Investigating a Medical Mystery

For each patient you investigate, complete the “Microscopic Analysis of Red Blood Cells” and the “Blood Test Data” sections of this master. The Reference Manual (Master 3.4) will help you interpret the information about each patient. Use this information to draw conclusions and then complete the “Making a Diagnosis” section.

When viewing blood samples in the virtual microscope, you will see mostly red blood cells (RBCs). You may also see white blood cells (WBCs). WBCs are usually larger than RBCs and irregular in shape. The nuclei of WBCs are darkly stained in these samples.

Patient __________________________

Microscopic Analysis of Red Blood Cells

1. Use the measurement tool to measure the diameter of four red blood cells in the field of view of the virtual microscope.

   Cell 1 ________   Cell 2 ________   Cell 3 ________   Cell 4 ________

   Average size of red blood cell __________

2. Observe the red blood cells in the microscope, noting the shape, color, and any irregularities you see. Record your observations here.

Conclusions from the Microscopic Analysis

Did you find any differences between your patient’s red blood cells and normal red blood cells that could be important clues to the patient’s condition? Explain.

Blood Test Data

Analyze the blood test data provided. Record any test results that are outside the normal range. If values are outside a normal range, be sure to record whether they are above or below normal.

Conclusions from the Blood Test Data

Do the blood test data indicate a specific disease? Explain. Use the information in the Reference Manual to help you determine the patient’s problem.
Making a Diagnosis

Now that you have observations and data to inform you, use the information from both the microscopic analysis and the blood test data to diagnose the patient’s condition. Explain how both types of data support your diagnosis.

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