



## SOP 3.01 Canine and Feline Venepuncture

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**Written by:** Esther Calcott, Jake Fountain  
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### Purpose

- (1) The objective of this standard operating procedure is to provide guidance to the Charles Sturt University staff on:
  - a. Safely collecting blood from cats and dogs

### Scope

- (2) This procedure applies to any person who is involved in AEC approved projects involving venepuncture for blood collection in cats or dogs.
- (3) All researchers and teaching staff using animals for scientific purposes must be competent. For definition of competency refer to Charles Sturt University's Policy on [Animal Care Competency Training and Assessment](#)

### Details of procedure

#### Equipment:

- (4) Clippers with 40 blade
- (5) Needle
- (6) Syringe
- (7) Blood tubes
- (8) EMLA cream/topical anaesthetic (if necessary)
- (9) Methylated spirits/alcohol
- (10) Chlorhexidine scrub (if necessary)
- (11) Swabs or cotton ball
- (12) Sharps container
- (13) Waste container

#### Safety and risk considerations:

- (14) Animal bite to human
- (15) Animal scratch to human
- (16) Injury from animal movement e.g. head butting by dog, back injury from restraining struggling animals using poor technique
- (17) Fear induced behaviours in animals – acute and chronic. These include avoidance, flight or fight behaviours and may be accompanied by urination, hyperthermia, defaecation, expression of anal glands etc.
- (18) Adverse bleeding event for animal patient
- (19) Clipper burn from inappropriate technique



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(20) Haematoma formation

### Procedure:

- (21) Ensure that all equipment has been collected prior to patient being removed from housing (this should include needle, syringe, blood tubes, methylated spirits, clippers, EMLA cream (optional)).
- (22) Ensure that all equipment is in good working order e.g. blades are sharp, clippers are lubricated, blood tubes are appropriate for samples being collected, blood tubes are in date and have been stored appropriately.
- (23) Ensure that the appropriately sized needles and syringes have been chosen for the animal being sampled. Examples of needle sizes include: small dogs and cats (22-25 gauge), large dogs (19-21 gauge). These are examples only and the gauge and length of needle chosen will be determined based on a number of factors including species, animal size, anticipated blood pressure, venous access, operator preference/skill level, volume of blood to be collected etc. Professional judgment will need to be exercised but as a general rule the smallest gauge that is still efficacious is preferred to minimise the impact on the subject. Animal is checked for general health and wellbeing by registered veterinarian
- (24) The animal is gently restrained by a qualified veterinary nurse/technologist or competent handler (see figures 1-4). Stress free or stress minimising handling and restraint techniques are preferred in all instances. Forceful handling and restraint should be avoided wherever possible- apart from the psychological impact on the animal the induction of stress can affect some of the characteristics of the sample.



**Figure 1** - Method of restraint for jugular puncture (feline)



**Figure 2** - Method of restraint for cephalic vein puncture (feline)



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**Figure 3** - Method of restraint for cephalic vein puncture (canine)



**Figure 4** - Method of restraint for jugular puncture (canine)

- (25) Clip hair over vein. Pay attention to reaction of subject to clippers. If the animal is highly stressed/anxious about the use of clippers, use habituation techniques if time permits. With anxious animals clippers should be used by someone with expertise. If stress/anxiety is undue, then consider removing hair using scissors or not removing hair at all.
- (26) If the animal is reactive to clippers, consider applying a small amount of EMLA cream (or other local anaesthetic cream) to the skin. Wait 5 minutes for the local anaesthetic to desensitise the area.
- (27) Swab with alcohol if clean or perform chlorhexidine scrub if gross contamination is present.
- (28) Apply pressure over vein to raise it (performed by person restraining the animal) if collecting blood from the cephalic vein.
- (29) Only a qualified veterinarian or experienced veterinary technologist or nurse may collect blood from the jugular vein.
- (30) Remove cap from needle making sure the uncapped needle remains sterile.
- (31) Introduce the needle (with syringe attached) into the skin over the vein with the bevel facing out at an angle of approximately 30 degrees.
- (32) Once the needle has breached the skin apply gentle suction to the syringe.
- (33) Once you are in the vein blood will appear in the flashback chamber of the needle.
- (34) Once the flashback chamber shows blood, gently withdraw the syringe plunger. Fill syringe to desired volume while holding vein up so it remains full (approx.5-10mL from dog; 3-5mL from cat). Too much pressure can suck the walls of the vein into the needle bevel and stop blood flow.
- (35) If the operator is unsuccessful in obtaining blood in the flashback chamber, or if the flow of blood stops unexpectedly, it is possible to gently move the needle under the skin to re-access the vein. These movements need to be gentle and relatively minor to avoid discomfort. However, they are preferred to removing the needle entirely and re-penetrating the skin.
- (36) If the operator fails to draw blood and needs to make other attempts by re-penetrating the skin, then a new needle should be used. No more than two attempts should be made by the same operator.
- (37) If the subject is becoming unduly stressed or anxious then professional judgement should be applied as to whether the sample will be affected. It may be necessary to rest the animal and/or change operators.
- (38) Withdraw needle from vein.



