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Finalist

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Animals in Biomedical Research

Humans and animals have coexisted since the beginning of time. We have used them as a source of food, as pack animals, and as pets, but by far the most important use humans have for animals is in biomedical research. Three important reasons why animals are so useful in biomedical research include that it is a tried and true method for research, there is no replacement for working with a living thing, and it helps to save both human and animal lives. Although some would argue against the use of animals for this research, the good it has done far outweighs the bad.

There are many examples throughout history of animals being used in biomedical research. Some of the earliest known examples of this are the Greek philosopher Aristotle who performed experiments on animals. Later, the Roman physician Galen performed dissections on goats and pigs to gain understanding of anatomy and physiology. There are many recent examples of animals being used successfully in research. Dogs were used to find the correlation between insulin and diabetes. Researchers have placed cells from human cancer tumors into mice without rejection, which allows the study of human cancer without risking human lives. In addition, studies with mice have shown that the immune system can be stimulated by genetically altered tumors, leading to hopes that gene therapy can be used to fight cancer (CBRA). Other examples include a vaccine for Diphtheria found with the use of guinea pigs. Some of the deadliest diseases would still be around today if not for the research gathered with the help of animal testing.

Animals are important to the continued advancement of medical research. Animals are used for a number of reasons. The most important reason is that many tests cannot be completed in any other way. A living body is an extraordinarily complex system. You cannot reproduce a beating heart in a test tube or a stroke on a computer (Oxford). Animals are also biologically similar to humans. In fact, chimpanzees share more than 99% of DNA with humans and mice share more than 98% DNA with humans (CBRA). This means that animals can be used in place of humans so that humans are not put in danger. The animal's environment (diets, surrounding, sleep, etc.) are easily controlled which allows scientists to control the variables much easier in an experiment. Animals also have short life spans which allow scientists to study their entire lives. All of these factors make them excellent subjects for experiments when living things are needed.

Due to research involving animals, millions of lives have been saved or kept free from illness every year. One of the best known examples of this is polio. Polio is caused by a virus which attacks the brain, spinal cord and lungs. It caused paralysis of limbs and prevented breathing. Polio reached a peak in 1952 with over 21,000 paralytic cases. After a vaccine was developed in the late 1950s polio was brought under control and eliminated from most of the world (AALAS). This vaccine was developed by Jonas Salk with the help of Rhesus monkeys.

Biomedical research using animals can also be beneficial to animals. In 1978, there was a sudden, worldwide outbreak of a virus among dogs which caused vomiting, diarrhea, dehydration and, frequently, death. Researchers soon discovered that this disease, called canine parvovirus, was similar to the feline panleukopenia virus. Since a vaccine was already available for the feline panleukopenia virus, a vaccine for parvovirus was developed, tested, and made available for distribution within a year (AALAS). The research gathered from the experiments helps to save lives on both sides. Without the use of animals, the loss of life would be much higher.

The examples described are just a few of the many beneficial results of animal testing. This testing is recognized and supported in the medical community. Vaccinations and treatments for many major diseases today are based on new drugs, medical devices, and surgical procedures that have all come from this research. One of the most prestigious awards for medical advancement, the Nobel Prize for Medicine, reflects this. Of the 98 Nobel Prizes awarded, 75 have depended on animal testing or animal case studies. Treatment for most diseases today relies on some element of animal testing to provide better and safer options for the people affected.

In conclusion, although there is concern about the animals used to support biological research, the positive outcome in regards to medical advancement and treatment cannot be denied.

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