

# Rodent Blood Collection

# RODENT BLOOD COLLECTION

**Blood Collection.** As with any procedure, training is critically important. The comfort and level of skill of an investigator with a procedure as well as the sample volume and frequency of sampling should be considered when choosing a method.

When collecting blood, care must be given not to exceed volumes that would have adverse health effects on the animal. For information on determining appropriate blood volumes and frequency, review the [NIH ARAC Guidelines for Survival Bleeding of Rodents](#)

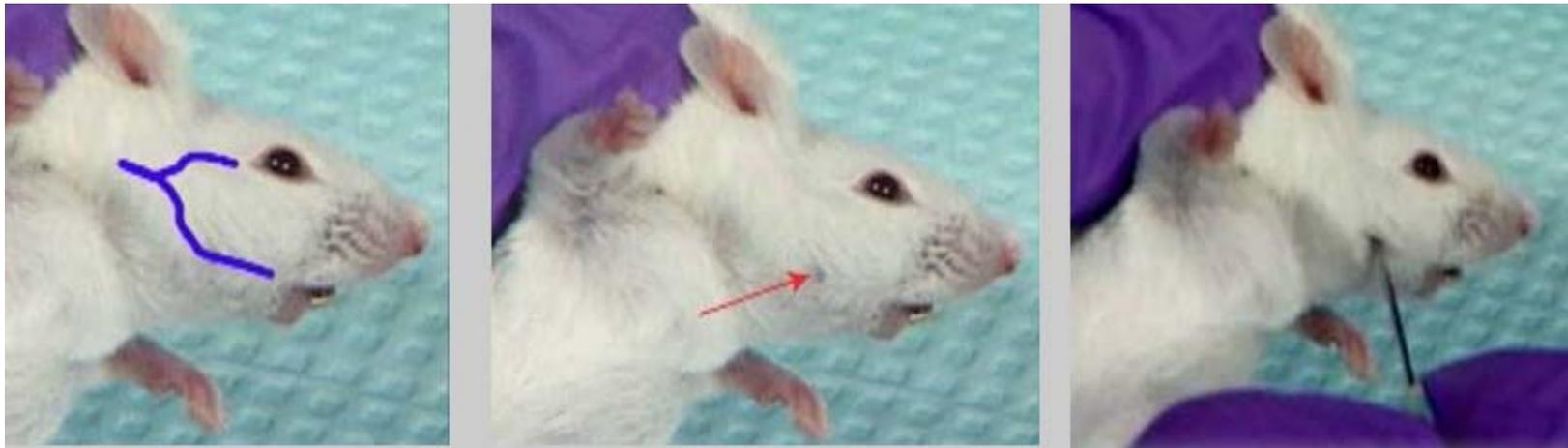
- ([http://oacu.od.nih.gov/ARAC/documents/Rodent\\_Bleeding.pdf](http://oacu.od.nih.gov/ARAC/documents/Rodent_Bleeding.pdf))

# RODENT BLOOD COLLECTION

## Mice – Mandibular Vein

The **Mandibular Vein** is located under the jawbone of the mouse (as shown in the first picture). This technique can be used for collecting large volumes of blood.

1. Restrain the animal by grasping the skin along its back with your left hand (if right-handed). The animal needs to be held in a symmetrical position.
2. Clean the withdrawal site with alcohol.
3. Locate the hairless area at the angle of the mandible (see middle picture). This is the landmark for the puncture site.
4. Insert needle or lancet as shown in the third picture below.
5. Collect blood into an appropriate container.
6. Release the animal, and apply light pressure to stop bleeding.

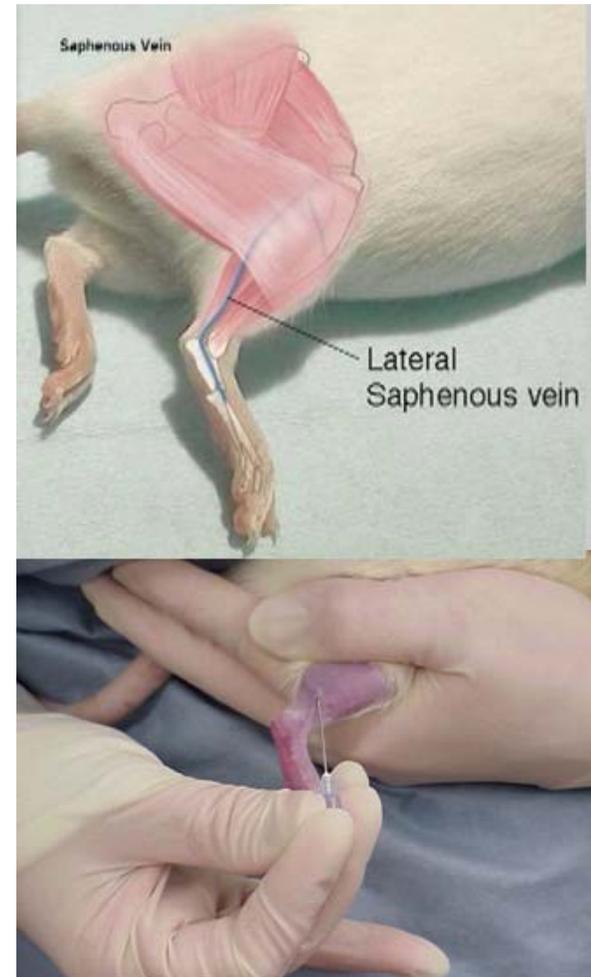


# RODENT BLOOD COLLECTION

## Mice & Rats – Saphenous Vein

The **Saphenous Vein** is located along the lower portion of the hind leg. This technique is used for collecting small volumes of blood. Unless the rat is anesthetized, this technique may require two people.

