Talking about harms

Barney Reed

This presentation

- **Why** talk about harms
- **When** to talk about harms
- **How** to talk about harms

Commitment 1

We will be clear about when, how and why we use animals in research

Commitment 1.1

When we communicate about the use of animals in research, we should provide accurate descriptions of the benefits, harms and limitations of such research, be realistic about the potential outputs of such research, and be open about its impact on animal welfare and the ethical considerations involved.

Annual Report 2017

“Providing a balanced communication of the harms as well as the benefits involved in animal research remained a significant challenge for organisations”

“These are understandably the most challenging aspects for signatories, but are pledges that they have signed up to and this information is essential if the Concordat's stated aim of enabling people to "debate the issues from a position of knowing the facts and make up their own minds about animal research" is to be realised.

"AS WE ALL KNOW, THE APPEARANCE OF HONESTY IS THE BEST POLICY...."

*“A **lack of openness** and limited availability of **balanced** information has contributed to mistrust”*

Nuffield Council on Bioethics - The ethics of research involving animals (2005)

Ipsos MORI

The public's views

After the dialogue revealed the number of nuanced arguments, which exist about the harms and benefits of animal research, participants felt that the public need to be educated about these nuances in order to be able to weigh up the harms and benefits of animal research. ***This will involve the sector being clear about the 3Rs, the harms and benefits of animal research and presenting a lot more accurate and unbiased information about what actually happens to animal before, during and after procedures.***

Openness in Animal Research (2013)

Ipsos MORI

The public's views

"Participants wanted information on the specifics of animal research in order to feel qualified to join any debate. Including:

- ***Levels of suffering, more detailed than mild/moderate/severe, with lots of examples including images of typical procedures in the public domain****.*

Openness in Animal Research (2013)

Ipsos MORI

The public's views

"Participants felt that the following ideas would help the public be better prepared to have an informed discussion about animal research:

- *Explaining the harms of animal research; specifically the* ***nature and level of suffering experienced by animals****"*

Openness in Animal Research (2013)

Ipsos MORI

The public's views

"If you pick an organisation, you should be able to check what animals, what project title..." *Participant London, E2*

"I want to know how many animals are bred and killed, publications of animal procedures and their severity. The number used and harm done to them." *Participant Cardiff, E2*

Ipsos MORI

The public's views

"Some participants pointed out that the sector should be prepared to show the public what [suffering] looks like. They felt that the sector could not really call itself open without allowing a demonstration of the range of procedures in the public domain."

Openness in Animal Research (2013)

Ipsos MORI

The public's views

"Participants acknowledged that this might involve the sector in more time and expense. However, they felt that giving this level of detail would send a clear signal to the public that the sector is respectful of all animals used."

Openness in Animal Research (2013)

Expectations - talking about harms...

1. Acknowledgement there are ethical dilemmas involved with the use of animals in research and testing.
2. Recognition that animals used in research and testing can suffer (and that this can sometimes be severe).
3. Showing an understanding of how procedures, as well as general housing and care, can impact on animal welfare.
4. That responsibilities are taken seriously.
5. That people are committed to trying to reduce harms wherever possible.

Opportunities for talking about harms

- **Institution’s website and related resources**
- **Non Technical Summaries**
- Press releases or interviews
- Inductions for new staff or routine internal communications
- Tours for external guests

Publication of Non-Technical Summaries

Annual Report 2017

*"Of the research organisations that are signatories to the Concordat (n=64)... **two thirds** (n=44) **published lay summaries** of the research projects they undertook."*

Home
Research
Research environment
Research governance, ethics and integrity
Ethics
Research involving animals
What is research involving animals?
Outcomes of Manchester's animal research
Our standards, culture and governance
Our research
Our community
Find out more

