

BRIEFING NOTES ON THE USE OF ANIMALS IN RESEARCH

Animal research in the UK: what, where, who and how much?

- Scientists use animals in **medical, veterinary and basic research**, to develop treatments for humans and animals, and to understand biological processes.
- Scientists refer to '**animal models**' to describe how animals are used to simulate the physiology of humans, or a medical condition that affects humans.
- **Genetically modified (GM) animals**, usually mice, rats and fish, are used to understand the function of particular genes and to study the genetic factors of diseases.
- Animal research takes place across a range of UK institutions including universities, teaching hospitals, specialist biomedical labs and veterinary research facilities.
- Specially trained and qualified researchers, called animal technologists, look after research animals and carry out the vast majority of procedures on animals in UK labs (though are not responsible for research).
- In 2013, 4.12 million **procedures** were carried out on animals. By species: 75% mice; 12% fish; 6% rats; 3% birds; 2% other mammals (inc. cats, dogs, and primates); 0.3% reptiles/amphibians.
 - Breeding GM animals accounts for around 50% of all procedures.

Why does animal research have to take place and why is it increasing?

- New medical treatments are required by law to be tested on animals before being used for human trials, and regulatory work, like testing batches of drugs, requires animal screening in order to protect patients.
- The number of procedures carried out on animals fell significantly after a peak in the mid-1970s but has steadily risen since the early 2000s; GM breeding accounts for much of the increase in the last decade.
- Notably, the growth in biomedical research in the UK far outstrips the increase in animal usage because a growing proportion of non-animal methods are being used wherever possible.

When are scientists allowed to carry out animal research?

- It is illegal to use animals if viable alternatives exist, and scientists are required by law to consider the **3Rs**: to **Replace** the use of animals; **Reduce** the number needed; or **Refine** procedures to cause less suffering.
- The UK has some of the strictest regulations in the world, and the Home Office requires licences to be held by the institution and the researcher, as well as for the individual project.
 - All facilities where animal research is carried out are subject to regular Home Office inspection.
- Before a project is considered for a licence it must first pass the ethical review process of the host institution. This process includes the views of non-scientists and lay people, spreading the responsibility outside the academic and scientific community.
 - The ethical review process weighs up harm to the animals against the benefits of the research, and additional conditions must be met for projects with traumatic procedures and for those involving large or companion animals. Primates in particular have a much higher threshold for acceptability.

Where do the scientific community and general public stand on animal research?

- Surveys consistently show the vast majority of scientists support the use of animals in research (see further info), but there has always been a small minority who are sceptical of the utility of animal experimentation.
- Studies have shown that the best standards of welfare lead to better quality research, and pressure to improve welfare has largely come from the scientific community.
- Public attitudes have remained largely positive over the last decade (see further info).

See overleaf for topics raised by animal rights activists

Topics raised by animal rights activists

Success/failure in developing medical treatments

Animal research has contributed to the overwhelming majority of medical advances, often through basic research to understand disease. But animal testing is also a crucial safety screening process in the development of new treatments. So while it is true that a great deal of animal experiments have not directly led to medical advances, they have ruled out many potential treatments that would have posed a threat to human health. Also, no-one would fund research that had no possible chance of leading to anything.

Are results of animal experiments relevant to human health?

Specific animals are chosen in experiments because they are similar to humans in a particular way – e.g. the way they react to a certain disease. Screening identifies side effects in animals that would also affect people. In addition, many drugs developed for people are also used to treat animals.

Suffering

The law states that anaesthetics must always be used, unless the giving of an anaesthetic would itself be more traumatic than the procedure in question; 71% of procedures are mild enough not to require anaesthesia, such as a blood test. Anything which may cause an animal a level of suffering equivalent to, or higher than, inserting a hypodermic needle qualifies as a procedure. This could be anything from breeding to an invasive technique.

Severity: The Home Office classifies the severity of procedures as mild, moderate, severe, or non-recovery (where the animal is killed under general anaesthetic). Only 2% of licensed projects include procedures that require them to be classified as severe.

Non-animal research methods

There are a variety of non-animal research methods which are used alongside animal testing and reduce the number of animals that would otherwise have been used. These include tissue cultures, such as with stem cells, computer models and clinical trials in humans. Non-animal methods account for the majority of biomedical research, but there are important research questions that such methods cannot answer, and which still require animals. To illustrate, in the process of developing a drug a large initial group of potential drugs may be screened and refined using non-animal methods. The likelihood of success is therefore much higher for the smaller group of drugs then taken through animal testing and on to clinical trials in humans.

Secrecy

Activists have claimed that the animal research visible to the public only represents a sanitised fraction of what is actually going on. While it is true that the legacy of extremism makes some researchers cautious, institutions are increasingly giving journalists no-holds-barred access to their facilities. Moreover, the statistics show the vast majority of procedures are mild and that welfare standards continue to rise. Pictures accompanying claims by animal activists often do not represent current research and may be old or from outside the UK.

Cosmetics and household goods

Animal testing for cosmetics and their ingredients was banned in the UK in 1998. Though not illegal abroad, the EU banned the sale of cosmetics developed through animal testing in 2013. Animal testing for household products is legal, though no testing has occurred in the UK since 2010 and there is pressure to introduce a ban.

What does the future hold for animal research?

While there will be continued pressure to reduce the amount of suffering caused by animal research, it is very unlikely ever to be completely replaced by other research methods. New avenues of research, and new pressures to treat existing and novel diseases – such as the growing number of people with neurodegenerative diseases – make it hard to envisage a world without animal testing.

Links to further information:

Home Office website giving information on the regulation of animal research, and yearly statistics for animal procedures in the UK. Includes a 'quick start' guide to the requirements of the Animals (Scientific Procedures) Act 1986, and a transitional guide to explain the how new European Directive will affect this act.

www.homeoffice.gov.uk/science-research/animal-research

Understanding Animal Research (UAR) provides extensive information on animal research in the UK and beyond. UAR have resources for journalists and provide links to a comprehensive list of organisations focused on animal research.

www.understandinganimalresearch.org.uk

AnimalResearch.info is a collaboration of scientists and expert contributors who provide information about the contribution of animals to scientific advances, and the rationale for why they are used.

www.animalresearch.info

Most recent Ipsos Mori poll 'Views on the use of animals in scientific research' (2012). Polls are commissioned annually by the Department for Business Innovation and Skills.

www.ipsos-mori.com/researchpublications/publications/1512/Views-on-the-use-of-animals-in-scientific-research.aspx

A 2011 poll of biomedical scientists, conducted by the journal Nature, including questions regarding whether animal research is necessary for science.

www.nature.com/news/2011/110223/full/470452a/box/1.html (Graphic summary)

www.nature.com/nature/newspdf/animal_research.xls (Data)

The National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs) is tasked by Government with supporting the UK science base through the application of the 3Rs.

www.nc3rs.org.uk

The Institute of Animal Technology and Laboratory Animal Veterinary Association are membership organisations for scientists, clinicians and technicians working with research animals.

www.iat.org.uk

www.lava.uk.net

These Briefing Notes have been written by the Science Media Centre in consultation with a number of scientists, science press officers and broadcast journalists. They are not intended as a comprehensive summary on a subject, but rather a snapshot of the basics, of points of controversy and a pointer towards sources of more detailed information. They are subject to change and will be updated as and when the science moves on.

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