

KINE 648 Lab #7

Phlebotomy

Equipment needed:

Torniquet

Vacutainer supplies

Gauze & Alcohol (or alcohol wipes)

Selecting a Puncture Site

- Palpate and trace the path of veins with the index finger. Arteries pulsate, are most elastic, and have a thick wall. Thrombosed veins lack resilience, feel cord-like, and roll easily.
- If superficial veins are not readily apparent, you can force blood into the vein by massaging the arm from wrist to elbow, tap the site with index and second finger, apply a warm, damp washcloth to the site for 5 minutes, or lower the extremity over the chair or bedside to allow the veins to fill.

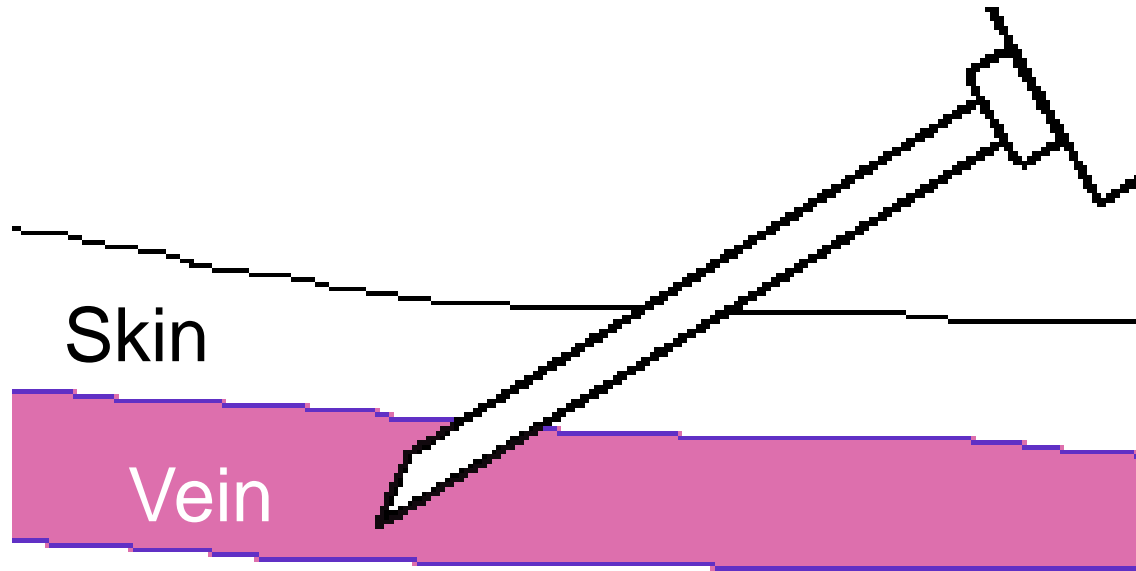
Areas to Avoid When Selecting a Puncture Site

- Extensive scars from burns and surgery
- The upper extremity on the side of a previous mastectomy - test results may be affected because of lymphedema.
- Hematoma - may cause erroneous test results. If another site is not available, collect the specimen distal to the hematoma.
- Edematous extremities - tissue fluid accumulation alters test results.

Performing a Venipuncture using the Vacutainer System

- Position the patient so as to hyperextend the arm.
- Apply the tourniquet 3-4 inches above the selected puncture site. Do not leave on more than 2 minutes.
- The patient should make a fist without pumping the hand.
- Prepare the patient's arm using an alcohol prep.
- Grasp the patient's arm firmly using your thumb to draw the skin taut and anchor the vein. The needle should form a 15 to 30 degree angle with the surface of the arm. Swiftly insert the needle through the skin and into the vein lumen.
- Insert the vacutainer so as not to move the needle placement at all.
- Fill all necessary vacutainer tubes, taking care not to disturb the puncture site.
- Remove the needle from the patient's arm using a swift backward motion.
- Simultaneously press down on the puncture site with a piece of gauze once the needle is out of the arm.
- Bandage the patient appropriately and label the specimen
- Dispose of contaminated materials/supplies in designated containers.

Correct Needle Placement



Useful web site containing venipuncture tutorial:

<http://library.med.utah.edu/WebPath/TUTORIAL/PHLEB/PHLEB.html>

Useful web sites for starting IV's

www.mrprotocols.com/sset/iv.html

nursingcrib.com/starting-an-intravenous-infusion/

Palpating the Vein



Inserting the Needle



Common Blood Tests for Heart Disease Risk

Test	Uses	Normal Ranges
Glucose	Test for diabetes	75 - 110 mg/dL
Cholesterol	Used to test for cardiac risk	120 - 200 mg/dL
Triglycerides	Circulating blood fat - cardiac risk	10 - 160 mg/dL
HDL Cholesterol	The "Good" cholesterol	29 - 67 mg/dL
LDL Cholesterol	The "Bad" cholesterol	< 130 mg/dL
Creatine Kinase (CPK)	Indicator of myocardial infarction	Men: 38 - 74 U/L Women: 26 - 140 U/L
Brain Natriuretic Peptide (BNP)	Test for heart failure	< 17.9 pg/ml

Tests for Renal and Hepatic Function

Test

Indications & Uses

Normal Ranges

Test	Indications & Uses	Normal Ranges
Sodium	Body fluid balance (kidneys - heart)	137 - 145 mmol/L
Potassium	Check acid - base, water balance	3.6 - 5.0 mmol/L
Chloride	Check acid - base, water balance	98 - 107 mmol/L
Urea Nitrogen (BUN)	u r impaired kidney filtration	9 - 21 mg/dL
Creatinine	d r impaired kidney clearance	0.8 - 1.5 mg/dL
Bilirubin (Hg metabolite)	u r impaired liver function	0.2 - 1.3 mg/dL
Total Protein	u r dehydration, renal failure d r malnutrition	6.3 - 8.2 g/dL
Albumin	d r malnutrition, liver problems	3.5 - 5.0 g/dL
Globulin	u r infections, collagen diseases	2.4 - 3.5 g/dL
Alb/Glob Ratio	d r inflammation and infection	1.2 - 2.2

Tests for Renal Function, Hepatic Function, and Cancer

Test

Uses & Indications

Normal Ranges

Uric Acid	u r Gout, renal failure, leukemia	2.5 - 8.5 mg/dL
Alkaline Phosphatase	u r Liver & bone disease (cancer)	38 - 126 U/L
AST	u r cell death in highly metabolic tissue (MI, hepatitis, cirrhosis, cancer)	17 - 59 U/L
LDH	u r heart, liver, or lung damage	313 - 618 U/L
ALT	u r Liver disease (cirrhosis, cancer)	7 - 56 U/L
Gamma GT (GGT)	u r Liver damage, obstruction, alcoholism	15 - 73 U/L
Prostate Specific Antigen (PSA)	u r prostate hypertrophy or prostate cancer	0 - 4.0 ng/mL
CA 125	u r ovarian and breast cancer	0 - 35 U/ml