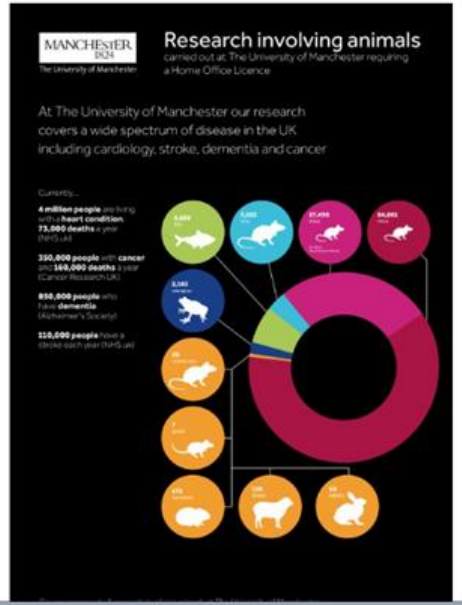
Our research

The vast majority of our research involving animals uses mice and rats. Here we detail the precise numbers and types of animal experiments carried out by the University, and on which types of animals.

We publish here all non-technical summaries of current licenses granted to University of Manchester researchers granted under the Animals (Scientific Procedures) Act 1986.

2017

- Advanced Education in Pharmacology (PDF, 200KB)
- Gene Function in Cardiovascular Disease (PDF, 139KB)
- Glucocorticoids and stress in the development of diabetes and obesity (PDF, 272KB)
- New Therapeutic Approaches for Inflammatory Disorders (PDF, 220KB)
- Regulation of glomerular barrier function in health and disease (PDF, 266KB)
- Evaluation of cognitive function in animal



https://www.manchester.ac.uk/research/environment/governance/ethics/animals/research/

UNIVERSITY OF LEEDS

Summaries of our research projects

The University carries out research to improve human health and to further our knowledge of other species. Examples of our research projects which have been granted by the Home Office are listed below. Each project is licensed for up to five years.

You can read general summaries and a more detailed document explaining the programme of work of current projects operating at the University as they become available.

- Angiogenesis in health and disease
- Brainstem and spinal cord circuits
- Calcium permeable channels and their associated mechanisms and therapeutic potential
- Decellularised biomaterials for homologous use in urinary bladder autoaugmentation
- Disease ecology in wild columbiform bird populations
- Education in in-vivo physiology and pharmacology
- Establishment of early pregnancy
- Generation of antibodies for the study of plant cell walls
- Immune and biological therapies for cancer
- Immune cell mechanisms in cancer and infection
- Immuno-virotherapy for haematological malignancies and metastatic disease
- Inflammatory responses to infection and insult
- Investigating cellular and molecular mechanisms of cardiac remodelling

http://www.leeds.ac.uk/info/5000/about/520/animal_research/3

Helpful hints for writing an NTS

- ASRU: Annotated Project Licence
  https://www.gov.uk/government/publications/animal-testing-and-research-improve-your-project-licence-application
- EC: Guidance on Non Technical Project Summaries
  http://ec.europa.eu/environment/chemicals/lab_animals/pdf/Recommendations%20for%20NTS.pdf
- UAR: Writing a Non Technical Summary - a guide for researchers (currently being developed)

NTS asks applicants to...

*"**Explain** the general measures you will take to minimise welfare costs (harms) to the animals".*

Avoid vague, meaningless phrases such as:

"Animal welfare is a priority"

"Care has been taken to design studies in a way that will minimise any suffering"

NTS asks applicants to state...

*“What are the expected **adverse effects** and the likely/expected level of **severity**?”*

Describe <u>what the animals will experience</u>.

Common problems…

1. Harms to animals are either not acknowledged, glossed over or downplayed.

2. It appears as though harms aren’t always recognised or understood e.g. *‘no adverse effects are expected’.*

Common problems…

3. The language used to discuss harms is either:

- too vague e.g. ‘*impacts on animals will be minimised*’
- too technical e.g. ‘*we will be modelling excitotoxicity and neurotoxicity*’
- or ‘hard’ e.g. ‘*subjects may be on a scheduled or controlled food or fluid regimen to reward and maintain task motivation and dietary fitness*’.

Think...

<u>What does all of this mean for the animal….?</u>

e.g.

"*Rats will be injected....*" is NOT an '*adverse effect*'.

"*Rats will likely experience some discomfort, transient pain and bruising to the skin from being injected on four occasions...*"

And the animal's whole lifetime 'story'

Room for improvement...

