Chapter 16: Hemolytic Anemias: Enzyme Deficiencies

Learning Objectives

At the end of this unit, the student should be able to:

1. Identify the two main pathways by which erythrocytes catabolize glucose.
2. Explain the role of erythrocyte enzymes in maintaining the cell's integrity, and describe how deficiencies in these enzymes lead to anemia.
3. Identify the most common erythrocyte enzyme deficiency.
4. Recognize erythrocyte morphology in a Romanowsky-stained blood smear associated with G6PD deficiency.
5. Identify compounds that induce anemia in G6PD deficiency.
6. Recognize erythrocyte morphology in a Romanowsky-stained blood smear associated with pyruvate kinase deficiency.
7. Explain how a defect of pyruvate kinase can cause decreased cell energy.
8. List the functions of glutathione reductase or GSH.