

# Anatomy and Physiology II MED 165

## Blood System Study Guide

---

1. What seven components are needed to keep cells alive?
2. What type of tissue is blood?
3. How much blood is in the average human?
4. What are the names of the two types of metabolism that occurs in human cells?
5. What are the three functions of blood?
6. What six substances are transported by blood?
7. What two homeostatic mechanisms are partially regulated by the blood system?
8. How does the blood system protect us?
9. When centrifuged blood can be separated into what two basic components?
10. What is hematocrit? (not on slides but mentioned in lecture and can be found on internet)
11. What are the components of blood plasma?
12. How much of plasma is water?
13. What types of solutes are dissolved into blood plasma?
14. What are the types of plasma proteins?
15. What process is maintained by serum albumin?
16. What percentage of plasma proteins is serum albumin?
17. When are globulin proteins produced?
18. What type of cells/ elements make up the formed elements?
19. What is the common name of an erythrocyte?
20. What critical substance is carried by erythrocytes?
21. What two organelles are missing from erythrocytes?
22. What is erythropoiesis?
23. Where does the process begin?
24. What is the signal that the organ needs to begin manufacturing new erythrocytes?
25. What are some causes of that signal?
26. What three substances are needed to make RBC's?
27. What hormone is released by the kidneys when the signal is encountered?
28. Where does that hormone travel?
29. What cell type begins the process of differentiation into an RBC?
30. How long does it take for that cell to mature into an RBC?
31. What are reticulocytes?
32. What does it mean if someone has a high reticulocyte count?
33. What does it mean if someone has a low reticulocyte count?
34. What is the average life span of an RBC?
35. What organs destroy RBCs?
36. What is hemoglobin?

37. What are the two regions of a hemoglobin molecule?
38. How many oxygen molecules are carried by each molecule of hemoglobin?
39. How many oxygen molecules are carried by each RBC?
40. To which region of the hemoglobin molecule does oxygen bind?
41. To which region of the hemoglobin molecule does carbon dioxide bind?
42. What is the importance of the saturation curve of hemoglobin?
43. When the red blood cell is destroyed, what happens to the globin portion of the protein?
44. What two substances is heme broken into?
45. Where is the iron transported to?
46. What is the remaining heme converted into and what color is it?
47. What is the substance in question 46, converted into?
48. What color is that substance?
49. How does bilirubin move from the spleen to the liver?
50. What is conjugated bilirubin converted into and where is it transported to?
51. In the small intestine, what happens to the remaining conjugated bilirubin?
52. What is the name of the condition in which there are too many erythrocytes?
53. What is the name of the condition in which there are too many erythrocytes?
54. What are leukocytes?
55. What are the two classifications of leukocytes?
56. What are the general functions of leukocytes?
57. What are neutrophils?
58. What is the role of neutrophils and in what type of infection will their number increase?
59. What is the primary job of eosinophils?
60. In our country, when will nurses see a patient with an increased number of eosinophils?
61. What substance is released by eosinophils?
62. What two substances are released by basophils?
63. In allergic reactions, how do the roles of eosinophils and basophils differ?
64. In what two locations of the human body are lymphocytes manufactured?
65. What is produced and released by B type lymphocytes?
66. What is the role of a T8 lymphocyte?
67. What is the role of a T4 lymphocyte?
68. How do you tell a monocyte from other leukocytes?
69. What is a monocyte called when it leaves the blood vessel?
70. What is the role of a monocyte?
71. What is a thrombocyte? What are they commonly called?
72. What chemicals are contained in their granules?
73. What is hemostasis?
74. What are the three basic steps of hemostasis?
75. When does blood vessel spasm occur and how long does it last?
76. What three events initiate blood vessel spasm? What causes the release of serotonin?
77. Why do platelets stick together?
78. What chemical attracts other platelets to the area of damage?

79. What is coagulation?
80. What is the final step of blood coagulation?
81. What ionic mineral is required for blood coagulation?
82. What vitamin is required for the synthesis of prothrombin?
83. What does prothrombin convert to in the presence of prothrombin activator?
84. What is fibrinogen converted into in the presence of thrombin?
85. Why aren't active clotting factors circulated in the blood vessels?
86. What does fibrin entrap to form a clot?
87. What causes clot retraction to occur?
88. What cell type begins to divide to form a scar tissue patch?
89. When a clot is no longer needed, what process dissolves the clot?
90. What globular protein is converted into fibrin?
91. What is the name of the surface antigen on a red blood cell?
92. What is the name of the plasma anti-body that reacts with specific surface antigens?
93. How is the blood type determined?
94. What surface antigens are present in the population?
95. In a patient with Type A blood, what surface antigen is present? What antibody is present?
96. If a patient has both an A and a B antigen, what is their blood type? What antibodies are present?
97. If a patient has no surface antigens on their RBCs, what blood type do they have? What antibodies are present?
98. What can happen if a patient is given the wrong blood type?
99. An additional antigen can be found on the surface of some red blood cells, it is similar to that found in monkeys. What is the name of that antigen? If a patient has that antigen, how does a nurse denote the presence of that antigen?
100. What is erythroblastosis fetalis commonly called?
101. If a mother with O- blood is impregnated for the first time with an O+ baby. Can the baby develop erythroblastosis fetalis?
102. What drug treats erythroblastosis fetalis?
103. What is a CBC?
104. What is the normal number of red blood cells?
105. What is the normal level of hemoglobin?
106. What is the normal number of WBC's?
107. What percentage of WBCs are neutrophils?
108. What percentage of WBCs are eosinophils?
109. What percentage of WBCs are basoophils?
110. What percentage of WBCs are monocytes?
111. What percentage of WBCs are lymphocytes?