“The most likely adverse effects are associated with microsurgery and intracerebral inoculations. All animals will be monitored closely for any adverse effects and appropriate refinement measures taken promptly”.

*This doesn’t tell the reader anything meaningful at all

Room for improvement...

“The most likely adverse effects are signs of neurodegenerative disease caused by the mice having genes that cause neurodegeneration. It is essential that the mice develop some symptoms of disease in order for us to study and treat the disease. All mice will be killed at the end of the study.”

*This doesn’t tell the reader anything meaningful at all

Examples of good practice

“As we are trying to model a severe human disease like Motor Neurone Disease it is possible that the animals will be affected quite badly, for example showing problems with movement and eventual paralysis.”

Talking realistically and openly about harms also then provides an opportunity to illustrate how you are applying 3Rs, and trying to minimise these impacts.

Examples of good practice

“The housing environment of mice with disease is a key focus of our daily management of sick mice. We use soft bedding for comfort and reduction of sores, provide access to food supplements on the cage floor, which consists of infant formula mixed with food used for weaning mice, and house mice in smaller numbers to allow easier movement around the cage when their mobility is reduced.”

Numbers of animals and severity

Annual Report 2017

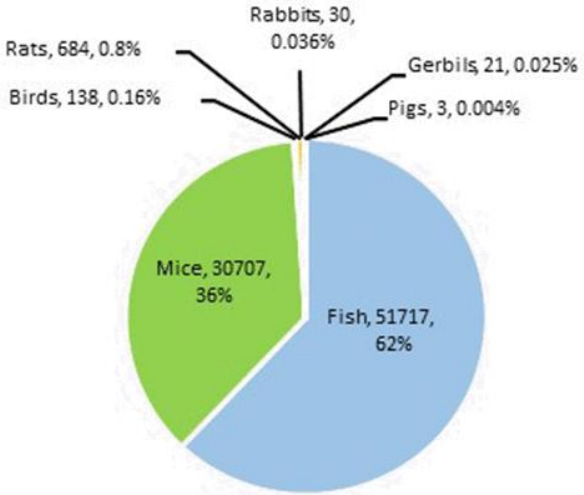
*"Of the research organisations that are signatories to the Concordat (n=64)... **the majority** (n=40) proactively **published** details of the **numbers and species of animals used** in research through their own channels.*

Severity?

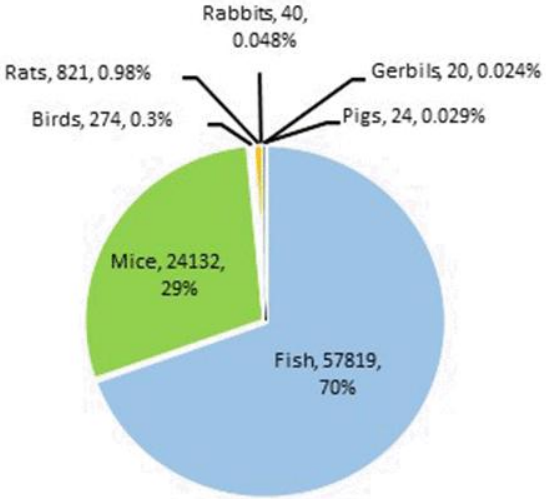
The University Of Sheffield.

