

Topic #1: Non-Specific Response and Immune Organs
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Investigate the body's initial defense system against invading microorganisms. Once this defense is breached, investigate how the organs of the immune system respond to the invader. Gather information on each organ and what role they play in your immune system. Be prepared to provide this information to your group. As a guide for your research, you should be able to answer the following questions:

A. What does non-specific defense mean, and why does it come before specific defenses:

B What is the first line and Second Line of Defense of defense in protecting your body from an attack by a microorganism?

First Line of Defense:	
1)	2)
Second Line of Defense	
1)	2)

C. What is any foreign substance that triggers an immune response in the human body known as?

D. Identify the eight organs of the immune system. What are they generally referred to as and why? What is the function of each organ in an immune response? Where is it located in your body? How are these organs connected?

Organ	Location	Function
1)		
2)		
3)		
4)		
5)		
6)		
7)		
8)		
How are these organs connected?		
Generally referred to as:		

Resources:

- <http://www.cancer.gov/cancertopics/understandingcancer/immunesystem>
- <http://www.howstuffworks.com/life/human-biology/immune-system.htm>
- http://www.kidshealth.org/parent/general/body_basics/immune.html
- http://www.niaid.nih.gov/Publications/immune/the_immune_system.pdf

Topic #2. Specific Defense

Investigate the cells of the immune system. Gather information on how they function in an immune response to a "foreign invader". What role do these cells play in protecting your body now and from any future attacks by the same organisms? Answer the following questions and share them with your group:

A. What are the main immune cells in the body called and what are the two major types?

1)	2)
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B. What cells are responsible for producing antibodies? What role does an antibody play in an immune response? What system "cleans up" after the antibodies do their work?

C. What are the two major contributions of the T-cells to the immune defense? Explain why T-cells are so important in an immune response.

1)	2)
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D. How are the two major types of immune cells able to recognize and fight off invading microorganisms?

1)	2)
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E. How do we gain immunity from future infections?

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Topic #3: Antibiotics

Investigate the role of an antibiotic in fighting an infection. Provide the information for your group about the following questions:

A. Why are antibiotics used and for what type of infections are they most effective in treating?

B. How are antibiotics connected to mold?

C. How do they destroy "foreign invaders" in our bodies?

D. Why is it important to follow the instructions for taking a prescribed antibiotic very carefully? Except for in times of an allergic reaction, why should you always finish a course of antibiotic once you have started it?

E. What are some problems that arise when a bacteria becomes resistant to an antibiotic?

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Topic #4. Immune Disorders

Investigate some of the disorders of the immune system. Name three major immune system disorders and describe them and how they affect your body's ability to fight off infection. Answer the following questions and share them with your group:

A. What does auto-immune disorder mean?

B. How does each of the three disorders you have chosen affect the immune system? Where do they originate?

Disease	Originates	Affect	Treatment

C. What are some ways to treat these disorders? What are some diseases that may develop due to an immune system disorder?

D. Describe in detail immunotherapy and some of the pros and cons in using this approach to combat immune disorders. Give your opinion on the concept of immunotherapy (is it good or bad?).

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