



What is wrong with
animal experiments?
A guide for students.

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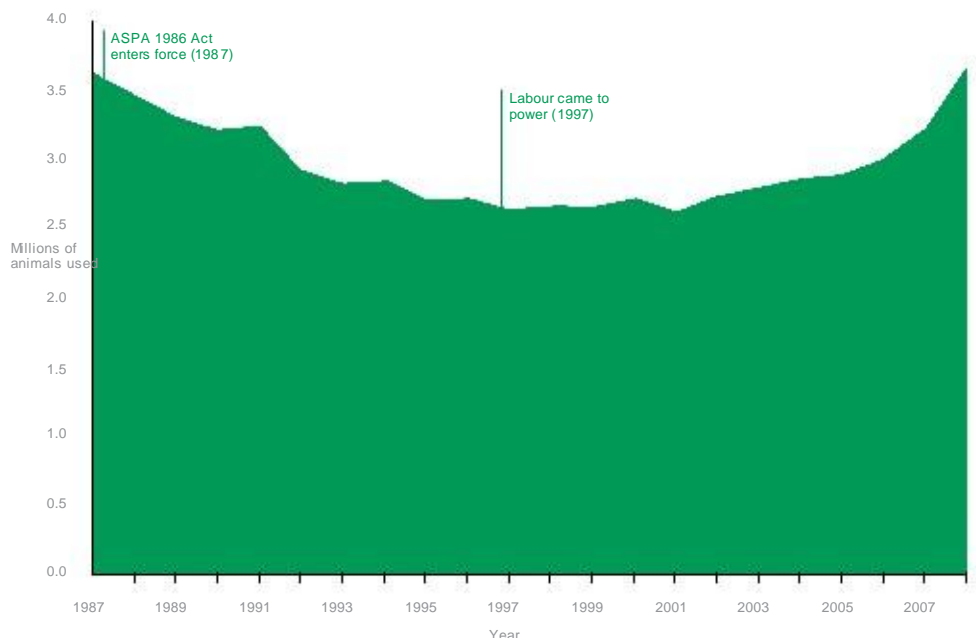
Introduction

'Vivisection' was originally used to describe cutting up live animals in scientific experiments. Today, the term is used more generally to describe any experiment that may cause pain, distress or harm to a living animal, usually conducted in a laboratory.

In Britain it is against the law to cause unnecessary suffering to animals. However, under a special law, the Animals (Scientific Procedures) Act created in 1986, the government allows scientists to carry out potentially painful experiments on animals. This law protects scientists from being prosecuted for doing what would otherwise be seen as cruelty to animals.

Over 3.5 million animals were used in experiments in 2008 in the UK alone. Some of them were poisoned, starved, deprived of water, subjected to electric shocks or invasive surgery, or infected with deadly disease. In two-thirds of all experiments, no anaesthetic is used and, at the end of the experiment, the vast majority of the animals are killed, often by being gassed.

Currently, the number of animals used in experiments is on the increase, following a large drop in the 1970s. The UK government has no strategy to bring the numbers down.



Animals used are:

Monkeys

The UK uses over 3,000 monkeys each year, mainly to test the safety of new drugs or in brain research.

Dogs

The UK uses over 4,000 dogs each year, mainly to test the safety of new drugs or in heart research.

Rabbits

Are still used in their thousands to test whether chemicals are going to be irritating to the skin or eyes or cause fever reactions, even though there are alternatives to all these tests.

Mice and rats

78% of experiments use

these sensitive creatures, mainly because they are cheaper to use, breed quickly and have shorter lifespans.

Other animals

Many thousands of other animals including cows, pigs, sheep, horses, guinea pigs, birds, fish and even wild animals are used for a variety of reasons including veterinary research.

Animals are used for:

- **Drug development:** animals are used in the development of new drugs for both humans and animals.
- **Toxicity (safety) testing:** animals are used to test the safety of new products such as washing powder and food additives.
- **Basic medical research:** this is also called 'curiosity driven' research and is simply to find out how animals' bodies work. It may also include generating new 'models' of human disease by creating GM animals.
- **Education:** animals are still used to train new animal researchers and surgeons.
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Global problem

Animal experiments are a global problem. We have estimated, based on official statistics, that over 115 million animals are used worldwide every year. The UK is one of the largest animal testing countries in the world and actually the largest in Europe, using at least 3.5 million animals every single year.

The use of primates by the research industry is not just an animal welfare issue but is directly leading to the destruction of native species. Primates are still trapped in their thousands each year in Asia to breed or be shipped abroad to laboratories in Europe and the USA.

Wasteful

Animal research is very wasteful of money and animal lives. For example, just one study to see if a chemical might cause cancer takes 5 years from start to finish, uses 860 animals and costs between £1-2 million.

