

Ethics and Legislation

Caroline Chadwick

Director

Biomedical Services Unit

General considerations

- Legislation
- Governance
- Experimental Design
- Adoption of 3Rs principles

Legislation

- In the UK all work involving living animals is covered under Animals Scientific Procedures Act 1986 (ASPA)
- In Europe the legislation is Directive 2010/63/EU

Animals (Scientific Procedures) Act 1986

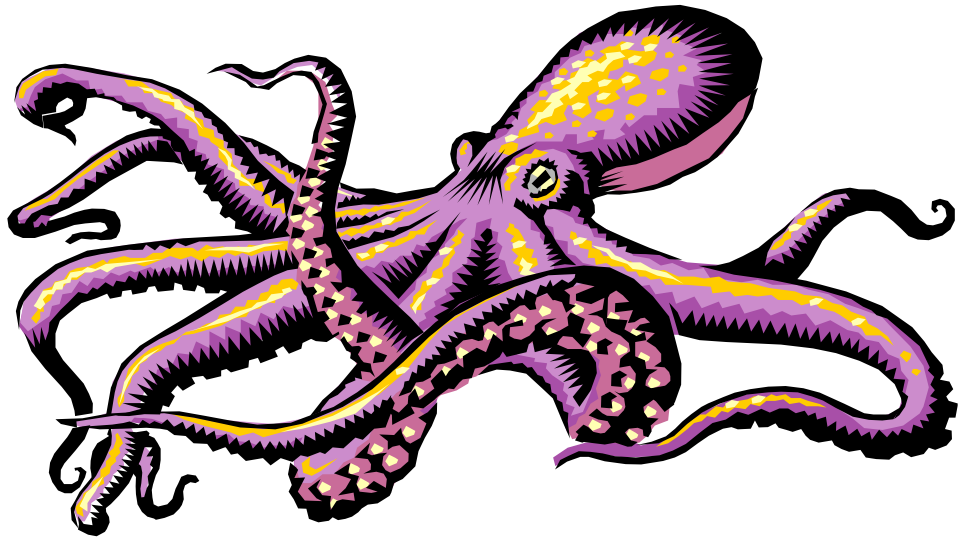
ASPA

The Act makes provision for the protection of animals used for experimental and other scientific purposes

Animals (Scientific Procedures) Act

“Protected animal”

Any living vertebrate other than man and any living cephalopod



Licensing system

The Act controls:

- The place where regulated procedures are to be performed;
- The type of work, the species and the maximum amount of suffering they can be exposed to
- The people who are to perform these procedures

Three types of licence:

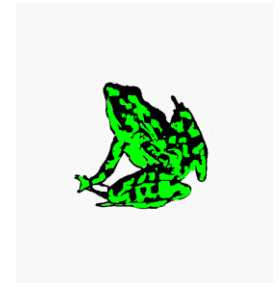
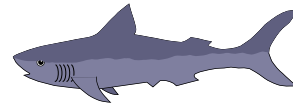
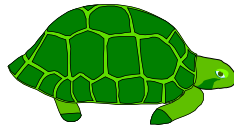
1. Premises (Establishment Licence)
2. Project (Project licence - research programme)
3. Persons (Personal licence)

- Named veterinary surgeon
- Named animal care and welfare officer
- Named Person Responsible for Compliance
- Named person responsible for training and competency
- Named Information Officer

Animals (Scientific Procedures) Act

“Protected animal”

Any living vertebrate other than man and any living cephalopod.



Embryonic and foetal forms of mammals, birds and reptiles are protected during the last third of their gestation period. Fish and amphibia once they can feed independently and cephalopods at the point they hatch.

Zebrafish

- In most laboratory conditions they are considered to be free feeding after D5 post fertilisation
- This can be influenced by temperature, local conditions and genotype

Euthanasia

- Suitably trained and competent individuals
- For Zebrafish Larvae overdose of anaesthetic
- Confirmation of death – disruption of membranes

Governance

- All legislation is covered, appropriate licences.
- AWERB – Animal Welfare and Ethical Review Body
- An AWERB must exist in all establishments

AWERB UK

- Retained previous ethical review process
- Exceeds minimum standards in the EU legislation
- Local AWERBS function in different ways

AWERB Functions

- Their function will be to scrutinise the ethics of proposed work;
 - to propose reductions in the numbers of animals used,
 - to propose refinements to the procedures to reduce suffering,
 - to propose replacement of animals, wherever possible
 - to advise on the care and accommodation of animals

AWERB Composition

- Named persons –
- NVS
- NACWO
- NTCO
- NIO
- PPL Holders
- PIL Holders
- Lay members

The 3Rs

- The publication of the principles of humane experimental technique by Russell and Birch in 1959 marks the birth of the 3Rs principles

3Rs

- **The 3Rs - Replacement, Refinement and Reduction - are a widely accepted ethical framework for conducting scientific experiments using animals humanely.**

Reduction

- **Reduction** refers to methods which minimise animal use and enable researchers to obtain comparable levels of information from fewer animals or to obtain more information from the same number of animals, thereby reducing future use of animals.

Experimental Design

- <https://www.nc3rs.org.uk/experimental-design>

Replacement

- An experiment shall not be performed if another satisfactory method of obtaining the result sought, not entailing the use of an animal, is reasonably and practicably available

Replacement

- Replacement can be defined as methods, strategies or approaches which do not involve the use of live animals. Replacement may be achieved through a number of tools or their combinations including
- *in vitro* systems using tissues, whole cells or parts of cells
- systems based on biochemical approaches, i.e. using synthetic (macro)molecules as proxies of (reactive) toxicity targets. Such methods are referred to as "*in chimico*"
- computer-based models and approaches – often termed *in silico*
- use of 'omics' technologies (e.g. transcriptomics, proteomics and metabonomics)
- non-testing approaches such as 'read-across' technique

Refinement

- **Refinement** refers to improvements to scientific procedures and husbandry which minimise actual or potential pain, suffering, distress or lasting harm and/or improve animal welfare in situations where the use of animals is unavoidable. It applies to the lifetime experience of the animal. There is evidence that refinement not only benefits animals, but can also improve the quality of research findings.

The NC3Rs

- The NC3Rs is the UK's national organisation which leads the discovery and application of new technologies and approaches to replace, reduce and refine the use of animals for scientific purposes ([the 3Rs](#)).

- <http://www.understandinganimalresearch.org.uk/resources/video-library/breeding-zebrafish/>

3Rs resources

- NC3R's
- UAR
- UFAW



Any Questions ?