

Unit 7 Blood

Guided Reading Questions

Blood Composition and Function

1. Whole blood can be separated into what three layers in what orientation? What do we call blood that can be separated into these three layers?
2. How much blood is in the average human body?
3. What does plasma look like? What is the function of following in plasma? Water? Electrolytes? Plasma proteins (albumin)? Nutrients? Respiratory gasses? Hormones?
4. Draw and describe the form and function of erythrocytes? What specialized structure facilitates an erythrocytes function?
5. What is the difference between an erythroblast and an erythrocyte?
6. Describe the different ways carbon dioxide and oxygen is transported in the body.
7. Describe the location, process and stages of hematopoiesis/erythropoiesis.
8. What is erythropoietin and where does it originate?
9. What factors stimulate the release of erythropoietin?
10. Is the regulation of erythropoietin a positive or negative feedback loop?
11. How long do erythrocytes live and how are they broken down in the body?
12. Describe and identify the following erythrocyte blood disorders:
 - a. Anemia
 - i. Hemorrhagic Anemia
 - ii. Iron-Deficiency Anemia
 - iii. Thalassemias
 - iv. Sickle-Cell Anemia
 - b. Polycythemia
 - c. Blood Doping
13. What is the function of leukocytes in the body? Where can leukocytes travel?
14. What are granulocytes? What are three types of granulocytes?
15. What is the function, size, shape, lifespan, abundance, and characteristics of:
 - a. Neutrophils?
 - b. Eosinophils?
 - c. Basophils?
16. What are agranulocytes? What are the two types of agranulocytes?
17. What is the function, size, shape, lifespan, abundance, and characteristics of:
 - a. Lymphocytes
 - b. Monocytes
18. When evaluating leukocyte formation, what leukocyte diverges from all others in terms of stem cell lineage?

19. Describe and identify the following leukocyte blood disorders:
 - a. Leukopenia
 - i. Leukemia (acute & chronic)
 - ii. Lymphoma
20. How are platelets formed? If they are not cells—what are they? Where do they originate?
21. What is the function of platelets? What hormone regulates their production?
22. What are the three steps of hemostasis?
23. What are disorders of hemostasis?
 - a. Thrombus (Thrombi)
 - b. Embolus (Emboli)
 - c. Thrombocytopenia
 - d. Hemophilia
24. Transfusion of Red Blood Cells
 - a. Whole Blood
 - b. Packed Red Cells
 - c. What is the shelf life of donated blood? When is the best time to donate blood after a natural disaster?
 - d. Approximately many different blood types do humans have?
 - e. What is an agglutinin? What is an agglutinin?
 - f. What does it mean to have type A blood in terms of agglutinin and agglutinin?
 - g. What does it mean to have type B blood in terms of agglutinin and agglutinin?
 - h. What does it mean to have type AB blood in terms of agglutinin and agglutinin?
 - i. What does it mean to have type O blood in terms of agglutinin and agglutinin?
 - j. When someone's blood is + or – what does that imply?
 - k. Explain how transfusion of incompatible Rh factors affect a patient immediately and over time.
 - l. What risk factors are found in women who are Rh- and carry Rh+ babies?
 - m. What is the difference between agglutination and hemolysis? What triggers each event?
 - n. What is a universal donor and acceptor?