

Recommended Standard Methods of Blood Collection: *Swine*

Method	Maximum volume (per sample)	Anesthesia Required	Description	Special Considerations
Marginal Ear Vein	No more than 1% blood volume	recommended	The pig is restrained (<i>state method of restraint</i>) and the ear is cleaned with three alternating scrubs of 70% alcohol and betadine. The vein is occluded at the base of the lateral surface of the ear. The 21-23 gauge needle is slid towards the base of the ear. When the vein has been punctured, the emerging blood can be collected directly by capillary action into appropriate tubes. Blood flow is stopped by applying pressure with sterile gauze at the blood sampling site for approximately 2 minutes to achieve hemostasis.	<ul style="list-style-type: none"> • To limit injury and bruising at the sampling site no more than three attempts should be made. • Local anaesthetic cream (e.g. EMLA cream) can be applied to the site 30 minutes prior to blood sampling. • The ear should be warmed in order to dilate the vessel. This can be done by gently stroking and applying a swab soaked with warm water and then drying the area. • Serial blood samples can be taken by moving towards the base of the ear on the same vein and by alternating ears. Up to eight samples can be collected in any 24-hour period, taking into account limits on sample volume. • Restraint: Large pigs can be bled whilst standing and restrained by a snout rope. Minipigs and small pigs can be held across the lap or against the body.
Jugular Vena Cava	No more than 1% blood volume	recommended	The pig is restrained (<i>state method of restraint</i>) and the collection site is cleaned with three alternating scrubs of 70% alcohol and betadine. A needle [19 - 21 gauge needle for pigs and 20 - 21 gauge needle for minipigs (1" long for minipigs/young pigs and 2" long for larger/older pigs)] is inserted into the vena cava approximately 1" (0.5 - 1" for minipigs) cranial to the sternum a little lateral and to the right of the midline. Blood flow is stopped by applying pressure with sterile gauze at the blood sampling site for approximately 2 minutes to achieve hemostasis.	<ul style="list-style-type: none"> • To limit injury and bruising at the sampling site no more than three attempts should be made. A vacutainer system can be used to collect small samples (e.g. down to 3 mL of blood). • Sampling from the cranial vena cava is not suitable for taking multiple samples and a catheter (either surgical or percutaneous) should be used for repeated sampling. • Restraint: Small pigs should be held in a supine position; head and neck straightened out and front limbs drawn backwards. An adjustable V shaped cushioned restrainer, or sling, can help hold the animal in position. Large pigs (>15kg) can be bled whilst standing (a snout rope is positioned behind the canine teeth and the neck lifted upwards). If it is necessary to place the animal in dorsal recumbency, this should be for the minimum length of time possible; five minutes should be sufficient time to collect a sample.

****See NOTES on page 2.**

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NOTES:

Total blood volume of a swine is 60 ml/kg or 6.0 % of total body weight (BW).

No more than 1% of the animal's blood volume in one collection or over a 24 hour period.

No more than 7.5% (4.5 ml/ kg BW) of total blood volume can be collected in a single or multiple draws over a week period.

If 10 % (6 ml/kg BW) of total blood vol, must allow 10 days recovery before next draw.

If 15 % (9 ml/ kg BW) of total blood volume is collected, must allow 15 days recovery before next draw.

*** A Comparative Medicine Veterinarian must be consulted if blood will be drawn from a USDA covered species.**