

Saladin 7E
Answer Key
Chapter 21, The Lymphatic and Immune Systems

Testing Your Comprehension

1. Anti-B (and anti-A) are in the IgM class of antibodies. These are pentamers, which are too large to pass through the placental barrier. Anti-D, however, is in the IgG class, and therefore a much smaller monomer. IgGs easily cross the placenta.
2. Removal of the axillary lymph nodes removes at least some of the pathway of lymphatic drainage from the upper limb, thus resulting in the accumulation of tissue fluid in that limb.
3. The antilymphocyte serum was given to inhibit the tendency of the girl's T lymphocytes to attack the donor heart, which they would recognize as foreign tissue. With suppressed immunity, however, the body may also fail to respond strongly to other foreign cells such as infectious microorganisms. The patient is thus very vulnerable to opportunistic infections, as happened in this case.
4. Even though B cells do not develop in the thymus, they depend upon activation by helper T cells, which *are* thymus-dependent. Therefore, a loss of thymic function impairs both cellular and humoral immunity.
5. A plasma cell is heavily loaded with rough endoplasmic reticulum, which is lacking from a B cell. This is related to the fact that the plasma cell is so heavily engaged in protein (antibody) synthesis.