Total Number of Regulated Procedures

2017



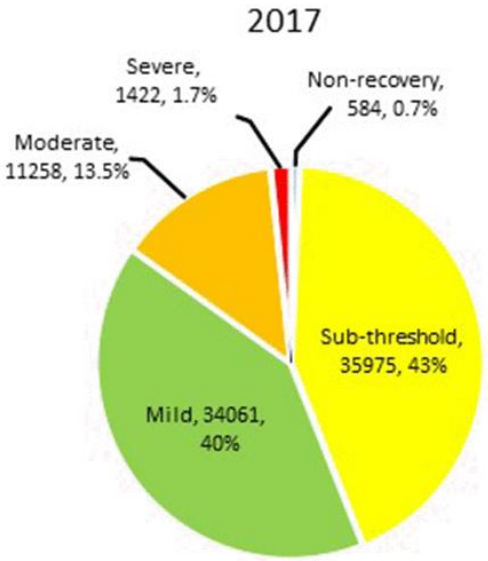
2016

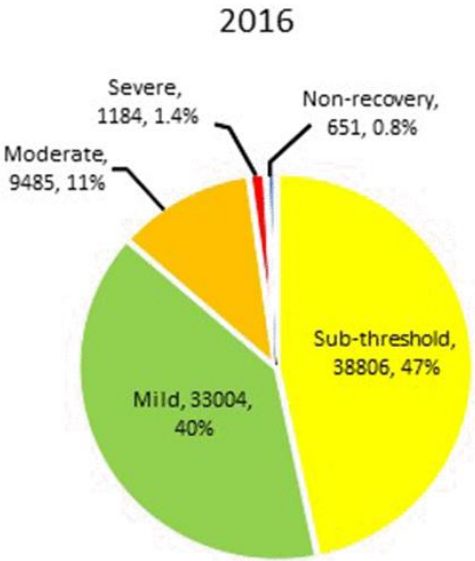


https://www.sheffield.ac.uk/rs/ethicsandintegrity/animal-research/facts-figures

The University Of Sheffield.

Actual Severity





https://www.sheffield.ac.uk/rs/ethicsandintegrity/animal-research/facts-figures

Lancaster University

In 2016, the **total number of procedures carried out was 1684**, involving the following species and ASPA severity limits:

Mice: 853 procedures where 283 were classified as ‘moderate’ severity, 467 classified ‘mild’ severity, 74 ‘subthreshold’ and 29 ‘non-recovery’. 719 of these procedures were undertaken with genetically altered animals.

Rats: 24 procedure classified as ‘moderate’ severity.

Wild birds: 786 procedures classified as ‘mild severity’ where all animals were sampled in the field and released back to the wild following assessment of full recovery.

Xenopus frogs: 21 procedures classified as ‘mild’ severity.

http://www.lancaster.ac.uk/research/support-for-researchers/research-services/research-integrity-ethics--governance/awerb/

Species	Sub-Threshold	Non-Recovery	Mild	Moderate	Severe
Mouse	2909	48	6218	3637	53
Rat	0	168	4163	1985	14
Guinea Pig	0	53	15	21	0
Hamster - Syrian	0	0	0	0	0
Other Rodent	0	18	64	124	0
Rabbit	0	0	36	0	0
Ferret	0	0	0	0	0
Pig	0	0	36	0	0
Sheep	0	0	300	19	0
Cattle	0	0	95	0	0
Domestic Fowl	0	0	410	0	0
Xenopus	0	0	0	0	0
Zebra Fish	4744	0	398	0	0
Other Fish	0	0	35	0	0

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

https://www.nottingham.ac.uk/animalresearch/faqs/faqs2.aspx

Type of animal	**Sub-threshold**	**Non-recovery**	**Mild**	**Moderate**	**Severe**	**Totals**
Mouse	2405	106	127	160	8	2806
Xenopus	726	0	926	4	19	1675
Zebra Fish			220			220
Totals	3131	106	1273	164	27	4701

http://www.port.ac.uk/research/using-animals-in-research/facts-and-figures/

MRC Medical Research Council

The number of procedures carried out as part of **research programmes in MRC-owned establishments** reported to the Home Office in 2016 was 318,664. This is 8% of the total of 3.94 million scientific procedures reported to the Home Office for that year. The number of scientific procedures by species and severity (Severity categories are described in the Annual statistics of scientific procedures on living animals Great Britain) can be found in the tables below. Breeding of genetically altered animals accounted for 46% of all procedures carried out.

