

Why animal testing does not work



We're all familiar with the term **animal testing**. It has been used in for over a 100 years in medicine and is still carried out today. In Great Britain, 2.54 million experimental procedures were carried out on animals in 2025. But are we familiar with the science behind why it doesn't reliably predict what happens in humans? Why do so many medicines that appear successful in animals fail in people? Have the results of animal tests ever harmed humans? And have we ever missed out on effective treatments because of animal testing?

Before we explore why animal testing does not work, it is important to understand one key scientific principle: **humans and animals are different species**. Although humans share many genes with animals such as mice, rats, dogs and monkeys, every species has evolved differently. These differences affect how diseases develop, how organs function, how the immune system responds and how medicines are absorbed, broken down and removed from the body.

What is animal testing? Is it morally justified?

Animal testing (also called animal experimentation) is the use of living animals in scientific research. In the UK, the government defines an animal experiment as a procedure that is "**likely to cause ... pain, suffering, distress or lasting harm**" to a protected animal. An estimated 115-200million animals are used in research worldwide. The most commonly used animals include mice, rats, fish, rabbits, dogs, monkeys and pigs.

Animals used in laboratories are deliberately subjected to procedures that can cause pain, suffering, distress or lasting harm. They cannot choose whether to take part or give consent. There is no moral justification for using animals in experiments.

Animals are **sentient**, meaning they can experience pain, fear, comfort and other emotions. Like humans, they have their own needs and interests.

Why doesn't animal testing work?

Animal testing does not reliably predict what will happen in humans because humans and animals are biologically different.

Every species has its own unique biology. Differences in genes, cells, organs, metabolism and immune systems mean that animals can respond very differently to diseases and medicines. A treatment that appears safe and effective in one animal may have little effect, or even cause harm, in another.

This is one of the main reasons why many medicines that appear successful in animal experiments do not become medicines for patients. Cancer drugs suffer from a notoriously high failure rate, with over 90% to 96% of drugs that "succeed" in animals later failing in human clinical trials.

Did you know?

95% of medicines that appear safe and effective in animals **fail in humans**. Developing one new medicine can take **10–15 years** and cost **US \$1–3 billion**. When medicines fail after years of testing on helpless animals, it means huge amounts of suffering has happened without producing a real treatment for human patients.

Scientists estimate that replacing animal tests with accurate human-based (non-animal) technologies, such as **organs-on-chips**, could save **more than US \$24 billion** by making medicine development faster and efficient - saving human and animal lives without causing suffering.

Unlike animal tests, these technologies use **human cells** and can even be designed to reflect differences between people, such as age, sex, genetics and disease. This is helping scientists develop medicines that are safe, effective and suited to individual patients. Even one dog's DNA is different to another breed of dog so how are we going to get cures in humans through animal testing if we cannot compare two animals within the same species?

Has testing on animals caused harm to humans?

Yes there are many documented failures of animal testing throughout history where medicines that passed animal safety tests proved catastrophic when given to humans, examples include:

- **Thalidomide:** Tested "safe" in over 10 species, including primates, yet caused **severe birth defects in up to 30,000 infants**
- **Vioxx:** While animal tests showed protective effects to the heart, the drug caused an estimated **140,000 deaths** and 320,000 strokes or heart attacks in humans
- **TGN1412:** This therapy that treated the immune system was found to be safe in monkeys but caused **multiple organ failure** in human volunteers at just 1/500th of the animal dose

Have humans almost missed out on treatments because of animal testing?

Humans have almost missed out on lifesaving treatments if we had relied on the results of animal testing. When animal tests falsely identify a safe chemical as "toxic," the almost certain outcome is the drug is abandoned. It is important to note that many highly beneficial drugs would have never been approved for use if animal testing was required as they would certainly fail animal testing. Notable examples include:

- Penicillin (fatal to guinea pigs)
- Paracetamol (toxic in dogs and cats)
- Aspirin (toxicity in rats and monkeys)