



Dayton Children's Hospital
One Children's Plaza Dayton, Ohio 45404

Laboratory Services

Specimen Collection Manual

Venipuncture Procedure

I. PURPOSE :

In infants and children, venipuncture presents special problems because of the small size of the veins and the difficulty controlling the patient. Immobilizing the infant to reduce mobility, use of appropriate sized needle, and careful inspection of suitable venous sites, will contribute to a successful venipuncture.

These guidelines provide appropriate steps and techniques to perform pediatric venipunctures.

II. PROCEDURE:

1. Inspect the site you plan to use. While some veins are visible and appear blue and slightly raised, others must be palpated to locate.
2. Apply the tourniquet an appropriate distance above the venous site. Apply the tourniquet with enough tension to compress the vein but not the artery.
3. If the patient is capable, ask the patient to make a fist. This pumps blood into the vein, making it easier to palpate.
4. Cleanse the site with proper sterile technique.
5. After accessing the patient, choose appropriate sized safety butterfly needle & syringe. (This varies with patient size and vein location.)
6. The insertion of the butterfly needle should follow the same direction as the vein. The needle should be held at a 15 degree angle when inserted into the vein.
7. Entrance into the vein is followed immediately by the appearance of blood in the tubing of the butterfly. If that does not occur, withdraw the plunger slightly. In most instances blood will appear in the hub of the butterfly. Withdraw the amount of blood required to do the ordered tests.
8. Release the tourniquet, withdraw the butterfly and apply gentle pressure to the puncture site with dry gauze.
9. Always apply a pressure dressing for proper vein care.



PROBLEMS AND SOLUTIONS FOR VENIPUNCTURE:

Failure to acquire an adequate specimen may be the result of several factors:

1. Excessive pull on the plunger may collapse a small vein. Pull the plunger more slowly and release tourniquet if necessary.
2. Not piercing the vein or piercing the outer layer of the vein without entering the lumen may not provide adequate blood flow. This may be remedied by withdrawing slightly and re-palpating the site. Adjust needle direction and enter vein.
3. Prolonged application of the tourniquet will cause stasis and petechiae causing measurable increases in some lab values.
4. A hematoma may occur when the outer layer of the vein is not completely penetrated, causing blood to leak into the soft tissue surrounding the vein. It also could occur when the needle penetrates the opposite side of the vein. Withdraw the needle and apply gentle pressure until bleeding has stopped. Another site should be chosen.
5. Hemolysis of a venous specimen is caused by collection of the specimen from a hematoma, too much force being applied to the plunger of the syringe, or the needle used has too small of a gauge. To prevent this, make sure you have appropriate site selection and that you are not using excessive pressure on the syringe. Small gauge needles should be avoided.
6. When blood is drawn above a site that has or has recently had I.V. solution running, it will cause the specimen to be diluted. Inaccurate results will occur. Do not draw blood above an I.V.

NOTE: In order to minimize total blood volume withdrawn, do not draw extra tubes without a physician's order. It is also not necessary to draw a "throw-away" tube prior to collecting a sample for coagulation testing.