

Recommended Standard Methods of Blood Collection: *Non-human Primates (NHPs)*

Method	Maximum volume (per sample)	Anesthesia Required	Description	Special Considerations
Femoral Vein or Artery	No more than 1% blood volume	YES	The animal is anesthetized and placed in dorsal or dorsal lateral recumbency with the hindlimbs extended. The skin over the femoral triangle is cleaned with 70% alcohol. The femoral artery is identified by placing a finger in the femoral triangle and locating the pulse. A needle (<i>Macaque 23-25 G; Baboon 21-23 G</i>) is inserted at a 45 to 60° angle with the needle bevel up. For an arterial blood sample, the needle is inserted directly over the palpable pulse. Slight negative pressure is applied to the syringe barrel as the needle is advanced. The needle is advanced until a flash of blood occurs in the hub. The blood sample is gently aspirated, the needle is removed, and firm pressure using sterile gauze is applied to the puncture site for 30 to 60 seconds for venipuncture, or three to five minutes for arterial collection to achieve hemostasis.	<ul style="list-style-type: none"> • When repeated sampling is necessary, the collection site should be rotated. • The femoral artery and vein are used to obtain relatively large quantities of blood. • Arterial samples are differentiated from venous samples by color and pressure. Arterial blood is bright red and the pressure is usually sufficient in larger animals to begin to push back the syringe plunger; venous blood is dark red and the pressure is insufficient to push back the syringe plunger.
Saphenous or Cephalic Vein	No more than 1% blood volume	YES	The animal is anesthetized and placed in either ventral or lateral recumbency with the forelimb (cephalic vein access) or hindlimb (saphenous vein access) extended. The skin over the collection site is clipped with an electric clipper and cleaned with 70% alcohol. The respective vein is distended by compressing the vein closer to the heart than the venipuncture site. Compression is applied by a tourniquet or manually by an assistant. For the cephalic vein, compression is usually applied at the crux of the elbow or just above the elbow. For the saphenous vein, compression is applied at the level of the knee or just above the knee. The vein is visualized and/or palpated following distension. A needle (<i>Macaque 23-25 G; Baboon 21-23 G</i>) is inserted with the bevel up at 20 to 30° angle. Slight negative pressure is applied to the syringe barrel as the needle is advanced. The needle is advanced until a flash of blood occurs in the hub. The blood sample is gently aspirated, the needle is removed, and firm pressure using sterile gauze is applied to the puncture site for 30 seconds to achieve hemostasis.	<ul style="list-style-type: none"> • When repeated sampling is necessary, the collection site should be rotated. • The saphenous or cephalic veins are used to obtain small to moderate amounts of blood. • In most cases, the needle can be inserted into the vessel in one motion. If the vessel moves under the skin as the needle is inserted, a thumb can be placed alongside the vessel. • If blood flow stops during the collection process, the needle can be rotated slightly within the vein, or the animal's foot or hand can be gently squeezed to stimulate venous blood flow.

***See NOTES on page 2

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NOTES:

Estimated Circulating Blood Volume for a NHP: Macaque (Rhesus) = 55 ml/kg; Macaque (Cyno) = 65 ml/kg; Baboon = 60 ml/kg

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

No more than 7.5% of total blood volume can be collected in a single or multiple draws over a week period.

If 10 % of total blood vol, must allow 10 days recovery before next draw.

If 15 % 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.**