Submission No 258

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

Name: Cheryl Forrest-Smith

Date Received: 30 March 2022

Dear Committee Members,

Re: **Inquiry into the use of primates and other animals in medical research in NSW**

Thank you for the opportunity to lodge my submission to this most welcome and extremely important inquiry.

Experiments – Examples

1 Forced to smoke

Inhalation research is currently being conducted at institutions across Australia, **with mice exposed via 'nose only' or 'whole body' exposure to cigarettes or other hazardous inhalants**.

To induce the disease, each mouse is severely restrained in a narrow chamber and subjected to up to 18 weeks of exposure to cigarette smoke. This is in addition to other procedures that may be carried out during the experiment, such as injections, the administration of food or drugs by force, behavioural tests, and ultimately death at the end of the experiment.

Multiple chambers are added to a smoking tower.

The nose-only method exposure method is detailed in this video:

I urge you to view - https://youtu.be/H1eroxmgG1Y or https://www.facebook.com/HumaneResearchAustralia/videos/258523913006117/

- This is highly invasive research, particularly nose-only smoke exposure, for a sustained period of time, from which the mice cannot escape. This kind of severe restraint **causes significant stress to mice.**
- There are **additional animal welfare risks and death** associated with the nose-only method such as the mice suffocating in the tube or complications due to faulty machines or human error. There are other unwanted impacts as well such as weight loss and hypothermia that the mice can experience while on the smoking tower.
- Mice may **suffer from the painful conditions** that are induced to recreate the human disease or condition
- Key anatomical differences between humans and rodents may impact inhalation data transferability

- The smoking habits of humans are not represented in animal models or this research method.
- There are more sophisticated human-based inhalation models available to provide results of greater human relevance

2 Primates

a *February 25, 2021*Media Releases News

On 25 February 2020, 3 baboons escaped from a truck while being transported from a primate breeding colony to the Royal Prince Alfred Hospital. The ensuing media attention brought the previously hidden industry into the public limelight, raising the question as to just what research on baboons entailed.

https://www.abc.net.au/news/2020-02-26/baboons-that-escaped-at-sydney-hospital-were-from-research-lab/12001260 - and video

Excerpts:

- **They weren't pets — that's illegal in Australia — and they weren't from the zoo.**

The three baboons that yesterday broke free from a truck in Sydney's inner west were from a research facility, where medical experiments are conducted on animals.

- NSW Animal Justice Party MP Emma Hurst said the baboons were "medical experimentation survivors" who were attempting to flee "further painful procedures forced upon their

bodies. These are the hidden faces behind animal experimentation in this country," she said.

https://www.abc.net.au/news/2020-02-26/baboons-that-escaped-at-sydney-hospital-were-from-research-lab/12001260

Whilst the little troop of three lost their bid for freedom, they've put the spotlight on primate experiments in Australia and given us an extremely important opportunity to urge our government to invest in non-animal methods of research.

The Australian Senate responded with the passing of Motion which called on the Federal Government to:

(i) ensure national transparency and accountability in the use of animals in research, and

(ii) invest in the methods and technology needed to end the use of animals for research purposes.

Two years on, and there has been no concrete actions resulting and primate research continues under a shroud of secrecy. In 2019 a total of 318 primates were proposed for research projects **funded by tax-payers** via the National Health and Medical Research Council (NHMRC), including neuro research and viral research.

b Baboons: NHMRC funded three grants involving some animal-to-animal xenotransplantation, using baboons. When questioned, the NHMRC was unable to confirm the number of baboons killed or caused harm.

c Twenty-four **macaques** were killed in HIV research at CSIRO, with an additional macaque dying for an undisclosed reason. '***It is not acceptable for 25 macaques to die and for the research institution involved to obstruct the release of documentation, arguing it is not in the public interest. The Australian public are concerned about the use of primates in research and it is our money (over $1million in this one case alone) that is funding this research'.***

d Humane Research Australia is campaigning for a ban on primate experimentation. A petition calling for an end to primate experiments is now at over 100,000 signatures.

https://www.humaneresearch.org.au/still-in-the-dark-about-australias-hidden-primate-experiments/

3 The Forced Swim Test - A Cruel and Outdated Practice

Of all the behavioural tests employed in animal research laboratories, one of the most cruel and unscientific is the Forced Swim Test (FST). The test involves the dropping of a mouse or a rat into a beaker of water to observe its ability to swim, unable to escape, until it gives up and floats. It is used to assess learned helplessness, which is a feature of depression-like behaviour in mice and rats in psychological studies, and to test the efficacy of anti-depressant drugs. Originally designed in the 1970s, the forced swim test experiment has faced increasing scrutiny over recent years. However, its use continues in Australian universities and research institutes.

Many of the world's top pharmaceutical companies (Roche, Bayer, Johnson & Johnson, AbbVie, GlaxoSmithKline, Pfizer, AstraZeneca, Bristol-Myers Squibb, and more) have formally ended their use, funding, and/or commissioning of forced swim tests. As determined by the stated pharmaceutical companies, the forced swim test does not teach us anything reliable about human depression—nullifying any scientific justification for carrying out the test; and it causes acute suffering and distress to the animals who are used—presenting a compelling ethical argument against using the test.

