

Ministry of Higher Education
and Scientific Research
University of Ishik
College of education
Department of Biology



Practical Animal physiology Lab.4 (4th Grade)

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Packed Cell Volume (PCV) and Red Blood Cell Indices.

Objective:

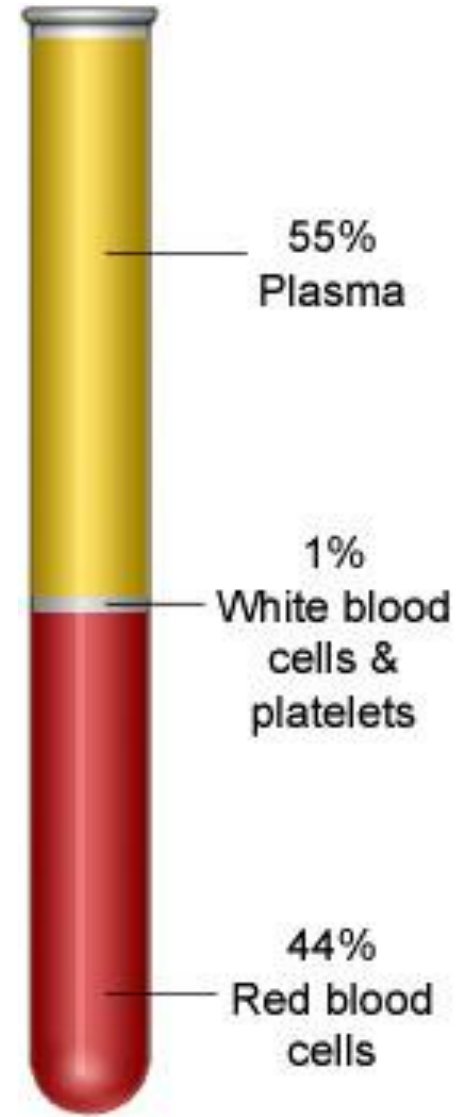
At the end of these laboratory students should be able to do PCV test, understand its procedure and techniques in the laboratory and hospitals.

- ▶ Whole blood is comprised of erythrocytes, platelets and leukocytes.
- ▶ The cells are suspended in the aqueous medium (plasma).
- ▶ In blood from healthy individuals, erythrocytes constitute the vast majority of cells.
- ▶ Plasma mainly consists of water (approximately 93%) but also of salts, various proteins and lipids as well as other constituents, e.g. glucose.

- ▶ **Hematocrit and PCV:** Is defined as the proportion of red blood cells to plasma within a sample of blood. Following collection of the sample, the specimen is centrifuged. Due to their weight, the red blood cells are forced to the bottom of the test tube. A determination of the percentage of these packed cells in comparison to the plasma is then made.

Normal hematocrit values:

- ▶ At birth (newborn): 53-65%
- ▶ Six to 12 months: 33-40%
- ▶ Adult males: 42-52%
- ▶ Adult females: 35-47%
- ▶ Elderly: Slightly decreased
- ▶ Pregnancy: Decreased (dilutional)



► Procedure

1. Lance your fingertip to obtain a drop of blood. Wipe away first drop of blood because it dilutes the sample with tissue fluid.
2. Fill the capillary tube (heparinized) two-thirds to three-quarters full with fingertip blood.
3. Seal one end of the tube with clay.
4. Place the filled tube in the micro-hematocrit centrifuge with the plug end to the outside.
5. Centrifuge at high speed (10000 rpm) for 5 minutes.
6. Read the hematocrit by placing the tube in the micro-hematocrit reader.

Thank you

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side of the frame, creating a modern, layered effect against the white background.