

	<b>Flinders University</b> <b>Safe Work Method Statement</b> <b>Oral Gavaging in Mice 18/06/19</b>			
				<b>College of Medicine and Public Health Animal Facility</b>
<b>SWMS Number</b>	<b>RA Number</b>		<b>RA Score</b>	
SWMS- 1.5	RA- 1.5		MEDIUM	
<b>Contact Person</b>	<b>SWMS prepared by</b>	<b>AWC Approval Date</b>		<b>Review Date</b>
Roxanne Collingwood	Roxanne Collingwood	18/06/2019		June 2021

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**Legislation**

- *Australian Code for the Care and Use of Animals for Scientific Purposes 8<sup>th</sup> Ed.*
- *Animal Welfare Act 1985*
- *Animal Welfare Regulation 2012*
- [Gene Technology Act 2000](#) (the Act)
- [Gene Technology Regulations 2001](#)
- *Work Health and Safety Regulations 2012*

### University Policy

- Work Health and Safety Policy 2013
- Responsible Conduct of Research Policy 2016
- NHMRC Guidelines

### Local Policy

Use of the College of Medicine and Public Health Animal Facilities by all staff and researchers of the College of Medicine and Public Health, Flinders University, is subject to awareness of, and adherence to the following:

#### Research Involving Animals:

- The University holds a licence for the use of animals for teaching and research purposes. To satisfy the requirements of the licence, anyone wishing to undertake teaching and research using animals must submit a proposal to the Animal Welfare Committee (via the Animal Ethics Review Sub-Committee). No work with animals may commence until written approval has been received from the Animal Welfare Committee. Standardised application forms for Research and Teaching can be found on the Flinders University website listed below. It is your responsibility to regularly check this site for updates to guidelines, forms etc  
[http://www.flinders.edu.au/research/researcher-support/ebi/animal-ethics/animal-ethics\\_home.cfm](http://www.flinders.edu.au/research/researcher-support/ebi/animal-ethics/animal-ethics_home.cfm)
- **All staff and students involved in animal research must complete Animal Ethics Online Training (AEOT) and must also regularly attend Animal Researcher Information Sessions (ARIS).**

### Safe Work Method Statement

Refer to Risk assessments, Safe Work Method Statement for chemicals, processes and plant equipment where appropriate. All projects must have an accompanying Risk Assessment signed by the Animal Facility Manager

SWMS 1.0 Mouse- Sexing, Handling, Restraint and Ear Notching  
 RA 1.0 Mouse- Sexing, Handling, Restraint and Ear Notching

### Personal Protective Equipment Required

- **Gloves**
- **Gown**
- **Mask**
- **Hair Net**
- **Shoe Covers**

### Hazards and Controls

- **Animal bites- training, demonstrate competency, adhere to SWMS**
- **Animal Scratches- training, demonstrate competency, adhere to SWMS**
- **Needle Stick- DO NOT recap needles, dispose immediately into sharps containers, adhere to SWMS**
- **Chemical exposure- wear PPE and goggles**

### Before Work Commences

**Ensure that you are aware of the locations of the following:**

- **Spill Kit**
- **Fire Extinguisher**
- **Eye Wash**
- **Exits**
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**Risk Assessment and SDS (Safety Data Sheet) - Ensure that you have read and understood for all the substances being used.**

### **Equipment**

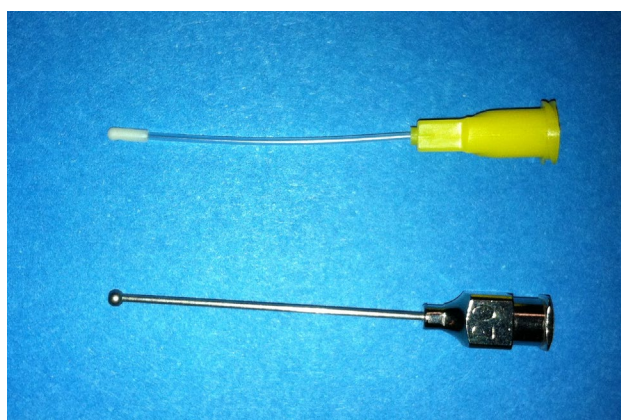
- Ensure that you have read and understood the Risk Assessment and Safe Work Method Statement
- Obtain training before using any equipment

### General Information

- All procedures must be performed by trained and competency assessed staff.
- Training and assessment is available from senior animal house staff or Animal Welfare Officer.
- Evidence of training is available in the Competency Skills Register.
- As an alternative to gavage, some materials may be consumed voluntarily in palatable mixtures (e.g. flavoured gelatin, Nutella or peanut paste) Material can also be dosed using a small flexible catheter introduced only into the animal's mouth.

