



2013 PSBR High School Essay Contest
Finalist

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“Why Are Animals Used in Biomedical Research?”

Biomedical research is a way to prevent and treat diseases that cause illness and death in both people and animals. The ultimate goal of biomedical research is to develop effective treatments and cures. Humans only understand a small amount of interactions and chemicals in the human body. The best way to determine the effect of a drug or disease is to test them on animals. Animals are great models that provide insights into the human body because of their similarity to humans. It is required by law to test a new drug or medicine on animals before they are tested on people. Animals are used in biomedical research to protect the livelihood of humans. I agree with the use of animals for biomedical research because it helps develop new treatments, is the best method of understanding health problems, and ensures safe medical treatments for humans.

The use of animals in biomedical research is a prerequisite to the development of new and more effective processes of treating diseases which affect both humans and animals. Many major medical advances have been the result of animal testing. It helps develop new treatments that can cure many diseases that kill many Americans every year. For example, in the late 1940s, polio killed thousands of people every year around the world. The polio vaccine was derived through the use of animal research and has saved many lives. Next, diabetes treatment has made an immense amount of progress through the use of animals in biomedical research. Dogs were extremely crucial to the development of insulin. Without the use of animals in biomedical research to develop insulin, many more diabetics would die because they are unable to regulate their blood sugar levels. Furthermore, not only humans have benefited from the use of animals in biomedical research, but also animals themselves. Many cats contract viruses such as feline immunodeficiency virus (FIV) and feline leukemia virus (FeLV) which can cause death. Researchers have developed a vaccine to prevent these diseases in cats. The use of animals in biomedical research is extremely crucial to the development of treatments for diseases and to even eliminate diseases.

When we use animals in biomedical research, it provides scientists a way of understanding health problems and how our bodies work. We may not understand much about some of the interactions within our own bodies. Since researchers are studying animals, they discover information that cannot be learned by other means. Without using animals, researchers will use computer models. They determine the toxic level of a substance by screening it in the beginning of an experiment. Researchers also use tissue and cell cultures which can be very valuable in the array of research tools and techniques available to them. Animal testing is one tool in biomedical research. For example, many diseases and processes cannot be studied in bacteria and tissue cultures alone. It is impossible to study certain affects of high blood pressure in tissue samples and blindness cannot be studied in bacteria. The living system is tremendously

complex because everything is interrelated. Without testing or observing the entire living system of an animal, we cannot understand or predict a disease or the effects of possible treatments. Scientists are looking for ways to reduce the amount of animals used to obtain valid results, but for now, animal testing is the most utilized procedure of biomedical research.

The use of animals in biomedical research is to ensure the safety of a particular drug or vaccine when it is given to a human. If scientists did not test a drug on an animal they would not know how it would affect a living system such as a human. If the drug has flaws, it could accidentally kill a human who is in need of that medicine to cure or treat their disease. Humans can take part in a clinical trial, but a pre-clinical trial must take place first. Animals will be tested during the pre-clinical trial to confirm that the drug can be administered to humans. Scientists use animals to help them understand health problems so they can alter a drug. They also use animals to figure out ways to treat or cure a particular disease or sickness. When a vaccine or medicine is created, scientists need to test it so they can adjust or change aspects of it so it becomes infallible. If animal testing was eliminated, scientists would have to test drugs on humans or end all testing of new drugs. Testing animals are not always used to show that drugs are safe and effective in humans. They test animals to decide if it is safe to test a drug on humans and to eliminate harmful drugs or side effects. The drug is only tested on a small group of people if it passes the animal test. We must use test animals so that we don't have to test drugs on humans and have humans suffer from a harmful or unknown drug effect.

I agree that animals should be used in testing so that scientists can create drugs to cure diseases such as cancer. Scientists are trying to reduce the number of animals used in biomedical research. They are encouraged to follow the three "R's" which are reduction, refinement and replacement. This helps reduce the number of animals used in biomedical research, gives them better living conditions and shares information with other researchers so tests don't have to be repeated. I believe these procedures will limit the number of animals used in biomedical research. I am for animal testing in biomedical research because it generates new and safer drugs, is the primary way for scientists to understand health problems, and ensures safe medical treatments for humans.

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