What concerns are raised by the use of animals for medical and scientific experiments?

The profound differences in anatomy, physiology, and genetics between humans and animals make animals poor models for humans. Results from research on animals cannot reliably be extrapolated to humans and in most instances animals are poor predictors for how humans will respond to drugs, treatments, or diseases.

In addition to the public health implications, serious ethical concerns are raised by the use of animals in experimental studies, particularly when the animals are subjected to captivity, invasive or painful procedures, or toxic exposures. These concerns are heightened by PCRM researchers’ findings that animals exhibit signs of mood and anxiety disorders and a review of the scientific literature showing marked stress responses in animals undergoing routine laboratory procedures, such as caging, isolation from other animals, handling, and blood collection.

What are some concerns with the use of animals in toxicity testing?

Toxicity testing aims to evaluate what harm may be caused to humans by exposure to chemicals, including medicines, food additives, and industrial/consumer products.

Toxicity tests that exploit animals may use rabbits, rats, mice, dogs, cats, primates, hamsters, birds, and even fish. Tests are performed by exposing groups of animals to very high doses of chemicals—often at levels 100 to 1,000 times higher than humans would typically be exposed to. Not only is this cruel, such large doses often overwhelm the animals’ systems, making interpretation of the study results difficult and leading to repeated or additional testing. These tests can vary in duration from four hours to several months to animals’ entire life spans. The animals are observed for toxic effects, including vomiting, diarrhea, convulsions, respiratory distress, appetite or weight loss, rashes, salivation, paralysis, lethargy, bleeding, organ abnormalities, tumors, and, ultimately, death.

To use the results of tests performed on animals to predict human reactions, scientists and regulators need to assume that the biological and physical processes of other mammals respond to chemicals in ways similar to those of humans. But that assumption is often incorrect, as scientists are beginning to understand. All animals do share aspects of biology very generally; however, the details about how each species absorbs, metabolizes, and excretes chemicals vary widely. Species differences and the use of very high testing doses lead to difficulties in interpreting animal toxicity testing results and can lead to more testing.

Is some animal testing required by law?

Neither the federal Food, Drug, and Cosmetic Act, nor the Food and Drug Administration (FDA) regulations require animal testing of pharmaceuticals, cosmetics, or personal care products. However, animal safety testing has become the default standard for the FDA, and the FDA industry guidance
for preclinical drug testing states that the agency will “generally ask” for toxicity test results using at least two species of animals. Thus, drug companies reasonably expect that the FDA will prefer animal safety tests for many safety endpoints.

An important part of PCRM’s work is to push companies to use the nonanimal methods that exist, and to facilitate the development of new, nonanimal technologies and test methods to replace traditional animal-based safety and efficacy tests.

Doesn’t federal law ensure that animals used in research and testing are treated humanely?

Under the Animal Welfare Act, no experiments—including those that inflict pain without relief—are outlawed. The Animal Welfare Act—the only federal law that applies to animals used for research—is, for all intents and purposes, a husbandry statute that regulates the size of cages, cleanliness standards, provision of food and water, etc., for only a small fraction of the animals used in experiments. Animals in laboratories are routinely subjected to painful procedures and are often killed afterward. Routine caging, isolation, handling, and even the laboratory environment itself are extremely stressful to animals.

Rats, mice, birds, fish (who combined make up more than 90 percent of all animals used in research), cold-blooded animals, and animals commonly used for food are excluded from the definition of “animal” under the Act and are therefore not given even these minimal protections. Furthermore, entities that use these animals in tests or experiments are not required to keep track of how many animals they use, so no one has any idea how many animals are killed every year. Some estimate that around 25 million animals are killed each year in US laboratories.

What are the alternatives to using animals in experiments?

There are many humane, cost-effective, and reliable ways to answer human health questions, and conduct scientific research and regulatory testing. Some alternatives to using animals include epidemiological studies (studies of human populations), clinical research, bioinformatics (statistical evaluation of biology), systems biology (studies of interaction between biological systems), tissue engineering (combines engineering principles and biology), microfluidics (organ-on-a-chip), in vitro (human cell and tissue cultures) research, in silico (computer-based) techniques, stem cell methods, genetic methods, advanced imaging technologies, and safe human-based studies.

What can I do to get involved?

- Sign up to receive action alerts by visiting www.pcrm.org/takeaction.
- Join us on Facebook and Twitter to stay up to date on PCRM’s efforts.
- Sign up at www.reformtoxicitytesting.org to meet with your congressperson in his or her local office to emphasize the importance of toxicity testing reform.
- Become a citizen lobbyist. To learn how, visit www.pcrm.org/LF/action-kit.
- If you are a scientist or physician and would like to advance PCRM’s mission please contact research@pcrm.org.