### Oral Gavage Procedure

1. If the maximum volume is required to be administered, mice should have food removed for a couple of hours prior to gavage to limit the volume of stomach contents.
2. Weigh the animal and calculate the dose volume to be administered. (Maximum volume to be given via gavage is 10mL/kg).
3. Prepare the syringe and feeding needle with the correct dose to be administered, and expel any air bubbles. Use 20 gavage needles for adult mice 38mm in length with a rounded tip (*see picture below*). A 24G gavage needle can be used on pups. Note: disposable gavage tubes are flexible and less likely to cause trauma, however, they can be bitten off and ingested and are best used with light isoflurane anaesthesia.



Disposable Flexible Gavage Tube

Stainless Steel Gavage Needle

4. Mice may either be gavaged in a conscious state, or may be lightly anaesthetised with isoflurane in an induction chamber, just sufficient to lose righting reflex, according to SWMS 1.3 *Mice Anaesthesia and Analgesia*, following the procedure as follows.

5. Restrain the animal by grasping the loose skin at the scruff of the neck with the thumb and forefinger to immobilize the head and torso. The head must be totally immobilized for proper positioning of the gavage needle.
6. Hold the gavage needle next to the animal, measure the distance from the tip of the nose to the last rib (this is the approximate distance to the stomach). DO NOT insert the gavage needle further than this distance to avoid rupturing the stomach. (See *Photo 1*)
7. Hold the animal with the nose pointing up, and insert the gavage needle into the mouth over the tongue.
8. Direct the gavage needle toward the oesophagus on the left side of the throat, gently press the needle on the back of the mouth, and allow the animal to swallow the needle. It is important to use very gentle pressure, as too much force will rupture the oesophagus.
9. Slowly insert the gavage needle until the measured distance into the stomach. If any resistance is met, or if the animal struggles vigorously, immediately withdraw the needle and follow steps 6 to 8.
10. Once the needle is properly positioned, gently depress the plunger to administer the required dose. If the substance being administered flows freely and is not seen in the mouth or nose, slowly inject the rest of dose. If any fluid is seen coming from the mouth or nose, remove the feeding needle immediately and release the animal into the cage. Observe for any difficulty breathing or bleeding from the mouth or nose before attempting the gavage again.
11. Once the entire dose has been administered, wait one second, then slowly remove the feeding needle and return the animal to its cage.
12. Observe the animal for any difficulty breathing, or bleeding from the mouth or nose, for at least 5 minutes before returning it to the animal holding room.



**Photo 1:** Measure the length of the gavage needle from the tip of the nose to the last rib



**Photo 2:** When the tip of the gavage needle has been confirmed slowly administer the solution

## Post Procedural Monitoring

1. Observe the animals for the following signs:
  - Laboured breathing
  - Mouth breathing
  - Intermittent and violent abdominal movement
  - Discharge from the nose or mouth
  - Ruffled fur
  - Hunched posture
  - Lethargy
  - Minimal responsiveness
2. Lethargy, laboured breathing, mouth breathing, violent abdominal movements, minimal responsiveness, and uncontrolled bleeding or discharges are criteria for immediate euthanasia.
3. Document all observations on the Clinical Record Sheet and contact the Animal Welfare Officer if any mice display any of the above signs.

### SWMS Review

This SWMS currently applies to the animals housed in the College of Medicine and Public Health Animal Facility. This SWMS will be reviewed 3 yearly, but also updated more frequently as policies, techniques and animal care requirements change.

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Animal Welfare Officer	Lewis Vaughan	0450 424 143 <a href="mailto:awo@flinders.edu.au">awo@flinders.edu.au</a>

### **Useful References**

Wolfensohn M and Lloyd M, 2013, *Handbook of Laboratory Animal Management and Welfare*, 4<sup>th</sup> ed, Wiley-Blackwell.

<http://www.nhmrc.gov.au>

<http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/Content/home-1>

<http://www.adelaide.edu.au/ANZCCART/>

[http://www.flinders.edu.au/research/researcher-support/ebi/animal-ethics/animal-ethics\\_home.cfm](http://www.flinders.edu.au/research/researcher-support/ebi/animal-ethics/animal-ethics_home.cfm)

[http://www.medipoint.com/html/for\\_use\\_on\\_mice.html](http://www.medipoint.com/html/for_use_on_mice.html)

Any questions regarding the above guidelines and any technical advice/ assistance required can be directed to the Animal Welfare Officer or the Animal Facility Manager.