

Equine Intramuscular & Subcutaneous Injections



Disclaimer

A series of booklets (instructions for skills and flipped classroom materials) has been developed by the Clinical Skills Lab team (staff, recent graduates and students) from Bristol Veterinary School, University of Bristol, UK.

Please note:

- Each flipped classroom booklet includes ways to prepare for learning a skill in class; it is acknowledged that there are often other approaches. Before using the booklets, students should check with their university or college to determine whether the approaches illustrated are acceptable in their context or whether an alternative resources should be used.
- The booklets are made available in good faith and may be subject to changes.
- In using these booklets, you must adopt safe working procedures and take your own risk assessments (as and when appropriate), checked by your university, college etc. The University of Bristol will not be liable for any loss or damage resulting from failure to adhere to such practices.

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Equipment list:

Equine Injections:

Intramuscular & Subcutaneous

Equipment for this station:

- Equine head and neck model
- Needle: 21g x 1½"
- Syringe: 2ml or 3ml

Considerations for this station:

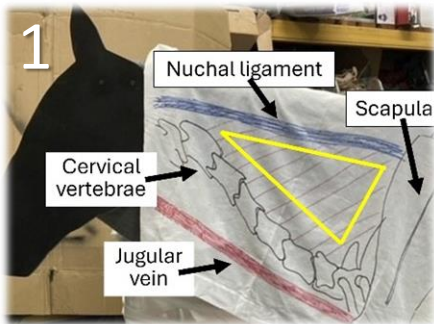
- To identify anatomical landmarks, flap the sheet down.
- When performing an injection ensure the sheet is folded up and out of the way.
- Do not inject fluid into the model, use **air** in the syringe.
- Personal protective equipment (PPE) must be worn when working with horses, including safety boots and a hard hat. Gloves should be worn when handling medications.
- Refer to instruction booklet 'CSL_H04 Locating Horse Injection Sites'.

Anyone working in the Clinical Skills Lab must read the 'CSL_I01 Induction' and agree to abide by the 'CSL_I00 House Rules' & 'CSL_I02 Lab Area Rules'

Please inform a member of staff if equipment is damaged or about to run out.

Clinical Skills:

Equine Injection: Intramuscular



Intramuscular injection:

With the sheet folded down, identify the relevant anatomical landmarks for an intramuscular injection in the neck.

The area suitable for an intramuscular injection is indicated by the yellow triangle on the photo above.



Fold the sheet back and identify an appropriate place to inject. If in doubt, return to step 1.

Note: With a real horse, apply a headcollar before starting and ensure the owner/handler is standing on the same side of the horse as you are.



Select a 2-3ml syringe and a 21 gauge 1.5 inch needle. Remove each from its packaging. Attach the needle to the syringe and draw up 1.5ml of air in the syringe.

Note: Air will be used for the injection into the model, not water/fluid. It is not necessary to wear gloves when using the model.



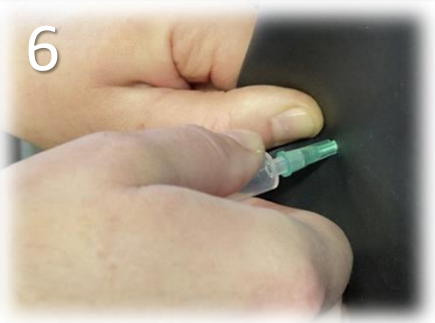
Stand perpendicular to the horse's neck and in line with the horse's forelimb.

Take a pinch of skin in your non-dominant hand at the spot (position) identified in step 2. This helps prepare the horse and distract it from the injection. Hold the pinch of skin throughout the injection technique (it is released in step 10 – see next page).



Hold the needle and syringe in your dominant hand. Stabilise your hand against the horse's neck and insert the needle next to the pinch of skin.

Stabilising the dominant hand (the hand used to give the injection) against the horse's neck means that if the horse moves a little, you will be able to move with it.



