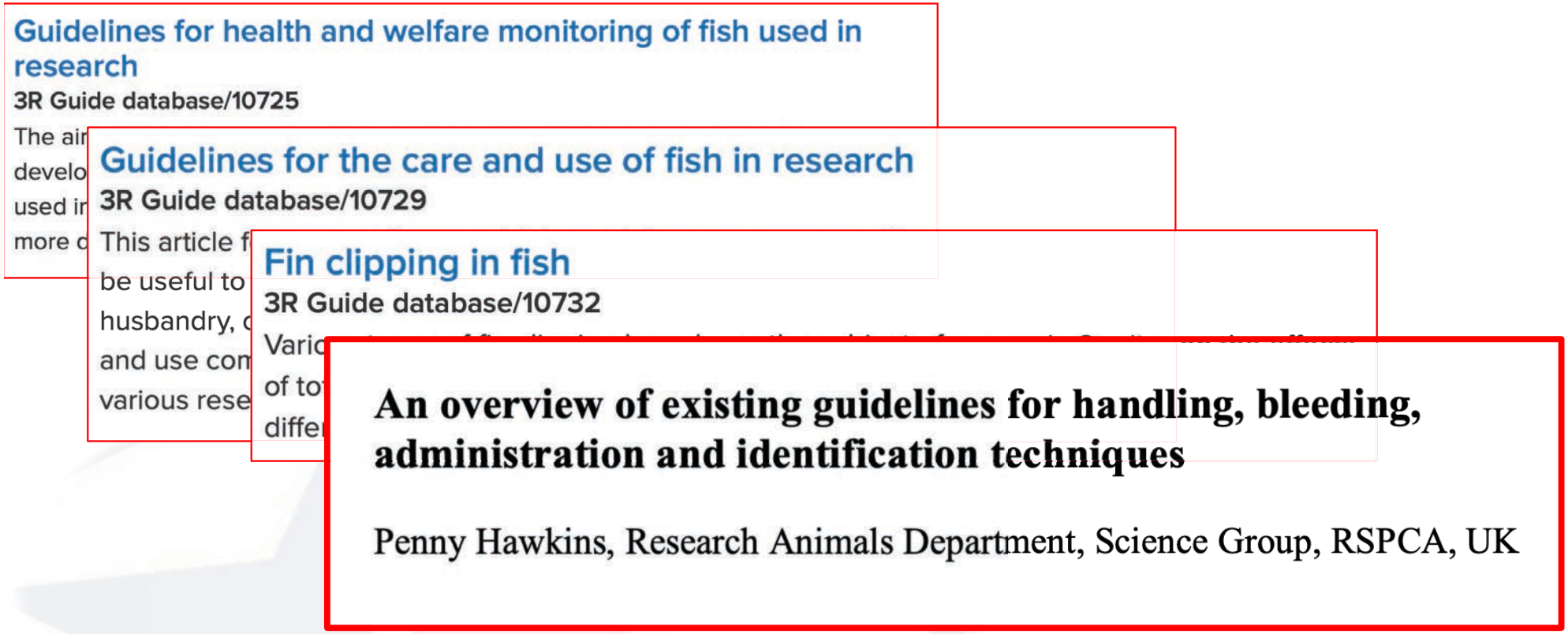
Fish | Farm animals | Laboratory animals | Wildlife and wild fish | Cephalopods | Other aquatic animals

norecopa.no / Species / Fish / Sampling

Sampling fish

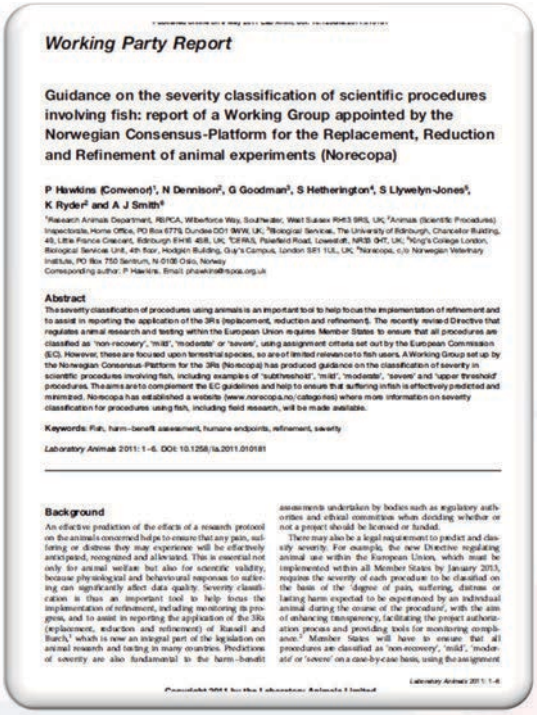
- Black MC (2000) **Collection of body fluids.** Chapter 30 in: The laboratory fish (Ostrander GK, eds). Baltimore: Academic press, 513-527. Blood, urine, fecal materials, eggs and milt.
- Roche H, Boge G (1996) Fish blood parameters as potential tool for identification of stress caused by environmental factores and chemical intoxication. Marine Environmental Research 41, 27-43. Shows that if 10 fish in a tank are sampled serially the stress level in the last fish will be significantly higher than in the first fish.
- Wooster GA, Hsu HM, Bowser PR (1993) Nonlethal surgical procedures for obtaining tissue samples for fish health inspections. Journal of Aquatic Animal Health 5, 157-164
- Hawkins P (2009) An overview of existing guidelines handling, bleeding, administration and identification techniques