Out of 115 million animals used worldwide every year, only approximately 20 brand-new drugs are approved for human use by the main drugs regulator in the USA – not only does this show that animals are not always used for vital medical research, but also that those animal tests are not very productive!

Unreliable

Because animals do not get many of the diseases we do, such as heart disease, many types of cancer, HIV, Parkinson's disease, schizophrenia, and so on, they have to be artificially induced. Not only can this involve some very cruel practices such as brain damaging, surgery, injection with toxic chemicals or infected tissue from other animals, but the diseases the animals get are not the same as the human disease. For example primates used in HIV/AIDS research are injected with the primate version – SIV or SHIV – which causes illness much more quickly than HIV does in humans. Primates used in Parkinson research have a toxin chemical injected into their brains which causes similar symptoms but these can be reversed; however patients with Parkinson's sadly do not get better.



Ethics and animal suffering

Animals experience pain and suffering or well-being and happiness and therefore, like people, have their own individual needs and interests which should be respected.

People who support these views may say that they believe in 'animal rights'. While not everyone accepts the idea of 'animal rights' almost everyone in our society would agree that cruelty to animals is wrong.

For example in a recent opinion survey, 76% of the British public agreed that "the Government should, as a matter of principle, prohibit experiments on any live animals which cause pain, suffering, distress or lasting harm".

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Believing in 'animal rights' mean that animals, like humans, should be considered as individuals. The most basic right of any individual is to be treated with respect.

"Surely it is the least of all rig hts to be spared the worst of all wrong s"
Dr Walter Hadw en, science head of the BUAV 1904-1932

Astonishingly, some of those who support vivisection say that the animals do not suffer. However there is overwhelming scientific evidence, not to mention common sense, that they do.

For a start, an experiment does not need to be licensed if there is little chance it would cause the animal to suffer. All of the 3.5 million licensed experiments conducted on animals in the UK have the potential to cause suffering to the animals involved, starting from giving the animal an injection to causing major brain damage and even death.

Here are some of the experiments that are commonly conducted on animals. Don't you think these might cause the animal pain and distress?

Cancer research

Implant cancerous tumours inside a mouse.

Psychology research

Take an animal away from their nestmates or mother and keep them entirely on their own; place the animal in a small box and give them electric shocks if they press the wrong lever.

Toxicology

Hold an animal down and force an industrial chemical down their throat that might make them sick or even kill them.

Brain research

Take out part of an animal's brain under surgery and force them to perform tests.

Food safety

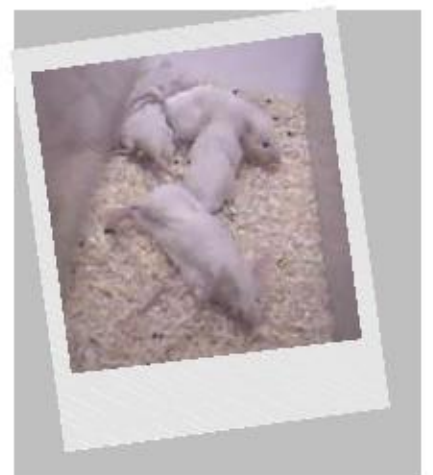
Inject ground up shellfish into the stomachs of mice and count how many die from paralytic shellfish poisoning.

Our undercover investigations, where we secretly film inside laboratories and view the actual procedures, have also revealed the suffering endured by the animals.

At Cambridge university we witnessed mamosets (small primates) being brain damaged under surgery and then being left for up to 15 hours alone in perspex boxes to recover. Some of the mamosets died from their injuries, others were left with epilepsy and paralysis, side effects of a stroke, which was the aim of the experiment.



At a commercial contract testing laboratory in the UK mice were literally poisoned to death to test batches of botox (a medical product that is more often used by cosmetic surgeons). Hundreds of mice at a time were injected with botox into their abdomens which several hours later caused them to suffocate to death.



Do animal experiments work?

It is often claimed that animal experiments directly lead to new medicines by 'proving' that they work. This leads to the awkward conundrum of 'wouldn't you rather your dog was used to produce an important medicine than your child died of some awful disease?' This is a huge oversimplification, not to say distortion, of the way that animals are used - and is not supported by scientific evidence.



Dangerous results

Modern drugs are becoming more complex and specific to humans. As a result, using animals to see if they work safely is even less useful, and may be dangerous. In 2006, a new type of drug called a monoclonal antibody (TGN1412) was tested on human volunteers in a clinical trial at Northwick Park hospital. Earlier tests on monkeys at 500 times the dose given to the humans failed to predict the severe side effects. All six of the young volunteers became seriously ill and nearly died; one later had to have his toes amputated. Researchers only later tested the drug using a simple 'test tube' method and found they could have predicted these dreadful results.