1. For mice, restrain in a restraint tube. Place the animal head first into the tube, and restrain the hind leg against the tube edge.
2. Pluck or clip the hair on the leg.
3. Clean withdrawal site with alcohol, and apply a small amount of petroleum based ointment.
4. Apply gentle pressure to the medial surface of the leg (as shown in picture). The vessel should become visible as blood pools.
5. Prick the vessel with a needle or lancet, and collect blood into an appropriate container.
6. Release animal, and apply pressure to stop bleeding.

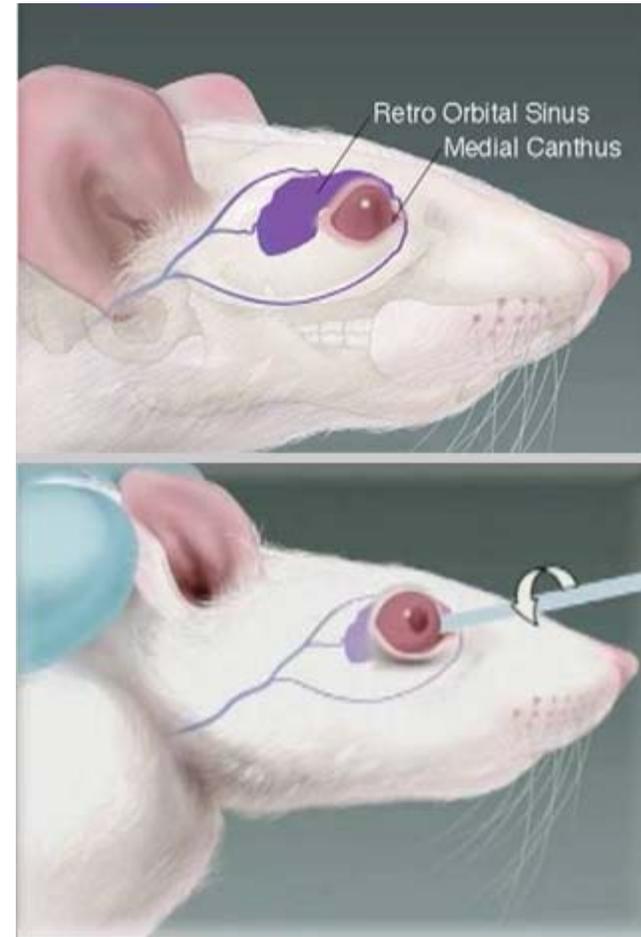


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## Mice & Rats – Orbital Sinus

The **Orbital Sinus** method may be used to collect large volumes of blood. ***Appropriate anesthesia must be used for this procedure.*** Animals may receive topical anesthetic (i.e., tetracaine ophthalmic drops) or general anesthesia.

1. Restrain the animal by grasping the skin along its back with your left hand (if right-handed).
2. Apply anesthetic drops to eye. Use caution not to touch the eye with the applicator.
3. Allow drop to take affect and then wipe away any excess fluid.
4. Place a hematocrit tube at the medial canthus of the eye (as shown in bottom illustration).
5. With a rotating motion, insert tube through the conjunctiva membrane.
6. Continue rotating the tube until blood flows.
7. Collect blood into an appropriate container.
8. Release animal, and apply gentle pressure to stop bleeding.



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## Mice & Rats - Tail Vein Nick

The **Tail Vein** is located on the side of the tail. It may be used to collect a small to medium volume of blood.

1. Carefully warm animal with heat lamp or disposable hand warmers.
2. Place animal in an appropriate restraint device.
3. Clean withdrawal site with alcohol.
4. Using a sterile scalpel blade, nick the lateral tail vein as shown in this picture.
5. Collect blood into an appropriate container.
6. Apply gentle pressure to stop bleeding.  
Alternatively, skin glue or silver nitrate may be applied.



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## Mice & Rats – Terminal Blood Collection

**Intracardiac (IC) bleeding must only be performed on anesthetized animals. It is a terminal procedure.** The animal must be euthanized once the sample has been obtained. The heart is located on the left side of the chest cavity.

1. Deeply anesthetize the animal.
2. Clean the withdrawal site with alcohol.
3. Insert needle at the base of the sternum at a 15 to 20 degree angle, and to the left of the midline as show in the picture on the left.
4. Pull back the syringe plunger slowly to aspirate the syringe.
5. Once procedure is complete, verify the animal is dead.