3R-Guide (390 guidelines for animal research and testing): norecopa.no/3r-guide



norecopa.no/media/6342/fish-guidelines.pdf

3R-Guide (390 guidelines for animal research and testing): norecopa.no/3r-guide



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)[1], N Dennison[2], G Goodman[3], S Hetherington[4], S Llywelyn-Jones[5], K Ryder[2] and A J Smith[6]

Abstract

Background

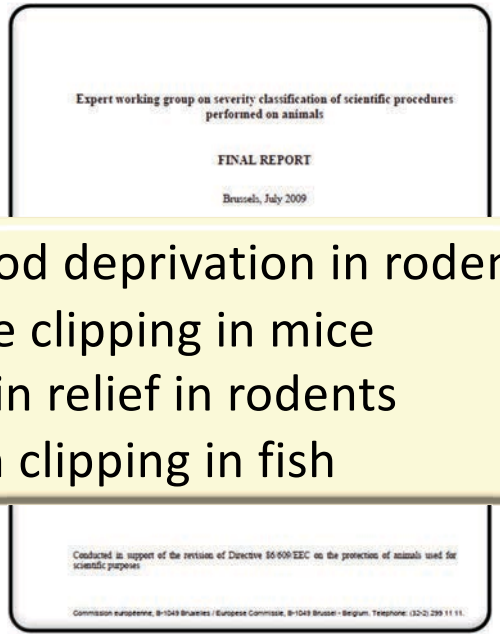
Guidance on the severity classification of procedures involving fish

Report from a Working Group convened by Norecopa

P Hawkins, N Dennison, G Goodman, S Hetherington, S Llywelyn-Jones, K Ryder and AJ Smith

Laboratory Animals, 45: 219-224, 2011

norecopa.no/categories



Expert working group on severity classification of scientific procedures performed on animals

FINAL REPORT

Brussels, July 2009

Conducted in support of the revision of Directive 86/609/EEC on the protection of animals used for scientific purposes

Food deprivation in rodents
Toe clipping in mice
Pain relief in rodents
Fin clipping in fish

ec.europa.eu/environment/chemicals/lab_animals/pdf/report_ewg.pdf

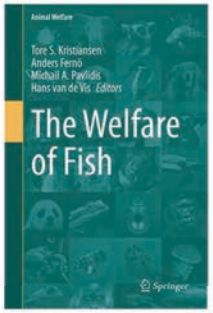
Norecopa: PREPARE for better Science

norecopa.no/textbase

The Welfare of Fish

By Tore S. Kristiansen, Anders Fernö, Michail A. Pavlidis & Hans van de Vis

Record number: 139098



This book investigates how fish experience their lives, their amazing senses and abilities, and how human actions impact their quality of life. The authors examine the concept of fish welfare and the scientific knowledge behind the inclusion of fish within the moral circle, and how this knowledge can change the way we treat fish in the future. In many countries fish are already protected by animal welfare legislation in the same way as mammals, but in practice there is still a major gap between how we ethically view these groups and how we actually treat them. The poor treatment of fish represents a massive animal welfare problem in aquaculture and fisheries, both in terms of the number of animals affected and the severity of the welfare issues.

Thanks to its interdisciplinary scope, this book should appeal to professionals, academics and students in the fields of animal welfare, cognition and physiology, as well as fisheries and aquaculture management.

List of chapters
A Brief Look into the Origins of Fish Welfare Science; Ethics and the Welfare of Fish; The Diverse World of Fishes; Fish behaviour: Determinants and Implications for Welfare; The Effects of Early Life Experience on Behavioural Development in Captive Fish Species; Fish Brains: Anatomy, Functionality, and Evolutionary Relationships; Inside the Fish Brain: Cognition, Learning and Consciousness; Awareness in Fish; The Predictive Brain: Perception Turned Upside Down; Can Fish Experience Pain?; How Fish Cope with Stress?; Individual Variations and Coping Style; Assessing Fish Welfare in Aquaculture; Welfare of Farmed Fish in Different Production Systems and Operations; Ornamental Fish and Aquaria; Fish as Laboratory Animals; Catch Welfare in Commercial Fisheries; Fish Welfare in Capture-Based Aquaculture (CBA); Fish Welfare in Recreational Fishing; Impacts of Human-Induced Pollution on Wild Fish Welfare; What Have We Learned?

More information is available here.

Part of the Animal Welfare book series (AWNS, volume 20).

eBook: 117.69 euros
Hardcover: 139.99 euros

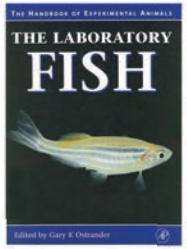
ISBN 978-3-030-41674-4 (hardcover)
ISBN 978-3-030-41675-1 (eBook)

Year: 2020

The Handbook of Experimental Animals: The Laboratory Fish

By Edited by Ostrander, Gary K.

