

PCA_052 Injections – Subcutaneous (SC) in pigs

I. OBJECTIVE

To describe a standardised procedure for performing subcutaneous (SC) injections in pigs for scientific purposes.

II. DEFINITIONS

Competent - “the consistent application of knowledge and skill to the standard of performance required regarding the care and use of animals. It embodies the ability to transfer and apply knowledge and skill to new situations and environments.” (as per, *Australian code for the care and use of animals for scientific purposes*, 2013)

III. COMMENTS / RECOMMENDATIONS

- Relative to animal ethics applications, when using this SOP, the following must be described in the individual ethics application: intended frequency/timeline of this animal use, any intended variation to this procedure.
- Pigs vocalise when they are handled: although this behaviour should not be ignored, be aware this does not necessarily indicate that they are experiencing pain or distress. Competency requires that you can distinguish between normal and abnormal behaviour. Ask your supervisor for advice if you are uncertain.
- Unless otherwise directed by a veterinarian for therapeutic treatment, a pig should not receive more than two SC injections in any one 24-hour period.
- As per routine conditions (see document footer) this procedure must be performed by, or under the direct supervision of, personnel who are competent to perform the procedure.

IV. PREPARATION

- General hygiene considerations: operators must use gloves and disinfect them between animals to prevent the transmission of blood-borne diseases; equipment must be cleaned between animals, including reusable needles, which must be sterile and changed between animals to prevent transmission of disease between pigs; ensure basic good hygiene practices (washing hands etc); do not enter a piggery if you are unwell.
- Ensure substances have been stored and prepared for administration according to manufacturer’s instructions, and note the product’s expiry date and batch number.

V. EQUIPMENT

- 16-19G needle for large, adult pigs
- 20-23G needle for medium and small pigs
- Appropriate animal restraint equipment
- PPE, as appropriate relative to the location and procedure (Overalls, steel-capped rubber boots, ear-muffs or ear plugs, are all recommended. As required, seek advice from biosecurity personnel).
- Sharp’s disposal container
- Gauze cloth

VI. PROCEDURE

1. The person performing the injection (the operator) ensures all required equipment is prepared and appropriate for use (e.g. substance to be injected is not expired, needle gauges are appropriate sizes etc).
2. The pig is restrained as appropriate for the procedure.
3. Only if the skin is visibly contaminated/dirty at the site of injection does it need to be cleaned before injection.
4. Insert the needle into the subcutaneous space, passing through the skin at an angle $\leq 45^\circ$ to the skin, with the bevel of the needle “facing up”. It often helps to “pinch”, creating an area of tenting that can then be injected into.

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The most common and appropriate site of SC injection in grower and adult pigs is often a fold of skin at the lateral cervical region, caudal to the base of the ear (see image 1). In juvenile pigs, however, a fold of skin at the fore- or hind-flanks may be more appropriate for use.

Note: the dermis of pigs is less mobile, when compared to many other non-human animals (e.g. the skin of dogs and cats is quite mobile relative to deep structures). This means the volume that can be injected SC is relatively less than in these other species – follow product manufacture’s guidelines.

5. Withdraw the syringe plunger slightly to ensure that inadvertent venepuncture has not occurred. If blood flashes back into the syringe, redirect the needle within the subcutaneous layer, and repeat this step.
6. Inject the substance, then remove the needle and place it into the sharp’s disposal container at the earliest appropriate time.
7. If a bead of blood or discharge of the injected solution is present on the skin upon removal of the needle gently apply pressure to the site of injection with a piece of gauze.
8. Observe animals for signs adverse reactions to the injection (e.g. acute swelling at the site or injection or otherwise, hives, increased respiratory rate, depression, or agitation). If unexpected adverse reactions occur immediately seek veterinary advise, and follow the appropriate institutional procedures (for general reference, see the [animal ethics webpage](#)).

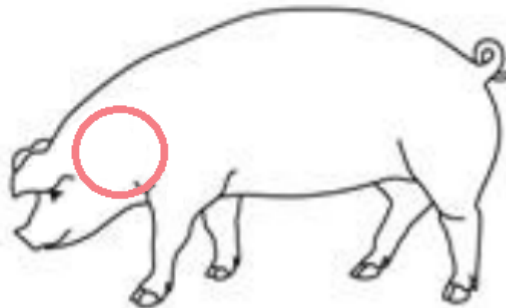


Image 1. Graphical representation of SC injection site: lateral cervical region. This is the most common location for SC injection in grower and adult pigs (image modified from: Intramuscular Injections in Swine, Virginia Tech, 2017 https://ouv.vt.edu/content/dam/ouv_vt_edu/sops/large-animal/sop-swine-intramuscular-injection.pdf).

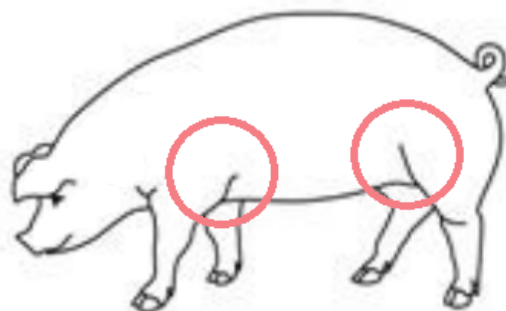


Image 2. Graphical representation of SC injection site: fore- and hind-flanks. This is most commonly used for SC injection in juvenile pigs (image modified from: Intramuscular Injections in Swine, Virginia Tech, 2017 https://ouv.vt.edu/content/dam/ouv_vt_edu/sops/large-animal/sop-swine-intramuscular-injection.pdf).

Version #	Reviewing AEC (note: all other relevant AECs ratify the approval)	AEC Review Date	Approval To Date
2	PCA	15/06/2022	15/06/2025

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