

---

## Issue Of Animal Testing In Today's Society

Imagine being forced to participate in a drug trial, with no concern for your wellbeing whatsoever. Constantly being poked and pricked, till you had no idea what was even going on. This is animal testing at its very core. Millions of animals all over the world have suffered this atrocious fate, and many more will continue if nothing is done to help them. It is considered a crime in today's world to abuse animals, so why isn't animal testing? Technology has come so far in such a short amount of time, that there are now alternatives to using innocent animals. Such as donated human tissues (from a biopsy or cosmetic surgery), computer models, volunteer studies, micro-dosing, and so on. To come to an answer to how we ought to fix this problem we've created, we must look back at our past to see how we got here in the first place. We'll look at how and why the ancients began to study anatomy. Then we'll see how their research influenced the 'modern' era of medicine as we know it. We'll look at the past and present pros and cons of animal testing, observe the ethical dilemmas we face today, and layout how we can find the solution to this problem. Finally, we will see why animal experimentation is ethically wrong and if not stopped, should at least be limited.

Animal testing is defined as performing scientific tests on animals when developing new products or drugs, according to Collins English Dictionary. It is true that throughout history, animals have proven to be very useful in the practice of medicine. Many treatments and cures have come from animals. But in the beginning, the goal was never to help mankind as a whole. The only thing worth gaining from animal testing was to satisfy humanity's anatomical curiosity. The first men to do something about this curiosity were Aristotle, Erasistratus, and Galen. These men were Greek physicians and scientists. Aristotle and Erasistratus were both some of the first to record their findings of live experimentation, while unfortunately, Erasistratus's work did not survive time. Likewise, Greek physician Galen of Pergamum was a pioneer in anatomical findings. He conducted animal experiments in the areas of anatomy, physiology, pathology, and pharmacology. He was the first to describe the complexities of the cardio-pulmonary system, and he even speculated on the brain and spinal cord function. In *De Anatomicis Administrationibus* (On Anatomical Procedures) he detailed precise experimental methods and identified the best instruments to perform specific procedures. But the most well-known physician was Hippocrates. He is known as the Father of Medicine and has the Hippocratic Oath named after him, even though he may have not actually written the oath himself. Hippocrates focused on the "natural" treatment to approach the disease. The three main categories were observed in the Hippocratic provision of care: health promotion, interventions on trauma care, and mental care and art therapy interventions. This approach is widely accepted even today. Without the benefit of the 19th-century tool, anesthesia, Galen too performed live experiments on both animals and men. During this time men could, /would never be set next to animals in comparison, even if only on a physiological level. Because men were and are the only ones who could reason, the man was thought to be a far superior creature in all degrees. However, just because they were thought to be the more sophisticated being, that didn't mean they weren't inquisitive about the other living things around them. For instance, the ancient Greeks believed that nature could only be truly understood utilizing exploration and experiment.

Modern medicine really began around 150 years ago, when physiology was accepted as part of

---

the scientific community. Physiology is the study of life, specifically, how cells, tissues, and organisms function. This was an important discovery because it is the foundation on which we build an understanding of what 'life is, how to treat diseases, and how to cope with different stresses placed upon us. One of the first discoveries was the functions of the cardiovascular and nervous systems. In 1859, Charles Darwin having heard of these new findings, came up with the theory of evolution. His theory allowed the world to see that humans and animals weren't that different from one another. However, this opened new doors for more animal testing, to see how different humans are from animals. For example, Louis Pasteur, a French chemist responsible for the process of pasteurization for milk and beer in, 1881 performed a public experiment for the anthrax vaccine. Back in the 19th century, Anthrax was a disease of sheep and cattle that was of enormous importance. Each year 5% of cattle and 10% of sheep died of Anthrax in France. In some particular areas of France and Argentina, the mortality rate of farm animals was so great the land had to be left unused. Anthrax is a zoonotic disease caused by a relatively large spore-forming rectangular-shaped bacterium called *Bacillus anthracis*. It mostly spreads in wild and domestic herbivores but can occasionally affect humans exposed to infected animal tissue or products. It does not typically spread from animal to animal nor from person to person. The bacteria produce spores in contact with oxygen. In herbivores, the anthrax bacterium produced extremely potent toxins which commonly presents as acute septicemia with a high fatality rate, often accompanied by hemorrhagic lymphadenitis. In dogs, humans, horses, and pigs, it is usually less acute. Meanwhile, Pasteur took 25 sheep that were inoculated with the vaccine, and 25 that were not. He injected all 50 of the sheep with live anthrax bacteria and after 3 days all the vaccinated sheep were alive and healthy, while the other 25 were either dead or dying. To prove his point even further, he repeated the experiment again but with 10 cows and received the same results.

While animal testing has become a rather controversial topic in today's culture, to deny the good that has come from it would be ludicrous. Many of the cures, vaccines, and drugs we use in medicine every day, came from first experimenting on animals. Without something as simple as penicillin, for example, millions of lives both human and the animal would be lost. Sir Alexander Fleming, the man responsible for the discovery of penicillin, was a Scottish bacteriologist. In 1895, he decided to leave Scotland to live with his elder brother and become and shipping clerk. After saving up enough money he began his medical studies at St. Mary's Hospital Medical School 6 years later. He originally wished to become a surgeon, but after working in the laboratories he was convinced he was meant to become a bacteriologist. On September 3, 1928, Fleming noticed that a culture plate of *Staphylococcus aureus* he had been working on, had become contaminated with a sort of fungus. This 'fungus' turned out to be a mold, which was later identified as *Penicillium notum*. The mold was inhibiting the growth of the bacteria in the petri dish. He came solely interested in all the possible uses of penicillin in the medical field. However, to stabilize and purify the penicillin for society to use he would need a large team. Working with just two young researchers would do not cut it. Fortunately, though Fleming did receive a chance to publish his findings. About 10 years later, Oxford Pathologist Howard Florey discovered Fleming's work and decided to expand on it, working with a biochemist named Ernst Boris Chain. The two decided to perform the 'mouse protection test', where essentially you would perform the ideal test that you would want to test on humans, onto animals. Florey and Chain injected eight mice with a lethal suspension of bacteria. Four were also given penicillin. The penicillin recipients survived, while the rest died, providing definitive proof that penicillin worked against serious bacterial infection. This set Florey and his team on the long road to purifying and mass-producing penicillin. Millions of people owe their lives to penicillin and other antibiotics.

---

eduzaurus.com