Record number: 13282 (legacy id: 6134)



This book is a comprehensive reference source for anybody working with laboratory fish. High quality illustrations are included throughout the volume. Also includes a colour plate section. Glossary. Appendix of useful addresses. Table of Contents: Part 1: Introduction (Diversity of fish, Early observations and descriptions, Fish in experimentation); Part 2: Housing, Maintenance and Breeding; Chapter 1: Facilities and Husbandry (Large Fish Models); Chapter 2: Facilities and Husbandry (Small Fish Models); Chapter 3: Diet; Chapter 4: Common Diseases and Treatment; Part 3: Gross Functional Anatomy; Chapter 5: Integumentary System; Chapter 6: Skeletal System; Chapter 7: Muscular System; Chapter 8: Nervous System; Chapter 9: Respiratory System; Chapter 10: Circulatory System; Chapter 11: Digestive System; Chapter 12: Urinary Tract; Chapter 13: Endocrine System; Chapter 14: Immune System; Chapter 15: Sensory Systems; Chapter 16: Reproductive Systems; Part 4: Microscopic Functional Anatomy; Chapter 17: Integumentary System; Chapter 18: Skeletal System; Chapter 19: Fish as an Experimental Model for Studying Muscle Function; Chapter 20: Nervous System; Chapter 21: Respiratory System; Chapter 22: Circulatory System; Chapter 23: Digestive System; Chapter 24: Urinary Tract; Chapter 25: Endocrine System; Chapter 26: Immune System; Chapter 27: Sensory Systems; Chapter 28: Reproductive Systems; Part 5: Procedures; Chapter 29: Stress and Anesthesia; Chapter 30: Collection of Body Fluids; Chapter 31: Routes of Administration for Chemical Agents; Chapter 32: Fish Necropsy; Chapter 33: Surgical Techniques; Chapter 34: Fixation of Fish Tissues; Chapter 35: Autoradiography of Fishes; Part 6: Experimental Models; Chapter 36: Cancer; Chapter 37: Toxicology; Chapter 38: Cell and Tissue Culture. Glossary (Terms defined in the glossary are emboldened in the main text); Index. This book also discusses the zebrafish.

Comments & References: 678 pages. 2-colour, user-friendly format. Available as a Hardcover and for Kindle at Amazon. Published by Academic Press, now part of Elsevier. This book is a Volume in the Handbook of Experimental Animals Series. Please see record numbers 6117, 7110 and 7877 for three other volumes in the same series. The summaries of the book chapters can be accessed online from Science Direct, and individual chapters can be purchased.

ISBN: 978-0-12-529650-2

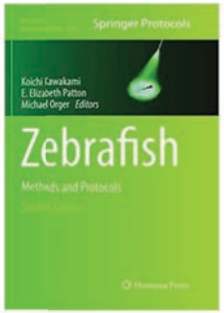
Price:

Year: 2000
Free of charge: Online: Free of charge

Zebrafish: Methods and Protocols, Second Edition

By Kawakami, Koichi; Orger, Michael and Patton, Elizabeth

Record number: 23948



This book details new emerging areas of zebrafish research focusing on genetics and genomics, techniques for developing and analysing zebrafish disease models, and methods for neuroscience. This edition guides readers through methods for mutagenesis and genome editing in zebrafish, applications of GFP-expressing transgenic fish, techniques for cancer models, imaging of infection and host-pathogen interactions, metabolism and transport of lipids, and the structure and function of neural circuits and their role in generating behaviour. Chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls. For more information on this book, please click here.

Comments & References: Second Edition. Includes cutting-edge methods and protocols, and contains key notes and implementation advice from experts. Available as a **Hardcover** and as an **eBook**. Suitable for new and experienced zebrafish researchers as a complement to the first edition of this book. Part of the "Methods in Molecular Biology" series.

ISBN: Hardcover: 978-1-4939-3769-1; eBook: 978-1-4939-3771-4

Price: Hardcover: US$139.00; eBook: US$109.00

Year: 2016

norecopa.no/species

norecopa.no / Meetings / Meetings Calendar

norecopa.no/meetings/meetings-calendar

Webinar and Meetings calendar

- Can Big Data Replace Animal Testing?, online LUSH conference, 11-12 November 2020
- Accessibility of recombinant antibodies, webinar, 12 November 2020
- EARA Media Training Workshop (for Portugal), online workshop, 12 November 2020
- The Role of Dogs and Minipigs in DART programs, webinar, 12 November 2020
- BSTP Annual Scientific Meeting: Pathology of Humanised Mouse Models, 12-13 November 2020
- Opossums in animal research, webinar, 13 November 2020
- Animal Research 2020 and Beyond, virtual event, 13 November 2020
- Assessing and alleviating pain and distress in laboratory animals, Stockholm, 16-17 November 2020
- Djurskyddskonferensen 2020, online, 17 November 2020
- Primate Welfare Meeting, online, 18 November 2020
- Minipigs in animal research, webinar, 18 November 2020
- Standarder for økt fiskevelferd, webinar, 19 November 2020
- EARA Media Training Workshop (for the Netherlands), online workshop, 19 November 2020
- Organizing and operating activities in a laboratory animal facility: Part II - Critical points and bottlenecks, Milan, 19-20 November 2020
- The Naked Mole Rat in animal research, webinar, 20 November 2020
- Non-invasive delivery of analgesics in rodents – possibilities and limitations, webinar, 20 November 2020
- ESLAV-ECLAM virtual meeting, 24-25 November 2020
- Xenopus in animal research, webinar, 25 November 2020
- Rabbits in animal research, webinar, 26 November 2020
- *In vitro* methods in practice: workshop, online event, 26 November 2020
- Are there alternatives to antibodies?, Copenhagen, 26 November 2020
- Zebrafish in animal research, webinar, 27 November 2020
- Assessing and alleviating pain in laboratory zebrafish, webinar, 27 November 2020
- Animal Research: Critical, Challenging & Creative Thinking Course: 30 November - 3 December 2020

