Animal experiments

Every year, around 3 million animals suffer painful experiments and are killed in UK laboratories. Dogs, cats, horses, monkeys, rats, rabbits, fish, mice and other animals are treated as mere laboratory tools. Some people believe that these experiments are necessary for human progress. But the more we learn about human biology, the more we find that experiments on animals are misleading, unreliable and inferior to modern non-animal research methods.

Do animals suffer in experiments?

The animals used in experiments are sentient beings which means they are capable of experiencing pain and fear.

Animal experiments have come under criticism recently, and two thirds of the British public say they are concerned about the use of animals in research[1]. But most animal laboratories work under a curtain of secrecy, behind closed doors and out of the public eye. It is even illegal to reveal how animals are treated in an experiment if the researchers want to keep this secret[2].

Mice are commonly used, not because they are similar to humans, but because they are small, cheap and easy to breed.

The details we do know about animal experiments tell us the scale of the suffering involved. The government describes an animal experiment as a procedure which is 'likely to cause pain, suffering, distress or lasting harm'[3]. These procedures include animals being force fed or injected with poison, being electrocuted or having their vital organs damaged. All the animals used are denied their freedom and forced into stressful, unnatural environments, usually in small cages or kennels, with no social contact.

Some animals will be used in experiments over a period of months, or even years. Once they are no longer needed, almost all animals are killed.

Beagles are the most commonly used dogs because they are small, docile and trusting

1. Basic research

Over half of animal experiments (53% in 2022) are carried out for basic research "to study the structure, functioning and behaviour of living organisms"[3]. This type of "curiosity-driven" research is not designed to find cures or treatments for human diseases and has little or no relevance to human health.

2. Product safety tests

Animals are used in toxicity tests supposedly to find out how safe new medicines, ingredients and industrial chemicals are. Animals are made to inhale or eat toxic chemicals or have them rubbed into their skin or dripped into their eyes.

LD50 or "Lethal Dose 50%" is a particularly cruel test that was invented in 1927 and is sadly still used today. It involves giving increasing amounts of toxic chemicals to groups of animals, usually mice, until 50% of them are killed. It does not produce data that is relevant to humans.

Animal Aid funded a safe and animal-free alternative to the LD50 called "AcutoX". This test exposes ethically sourced, human skin cells to increasing amounts of a test chemical, to see how damaged the cells are. The more damaged the cells, the more toxic the chemical[4]. The data produced is accurate, precise and, crucially, it is actually relevant to humans.

There is a partial ban on animal testing for cosmetics such as soap, deodorant, toothpaste, makeup and perfume in the UK.

This means that cosmetics or ingredients which are only used in cosmetics cannot be tested on animals. However, as some ingredients have more than one use, many cosmetics sold in the UK contain ingredients which have been tested on animals.

There is a growing range of cruelty-free products available.

Look out for one of these logos on products:

crueltyfree NOT TESTED ON ANIMALS

See our *Product safety testing* factsheet

3. Warfare research

Animals are maimed, shot, blown up and exposed to poisonous chemicals, gases, deadly toxins, viruses and bacteria in warfare research.

Marmosets are used in Parkinson's disease research.

4. Medical research

New medical treatments for people are tested on animals first. Because human diseases are non-existent or fundamentally different in other animals, researchers try to recreate human diseases in animals so that they can study them and try to find cures. Animals have their DNA altered, are given cancer, are infected with viruses, are brain-damaged and are injured in other ways in an attempt to model human illnesses.

For example, in Parkinson's disease research, monkeys' brains are deliberately damaged with toxic chemicals to recreate the symptoms of illness[5]. In heart disease research, the condition is induced in dogs by blocking the arteries to their heart[6].

None of these are similar enough to human diseases to give us reliable results. It is hardly surprising that nine out of ten new medicines that pass animal tests, fail when they are tried out on humans[7].

Genetically altered animals

Genetically altered animals have genes added, removed or changed to recreate different human diseases such as diabetes, cancer, Alzheimer's and even obesity. Researchers claim this makes experiments more reliable, but these experiments totally fail to consider the environmental and genetic factors which affect the humans who develop these diseases.

A staggering amount of time and money, not to mention animal lives, are wasted on attempts to improve animal models. These models simply don't deliver the treatments for diseases which are urgently needed[8]. Wouldn't these resources be better invested into human-relevant research?

See our *Genetically modified animals in biomedical research* factsheet

Do animal experiments save lives?

Many people believe that all this suffering is justified because it benefits humans. But what if that's not the case?

While we share similarities with other animals, there are huge differences in the biology of how our cells work. These differences mean that seeing the effects of a medicine in one species tells you very little about how it will affect a different species.

Far from saving lives, misleading results from animal experiments may actually put human lives at risk and delay the production of effective treatments for human disease.

Chemicals that are harmless to humans may be toxic to animals, and vice versa. Many drugs that were passed as safe in animal tests have been withdrawn after causing serious side effects, even deaths, when given to people. For example, when the drug TGN1412 was first tested in humans at doses 500 times smaller than those found to be safe in animals, all six volunteers suffered life-threatening reactions[9]. The arthritis drug Vioxx, which had been tested 'successfully' on animals, caused tens of thousands of heart attacks and strokes before being withdrawn[10].

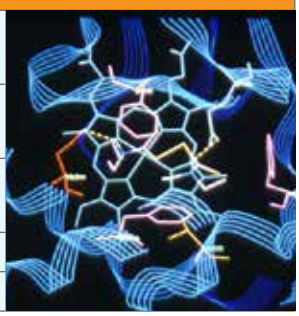
To make matters worse, drugs which are safe in humans and could potentially provide cures to diseases, may be toxic to animals and therefore will never reach human trials. Safe and effective treatments such as penicillin, paracetamol and aspirin can all be fatal in different species such as rats or dogs[11]. It is impossible to know how many potential treatments we have missed out on due to misleading data from animal experiments.

The above examples are not one-offs, but represent the wider picture — that animal testing simply fails to ensure human safety[12,13]. Governments and institutions around the world are beginning to recognise this. Both the USA and UK[14] governments have said that there is no legal requirement for animal testing in medical research. The EU is working on a plan to phase out the use of animals in toxicity tests[15].

What are the alternatives to animal experiments?

Stopping animal experiments will not mean an end to medical progress. In fact, because animal research cannot reliably be applied to people, human-based studies will actually give better results.

Humane non-animal methods include:
Human cells or tissue cultures studied in vitro (in a test tube) to gather information about disease and to test drugs.
Computer programmes and artificial intelligence that model the workings of human organs so that researchers can predict how drugs will work.
Organ-on-a-chips which allow new drugs to be tested by accurately modelling what goes on in a human organ or the whole body.
Epidemiology studies to observe and compare groups of people to discover the causes of illness.
Clinical case studies that involve studying patients to discover more about treatments.



See our *Humane research* factsheet for more information.

What you can do!

- Join Animal Aid, find out more and order leaflets to spread awareness.
- Buy cruelty-free cosmetics, toiletries and household cleaning products with the leaping bunny logo.
- Donate to charities that don't experiment on animals: **www.victimsofcharity.org**
- Ask your teacher to invite someone from Animal Aid to give a talk on animal experiments.
- Are you a KS5 science student? Ask your teacher if you can attend our annual Future of Science conference: **animalaid.org.uk/fos-student-conference**
- Applying to uni? Check if the universities you are applying to conduct animal experiments: **universitieschallenged.org.uk**
- Sign our petition to end the LD50 test:

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References are available at: animalaid.org.uk/education/education-resources/animal-experiments

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