- One study found 19 of 20 substances

judged to be safe in humans actually caused cancer in rodents

- Over 1,000 potential treatments for stroke have been tested in animal models, only approximately 100 of these have been tested to human trials, and all of them failed

- A review by the drug industry of animal experiments found that tests on rats and mice only predicted 43% of human side effects

- The disastrous effects of a drug called thalidomide in the 1960s (where thousands of babies whose mothers had been taking the drug for morning sickness were born with limb deformities) is often used as a strong reason for why we need to test on animals. However, a review of these animal tests found that they only predicted damage to human foetuses just over 50% of the time – in other words, no better than tossing a coin

"The history of cancer research has been the history of curing cancer in the mouse. We have cured mice of cancer for decades and it simply didn't work in human beings."

Dr. Richard Klausner former director of the US National Cancer Institute

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Animal experiments are conducted in order to increase the researchers' confidence in a medicine or chemical or idea, by identifying many of the same effects you would see in a human. Depending on the substance tested this might be side effects (safety) and/or whether the drug actually works (efficacy). In this way animal tests are supposed to make human trials of new medicines safer and more likely to succeed.

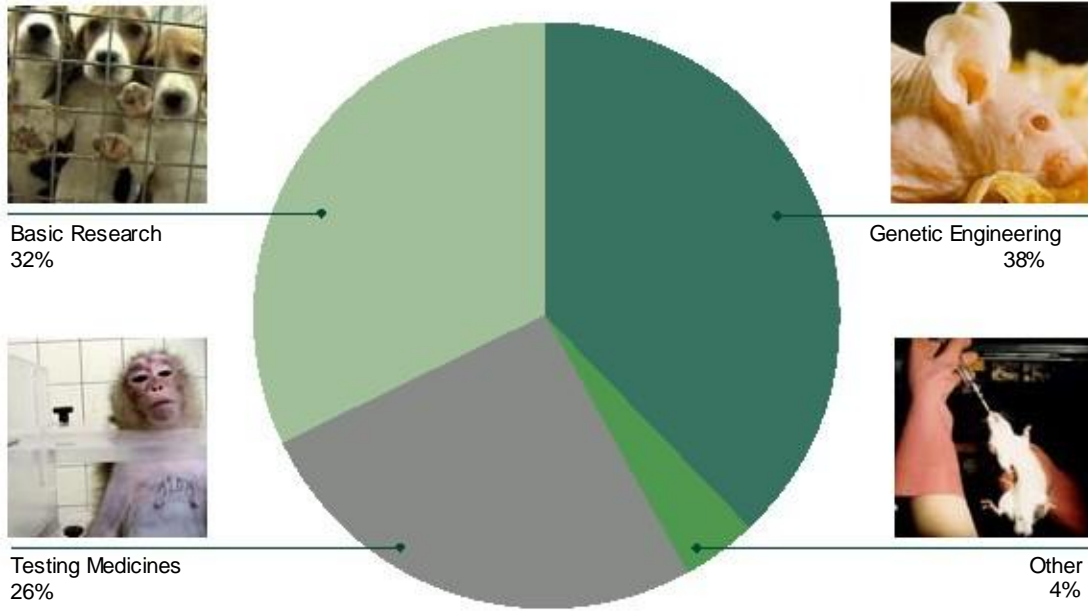
However, when the results of animal tests have been compared to what we see in humans, the results are very poor. For example:

- Over 85 HIV/AIDS vaccines have been shown to work in monkeys, but to date none of these have worked in human trials

It is perhaps not surprising therefore that despite many decades creating animal models of conditions like stroke, Alzheimer's, HIV, Type 1 diabetes and multiple sclerosis, we do not yet have reliable, effective treatments for these diseases.



Are all animal experiments necessary?



In the UK only 22% of animal experiments are done to see if new medicines work and are safe for humans.

There are many uses of animals that most people would believe are not vital:

Tobacco, alcohol and drug research

The UK no longer tests tobacco products (i.e. brands) on animals but they are still used to test the effects of tobacco, alcohol and illegal drugs such as cocaine, even though we know what these substances can do to us!

Cosmetics

The use of animals in cosmetic testing is now banned throughout Europe including the UK, however it is still possible to test chemicals on animals which end up in cosmetics. There are also loopholes, for example botox can be tested on animals because it is a medicine even though it is mostly used for 'cosmetic purposes'.

Household products

In recent years hundreds of animals have been used to test household products in the UK alone. These products include washing powders and cleaners. The government

is refusing to ban their use despite their relatively trivial function.

Chemicals and pesticides

Thousands of chemicals are used in industry and these are tested on animals in an attempt to 'prove' they are safe.

Food

Food additives, health foods such as herbal products and even shellfish are on tested on animals to see if they are safe to eat.