Scientific procedures on living animals in MRC units and institutes, numbers by species, 2016

Species	2016	
	n	%
All procedures	**318,664**	**100**
Mouse	256,158	80
Rat	396	<1
Other rodents (Onychomys)	6	<1
Old World Monkey (Macaque)	61	<1
Fish	62,043	19

MRC Medical Research Council

Scientific procedures on living animals in MRC units and institutes, numbers by severity, 2016

Severity	2016	
	n	%
All procedures	**318,664**	**100**
Sub-threshold	160,314	50
Non-recovery	829	<1
Mild	86,038	27
Moderate	65,734	21
Severe (includes animals found dead)	5,749	2

Images

Annual Report 2017

*"Of the research organisations that are signatories to the Concordat (n=64)... **only a few published video** footage (n=10) or **images of animals undergoing procedures**."*

Images currently used are still usually generic ones of an animal unit, or of ‘happy’ animals in their housing with lots of enrichment etc., or just being nicely handled.

But some organisations are now trying to include a wider range of representative images or videos e.g. including animals during or after procedures.

https://www.youtube.com/watch?v=cc-flRHWEao

NB: there are already images showing these types of things on the internet...

Procedures With Care

SEARCH

Search

Home | Administration of Substances | Aseptic Technique

HOME > ORAL GAVAGE

Oral Gavage in the Rat

The material can be administered orally using a number of different techniques, although gavage using a stomach tube is the most widely used. To minimise the risk of adverse effects associated with this procedure, it is important that the operator is skilled both in the technique and the restraint method needed.

Although gavage can be undertaken using rigid dosing cannulae, flexible catheters or tubes are preferred, as these are less likely to cause oesophageal trauma. Inadvertent dosing into the lung can occur, which usually results in the animal showing immediate signs of respiratory distress. If such signs are observed, then the animal should be immediately humanely killed.

As an alternative to gavage, some materials may be consumed voluntarily in palatable mixtures (e.g. flavoured syrups, Leach et al, 2010*, Corbett et al, 2012**). Rats can also be trained to drink voluntarily from a syringe (see video on right) and this approach has been shown to be both effective and to result

VIEW BY SPECIES

- Mouse
- Rat
- View All

VIEW BY TECHNIQUE

- Oral Gavage
- Intramuscular
- Intraperitoneal
- Intravenous
- Subcutaneous
- View All

EXTERNAL LINKS

- FLAIRE Learning Flecknell Laboratory Animal Interactive Resources for Education
- Institute of Animal Technology Advancing and promoting

Secure | https://www.jove.com/video/3564/whole-animal-perfusion-fixation-for-rodents

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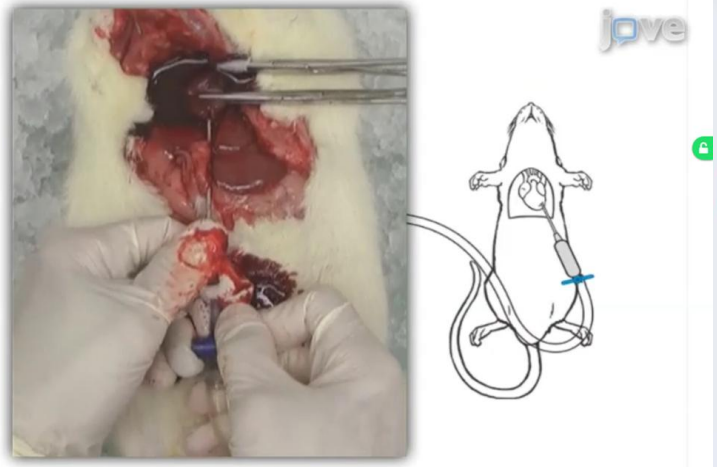
NEUROSCIENCE

Whole Animal Perfusion Fixation for Rodents

Gregory J. Gage[1], Daryl R. Kipke[1], William Shain[2]

[1]Biomedical Engineering, **University of Michigan**, [2]Department of Neurological Surgery, **University of Washington School of Medicine**



THIS ARTICLE IS OPEN ACCESS.