norecopa.no/meetings/recorded-webinars

- Can we achieve positive welfare for farmed fish? (Sanchez-Saurez & Torgerson-White, 6 November 2020)
- How fish are treated under UK law (Bowles, 5 November 2020)
- The salmon, the louse and the cleaner fish (Lybæk, 5 November 2020)
- Better farming practices in aquaculture: can standards drive change? (Abemany, 5 November 2020)
- Octopus farming (Lara, 4 November 2020)
- Recent progress in the welfare of crabs, lobsters, and other decapods, in the food industry (Broadhurst, 4 November 2020)
- Improving slaughter of fish, decapods and cephalopods in practice (Spence, 4 November 2020)
- Wild fish slaughter - capture, loading, storage and slaughter (van de Vis, Reimert, Gerritzen, Bokma & Boonstra, 4 November 2020)
- The Use of an Automated Captive Bolt for Euthanasia of Laboratory Rats (Yam, Schuppli & Weary, 4 November 2020)
- Humanely ending the life of animals - Laboratory, session 1 (FSVO/UFAW/HSA symposium, 4 November 2020)
- Humanely ending the life of animals - Laboratory, session 2 (FSVO/UFAW/HSA symposium, 4 November 2020)

Pdf-filer av 80+ presentasjoner ved Norecopas møter

norecopa.no/meetings/presentations

Most of the presentations on this page are from events arranged by Norecopa. A few of them are from external events where Norecopa's staff have lectured.
They are grouped into

Koenig 101017.pdf

- General presentations
- Care and use of animals in field research
- Care and use of farm animals in research
- Care and use of fish in research

Title	Speaker	Affiliation	Year
General presentations			
Design of animal studies: Increasing reproducibility and animal welfare	Adrian Smith	Norecopa	2020
PREPARE before you ARRIVE: Good reporting relies on good planning	Adrian Smith	Norecopa	2019
Animal-free testing and humans-on-a-chip: How far have we come?	Leopold Koenig	TissUse GMBH, Berlin, Germany	2017
Nordic 3R-Centres: What can we offer?	Tom Bengtsen	Denmark's 3R-Center	2017
Prize-winning 3R activity in Norway	Gøril Eide	University of Tromsø, Norway	2017
Have the 3Rs made any difference?	Elliot Lilley	RSPCA, UK	2017

Harmonisation of the Care and Use of Fish in Research

Scientific Programme

Tuesday 22nd September 2009

Experiences from the inspection of fish research facilities in the UK
Kathy Ryder, Home Office Inspectorate, UK
Abstract Presentation (0.5 MB)

Research needs within fish welfare - presentation of a report on the status in Norway
Trond Brattelid, NIFES, Norway
Abstract Presentation (0.5 MB)

Do we have practical positive and negative welfare indicators for fish that we can use in a research/farm setting?
John Avizienius, RSPCA, UK
Abstract Presentation

Health monitoring of fish used in research - progress?
Anne Ramstad, VESO Vikan, Norway
Abstract Presentation (0.6 MB)

Husbandry and environmental enrichment - what do fish need and has there been much progress?
Gareth Readman, AstraZeneca, UK
Abstract Presentation (0.7 MB)

Telemetry in fish - update
Øyvind Aas-Hansen, Nofima Marin, Norway
Abstract Presentation (1.5 MB)

norecopa

Harmonisation of the Care and Use of Fish in Research

Gardermoen, 22 – 24 September 2009

A consensus document from the participants

Introduction

An international consensus meeting was held in September 2009 at Gardermoen, Oslo, to discuss the care and use of fish in research. A total of 61 participants from Norway (43), Great Britain (10), Sweden (4), Canada (1), The Netherlands (1), Singapore (1) and the USA (1) attended the meeting.

The meeting was organised by Norway's Consensus-Platform for Replacement, Reduction and Refinement of Animal Experiments, Norecopa (www.norecopa.no). It was a sequel to a similar consensus meeting arranged in May 2005 (http://oslovet.veths.no/dokument.aspx?dokument=153).

The specific aims of the meeting were:

- to provide a forum for dialogue between stakeholders (regulators, industry, researchers and animal welfarists)
- to increase focus on "the 3Rs" *(Replacement, Reduction, Refinement)* of Russell & Burch (http://altweb.jhsph.edu/publications/humane_exp/het-toc.htm)
- to further harmonisation and best practice in fish care and use
- to investigate whether progress has been made since the consensus meeting held in May 2005
- to identify tasks for Norecopa to work with in the area of fish research and testing.

This document summarises the participants' views on fish research and the potential for implementation of the 3Rs in this field. It is a consensus document that has been circulated to all participants for approval.

norecopa.no/meetings/fish-2009

Deltar gjerne i forsknings- og utviklingsprosjekter, bl.a. med søknader til Forskningsrådet og legater

f.eks.

