



2015 PSBR 7th & 8th Grade Essay Contest
Third Place

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Curing cancer with one mouse. That might sound impossible, but scientists now look at cancer differently because of a single mouse. Thanks to biomedical research, scientists have found that mice can fight off cancer because of specific white blood cells that their bodies produce. For this reason, and many more, research scientists aim to improve human health and cure disease by conducting safe and humane experiments.

Biomedical research started centuries ago in ancient Greece. Throughout history scientists have dissected animals to reveal how their bodies work and observe how their physiology relates to humans. Today, biomedical research is more advanced than ever thanks to our growing knowledge in genetics and technology. Although biomedical research is for a good cause, experimentation on animals has caused an ongoing argument on the ethics of experimentation with living organisms. Some people are completely opposed to experimentation while others recognize the significant benefits of the research to humans and animals.

The three areas of focus in biomedical research are basic research, applied research, and clinical research. Basic research is used to expand knowledge on a topic. In applied research, scientists apply what they have learned through exploring basic research in an experiment, usually conducted in a laboratory. During clinical research, scientists use what they have learned from basic and applied research to test a medicine or a medical device on volunteers to confirm that the treatment not only works in a laboratory on animals but on humans.

Eighteen million animals a year are used in experiments to help better understand diseases. Most of the animals are bred for research with 90% of the animals being rodents. Rodents are chosen because of their similar physiology to humans.

In 1966 The Animal Welfare Act was enacted to stop animals from being hurt unnecessarily during research. Furthermore, the USDA and IACU check laboratories annually to make sure the animals are well treated. There are alternatives to experimentation with animals. In vitro tests are performed on less complex organisms. Researchers also use computer simulations that don't use living organisms. Computers are used to calculate how different medicines would affect people if they were tested in a clinical trial. Epidemiological studies are another alternative method to animal experimentation. In epidemiological studies scientists observe how, when, and where people become sick. Finally, in human clinical trials a closely monitored dose of medicine is tested in humans while scientists observe the results. This process helps determine if the medicine is safe for people to use.

Because of experimentation on living organisms, millions of people have benefited. Biomedical research helps us to better understand diseases and their cures. Without exploring new and different ways to solve medical problems our world would be a very different place. The next time you think a mouse doesn't matter, think again because one day it could save your life.

References

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