BODY DEFENSES

NONSPECIFIC DEFENSES

PHYSICAL BARRIERS

PHAGOCYTES
### Inflammatory Response

![Cell Illustration]

### Antimicrobial Proteins

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### Specific Defenses

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<table>
<thead>
<tr>
<th>Cell-Mediated Immunity</th>
<th>Antibody-Mediated Immunity</th>
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CELL-MEDIATED IMMUNITY
ANTIBODY-MEDIATED IMMUNITY

Animals Form & Function Activity #4 page 4
ANTIBODY STRUCTURE
**QUESTIONS:**

1. Match the description with the correct compound or process.

A. Antibodies  
B. Antigen  
C. Complement  
D. Cytokines  
E. Histamine  
F. Interferons  
G. Lysozyme  
H. Perforin  
I. Phagocytosis  
J. Pyrogens

______ Enzyme that digests the cell walls of many kinds of bacteria; present in some mucus secretions

______ Ingestion of invading organisms by certain types of white blood cells

______ Released by basophils and mast cells in response to tissue injury; triggers dilation and increased permeability of nearby capillaries

______ Molecules that set the body’s thermostat at a higher temperature

______ Group of 20 or more blood proteins that cooperate with other defense mechanisms; may amplify inflammation, enhance phagocytosis or lyse pathogens; activated by immune response or exposure to antigens

______ Proteins produced by virus-infected cells; induce other cells to produce chemicals that inhibit viral reproduction

______ Foreign molecule that triggers a specific response by lymphocytes

______ Proteins, produced by plasma cells that bind to specific antigens

______ Proteins or peptides that serve to stimulate lymphocytes

______ Protein that forms pores in a target cell’s membrane
2. Match the description/function with the correct cell.

<table>
<thead>
<tr>
<th>A. B lymphocytes</th>
<th>H. Memory T cells</th>
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</thead>
<tbody>
<tr>
<td>B. Basophils</td>
<td>I. Monocytes</td>
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<tr>
<td>C. Cytotoxic T cells</td>
<td>J. Neutrophils</td>
</tr>
<tr>
<td>D. Eosinophils</td>
<td>K. NK cells</td>
</tr>
<tr>
<td>E. Helper T cells</td>
<td>L. Plasma cells</td>
</tr>
<tr>
<td>F. Mast cells</td>
<td>M. Suppressor T cells</td>
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<tr>
<td>G. Memory B cells</td>
<td>N. T lymphocytes</td>
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</tbody>
</table>

_____ 60% to 70% of all white blood cells; phagocytic cells; engulf and destroy microbes in infected tissues
_____ 5% of all white blood cells; exit circulation and enlarge to become macrophages; engulf and destroy bacteria and dead cells
_____ 1.5% of all white blood cells; defense against larger parasitic invaders; target foreign compounds or pathogens coated with antibodies
_____ Lymphocytes that destroy virus-infected body cells and abnormal cells; destroy cells by attacking the cell’s membrane and causing the cell to rupture
_____ Cells found in connective tissue that produce and release histamine

_____ White blood cells that produce and release histamine

_____ Lymphocytes responsible for antibody-mediated immunity

_____ Lymphocytes responsible for cell-mediated immunity

_____ Cells that produce antibodies; derived from B cells

_____ Cells held in reserve; differentiate to form plasma cells with second exposure to antigen

_____ Responsible for cell-mediated immunity; track down and attack bacteria, fungi, protozoa and foreign tissues that contain targeted antigen

_____ Release cytokines that coordinate specific & nonspecific defenses and stimulate cell-mediated and antibody-mediated immunity

_____ Remain in reserve; differentiate into cytotoxic T cells with second exposure to antigen

_____ Depress the action of other T cells and B cells by secreting suppression factors; limit the degree of the immune system action in response to a single exposure to an antigen
3. How are lymphocytes able to distinguish self from nonself?

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

4. How is the primary immune response different from the secondary immune response?

<table>
<thead>
<tr>
<th>Primary Immune Response</th>
<th>Secondary Immune Response</th>
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5. How is active immunity different from passive immunity?

<table>
<thead>
<tr>
<th>Active Immunity</th>
<th>Passive Immunity</th>
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</table>
6. Match the description with the correct term.

A. Allergens                  C. Autoimmune disorders
B. Allergies                  D. Immunodeficiency disease

_____ Immune system fails to develop normally or the immune response is blocked
_____ Develop when the immune response mistakenly targets normal body cells & tissues
_____ Inappropriate or excessive immune responses to antigens
_____ Antigens that trigger allergic reactions
_____ AIDS/HIV

_____ Psoriasis, rheumatoid arthritis, myasthenia gravis, multiple sclerosis, narcolepsy, Type 1 diabetes, Graves’ disease, Addison’s disease, pernicious anemia, lupus