

How Our Immune System and Vaccines Protect Us From Diseases

Name: _____

Date: _____

Student Quiz

- Match the following terms with the right description. Write the letter representing the right description for each term in the table below.

Term	Description #
Antibody	
Antigen	
Pathogen	
Primary immune response	
Innate immune response	
Adaptive immune response	
Antigenic drift	
Vaccine	
Memory cells	

Description	#
Adaptive immune cells that remain long-term after an infection. Can be quickly reactivated upon re-exposure to a specific antigen.	A
The first line of defense of our immune system. Includes the skin, mucous membranes, and innate immune cells, such as phagocytes. Is non-specific and has no memory. Response time usually minutes or hours.	B
Protects us from certain diseases. Usually, contains antigens that trigger a primary immune response against a pathogen without causing an actual infection or disease.	E
A y-shaped protein produced by B cells. Consists of a constant region and a variable region that includes specific antigen-binding sites.	F
Name for the immune response that happens when the immune system encounters a specific pathogen for the first time.	G
A harmful microorganism (like a bacteria, virus, or fungus) that can make us sick.	H
Any foreign substance or molecular structure that triggers an immune response. Example: specific features or molecular structures on a pathogen's cell surface.	J
The second line of defense of our immune system. Its key players are T cells and B cells. Is specific and can remember pathogens. Response time usually days or weeks.	K
A slight change of a pathogen's antigen structure due to an accumulation of genetic mutations. Results in the emergence of pathogen variants that can escape existing immunities.	L

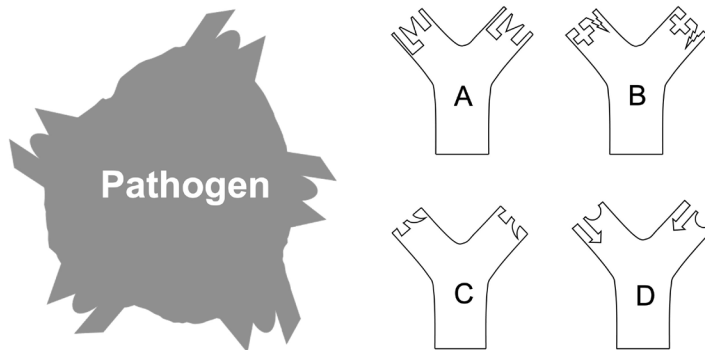


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2. In your own words, describe at least three main differences between the innate and adaptive immune responses.

3. Which of the following antibodies can target the depicted pathogen?



- a. Antibody A
- b. Antibody B
- c. Antibody C
- d. Antibody D
- e. None

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4. Which of the following are types of vaccines?
 - a. Inactivated vaccines: contain inactive forms of the pathogen
 - b. Live-attenuated vaccines: contain active but weakened forms of the pathogen
 - c. Active vaccines: contain active forms of the pathogen
 - d. mRNA vaccines: contain mRNA that instructs our body to make the pathogen's antigen
 - e. T cell vaccines: contain T cells specific to the pathogen

5. Explain below why we need an annual flu shot.

