

 <p>THE UNIVERSITY OF QUEENSLAND AUSTRALIA CREATE CHANGE</p>	<p>UQ Animal Ethics Committee - Standard Operating Procedure  Institutional author: <b>School of Veterinary Science, UQ VETS</b>  <b>CAN_006 - Blood Collection - Cephalic Venepuncture in Dogs</b>  AEC Reviewed &amp; Approved: 14/12/2022</p>	Version #1
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## CAN\_006 - Blood Collection - Cephalic Venepuncture in Dogs

### I. OBJECTIVE

To collect a sample of blood from the cephalic vein of a dog.

### II. COMMENTS / RECOMMENDATIONS

- As indicated within “conditions” (see the document’s footer), this procedure must only be performed by, or under the direct supervision of, a trained and competent person.
- Assess the demeanour of the dog before attempting this procedure.
- Check you have the required in-house testing kits required before performing this procedure.
- Dispose of used needles into the yellow sharp’s containers immediately after use.
- If collecting blood from a greyhound this procedure should be performed with the dog on the ground in a standing position or in a lateral position on a comfortable table.
- Do not apply Vet Wrap too tightly around the limb. This procedure should only be completed by trained staff members or by students under direct supervision of trained staff members.

### III. EQUIPMENT

- Collar and lead for safe restraint
- 1 operator and 1 handler
- Nitrile Gloves
- Clippers with #40 blade
- Kidney dish
- 5% chlorhexidine (Hexacon™) and Methylated spirits solution (Alcoholic chlorhexidine).
- 5% Chlorhexidine Scrub solution
- 70% Methylated Scrub solution
- Gauze swab
- Vet Wrap
- Appropriately sized needle for dog size and for sampling requirements
- Appropriately sized syringe for volume of blood required
- Required blood collection tube(s) or testing kit(s)
- High reward treats **unless fasting is required**

### IV. PROCEDURE

- 1) Ensure all necessary equipment is prepared before retrieving the dog for this procedure.
- 2) Handler assesses the dog’s demeanour before attempting this procedure and maintains control of the dog at all times.

<p>Conditions:</p> <ul style="list-style-type: none"> <li>• Investigators named in an animal ethics application, relative to this SOP, must be competent to implement the SOP</li> <li>• Any variation to this SOP must be described in the relevant animal ethics application</li> <li>• If this SOP has not been reviewed and approved by a UQ AEC within the last three years it is no longer valid and cannot be used in animal ethics applications until reapproved (see “AEC Reviewed/Approved” date in this document’s header).</li> </ul>
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- 3) Handler wears gloves and gently restrains the dog in sitting, lying or standing position as per the following S.O.P.s:
  - a. If performing this procedure in a standing position on the ground please refer to the S.O.P for canine cephalic restraint<sup>1</sup>
  - b. If performing this procedure in lateral recumbency<sup>2</sup> please refer to the S.O.P. for a two-person lift.
  - c. If performing this procedure on a smaller dog on a table please refer to the S.O.P for small dog table restraint<sup>3</sup>
  - d. Ensure the dog is restrained correctly for a cephalic venepuncture.<sup>4</sup>
- 4) Handler gently extends the front leg forward and places thumb over anterior aspect of the proximal forelimb, rolling the cephalic vein laterally to stabilise and occlude it
- 5) Operator wears gloves, identifies cephalic vein on dorsal antebrachium
- 6) Operator clips a 3-4cm area over the dog's cephalic vein using a #40 clipper bade.
- 7) Operator aseptically prepares venepuncture site using chlorhexidine scrub, alcohol chlorhexidine and then methylated scrub solution.
- 8) Operator aseptically connects the needle and syringe, ensuring the bevel of the needle is in line with the increments on the syringe.
- 9) Operator gently holds dog's extended foreleg at the carpus, further stabilising the cephalic vein by placing thumb to the side of the vessel
- 10) Operator inserts needle with syringe attached, bevel up, through skin and into vein, ensuring needle is in vein by observing flash of blood in the needle hub
- 11) Operator applies negative pressure to syringe by pulling syringe plunger back to draw required amount of blood
- 12) Operator removes needle from vein, handler applies gentle manual pressure over puncture site with clean gauze swab for one minute then places a light leg bandage using clean gauze swab and vet wrap to minimise bruising and haematoma formation and visually ensures venipuncture site has stopped bleeding
- 13) Operator detaches needle from syringe and places blood sample into blood collection tube(s) or testing kit(s) as needed
- 14) Operator disposes of sharps in sharps collection bin
- 15) Handler rewards dog with high reward treats (unless fasting is required)
- 16) Handler rechecks the venepuncture site regularly for signs of bruising or swelling and removes vet wrap after 1-2 hours

## V. REFERENCE INFORMATION

Table 1. Guidance relative to blood collection volumes, based on a dog's live body weight (NHMRC 2008).

- *Disease conditions (and other physiological stressors such as pregnancy, obesity, and age) will usually reduce the total blood volume (TBV) relative to body weight. This must be taken into consideration.*
- *In the clinical setting, the volume of blood collected from dogs rarely results in any noticeable physiological impact (i.e. usually <5mL is collected, which is well tolerated, even in a small-sized dog).*

<sup>1</sup> <Z:\SVS\Teaching\CSC\S.O.P Gatton\SOP Clinical Studies Centre- Canine\Canine SOPs Amy updated 2020>

<sup>2</sup> <Z:\SVS\Teaching\CSC\S.O.P Gatton\SOP Clinical Studies Centre- Canine\Canine SOPs Amy updated 2020>

<sup>3</sup> <Z:\SVS\Teaching\CSC\S.O.P Gatton\SOP Clinical Studies Centre- Canine>

<sup>4</sup> <Z:\SVS\Teaching\CSC\S.O.P Gatton\SOP Clinical Studies Centre- Canine\Canine SOPs Amy updated 2020>

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- Repeat blood collections, however (over a short period), must be calculated cumulatively to appreciate the total loss of blood volume, ensuring this will be well tolerated (physiologically).
- Dogs which undergo large blood volume collections (e.g. for transfusion) may require physiological support (e.g. intravenous crystalloid fluid replacement).
- Animals must be clearly identifiable to ensure accurate calculation of total blood volume loss, relative to any previous blood collection.

Body weight	Total Blood Volume (TBV) [approximately 6-7% of body weight]	Minor Bleed (7.5% of TBV)	Moderate Bleed (<7.5-10% of TBV)	Major Bleed (<10-15% of TBV)
Recovery period required ( <b>minimum</b> ), relative to blood volume collected:		1 week	2 weeks	4 weeks
5kg	350mL	26mL	26 – 35mL	35 – 52mL
10kg	700mL	52mL	52 - 70mL	70 – 105mL
15kg	1050mL	78mL	78 – 105mL	105 – 157mL
20kg	1400mL	105mL	105 – 140mL	140 – 210mL

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<b>Authors / reviewers</b>	Unknown/Amy Edwards/Katie Nash	
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Revision	Date	Author/s	Amendments
1.0	25/05/2020	Amy Edwards	Links to handling SOPs, equipment, procedure, and precaution additions
2.0	21/10/2022	Katie Nash	Added further details on vein occlusion and phlebotomy, reworded sample handling following collection, added recommendation re students
3.0			

Version #	Reviewing AEC (note: all other relevant AECs ratify the approval)	AEC Review Date	Approval To Date
1	PCA	14/12/2022	14/12/2025

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