How to collect blood from a cat

Attire:
Clean scrub top or laboratory coat
Examination gloves

Persons required:
Phlebotomist
Handler to hold the donor cat
Preferably an extra assistant if this is not a procedure regularly performed by the phlebotomist

Donor Selection:
Locate happy & healthy Cat
1-8 years old
>4kg lean bodyweight
Preferably indoor only
Perform full physical health check and consider cardiac ultrasound to detect silent heart disease
Perform full haematology and biochemistry analysis – packed cell volume/total solids as a minimum
Perform infectious disease screen – Minimum FeLV/FIV if outdoor cat
Perform Blood Type (Blood Typing Kits available from PBB)

Equipment required:
Clippers
Chlorhexidine (or povidone-iodine) mixed with clean warm water to make a solution
Cotton wool or gauze swabs
Surgical spirit
Sterile 60ml luer tip syringe, 19G butterfly catheter, Three way tap
Or Small Animal Syringe Collection
250ml or 450ml blood collection bag source of CPDA-1/CPD
All of the above available from Pet Blood Bank
Sterile 10ml syringe and 20G needle to withdraw anticoagulant
2 or 3 small swabs
5cm roll conforming bandage i.e. vet wrap for neck bandage
Scissors
Plastic or guarded haemostat (protective cover over haemostat teeth)
Macoclamp-P if using (recommended to prevent contamination - available from PBB)

Sedation / Anaesthesia
Intravenous sedation drawn up (recommend using 0.2-0.6ml of 50:50 mix of diazepam/ketamine given intravenously to effect via a cephalic catheter).
Or:
Isoflurane and oxygen ready to perform mask induction, intubation and maintenance of general anaesthesia
Restraint e.g. cat bag or large towel if necessary for mask induction

Preparation:
• Calculate amount of blood to be drawn from donor and amount of CPDA-1/CPD required. Blood volume in cats is approximately 55-65ml/kg. Do not take >20% blood volume (11-13ml/kg). Amount of CPDA-1/CPD required is 1.3ml per 10ml whole blood drawn.
• Wash hands thoroughly and don clean examination gloves.
• Connect the 60ml syringe and butterfly catheter to the three way tap, leaving the lateral port of the three way tap free and the stopcock turned off to the butterfly catheter.
- Use the 10ml syringe and 20g needle to draw up required amount of CPDA-1/CPD (6-8mls) of CPDA-1/CPD then remove needle and connect syringe to the lateral port of the three way tap.
- Aspirate the required amount of CPDA-1/CPD into the 60ml syringe before turning the stopcock off to the lateral port, removing the 10ml syringe and capping the port.
- The remainder of the CPDA-1/CPD must then be drawn off the collection bag and discarded if this bag is to be used to administer the donated blood.
- Charge the butterfly catheter with CPDA-1/CPD and then place the guarded haemostat onto the catheter tubing. **Note: at no time should outside air be allowed to enter the collection system.**
- Bring the donor to the collection area and make cat comfortable in the restraining bag if using one for mask induction.
- Administer the intravenous sedation via a cephalic catheter or perform mask induction and intubation for anaesthesia.

**Collection:**

- For a cat under General anaesthesia position the cat in lateral recumbency and gently pull the forelegs back towards the tail at a 40o angle to the body, exposing the jugular furrow. For a calm, lightly sedated cat, sternal recumbency can be utilised.
- Clip an area 5cm x 5cm over the mid-jugular region allowing visualisation of the vein.
- Using the chlorhexidine solution on cotton wool or a gauze swab, clean the area using a minimum of three passes (wipes).
- Apply a small amount of surgical spirit to the area on cotton wool/swab or via the bottle and allow to dry.
- Change examination gloves for a clean pair.
- Have your assistant hold off the jugular vein at the thoracic inlet to allow filling of the vein, then perform venipuncture by inserting the butterfly needle, bevel up and remove the haemostat from the tubing. It is possible to insert needle towards head or towards thoracic inlet, however if inserting towards the head, ensure the tip of the needle once placed, will rest caudal to the junction of the jugular and linguofacial veins.
- Lightly pull on the 60ml syringe plunger to create a vacuum as too much pressure can stop blood flow. Blood should flow freely into the syringe at a rate of 5ml/minute or greater. Mix the anticoagulant and incoming blood with a careful rocking motion frequently during the blood draw.
- Continue collection until syringe reads required amount for combined volume of blood plus anticoagulant (usually around 57ml +/- 10%).
- Turn the stopcock off to the donor, release the vein, remove the needle and replace cap.
- Have the handler apply pressure to the venipuncture site with 2 or 3 small swabs for 2 minutes. Wrap the donors’ neck with vet wrap bandage over the swabs and leave in place for 30-60 minutes before removing. Monitor heart rate, mucous membrane colour during recovery.
- Ask handler to place donor in recovery area. Cats to be monitored during recovery until able to go home with their owners; owners may wish to leave their cats for this time and return to collect them later.
- The butterfly needle and tubing can then be removed from the three way tap and the blood administered to the recipient using a Haemonate filter (available from PBB) attached to the syringe or administered using a standard filtered blood giving set using the port of a plain blood bag without anticoagulant (e.g. a dry bag or the collection bag used as a source of CPDA-1/CPD with the remaining anticoagulant removed).

* - if using an alternative anticoagulant to CPDA-1/CPD, please see the BSAVA Manual of Canine and Feline Haematology and Transfusion Medicine, page 276, Fig 15.8, “Anticoagulant-preservative solutions for blood collection in the dog and cat” for information on dose rates.

- [www.animalbloodregister.com](http://www.animalbloodregister.com) for information on donors registered in your area
- [www.dr.addie.com](http://www.dr.addie.com) information on breed blood groups
- [http://www.fabcats.org/owners/blood_groups/info.html](http://www.fabcats.org/owners/blood_groups/info.html) information on type B breeds