View Humane Research Australia's video on the FST in Australia:

I urge you to view - https://youtu.be/LNw8Kyh_rck

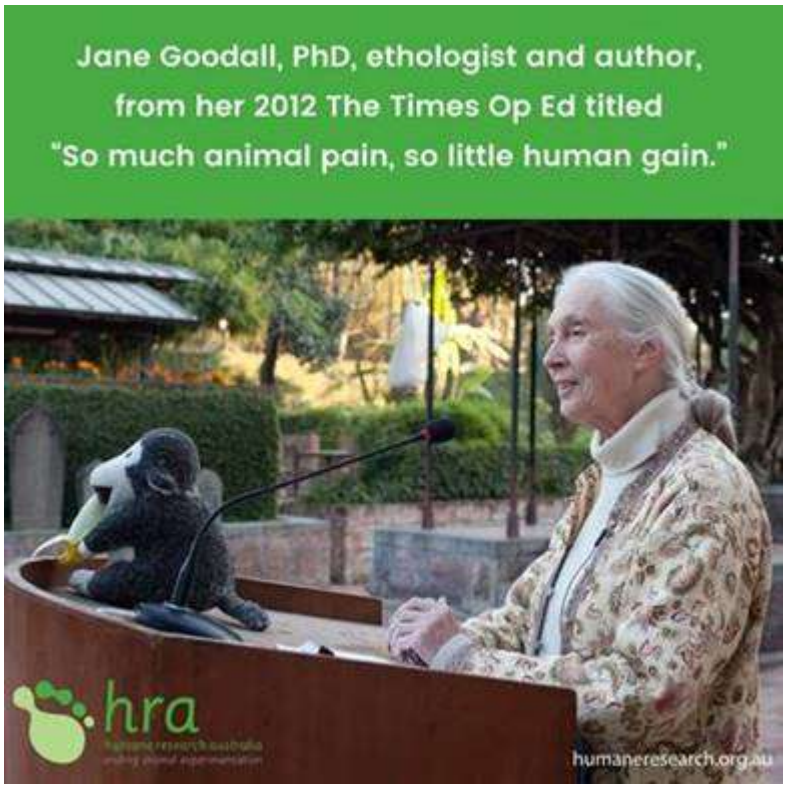
4 RABBITS

Invasive 'research' is conducted on rabbits in Australia. Each year thousands of rabbits are used in numerous areas of research, from medical testing to environmental studies. In NSW in just one year, 2376 rabbits were subjected to experimentation, 708 of whom were used for regulatory product testing. Government statistics indicate that of these 2,376 rabbits, only 12 remained to live free after the experiments. The fate of laboratory animals is rarely good.

The Australian Code for the Care and Use of Animals for Scientific Purposes permits what is termed as 'necessary suffering' inflicted on the research animal, e.g. Depending on the experiment, a rabbit in a research facility might be entitled to a nesting box with straw, however he/she is by law allowed to be starved from water and food for experimentation, and be housed in a cage not bigger than its size for experiments such as muscle cramping.

Obviously, these few examples are but a fraction of the misery, fear, distress, pain, and death inflicted on a vast range of non-human species in laboratories in NSW. Virtually no non-human species is spared.

FAILURES



a Analysis of 'breakthroughs' reporting should be employed. A UK paper illustrates the exaggerated results of biomedical studies using animals. The report looked at 27 examples of animal research that were highly publicised in the UK national media in 1995, and which were claimed to provide a "breakthrough" for human health. Each study was followed up more than 20 years later to determine if any actual human benefit had transpired. **Only one out of the 27 animal studies** reviewed for the report resulted in actual benefit to humans. - Bailey J, Balls MClinical impact of high-profile animal-based research reported in the UK national press BMJ Open Science 2020;4:e100039. doi: 10.1136/bmjos-2019- 100039

b And what about scientific curiosity? Knowledge for knowledge's sake may be a questionable use of funds and in many cases, animal lives. Such examples are referenced in HRA case studies. For example, research published by the University of New South Wales in which rats were fed a fast-food diet of pies, lamingtons, and dim sims to investigate linkages with obesity. With human data already having established the link between a fast-food diet and obesity, and key differences in the gastrointestinal pathway of humans and rodents, surely research funding could have been better spent, when the grants process is so competitive and should be dependent on vigorous assessment of grants for their merit. **https://www.humaneresearch.org.au/precious-resources-wasted-feedinglamingtons-and-meat-pies-to-laboratory-rats/**

c 92% of drugs fail in human trials even though they passed pre-clinical animal tests.
https://crueltyfreeinternational.org/latest-news-and-updates/bio-updates-figure-failure-rate-drugs-after-pre-clinical-animal-tests-92#:~:text=The%20report%20concludes%20that%2092,and%20neurology%20drugs%20(6%25). - Sept 2021

Sadly, there are countless examples of non-translatable clinical science based on laboratory animal research, mostly mouse models. The drugs or other interventions "worked" (were nontoxic and clinically effective) in animal models but were abandoned for use in people due to toxicity or lack of therapeutic efficacy. These include:

- Type 1 diabetes—all 195 methods that prevented or delayed diabetes in mice failed in people

- HIV pre-clinical and phase 1,2 and 3 trials—30-40 vaccines in clinical trials failed whereas all vaccines worked in non-human primates.