ENRICH Fish 3R-KART EU-datasett Fiskevaksiner NORINA Wiki Konferansestøtte

se f.eks. norecopa.no/species/fish/projects

Norecopas 3R-pris

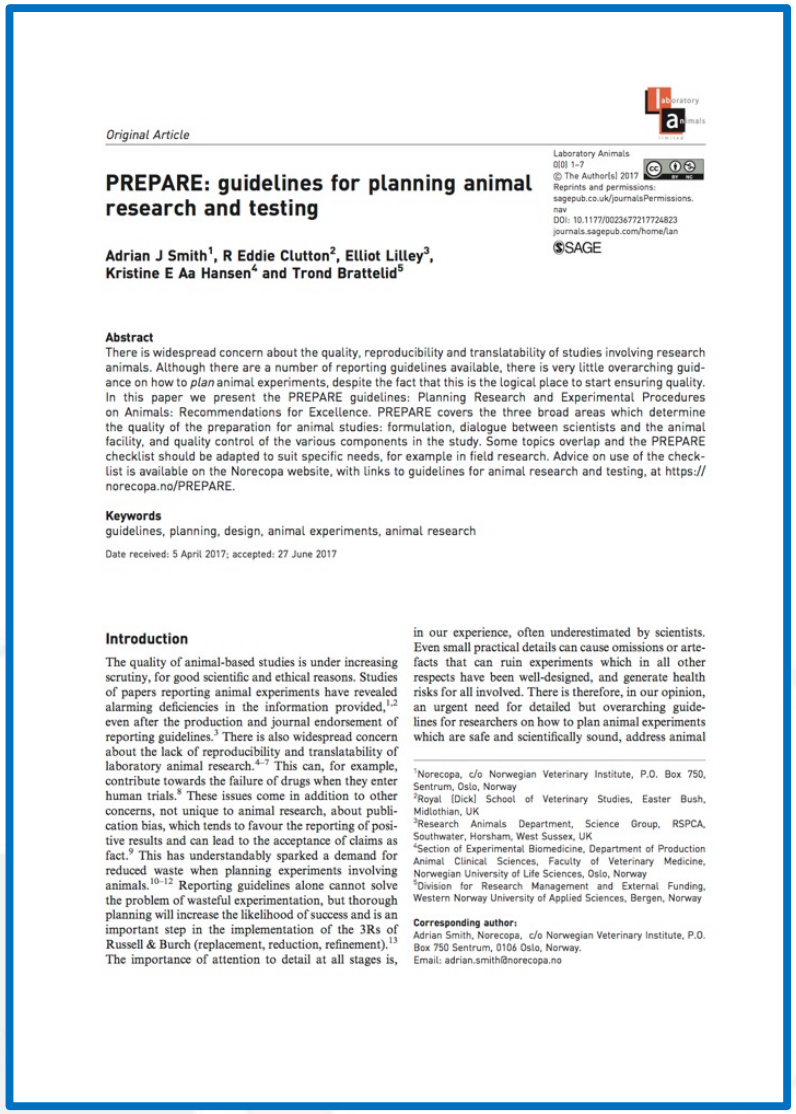
(30.000 kroner + diplom)

Interesse??

Norecopa's 3R-prize was awarded for the third time in 2013, to cand.med.vet. Anne Berit Romstad at VESO Vikan.

3 ganger til forskning relatert til bruk av fisk

norecopa.no/about-norecopa/3r-prize



Original Article

PREPARE: guidelines for planning animal research and testing

Adrian J Smith[1], R Eddie Clutton[2], Elliot Lilley[3], Kristine E Aa Hansen[4] and Trond Brattelid[5]

Laboratory Animals
0(0) 1–7

DOI: 10.1177/0023677217724823
journals.sagepub.com/home/lan
SAGE

Abstract

There is widespread concern about the quality, reproducibility and translatability of studies involving research animals. Although there are a number of reporting guidelines available, there is very little overarching guidance on how to *plan* animal experiments, despite the fact that this is the logical place to start ensuring quality. In this paper we present the PREPARE guidelines: Planning Research and Experimental Procedures on Animals: Recommendations for Excellence. PREPARE covers the three broad areas which determine the quality of the preparation for animal studies: formulation, dialogue between scientists and the animal facility, and quality control of the various components in the study. Some topics overlap and the PREPARE checklist should be adapted to suit specific needs, for example in field research. Advice on use of the checklist is available on the Norecopa website, with links to guidelines for animal research and testing, at https://norecopa.no/PREPARE.

Keywords

guidelines, planning, design, animal experiments, animal research

Date received: 5 April 2017; accepted: 27 June 2017

Introduction

The quality of animal-based studies is under increasing scrutiny, for good scientific and ethical reasons. Studies of papers reporting animal experiments have revealed alarming deficiencies in the information provided,[1,2] even after the production and journal endorsement of reporting guidelines.[3] There is also widespread concern about the lack of reproducibility and translatability of laboratory animal research.[4–7] This can, for example, contribute towards the failure of drugs when they enter human trials.[8] These issues come in addition to other concerns, not unique to animal research, about publication bias, which tends to favour the reporting of positive results and can lead to the acceptance of claims as fact.[9] This has understandably sparked a demand for reduced waste when planning experiments involving animals.[10–12] Reporting guidelines alone cannot solve the problem of wasteful experimentation, but thorough planning will increase the likelihood of success and is an important step in the implementation of the 3Rs of Russell & Burch (replacement, reduction, refinement).[13] The importance of attention to detail at all stages is, in our experience, often underestimated by scientists. Even small practical details can cause omissions or artefacts that can ruin experiments which in all other respects have been well-designed, and generate health risks for all involved. There is therefore, in our opinion, an urgent need for detailed but overarching guidelines for researchers on how to plan animal experiments which are safe and scientifically sound, address animal

