

Transparency **96** Don't Spread It Around!

**SECTION FOCUS**  
Use with Chapter 39,  
Section 39.1

The first illustration shows a nurse in a blue uniform and cap washing her hands at a sink. The second illustration shows a person with dreadlocks coughing into a white tissue. The third illustration shows a person lying in a hospital bed, covered with a green blanket, while a nurse in a blue uniform stands by the bedside.

- 1 How are the people in the first two pictures helping to prevent disease?
- 2 What do you think the person in the third picture is doing to prevent the spread of disease?

Transparency **97** Becoming Immune

**SECTION FOCUS**  
Use with Chapter 39,  
Section 39.2

The first illustration shows a child with a fever and red spots on their face sitting up in bed, reading a book. A bedside table with a pitcher and glasses is next to them. The second illustration shows a nurse in a green coat administering a vaccine into the arm of a child in a blue uniform.

- 1 Do you think the first child will get the same disease again? Explain.
- 2 What is the second child doing to avoid getting the disease? How are the results the same for both?

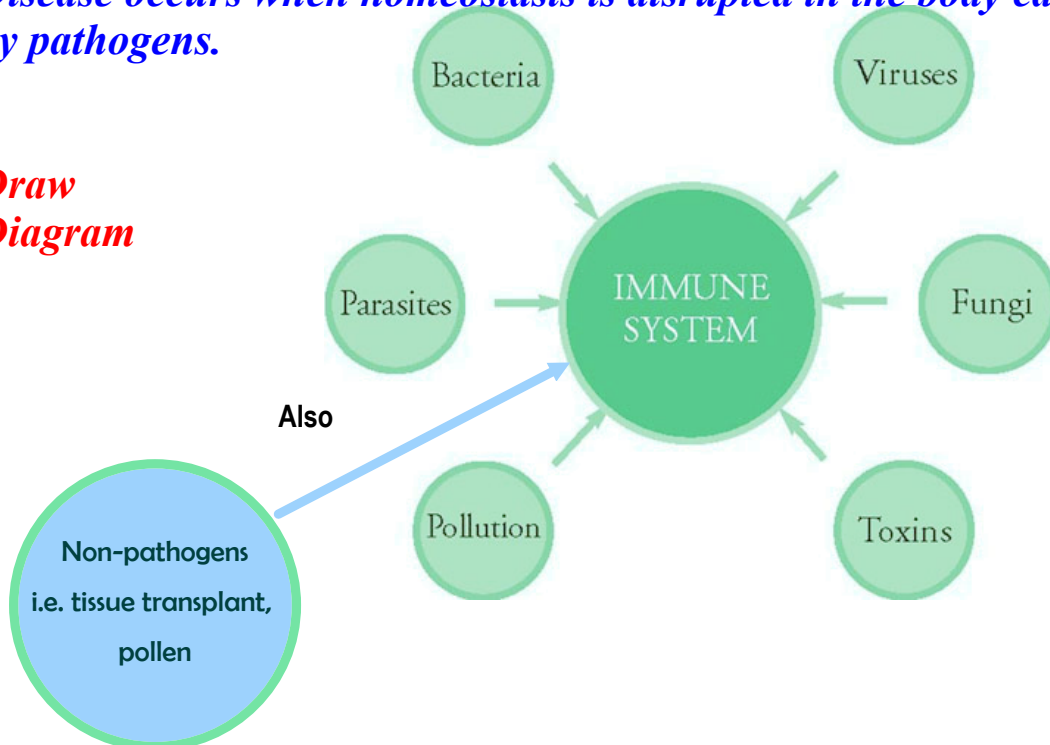
## Immune System

### *Job of this System*

- *To defend and repair the body*
- *Three lines of defense* to counter threats against our bodies.