- Alzheimer's disease—300 different interventions effective in mice, not effective in humans.

- Amyotrophic lateral sclerosis (ALS)—100 potential drugs in established animal models, all failed in human clinical trials

Better ways to do research

- https://www.humaneresearch.org.au/wpcontent/uploads/2020/06/BetterWaysToDoResearch.pdf

- A business case for funding non-animal methodologies: https://www.humaneresearch.org.au/wp-content/uploads/2021/02/Final-business-caseFeb-2021.pdf

- Optimising inhalation research: transitioning to human-relevant research:

https://www.humaneresearch.org.au/wp-content/uploads/2021/11/Optimising-inhalationresearch-transitioning-to-human-relevant-research.pdf

- Other relevant reports which are recommended reading are:

- Accelerating the Growth of Human Relevant Life Sciences in the United Kingdom Alliance for human-relevant science:

https://www.humanrelevantscience.org/accelerating-the-growth-of-human-relevant-life-sciences-in-the-united-kingdom-2/

- The economic impact of the UK's New Approach Methodologies sector Animal Free Science

- The Research Modernisation Deal PETA: https://www.peta.org/wp-content/uploads/2020/12/peta-2021-research-modernizationdeal.pdf

- Re-Engineering Biomedical Science - for more **ethical** and **human-relevant** research: https://www.codexresearch.com.au/

The above reports and links highlight the scientific, as well as the economics gains from non-animal research methods, which offer huge growth potential and opportunity for innovation. For example, in September 2021, US-based organ-on-a-chip provider Emulate Inc. announced that it had raised almost $225 million in investment. In the UK, in absolute terms, the New Approach Methodologies (NAMs) industry turnover, which include the use of human cells and tissues; artificial intelligence; and organ-on-a-chip technology, grew by £452 million over the period of 2017-1, reflecting an uptake in demand for goods and services provided by the industry.

Recommendations

1 Ban, in legislation:

a The 'Forced Swim Test' - immediately

b The 'Forced Inhalation Test' - immediately

c The use of all animals, including primates, dogs, cats, and marine life.

2 Funding for the development of animal-free based scientific experiments and testing via incentives such as awards, scholarships or research grants.

3 Introduce and fund mandatory rehoming of suitable dogs and cats used in research (current rehoming guidelines are voluntary)

4 Increased powers of investigation and more decisive action to penalise breaches

5 CCTV cameras in research facilities

6 Greater transparency, accountability, access: Establish the "Openness Agreement"

In closing

The use of animals in research, testing, training and education has long been considered a necessary evil. More and more, people now question the ethics of this approach. At the same time, the animal research community increasingly recognises the problems with animal research: it is costly, lengthy and not very effective - e.g. 92% of drugs fail in human trials even though they passed pre-clinical animal tests (Failures - c). Also, it may have held back the discovery of treatments and cures for humans because they did not work well in animals.

Governments, the scientific community and industry in EU countries and the US have taken the lead in collaborating to replace animal experimentation.

Unlike the US and the EU, the Australian government does not provide incentives for new animal-free methods.

We need urgent change.

The future lies in personalised medicine, regenerative medicine, precision medicine, biobanks and personalised drug screening:306 “This new era is marked by a consideration of validity (e.g. reproducibility), by the use of human biomaterials (3D cell cultures, organoids and induced pluripotent stem cells (iPSC)), by the use of ‘high-content’ methods (e.g. Omics), by the combination of computer-based approaches, such as ‘read-across’ and ‘virtual organs’, and by miniaturisation technology (organ/human on a chip)”.

For industry, rather than academic institutions, e.g. Biotech and pharmaceutical companies, the advantages of new animal-free research methods are compelling – they are cheaper and faster than conventional methods, and more acceptable to customers.

With greater investment in innovative and promising animal-free methods, firm policy initiatives and robust collaborations of all interested parties, better treatments and cures for human diseases can be developed. This will also end the suffering of millions of animals.

Thank you for taking the time to read my submission.

Yours faithfully – and with hope,

Cheryl Forrest-Smith

Sources

- https://www.humaneresearch.org.au/wp-content/uploads/2022/03/HRA-Submission-NSW-Inquiry-into-Animal-Experimentation.pdf - Highly commendable

- https://www.humaneresearch.org.au/wp-content/uploads/2020/12/Bulletin-20.pdf - Forced Swim Test

- https://www.humaneresearch.org.au/wp-content/uploads/2020/02/bulletin19-tn-130x150.jpg - Fish

- https://www.humaneresearch.org.au/forced-to-smoke

- https://www.humaneresearch.org.au/wp-content/uploads/2022/02/Public-consultation-openness-agreement-HRA-feedback-.pdf

- https://www.humaneresearch.org.au/better-ways-to-do-research/