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[2]Royal [Dick] School of Veterinary Studies, Easter Bush, Midlothian, UK
[3]Research Animals Department, Science Group, RSPCA, Southwater, Horsham, West Sussex, UK
[4]Section of Experimental Biomedicine, Department of Production Animal Clinical Sciences, Faculty of Veterinary Medicine, Norwegian University of Life Sciences, Oslo, Norway
[5]Division for Research Management and External Funding, Western Norway University of Applied Sciences, Bergen, Norway

Corresponding author:
Adrian Smith, Norecopa, c/o Norwegian Veterinary Institute, P.O. Box 750 Sentrum, 0106 Oslo, Norway.
Email: adrian.smith@norecopa.no

Norecopa: PREPARE for better Science

Pre-published under Open Access on 3 August 2017 in *Laboratory Animals*, sponsored by the Universities Federation for Animal Welfare (UFAW), UK

https://doi.org/10.1177/0023677217724823

Lest eller nedlastet over 15 000 ganger

Smith, AJ, Clutton, RE, Lilley, E, Hansen KEAa, Brattelid, T. (2018): PREPARE: Guidelines for planning animal research and testing. Laboratory Animals, 52(2): 135-141.
DOI: 10.1177/0023677217724823

PREPARE:

Planning **R**esearch and **E**xperimental **P**rocedures on **A**nimals: **R**ecommendations for **E**xcellence

PREPARE dekker 15 temaer:

Formulation of the study

1. Literature searches
2. Legal issues
3. Ethical issues, harm-benefit assessment and humane endpoints
4. Experimental design and statistical analysis

Dialogue between scientists and the animal facility

5. Objectives and timescale, funding and division of labour
6. Facility evaluation
7. Education and training
8. Health risks, waste disposal and decontamination

Methods

9. Test substances and procedures
10. Experimental animals
11. Quarantine and health monitoring
12. Housing and husbandry
13. Experimental procedures
14. Humane killing, release, reuse or rehoming
15. Necropsy

norecopa.no/PREPARE/prepare-checklist

PREPARE

The PREPARE Guidelines Checklist

Planning Research and Experimental Procedures on Animals: Recommendations for Excellence

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PREPARE[1] consists of planning guidelines which are complementary to reporting guidelines such as ARRIVE[2].
PREPARE covers the three broad areas which determine the quality of the preparation for animal st

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 topi
checklist can be adapted to meet special needs, such as field studies. PREPARE includes guidance on
facilities, since in-house experiments are dependent upon their quality. The full version of the guidelin
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 species to be used, its biology and suitability to answer the experimental questions with the least suffering, and its welfare needs. ☐ Assess the reproducibility and translatability of the project.
2. Legal issues	☐ Consider how the research is affected by relevant legislation for animal research and other areas, e.g. 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.

Three Rs!

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 [illegible]tion	☐ Conduct a physical inspection of the facilities, to evaluate building and equipment standards and needs. ☐ Discuss staffing levels at times of extra risk.
[illegible]ation and	☐ Assess the current competence of staff members and the need for further education or training prior to the study.
[illegible] 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 health monitoring	☐ Discuss the animals' likely health status, any needs for transport, quarantine and isolation, health monitoring and consequences for the personnel.
12. Housing and husbandry	☐ Attend to the animals' specific instincts and needs, in collaboration with expert staff. ☐ Discuss acclimatization, optimal housing conditions and procedures, environmental factors and any experimental limitations on these (e.g. food deprivation, solitary housing).
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 & Brattelid 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*

