

New technique shown to significantly improve welfare of laboratory animals

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The refinement of a common handling technique used on laboratory animals for pre-clinical research can dramatically reduce stress levels and significantly improve welfare, according to the findings of a new study published in *Scientific Reports*.

The majority of [preclinical studies](#) involving laboratory animals require

the administration of substances and, to facilitate this in rodents, animals are normally physically restrained. As part of the study, researchers from Bristol's School of Physiology and Pharmacology found that the physical restraint of the animal is the main cause of stress.

In this paper, the team demonstrate a new handling technique used on rats which avoids the use of physical restraint. The study then compared the physiological, behavioural and emotional impacts of restrained versus non-restrained injection procedures in the rodents to assess their [stress levels](#). They found that the new handling method resulted in the rodents being in a more positive affective state, lowering their [stress hormone levels](#) by around 50 per cent.

The results have important implications for scientific research as well as animal welfare as we know that the release of [stress hormones](#) can alter an animal's physiological, neurochemical and psychological state as well as its response to drug treatments.

Dr Emma Robinson, lead author of the study from Bristol's School of Physiology and Pharmacology, said: "While major steps have been made in the development of alternatives to using animal models in research and to reduce the number of procedures undertaken, further improvements in [animal welfare](#) can be made through refining existing procedures.

"This study highlights important welfare implications associated with physical restraint and demonstrates a new method to reduce this which benefits the animal's welfare as well as experimental outcomes."

More information: "Reducing the stress of drug administration: implications for the 3Rs." *Scientific Reports* 5, [DOI: 10.1038/srep14288](https://doi.org/10.1038/srep14288)

Provided by University of Bristol

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