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- (39) Immediately apply pressure over the site of venepuncture to stop formation of a haematoma.
- (40) The veterinary technologist or other staff should reassure the animal if possible, by voice and tactile methods both during and after the procedure. In some cases, treats may be appropriate during and immediately after the procedure.
- (41) Apply pressure over site of venepuncture for 30-60 seconds as a minimum and check that bleeding has stopped and there is no haematoma formation.
- (42) Remove needle from syringe. Gently fill the blood tubes from the syringe – do not force blood through the needle. Forceful expulsion of blood can damage blood cells (especially erythrocytes) and contaminate the sample.
- (43) Label all tubes with appropriate details.
- (44) Discard all sharps into the sharps bin and waste into a biological waste bin.
- (45) Return patient to housing and ensure patient is comfortable.

### Drugs, chemicals, or biological agents

- (46) Methylated spirits/alcohol
- (47) EMLA cream/topical anaesthetic (if necessary)
- (48) Chlorhexidine scrub (if necessary)
- (49) Blood (when collected from animal)

### Impact of procedure on wellbeing of animals

- (50) There is potential for chronic behavioural impact by all invasive procedures. The experience of the animal during handling and restraint will affect its future behaviour in similar circumstances.
- (51) Every effort should be made to minimise fear/anxiety/distress by applying low stress handling and restraint techniques.
- (52) Students should be reminded that how handling and restraint is perceived by the animal will have impacts on all future interactions between that animal and other humans e.g. groomers, veterinarians, animal care staff.
- (53) Minor discomfort will be experienced during the blood collection due to the insertion of the needle.

### Animal care

- (54) Animals are provided with food and water *ad libitum*.
- (55) Animals are gently handled and restrained using low stress techniques during the procedure.
- (56) Animals are rewarded with praise and treats at conclusion of blood collection. This may also be done during the procedure where appropriate and practical. The use of rewards is most pertinent during the aversive episode rather than at its conclusion.
- (57) Animals are returned to their place of residence or clinical caging at the conclusion of blood collection.

### Pain relief

- (58) Due to the brief nature of the procedure, no pain relief is required.



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### **Reuse and repeated use**

- (59) If blood needs to be re-collected, it should be done so in another area that has not been punctured e.g. other cephalic vein or saphenous vein. It is necessary to change operators if one operator has tried twice without success.
- (60) Consideration should be given to allowing the animal to rest in between attempts if it is unduly stressed or anxious.

### **Qualifications, experience or training necessary to perform this procedure**

- (61) This procedure may be performed by a registered veterinarian; an experienced and competent veterinary technologist or nurse; or other personnel with appropriate training who has been assessed and determined to be competent by a registered veterinarian.
- (62) A veterinary technologist or nurse must have expertise in the practice as demonstrated to the satisfaction of the attending veterinarian.

### **Record requirements**

- (63) On collected blood samples label the samples with:
  - a. ID of choice e.g. name, research ID
  - b. Species
  - c. Date of collection
  - d. Time of collection
- (64) Complete animal monitoring form if applicable

### **Associated documentation**

Nil

### **Glossary**

Nil

### **References and relevant links**

Nil