



# THE PROBLEM OF PAIN IN ANIMAL EXPERIMENTATION

Katherine Roe, Ph.D.,<sup>1</sup> Ingrid Taylor, D.V.M.,<sup>1</sup> Alka Chandna, Ph.D.<sup>1</sup>  
<sup>1</sup>People for the Ethical Treatment of Animals (PETA US)

## INTRODUCTION



Untreated or mistreated pain in laboratory animals presents numerous scientific and ethical concerns in biomedical research. International animal welfare laws and guidelines exist to minimize pain in animals used in experiments, yet laboratory animals are often given inadequate pain relief, and critical information about pain management procedures is frequently underreported in many scientific publications.<sup>1</sup>

In 684 experimental surgeries reviewed by Herrmann and Flecknell,<sup>2</sup> 30% did not require post-operative analgesia be given, and for an additional 10%, analgesia was only given if “deemed necessary.”

Failing to manage animals' pain is not only ethically problematic--it also negatively effects the quality of data being collected. Failing to report the level or method of pain management in scientific journals makes it impossible for readers to thoroughly interpret results, and is likely a contributor to poor reproducibility of animal experiments.<sup>3</sup>



Providing comprehensive pain management is:

- **Required by animal welfare laws and guidances**
- **An ethical imperative**
- **Scientifically valuable**

Tools to assess pain in animals:

- Are often subjective
- Require specialized training and familiarity with the species
- Are not used frequently enough (i.e., animals may just be checked twice daily)
- Often only use one method of assessment
- Use metrics like weight that may not reflect the needs of all animals
- Do not provide an understanding of breakthrough pain and rescue analgesia needs
- Fail to take into account pain masking in many species
- Are time-consuming
- Can account for significant variability in data when used properly

## METHODOLOGY

Copies of Public Health Service (PHS) Assurances and most recent Annual Reports were obtained from the National Institutes of Health's (NIH) Office of Extramural Research (OER) via FOIA request. Violations from 25 AAALAC accredited institutions were catalogued, and coded for pain-related violations. Examples of pain-related violations include: surgeries performed without any or adequate anesthetic or analgesic; expired, absent, or inadequate post-procedural analgesics and/or monitoring; improper anesthetic during euthanasia; incomplete euthanasia, and failure to meet humane endpoints.

## CONTACT INFORMATION

Author emails:

[KatherineR@peta.org](mailto:KatherineR@peta.org)

[DrTaylor@peta.org](mailto:DrTaylor@peta.org)

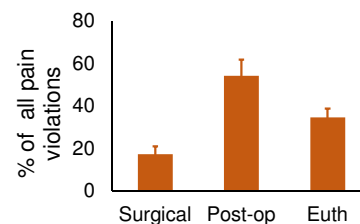
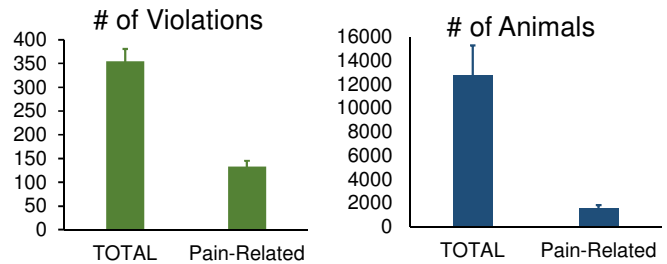
[AlkaC@peta.org](mailto:AlkaC@peta.org)

<https://headlines.peta.org/research-modernization-new-deal/>

## RESULTS

### PAIN-RELATED WELFARE VIOLATIONS ARE FREQUENTLY REPORTED BY US RESEARCH INSTITUTIONS

#### PHS Violations Across 25 US Academic Institutions



Pain-related violations made up **35%** of all violations in our sample.

Post surgical pain management and monitoring accounted for more than 50% of all pain-related violations.

### STRATEGIES TO IMPROVE SCIENCE & WELFARE AND ADDRESS PAIN-RELATED VIOLATIONS

1

Require robust and multimodal pain management protocols for all invasive and surgical procedures prior to approval of research protocols.

2

Decisions and the authority to administer analgesia rests with the veterinarian and animal care staff, not the principal investigator.

3

Ensure the animal care staff, veterinary staff, and experimenters are trained in species specific natural behaviors and pain assessments. Audit records and observe staff to ensure analgesia is being given.

4

Editors of scientific journals require a description of pain management protocols in publications, to include drug, dosage, frequency, and pre- and post-operative analgesia.

5

Redirect funding and resources away from harmful research in animals to human-relevant, animal free methods.

## CONCLUSIONS

Mismanaged pain relief and monitoring compromise a concerning percentage of welfare violations in laboratories in the United States. Collectively, this results in an alarming but underreported number of animals suffering with pain in laboratories. This is not only ethically unacceptable, but also introduces several potentially catastrophic confounds into experimental data.

References:

1. Carbone, L., & Austin, J. (2016). *PLoS one*, 11(5), e0155001.

2. Herrmann, K., & Flecknell, P. (2018). *ALTEX*, 46(6), 317-333.

3. Peterson, N. C., Nunamaker, E. A., & Turner, P. V. (2017). *Comparative Medicine*, 67(6), 469-482.