

## 3Rs of Ethical Animal Research

### What are the 3Rs?

The 3Rs are fundamental principles in all research that involves animals. According to the [Australian code for the care and use of animals for scientific purposes](#) (the Code), these principles, known as Replacement, Reduction, and Refinement, should be applied to all stages of animal care and use in research. The Code defines the 3Rs as follows:

- **Replacement:** methods that allow for the research aims to be achieved without the use of animals.
- **Reduction:** methods that allow for comparable results to be achieved with less animals or more information to be gathered from the same number of animals.
- **Refinement:** methods that ensure any pain or distress to the animals is minimised and animal wellbeing is enhanced.

### What are some important considerations when applying the 3Rs?

The 3Rs ensure that the use and care of animals for scientific purposes is ethical, humane, and responsible. When applying these principles to the research design, some important considerations include:

- Whether there are alternative methods to achieving the research aims, including virtual simulations, existing databases or research, using non-sentient animals, or reviewing established case studies that can replace the use of animals in the research design.
- Whether the number of animals in the research design are actually required to achieve the research aims and to ensure good statistical results or whether the number can be reduced to achieve the same outcome.

- Whether appropriate and effective procedures have been included in the research design to ensure that animal wellbeing is supported and safe-guarded throughout the lifecycle of the project.

### Key things to remember when completing the submission:

- Animals used for scientific purposes must be respected and their wellbeing must be safeguarded. This should be applied throughout the lifetime of the animal including the acquisition, transport, breeding, housing, husbandry, use of the animal in a project, and provisions for the animal at the conclusion of their use.
- The use of animals for scientific purposes must be justified to the satisfaction of the Animal Ethics Committee (AEC). This justification should include evidence to support the use of animals based on the 3Rs.
- Research design and the application of the 3Rs should be reviewed at every stage of a project to ensure best practice.

### Additional Resources:

- [ARRIVE Guidelines](#)
- [Code of Practice for the Housing and Care of Laboratory Mice, Rats, Guinea Pigs and Rabbits](#)
- [Guidelines for the generation, breeding, care and use of genetically modified and cloned animals for scientific purposes \(2007\)](#)

### Further information

Further information can be found in the [Animal Ethics Procedure](#).

For further advice on this topic or other animal ethics matters, please email [animalethics@rmit.edu.au](mailto:animalethics@rmit.edu.au) a Research Governance and Ethics Coordinator will assist you and may refer you to the Animal Welfare Officer for advice.