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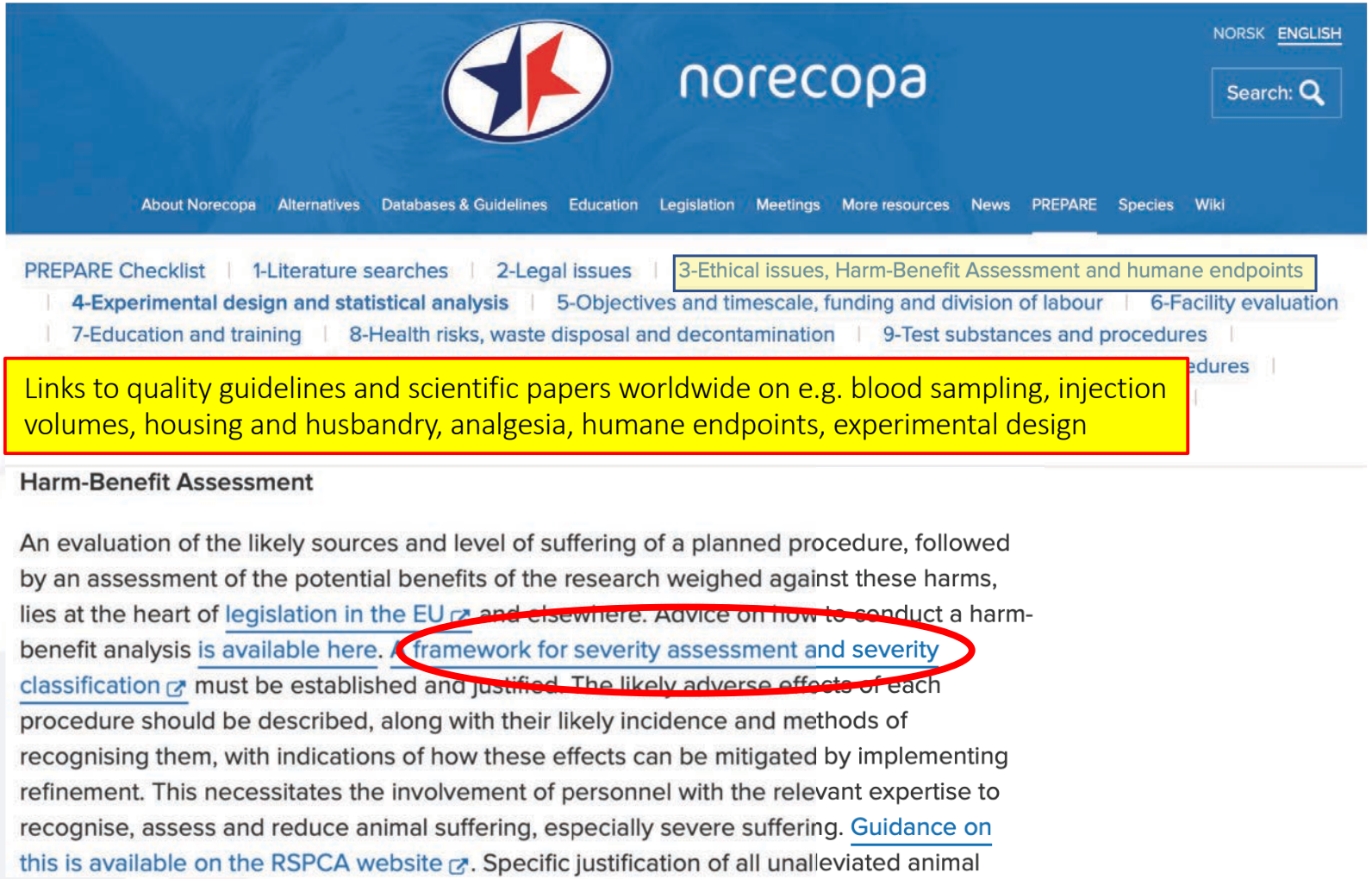

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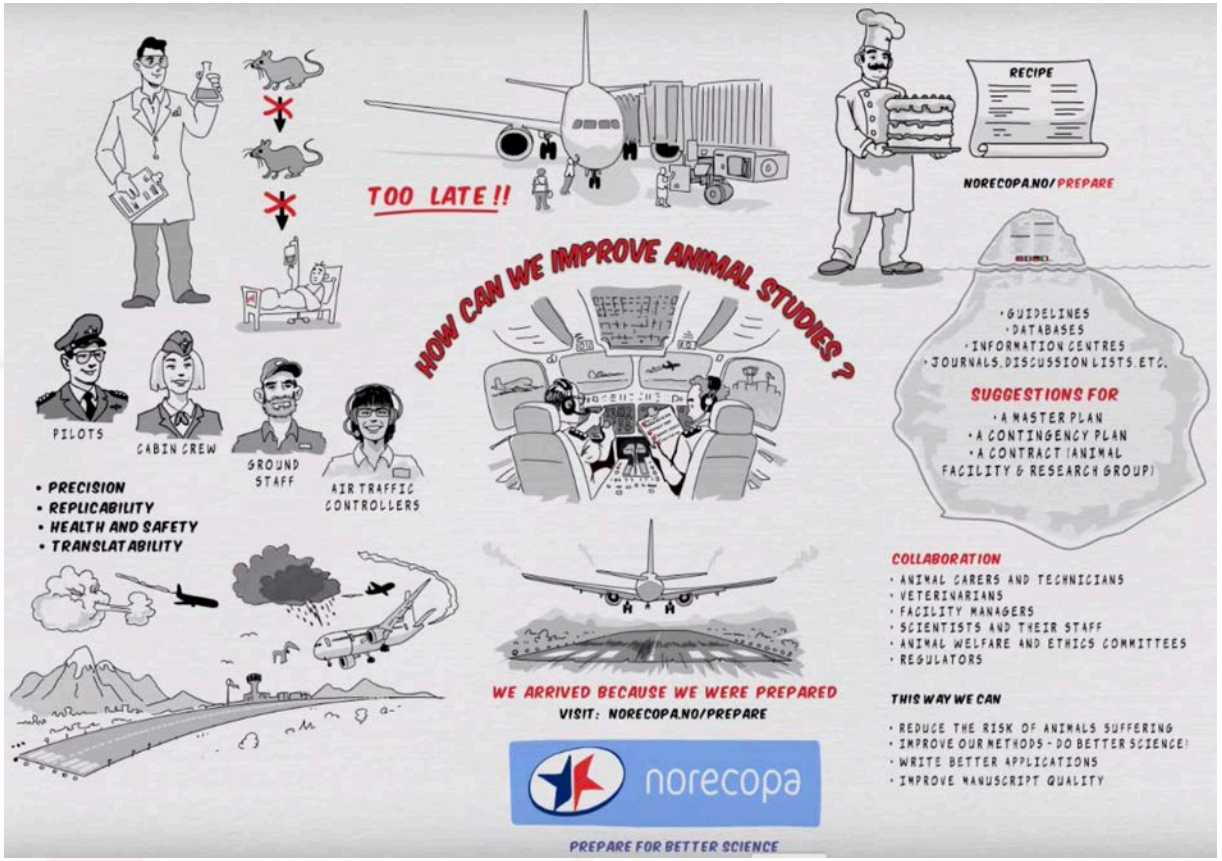

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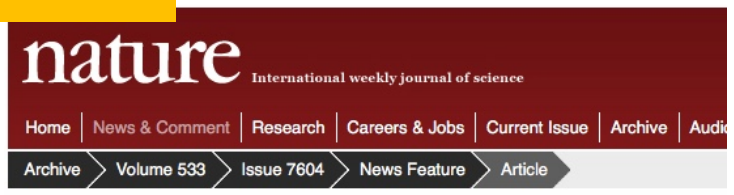
"The Reproducibility Crisis"

NATURE | NEWS

Swiss survey highlights potential flaws in animal studies

Poor experimental design and statistical analysis could contribute to widespread problems in reproducing preclinical animal experiments.