The needle is inserted perpendicular to the surface of the horse's skin. Gently and smoothly push the needle in until the hub is against the skin surface.



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Clinical Skills:

Equine Injection: Intramuscular



7
Reposition your dominant hand so that you can draw back on the plunger to check for blood (which would indicate that the needle is in a vessel). If blood appears in the syringe, reposition the needle and draw back again to check.

Note: In this model, air will continue to fill the syringe. In a horse, normally a negative pressure is felt.



8a
When no blood is seen in the syringe it is safe to inject.
Inject the contents of the syringe by depressing the plunger with your thumb, as shown in the photo above.



8b
An alternative technique is to depress the plunger with the palm of your hand, as shown in the photo above.



9
Once the plunger has been fully depressed, remove the needle.



10
Finally, release the pinch of skin.

Dispose of the needle and syringe appropriately. See booklet 'CSL_U02 Safe Use of Needles.'

Clinical Skills:

Equine Injection: Subcutaneous



Subcutaneous injection:

Select a 2-3ml syringe and a 21 gauge 1.5 inch needle. Remove each from its packaging. Attach the needle to the syringe and draw up 1.5ml of air in the syringe.

Note: Air will be used for the injection into the model, not water/fluid. It is not necessary to wear gloves when using the model.



Stand perpendicular to the horse's neck and in line with the horse's forelimb.

Make a 'tent' in the skin by taking a large pinch of skin in your non-dominant hand near the base of the horse's neck, cranial to the scapular and dorsal to the jugular groove.

Hold the pinch of skin throughout the injection technique (it is released in step 8 – see next page).



Hold the needle and syringe in your dominant hand. Stabilise your dominant hand against the horse's neck and smoothly insert the needle underneath the skin, into the subcutaneous space i.e. into the 'tent'.



Insert the needle up to the hub. Check that the needle has **not** been pushed all the way through the pinch of skin and out the other side. If it has, pull the needle back a bit.



Reposition your dominant hand so that you can draw back on the plunger to check for blood (which would indicate that the needle is in a vessel). If blood appears in the syringe, reposition the needle and draw back again to check.

Note: In this model, air will continue to fill the syringe. In a horse, a negative pressure is felt.



When no blood is seen in the syringe it is safe to inject.

Inject the contents of the syringe by depressing the plunger. In the photo above the plunger is being depressed by the little finger. Alternatively, the plunger can be depressed with the thumb or palm of the hand.

Clinical Skills:

Equine Injection: Subcutaneous



7
Once the plunger has been fully depressed, remove the needle.



8
Finally, release the pinch of skin (the 'tent').

Dispose of the needle and syringe appropriately. See booklet 'CSL_U02 Safe Use of Needles.'

Resetting the station: Equine Injections: Intramuscular & Subcutaneous

1. Dispose of needle safely
2. Fold sheet back down over the neck

Station ready for the next person:



Please inform a member of staff if equipment is damaged or about to run out.

I wish I'd known:

Equine Injections:

Intramuscular & Subcutaneous

- When making the skin 'tent' (subcutaneous injection) or pinching the skin (intramuscular injection), a useful technique is to press the knuckle of your first (index) finger into the horse's neck and then roll the skin onto your finger with your thumb. This helps you get a good grip.
- In the horse, there are differences in the techniques for inserting the needle in the neck compared to the gluteal muscles:
 - For the neck, the needle should be inserted gently and smoothly, not too rapidly or forcefully (which is a more typical technique for injections into the gluteals).
- Some horses do not like having injections and may show signs of distress. It is helpful to be aware of the signs to look out for. A useful resource is:
<https://www.bhs.org.uk/horse-care-and-welfare/behaviour/equine-stress/>
- There are methods to train horses to cope with injections. A useful resource is:
<https://m.youtube.com/watch?v=MRAIdnQmzak&pp=ygUUQmV2YSBIYXN5IGluamVjdGlvbnM%3D>