Chapter 21:

LEARNING OBJECTIVES

On completion of this chapter, the reader will be able to:

1. Identify the characteristics of the pluripotent stem cell and the cell lineages derived from the pluripotent stem cell.
2. Explain where the education of B- and T-lymphocytes occurs.
3. Review the primary and secondary lymphoid organs and know their function.
4. Recall the differences between the adaptive and innate arms of the immune system.
5. Define the roles of neutrophils, mast cells, eosinophils, monocytes/macrophages, dendritic cells, and plasma cells in eradicating pathogens.
6. Recite three mechanisms by which a phagocyte can recognize a pathogen.
7. Outline the main functions of the complement system in the immune response.
8. Identify the signals required for activation of B-lymphocytes and T-lymphocytes (CD4+ and CD8+).
9. List the five classes of immunoglobulin and know their characteristics (i.e., ability to activate complement, distribution, etc.).
10. Discuss the mechanisms involved with the downregulation T-lymphocyte responses.
11. Know two mechanisms by which a natural killer cell recognizes its target.
12. Define the role of CD40 ligand and CD40 in the immune response.
13. Identify the cell types that express HLA class I and II molecules.
14. Explain factors to be considered when interpreting a white blood cell count.
15. Interpret the functional tests of the immune response and the limitations of these tests.
16. Assess the clinical consequences of modulation of the immune response.