NATURE | NEWS FEATURE

1,500 scientists lift the lid on reproducibility

Survey sheds light on the 'crisis' rocking research.

Monya Baker

25 May 2016 | Corrected: 28 July 2016

More than 70% of researchers have tried and failed to reproduce another scientist's experiments, and more than half have failed to reproduce their own experiments. Those are some of the telling figures that emerged from *Nature*'s survey of 1,576 researchers who took a brief online questionnaire on reproducibility in research.

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Foredrag om planlegging av dyreforsøk, f.eks. norecopa.no/CBMR

Summary

1. ***PLAN***, in collaboration with animal care staff from day one and consult the guidelines: *be PREPARED*

2. ***WRITE*** a good manuscript, showing that you have been aware of the potential causes of irreproducibility, and with enough detail that scientists can evaluate the model

3. ***FLAG*** any advances you have made within the 3Rs, preferably in the title or abstract (or write a separate method paper)

Lukket diskusjonsforum for nøkkelpersonell ved DVE

Nyhetsbrev

SHARE THE NEWSLETTER ON

Newsletter no. 6-2020 from Norecopa

Welcome to Norecopa's sixth newsletter in 2020. ***Please share this with your colleagues and friends!***

Norecopa maintains an international Webinars and Meetings Calendar, which is updated several times a week. You will find shortcuts to several other key resources on our front page.

We continue to update a list of resources related to the Covid-19 pandemic and about preparedness in general: Be PREPAREd

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All Norecopa's newsletters can be read here and their content is indexed by the search engine on Norecopa's website.

This newsletter contains the following items (if some links do not work, check that your mail program has opened the whole of the newsletter):

- Update on Norecopa
- Update on PREPARE
- National Committee statement
- News from other 3R Centres
- New book on refinement
- EU datasets on non-animal models for disease
- The use of horseshoe crabs in research and testing
- Glimpses from research
- Food for thought
- From the media
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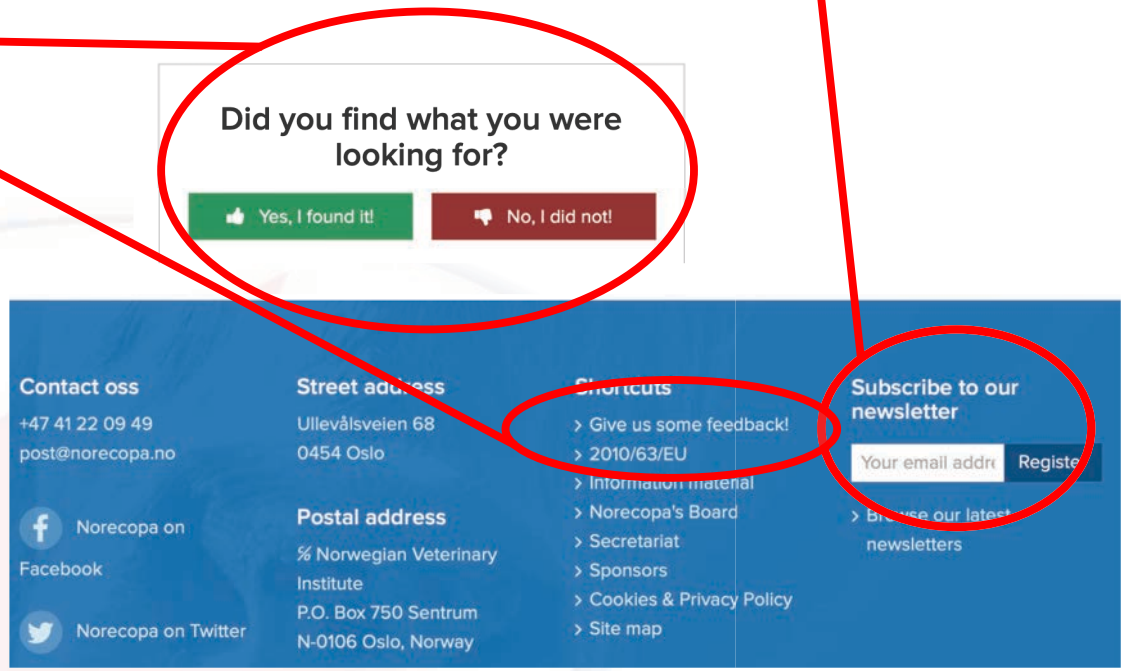
Nyhetsbrev

Tilbakemeldinger



Hva ønsker dere fra Norecopa?

Det har vært lite å hente fra

- Årsmøtene
- Diskusjonsforumet
- Tilbakemeldinger på nettsidene
- Uoppfordret kontakt fra medlemmene

Uten dette må Norecopa sette sin egen dagsorden

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