

Blood Tests: Lab

You do not have to sample your own blood.

If you wish to do so, you must do it yourself.

You may not allow anyone else to take the sample.

A. Blood Type

1. Obtain blood typing “well” dish
2. Place one drop of anti-A serum, one drop of anti-B serum and one drop of anti-Rh (D) serum in each well.
3. Swab your middle finger with alcohol. Shake your hand, pinch the middle finger between thumb and ring finger of the same hand, and briskly prick it with a sterile lancet. Milk one drop of blood next to each drop of anti-serum.
4. Using separate toothpicks, mix the blood and serum in each drop. Place the slide on the blood typing box and tilt it back and forth. Do not let any of the drops dry out.
5. A positive test is agglutination, a uniform appearance in a negative.

B. Blood smear - Microscopic Examination of Blood

Clean a microscope slide with 70% alcohol. With a *sterile* lancet (*open one yourself- don't use one already opened or employed by someone else!*), obtain a drop of your own blood and let it fall on one end of the slide. Discard the lancet into the **RED Sharps** container.

Microscopic Examination of Blood

Take a second slide and place it at an angle on the first slide. The technique will be demonstrated by the instructor. Move the second slide toward the drop of blood, until the slide just touches the drop; the blood will flow along the edge of slide 2. Then move slide 2 back along slide 1, drawing the blood out into a thin film or *smear* across slide 1. Repeat for slide 2 using slide 1. Allow the slides to dry, place them in a petri dish, and add enough Wright's stain to cover the blood smear. Count the number of drops of stain you add. After 3-4 minutes, add an equal number of drops of distilled water. Leave the stain and water on for three more minutes, until a metallic green film or scum is apparent on the fluid surface, blow gently on slide every minute to keep stain and water mixed. Rinse the slide off by dipping it in a beaker of clean tap water. Allow the stained slide to dry thoroughly, on edge, and then examine it under the microscope.

Most of the cells you see will be **erythrocytes**, the red blood corpuscles. The **leukocytes**, white blood cells, are rarer, scattered among the erythrocytes. The **platelets** are often destroyed in making the slide and will not be visible. Try to identify as many different kinds of leukocytes as you can, and draw them on the blood sheet. Prepared slides are available in the brown slide closet in the SE corner of the room; or may be found on the internet, see cells - histology class.

Name: _____

C. Observing a clot

With a glass marking pencil, mark an X on a slide. Focus upon the X in medium power. Remove the slide, but leave the microscope in focus.

Prick your finger and place a drop of blood about 1/4 inch from the X on the slide. Quickly place the slide – no cover slip – on the microscope stage and focus on the edge of the drop. Notice thin black fibrin threads forming; these will eventually join to form a net or mesh.

D. Hemoglobin estimation

A very rough estimate of the hemoglobin concentration of the blood can be obtained by using the Tallqvist-Adams Hemoglobin Scale.

Tear an absorbent paper strip out of the Tallqvist booklet. Place a drop of blood on one half of the strip, then double back the other half to absorb any excess.

When the drop no longer looks shiny, match the blood with the scale by letting the drop show through the holes. When you have obtained a good color match, read the hemoglobin in grams and as a percent of normal.

E. Microhematocrit

Squeeze your punctured finger tip so that a good drop of blood appears. Hold one end of a microhematocrit tube in the drop: the blood will be drawn up into the tube. When the tube is at least two-thirds full, seal the end with the plastic plug.

Place the tube, in pairs, in the centrifuge, plug side out. Spin the tube in the centrifuge for three minutes. This drives the RBCs to the bottom and leaves the plasma on top.

Use the hematocrit reader/calculator to determine your hematocrit.

F. Coagulation (clotting) time

If your puncture has stopped bleeding, note the time. If you can get more blood from your puncture, hold the end of a plain (no anticoagulant) capillary tube in the drop of blood and let the tube fill up.

Record the starting time. Every two minutes, carefully break a small section of the tube and separate the two pieces. Coagulation has occurred when threads of fibrin remain stretched between the broken ends of the tube. Record the time required for your blood to clot.

G. Data record

Your blood type: _____	Normal
Hemoglobin: _____ grams/%	Female = 12-16, male = 14-18
Hematocrit: _____ %	Female = 35-47, male = 38-54
Clotting time: _____ minutes	

Formed Elements - Observe under microscope, draw, color, and label.


