

Diseases and Immunity Quiz Questions and Answers PDF

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Which of the following diseases is caused by a virus?

- Tuberculosis
- Malaria
- Influenza ✓**
- Ringworm

Viruses are responsible for a variety of diseases, including influenza, HIV/AIDS, and COVID-19. Identifying diseases caused by viruses is crucial for understanding their transmission and treatment.

What is the primary role of antibodies in the immune system?

- Destroy pathogens directly
- Mark pathogens for destruction ✓**
- Produce white blood cells
- Stimulate nerve cells

Antibodies are proteins produced by the immune system that specifically recognize and bind to foreign substances, such as pathogens, to neutralize them and mark them for destruction by other immune cells.

Explain how vaccines contribute to herd immunity and why it is important for public health.

Vaccines contribute to herd immunity by increasing the number of immune individuals in a population, thereby limiting the transmission of infectious diseases. This is important for public

health because it protects vulnerable individuals who cannot be vaccinated, such as infants and those with certain medical conditions, and helps to control and prevent outbreaks.

Which of the following is a characteristic of innate immunity?

- Specific response
- Memory formation
- Rapid response ✓
- Antibody production

Innate immunity is characterized by its immediate response to pathogens and its non-specific nature, meaning it does not target specific pathogens but rather provides a general defense against a wide range of invaders.

Which components are part of the innate immune system? (Select all that apply)

- Skin ✓
- Mucos membranes ✓
- T-cells
- Phagocytes ✓

The innate immune system includes physical barriers like skin, immune cells such as macrophages and neutrophils, and various proteins like complement and cytokines. These components work together to provide the first line of defense against pathogens.

What are common symptoms of an allergic reaction? (Select all that apply)

- Sneezing ✓
- Fever
- Itching ✓
- Swelling ✓

Common symptoms of an allergic reaction include hives, itching, swelling, difficulty breathing, and gastrointestinal issues. These symptoms can vary in severity and may require medical attention depending on the individual's response.

What is the purpose of a vaccine?

- Cure diseases
- Stimulate immune response ✓
- Provide nutrients

- Reduce inflammation

Vaccines are designed to stimulate the immune system to recognize and fight specific pathogens, thereby providing immunity against diseases without causing the illness itself.

What are the potential effects of a compromised immune system on an individual's health?

The potential effects of a compromised immune system on an individual's health include frequent infections, prolonged illness, and a greater likelihood of developing autoimmune disorders and cancers.

Which cells are involved in the adaptive immune response? (Select all that apply)

- B-cells ✓
- Red blood cells
- T-cells ✓
- Phagocytes

The adaptive immune response primarily involves T cells and B cells, which are responsible for recognizing specific antigens and generating a targeted immune response.

Which of the following are methods to prevent infectious diseases? (Select all that apply)

- Vaccination ✓
- Regular exercise
- Handwashing ✓
- Quarantine ✓

Preventative methods for infectious diseases include vaccination, proper hand hygiene, and safe food handling practices. These strategies help reduce the transmission and spread of pathogens.

Discuss the role of hygiene practices in controlling the spread of infectious diseases.

Hygiene practices play a crucial role in controlling the spread of infectious diseases by minimizing the transmission of pathogens through proper handwashing, sanitation, and safe food handling.

Describe the process by which the immune system recognizes and responds to a pathogen.

The immune system recognizes pathogens through pattern recognition receptors (PRRs) that detect pathogen-associated molecular patterns (PAMPs). This recognition triggers a cascade of immune responses, including the activation of T cells and B cells, which work together to eliminate the pathogen.

Which of the following are characteristics of autoimmune diseases? (Select all that apply)

- Immune system attacks own cells ✓
- Caused by external pathogens
- Chronic inflammation ✓
- Typically contagious

Autoimmune diseases are characterized by the immune system mistakenly attacking the body's own tissues, leading to inflammation and damage. Common features include chronic inflammation, tissue damage, and a variety of symptoms depending on the specific disease.

What is the main function of T-cells in the immune system?

- Produce antibodies
- Attack infected cells ✓

- Transport oxygen
- Release hormones

The main function of T-cells in the immune system is to identify and destroy infected or cancerous cells, as well as to help regulate the immune response.

Which type of pathogen requires a host cell to replicate?

- Bacteria
- Virus ✓
- Fungus
- Parasite

Viruses are the type of pathogen that require a host cell to replicate, as they cannot reproduce independently and must hijack the cellular machinery of a host to multiply.

Which diseases can be transmitted through airborne particles? (Select all that apply)

- Tuberculosis ✓
- HIV/AIDS
- Influenza ✓
- Malaria

Airborne diseases are transmitted through tiny particles in the air, which can be inhaled by individuals. Common examples include tuberculosis, measles, and COVID-19.

Which of the following is an autoimmune disease?

- Hypertension
- Asthma
- Type 1 diabetes ✓
- Influenza

An autoimmune disease occurs when the body's immune system mistakenly attacks its own tissues. Examples include rheumatoid arthritis, lupus, and multiple sclerosis.

Which vaccine type uses a killed version of the pathogen?

- Live-attenuated
- Inactivated ✓
- Subunit

mRNA

Inactivated or killed vaccines use a killed version of the pathogen to stimulate an immune response without causing disease. This type of vaccine is effective in providing immunity against various infectious diseases.

Analyze the impact of autoimmune diseases on daily life and potential treatment options.

Autoimmune diseases can lead to chronic symptoms that affect daily activities, and treatment options include immunosuppressants, anti-inflammatory drugs, and lifestyle modifications.

How does the immune system differentiate between self and non-self cells, and what happens when this process fails?

The immune system differentiates between self and non-self cells by recognizing unique proteins (antigens) on the surface of cells. When this process fails, it can result in autoimmune disorders, where the immune system erroneously targets and attacks the body's own tissues.