

Critical Reading: Chapter 23 Immune System Failure

Name

Class

Date

Read these passages from the text and answer the questions that follow.

Autoimmune Diseases

Autoimmune diseases occur when the immune system fails to recognize the body's own molecules as "self," or belonging to the person. Instead, it attacks body cells as though they were dangerous pathogens. Some relatively common autoimmune diseases are listed in **Table 24.1**. These diseases cannot be cured, although they can be treated to relieve symptoms and prevent some of the long-term damage they cause.

Table 24.1: **Autoimmune Diseases**

Name of Disease	Tissues Attacked by Immune System	Results of Immune System Attack
Rheumatoid arthritis	tissues inside joints	joint damage and pain
Type 1 diabetes	insulin-producing cells of the pancreas	pain inability to produce insulin, high blood sugar
Multiple sclerosis	myelin sheaths of central nervous system neurons	muscle weakness, pain, fatigue
Systemic lupus erythematosus	joints, heart, other organs	Joint and organ damage and pain

Why does the immune system attack body cells? In some cases, it's because of exposure to pathogens that have antigens similar to the body's own molecules. When this happens, the immune system not only attacks the pathogens. It also attacks body cells with the similar molecules.

Immunodeficiency

Immunodeficiency occurs when the immune system is not working properly. As a result, it cannot fight off pathogens that a normal immune "system would be able to resist. Rarely, the problem is caused by a defective gene. More often, it is acquired during a person's lifetime. Immunodeficiency may occur for a variety of reasons:

- The immune system naturally becomes less effective as people get older. This is why older people are generally more susceptible to disease.
- The immune system may be damaged by other disorders, such as obesity or drug abuse.
- Certain medications can suppress the immune system. This is an intended effect of drugs given to people with transplanted organs. In many cases, however, it is an unwanted side effect of drugs used to treat other diseases.
- Some pathogens attack and destroy cells of the immune system. An example is the virus known as HIV. It is the most common cause of immunodeficiency in the world today.

Questions

1. What is an autoimmune disease?

2. Describe rheumatoid arthritis.

3. Why does the immune system attack body cells?

4. What is immunodeficiency?

5. Immunodeficiency may occur for a variety of reasons. Describe two of these reasons.