Even apparently vital medical research on animals is not as useful as it might first appear. There have been several studies that have shown that a large proportion of animal research is not actually used. There are also many examples of animal tests being conducted at the same time as similar studies on humans by other researchers, suggesting that animal tests do not play the vital role we are led to believe they do.

One survey of apparently vital studies on chimpanzees (our closest relative) found that only 14% of these studies featured in reports of human medical treatments.



GM animals

Genetically modified (GM) animals are used in an attempt to understand genetics and produce human-type versions of diseases. 'Genetic engineering' has a unique capacity to cause immense suffering to animals. Hundreds of animals may be 'created' in an attempt to obtain an individual with a particular set of characteristics. Some of these animals may suffer severe, even lethal, unexpected effects, such as the development of tumours, brain defects, limb and skull deformities, infertility, arthritis, diabetes and behavioural problems.

What are the alternatives?

There is a huge range of non-animal research techniques that, as well as being a more humane approach to science, can also be cheaper, quicker and more effective.

These include:

Cell cultures

Almost every type of human cell can be grown in culture and this has been key to understanding cancers, sepsis, kidney disease and HIV/AIDS. Cells grown in test tubes are routinely used in chemical safety testing, vaccine production, medicines development and to diagnose disease.

Chemical methods

Analytical techniques used by chemists can be used to detect toxins in products, such as the LCMS method to replace the use of mice who are injected to detect toxins in shellfish.

Tissue and organ culture

Tissues from humans donated after surgery or even death can be used to investigate diseases and also test whether drugs might be safe and effective, before they are used on humans.

Computer models

Programs run on computers can be used to predict whether a chemical is going to be harmful based on its similarity to other chemicals, or to even simulate body processes such as heart rate.

Human volunteers

Studies of humans can often be the best way to replace animals. We can now see inside peoples' brains using imaging machines or test microscopic amounts of new drugs harmlessly on volunteers, as well as conduct large scale studies of populations to help see what might cause disease (epidemiology)

Scientists are moving away from using animals but it is a slow process and they need more support.

Funding problems:

Currently, not enough money is put into researching more alternatives. For example in 2007, the UK government funded alternatives projects with £2.6 million, however that same year they provided general biomedical research with funding of £643 million.



Alternatives are often not used when they should be:

In 2009 the BUAV found that at a contract testing laboratory in the UK rabbits were being used to test whether drugs might cause fever reactions (pyrogenicity tests), even though an alternative was acceptable to the European or US regulatory authority. The rabbits were restrained in 'stocks' for hours at a time with temperature probes inserted up their bottoms, and deprived of food and water for long periods.

"From my knowledge of the scientific community, I know that it is partly indifference – and partly a fear of new developments. Some scientists simply find it too much bother to change techniques, or dismiss humane methods before they are fully developed."

Dr Gill Langley, former science director at the Dr Hadwen Trust for Humane Research

Why do researchers continue to use animals?

It is our belief that researchers use animals because it is the conventional way of testing drugs. Appreciating how unreliable animal tests often are would mean changing how they do their experiments, and many researchers cannot see any other way of getting the results they need. Some scientists seem to like doing research that leads to more questions because this means more work for them to do. And, because there is a common perception that researchers wouldn't do animal research unless they really needed to, their studies go unchallenged.

"We can't use toxicology that is 60 years old."

Prof Thomas Hartung, former head of the European Centre for the Validation of Alternative Methods

The way forward

For over 100 years, the BUAV has been campaigning peacefully, legally and professionally to end animal experiments – and to create a world where nobody wants or believes we need to experiment on animals.

Our work is backed up by extensive scientific knowledge and we work closely with an international network of scientists, lawyers, investigators and other experts. Although only a small organisation, the BUAV is one of the world's leading authorities on animal testing issues.

Over recent years we have successfully campaigned to:

- Ban the capture of wild primates for UK research
- Ban the testing of cosmetics products and ingredients in the UK and European Union
- Ban the use of the LD50 oral toxicity tests in the UK in which animals could be force fed chemicals until 50% of them died



What can you do?

Commit to only buying 'cruelty free' cosmetics and household products. Look for the leaping bunny logo which means that the company has promised not to test on animals or buy ingredients for their products that have been tested on animals.

For a full list of companies visit www.gocrueltyfree.org.

Encourage your school to go cruelty free by only using products in bathrooms and kitchens that have the leaping bunny logo. Contact us at info@buav.org for more information on how to make your school 'cruelty free'.

Talk about the issue amongst your friends - many people are surprised to hear the facts and are less supportive of animal experiments when they know more about them.

Find out more about the BUAV's campaigns and how you can get involved at www.buav.org. You can also find us on Facebook - search for 'BUAV-The Campaign to End All Animal Experiments' or follow us on Twitter at www.twitter.com/thebuav.



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