CHAPTERS

ISSUE 65
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1 COMMENT

PDF

EMBED

ADD TO FAVORITES

The Journal of Visualized Experiments

https://www.youtube.com/watch?v=hqThnRgMojo

Chair restraint training of non-human primates

Overview | Publications | 3Rs Impacts

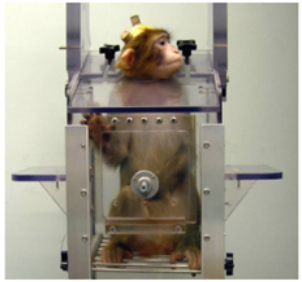
Use of a specifically-designed restraint chair is the most common method of restraint for various research studies that require non-human primates to 'sit' in place for sustained periods of time. Despite widespread use of restraint chairs, there is little published information about the methods used to train monkeys to accept this form of restraint, which can be a stressful procedure for these animals.

Working with the Yerkes National Primate Research Center at Emory University, we led an international survey to document current practice and to identify opportunities for refinement. The work is published in *Comparative Medicine*. Reprints are available on request from enquiries@nc3rs.org.uk

The survey identified large variation in the types of chair used, the methods of transferring the monkey from the home environment into the chair, the time allowed to prepare the animals for chair restraint equipment before research procedures begin, and the roles of the personnel involved.

We make several recommendations for refining the use of chair restraint, such as greater discussion of training procedures between laboratories, more pre-study training based on positive reinforcement techniques, use of standard operating procedures to increase consistency in animal training and monitoring, and seeking advice from specialist training consultants.

Ensuring that the chair restraint process is as fully refined as possible will reduce any



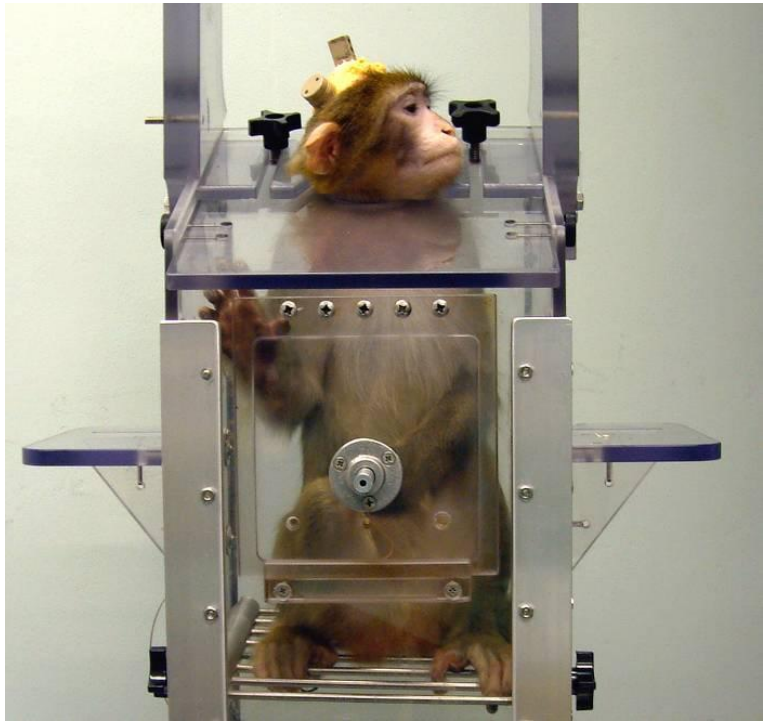
Office-led project

Status:
Active

NC3Rs Scientist
Dr Mark Prescott

Primary 'R'
Refinement

Scientific Discipline
Pharmaceuticals and chemicals
Neuroscience and behaviour



Summary

Providing balanced information - *which includes meaningful and honest information about what animals actually experience* - is important for the credibility of the Concordat and for informing the public debate (which was the stated aim of the Concordat at its launch).

Suggestions for improvements

- Think about the ‘harms’ or impacts involved from the animal’s perspective.
- Improve quality of NTS and publish on own website.
- Provide ‘case studies' e.g. of how 3Rs have been implemented in your establishment.
- Publish severity stats on own website.
- Use a range of representative images, including animals being used in procedures.

Breakout discussion - Question 1

- Is there pressure not to talk about ‘harms’.
- If so, do you think this is real or perceived?
- Who is exerting the pressure?
- Do you challenge this?
- How?

Breakout discussion - Question 2

- How well do you think your establishment is currently doing at talking openly and honestly about harms?
- How do you think you could move things on?
- What help might you need to do this?