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INQUIRY INTO USE OF PRIMATES AND OTHER ANIMALS IN MEDICAL RESEARCH IN NEW SOUTH WALES

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Some points on why animal testing is outdated, inhumane and unreliable in this day and age.

Human and nonhuman animals differ in many ways, so the results produced by animal experiments often don't accurately predict human responses. Drugs that are tested on animals also have low rates of success—92 percent of experimental drugs that work safely in nonhuman animals fail in human clinical trials because they are too dangerous or ineffective.

Animal testing can be detrimental to humans as well. There have been many trials on humans that went badly because their assumed risk was low due to previous testing on animals, but which turned out to be detrimental to human health.

For example, Vioxx, a drug used to treat arthritis, was found to be safe for monkeys and five other animal species. Yet it's estimated to have caused around 320,000 heart attacks and strokes and 140,000 deaths worldwide. A clinical trial of a Hepatitis B drug, which was first tested on animals, had to be stopped because it caused severe liver damage in seven patients, five of whom died. Another drug trial in France in 2016 resulted in the death of a volunteer and left four others with severe brain damage. The drug was intended to treat a wide range of conditions and was previously tested in mice, rats, dogs, and monkeys.

Human volunteers that were testing a new monoclonal antibody treatment in the U.K. in 2006 suffered a severe allergic reaction and nearly died. The testing on monkeys at 500 times the human dose completely failed to predict any dangerous side effects.

It is obvious that animal testing harms nonhuman animals first and foremost. Mice, rabbits, rats, and guinea pigs are routinely subject to skin and eye irritation tests conducted by dripping chemicals into their eyes or rubbing them onto their shaved skin, without any pain relief. The use of the eye for toxicity testing is known as the Draize test. This toxicity test can lead to scarring, blindness, and death. It is one of the most commonly used toxicity tests alongside the LD50 test. Both are infamous for the intense pain that they inflict on their subjects.

The LD50 test is used to test the dosage of a substance that is necessary to cause death in 50 percent of the nonhuman animal subjects within a certain amount of time. To do this,

researchers hook the animals up to tubes that pump large amounts of the test product into their stomachs until they die, which may take days or even weeks of prolonged suffering. Animals often suffer from vomiting, paralysis, convulsion, internal bleeding, and diarrhea during this time. Since death is the goal and required for the study to conclude, no euthanasia is used.

Although we share many traits with nonhuman animals, such as the capacity to feel pain and experience a wide range of emotions, there are many things that separate us. Nonhuman animals don't contract many human diseases such as HIV, schizophrenia, Parkinson's disease, major types of heart disease, and certain types of cancer. In fact, only one-third of substances known to cause cancer in humans has been proven to cause cancer in nonhuman animals. Additionally, an analysis of over 100 mouse cell types found that only half of the DNA responsible for regulating genes in mice could be matched with human DNA.

Many drugs affect humans and nonhuman animals differently. Take aspirin, for example. It is toxic to many animals including cats, rats, and mice, but is safe for most humans. We wouldn't be able to buy it in pharmacies if it had been tested using current animal testing standards.

It has been proven that nonhuman animals feel pain. Evolutionary biologists like Marc Bekoff are clear that all mammals share basically the same nervous system, chemical transmitters, perceptual tools, and emotional states, which all contribute to the experience of pain. Even if we can't know whether mammals feel pain exactly as we do, this doesn't mean they don't experience it.

German Lopez also writes for Vox, "In the wild, hurt animals nurse their wounds, make noises to show distress, and even become reclusive. In the lab, researchers found that animals, like chickens and rats, self-administer pain relievers (from special machines set up for tests) when they're hurting. And in general, animals tend to avoid situations in which they've been hurt before—indicating a memory and awareness of previous pain and threats."

Many laboratories that use animals are not required by law to provide veterinary care or pain relief, to consider or search for alternative methods of testing, or to be inspected any other entity.

- The registration of a single pesticide requires over 50 experiments and studies on up to 12,000 animals.
- According to the National Institutes of Health, 95 percent of drugs tested on animals ultimately fail in human trials.
- Of all the animals forced into animal testing, 60 percent are used in biomedical research and product safety testing.

Scientists are now able to use human cells and tissues, computer modelling, 3D printing, robots, and more for experiments. These technologies are better for everyone and typically more accurate, less expensive, and faster, let alone more humane than animal testing.

Human beings can spare the death and torture of millions of innocent nonhuman animals each year by ending animal testing and using alternative methods instead.

Our current moral framework asks us to weigh the costs of experimentation to lab animals (both suffering and death) with the potential, yet always uncertain, benefits it generates for humans. Few of us would look at the acute severity of COVID-19 and not see that the potential benefits dwarf the costs. Many would still make this calculation despite knowledge of the widespread failures in translating results from animal models to humans. Approximately 90 percent of clinical trials fail after success in animal models. Even still, our justification would go something like this: all information is valuable information because some unknown fraction of it will pave the way out of the corner we've backed ourselves into.

But this calculation ignores that prevention was always an option. This doesn't mean that biological research is obsolete; but it does mean that its importance must be judged in relation to epidemiology and public health, economic policy, food policy, environmental policy, social justice, and the like. Disease is often not just biology gone awry; and the health of our population will benefit from re-prioritizing our biomedical approach to recognize this. The animals in our labs will benefit as well.

Our belief in the centrality of animal research to address disease assumes that our treatment-centric approach is the best, if not the only way to effectively promote human health. As we divert our resources to an approach with prevention at its core, we will naturally divest in animal research, reducing the total number of animals used. To prioritize the social dimension

of disease would effectively reduce the cost to animals while simultaneously increasing the benefit to humans. Again, this is a win-win for humans and animals.

As we continue to find our way out of this pandemic, it is important not to lose sight of its origin. COVID-19 is a tragic lesson in the effects of deemphasizing preventive health measures in favour of biological solutions; and it is a lesson in how this trade-off warps our justification of animal experimentation by creating an inflated sense of necessity. We talk about the 'new normal' to describe life after COVID-19, but perhaps biomedical research itself may also be ready for a 'new normal.' And while the proposed shift from a treatment- to prevention-centric approach to human health does not require a rethinking of the cost/benefit framework we currently use to guide our use of animals in research, it is possible that as we decrease our reliance on lab animals, we can open our eyes to new moral possibilities as well.

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