

	<b>Flinders University</b> <b>Safe Work Method Statement</b> <b>Sheep – Injection Techniques</b> <b>21/05/19</b>		
			<b>College of  Medicine and  Public Health  Animal Facility</b>
<b>SWMS Number</b>	<b>RA Number</b>	<b>RA Score</b>	
SWMS- 5.1	RA – 5.1	Medium	
<b>Contact Person</b>	<b>SWMS prepared by</b>	<b>AWC Approval Date</b>	<b>Review Date</b>
Roxanne Collingwood	Roxanne Collingwood	21/05/2019	May 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 Regulations 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 permit for the use of animals for teaching and research purposes. To satisfy the requirements of the permit, anyone wishing to undertake teaching and research using animals must submit a proposal to 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 Statements

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

**SWMS 5.0-Sheep Catching, Handling and Restraint**

**RA 5.0-Sheep Catching, Handling and Restraint**

### Personal Protective Equipment Required

- Protective clothing
- Closed toe shoes

### Hazards and Controls

- **Animal kicks- training, demonstrate competency, adhere to SWMS**
- **Animal Scratches- training, demonstrate competency, adhere to SWMS**
- **Needle Stick- DO NOT recap needles, dispose of in sharps containers**
- **Chemical exposure- wear PPE and goggles if necessary**

### Before Work Commences

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

- **Spill Kit**
- **Fire Extinguisher**
- **Eye Wash**
- **Exits**

**Risk Assessment and SDS (Safety Data Sheet) - Ensure that you have read and understood for all the substances being used.**

#### **Equipment**

- **Check for safety and electrical compliance**
- **Ensure that you have read and understood the Risk Assessment and Safe Work Method Statement obtain training before using any equipment**

### General Information

**\*\*\*IMPORTANT – Ensure all doors in the facility MUST be closed to prevent escape\*\*\***

- **All procedures are to be performed by trained competent staff.**
- **Training is available from senior animal house staff or Animal Welfare Officer.**
- **Evidence of training is available in the “Staff Training Needs Analysis”.**

### Recommended Needle Sizes IV, IM, SC

- Lamb less than 10kg = 21 gauge needle
- Lamb greater than 10kg and less than 20kg = 20 gauge needle
- Sheep greater than 20kg and less than 40kg = 19 gauge needle
- Sheep greater than 40kg = 18 gauge needle

### Subcutaneous Injection

**NOTE: Recommended maximum volume for injection must not exceed that stated in the data sheet, and only be administered by the stated route(s).**

- Anesthesia is not required. This technique requires two technicians; one to restrain the sheep, the other performs the injection.
  1. Using an appropriate size needle (see recommended needle sizes) and syringe, draw up the required dose and expel any air bubbles.
  2. The injections are usually made under the skin of the back and sides, or under the skin overlying the neck.
  3. Restrain the sheep using one of the methods described in *SWMS 5.0*.
  4. Injections can be performed using the loose skin of the back, neck, sides, or in the leg skin fold. Tent the skin over the shoulders between your thumb and forefinger.
  5. Insert the needle through the skin in an anterior (*as shown*) or posterior direction at a shallow angle to the skin surface.

6. Gently draw back on the plunger. If blood is not observed in the hub of the needle, inject the desired dose.
7. Withdraw the needle. Briefly apply pressure to the needle entry site.



**Sheep Restraint**



**Injection into leg flap**

### Intradermal Injection

**NOTE: Recommended maximum volume for injection must not exceed that stated in the data sheet, and only be administered by the stated route(s).**

- Anesthesia is not required. This technique requires two technicians; one to restrain the sheep, the other performs the injection.
  1. Using an appropriate size syringe and a 25-30 gauge needle, draw up the required dose (maximum volume 0.5ml per site) and expel any air bubbles.
  2. The injections are usually made under the skin of the back and sides, or under the skin overlying the neck.
  3. Restrain the sheep using the method in *SWMS 5.0*.
  4. Injections can be performed using the loose skin of the back, neck, sides, or in the leg skin fold.
  5. Shave the fleece, and decontaminate the skin with Chlorhexidine Surgical Scrub.
  6. With the bevel up, insert the needle 2-3mm almost horizontally to the surface of the skin. Gently draw back on the plunger, if blood is not observed in the hub of the needle, inject the desired dose. (NOTE: When injecting the substance, there will be some resistance and result in a “bleb”).



### Intramuscular Injection

**NOTE: Recommended maximum volume for injection must not exceed that stated in the data sheet, and only be administered by the stated route(s).**

- Anesthesia is not required. This technique requires two technicians; one to restrain the sheep, the other performs the injection.
  1. Using an appropriate size needle (see recommended needle sizes) and syringe, draw up the required dose and expel any air bubbles.
  2. An intramuscular injection is given into the muscles of the hind limb, either the biceps femoris, or the quadriceps.
  3. Palpate the muscle prior to injection. Place the needle anterior to the femur halfway between the hip and the knee, and parallel to the femur.
  4. Insert the needle slightly downward to enter the group of muscles, then parallel to the femur to maintain the depth.
  5. Gently draw back on the plunger, if blood is not observed in the hub of the needle, inject the desired dose. Withdraw needle, apply pressure, and massage the site.
  6. Care must be taken with small lambs not to inject too deeply, as it is possible to inject the sciatic nerve which runs down behind the femur.



### Jugular Intravenous Injection

**NOTE: Recommended maximum volume for injection must not exceed that stated in the data sheet, and only be administered by the stated route(s). Maximum volume for bolus IV injection is 60ml; volumes in excess of 20mls should be administered via an intravenous infusion line.**

- Anesthesia is not required. This technique requires two technicians; one to restrain the sheep, the other performs the injection.
  1. Using an appropriate size needle (see recommended needle sizes) and syringe, draw up the required dose and expel any air bubbles.
  2. Restrain the sheep using the method in *SWMS 5.0*.
  3. Clip fleece from the side of the sheep's neck to allowing the jugular to be identified.
  4. Once the jugular is identified, insert the needle or catheter at approximately a 10°-20° angle to the animal's neck. Blood will be seen in the hub of the needle.
  5. Gently draw back on the plunger, blood should flow freely into the syringe, inject the desired dose. Withdraw needle, apply pressure to the puncture site until bleeding ceases.



#### 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.

Position	Name	Contact Details
Manager Animal Facility	Roxanne Collingwood	8204 4380 <a href="mailto:roxanne.collingwood@flinders.edu.au">roxanne.collingwood@flinders.edu.au</a>
Animal Welfare Officer	Lewis Vaughan	0450 424 143 <a href="mailto:awo@flinders.edu.au">awo@flinders.edu.au</a>

#### **Useful References**

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

<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)

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