

**2012 PSBR High School Essay Contest
Grand Essayist**

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In 1962, the survival rate for childhood Leukemia was only four percent. Today, over eighty percent of children with Leukemia survive (Animal Research). The successful treatment of childhood Leukemia is just one of many important medical advances brought about by animal-based research. Animal rights groups argue against the use of animals in biomedical research, but no viable alternative has been found in the majority of cases. Opponents are concerned about animal cruelty. However, biomedical research is heavily regulated to ensure test animals are treated as humanely as possible, and some medical discoveries help animals as well as humans. Although controversial, the many benefits of animal-based biomedical research make it essential for improving and saving lives.

One of the main reasons animals are used in biomedical research is because of their biological similarity to humans. A pig's cardiovascular system, the immune system of mice and the reproduction system of guinea pigs function like their human counterparts (Haugen 140). Animals also suffer from some of the same health problems as humans such as diabetes, heart disease, and cancer. Mice are particularly useful since much of their DNA is identical to humans, and they can be genetically altered to display certain disorders (Judson 53-55). The study of diseases and health problems in animals helps scientists discover effective treatments for humans. Also, the shorter life span of animals makes it possible to study them throughout their entire life cycle and also to study multiple generations. These factors make animals the ideal test subjects for biomedical research.

In an effort to decrease the number of animals used in research, scientists have developed some replacements. However, these alternatives have limited usage. Computer modeling is one such alternative. The problem with using computers is they can only provide models based on known information, but research typically involves experimentation to discover new information (Animal Research). Cell cultures are useful in drug testing, but they don't show the effects a drug will have on the entire human body. While these alternatives supplement animal-based biomedical research, they cannot replace it.

Perhaps the most convincing argument in favor of animal use in biomedical research is the extensive medical advancements made as a result. Deadly diseases such as polio, pertussis, tuberculosis, measles, mumps, and diphtheria have almost been eliminated in the United States because of vaccinations developed through animal testing. The following treatments also owe their existence to animal research: antibiotics, insulin, open-heart surgery, organ transplant surgery, and spinal cord treatments to relieve paralysis (Watson 30). Current animal-based biomedical research is being used to develop new less toxic cancer drugs, and it continues to play an important role in HIV/AIDS research. Animals have also benefited from animal-based biomedical research which developed treatments for diseases such as diabetes and rabies. With one exception, every Nobel Prize in Medicine awarded since 1979 was dependent on data from

animal models (Nobel Prize). These important medical advancements would not be possible without animal-based biomedical research.

Despite the overwhelming good which has been accomplished, some are still against using animals in biomedical research. Opponents worry that the animals will be treated inhumanely. However, many laws and regulations are in place to prevent this from happening. The *Animal Welfare Act* requires that discomfort and pain inflicted on the animals must be limited (Judson 76). It also ensures that animals are housed and cared for in a humane way. The guidelines and regulations for organizations receiving federal funding are even more extensive as required by the *US Public Health Service Act* (Judson 78). In addition, scientists realize that more accurate test results will be obtained from animals which are treated humanely.

In the United States, medical progress made possible by the use of animals in biomedical research is often taken for granted. We no longer need to fear deadly diseases such as polio. Medication and medical procedures which improve the quality of our lives are readily available. Such things would not be possible if animals were not used in research, and our world would be a dramatically different place. The benefits of animal-based biomedical research far outweigh any negative aspects. Therefore, until viable alternatives can be developed, humane animal-based biomedical research should be continued.

Works Cited

"Animal Research Benefits: | Americans for Medical Progress." *Americans For Medical Progress - Because Research Needs Advocates*. N.p., n.d. Web. 7 Feb. 2012. <<http://www.amprogress.org/animal-research-benefits>>.

Haugen, David M.. *Animal experimentation*. Detroit: Greenhaven Press, 2007. Print.

Judson, Karen. *Animal testing*. New York: Marshall Cavendish Benchmark, 2006. Print.

"Nobel Prize in Medicine." *Foundation for Biomedical Research*. N.p., n.d. Web. 8 Feb. 2012. <<http://www.fbresearch.org/TwoColumnWireframe.aspx?pageid=128>>.

Watson, Stephanie. *Animal testing: issues and ethics*. New York: Rosen Pub., 2009. Print.