*Disease occurs when homeostasis is disrupted in the body caused by pathogens.*

**Draw  
Diagram**



| Innate Immunity   |   | Acquired Immunity   |
|---|---|---|
| Nonspecific defense mechanisms  |   | Specific defense mechanisms (immune system)   |
| First line of defense   | Second line of defense  | Third line of defense   |
| <ul style="list-style-type: none"> <li>• Skin</li> <li>• Mucous membranes</li> <li>• Secretions of skin and mucous membranes</li> </ul> | <ul style="list-style-type: none"> <li>• Phagocytic white blood cells</li> <li>• Antimicrobial proteins</li> <li>• The inflammatory response</li> </ul> | <ul style="list-style-type: none"> <li>• Lymphocytes</li> <li>• Antibodies</li> </ul> |

### *Passive Immunity vs. Active Immunity*

#### *Natural*

*-mother to child*

#### *Artificial*

*-antibodies from  
differ source*

#### *Natural*

*-exposure to antigens*

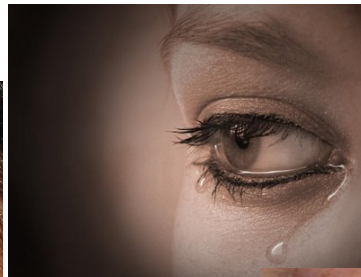
#### *Artificial*

*-vaccines are antigens  
weakened or dead*

- The **first line of nonspecific defense** is *external*, *consisting of skin (epithelial) cells* that cover and line our bodies and secretions they produce.



EAR WAX &amp; HAIR



TEARS

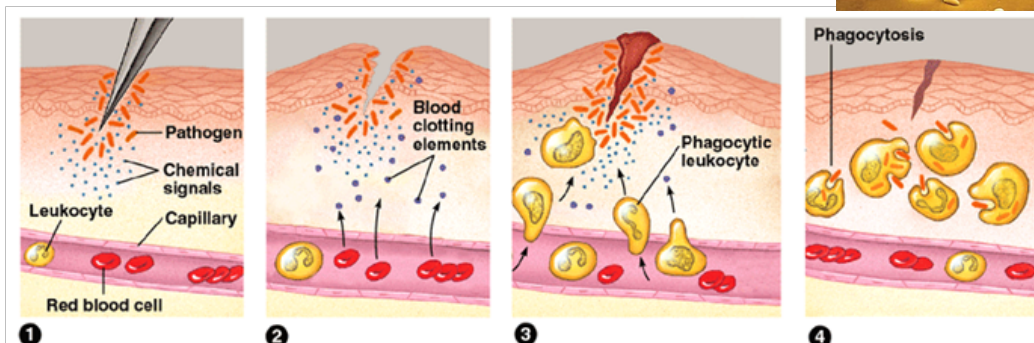
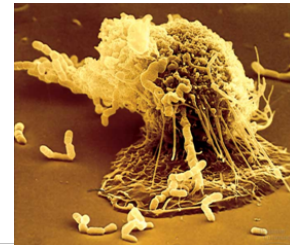


EPIDERMAL CELLS

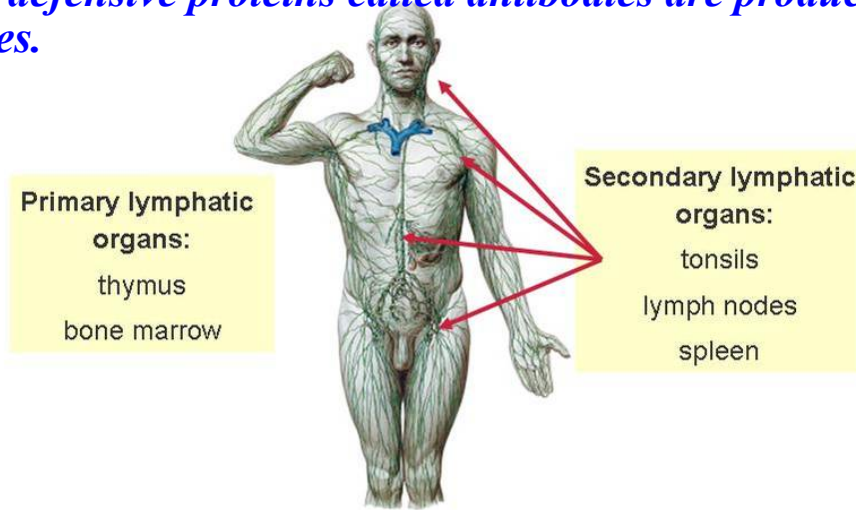


NOSE HAIRS

- The **second line of nonspecific defense** is *internal*, involving *phagocytes and proteins* that *indiscriminately attack invaders* that penetrate the body's outer barriers.



- The **third line** of defense, the immune system, responds in a **specific** way to particular **toxins, microorganisms, and other substances marked by foreign molecules**.
- *Specific defensive proteins called antibodies are produced by lymphocytes.*



**STOP**

Sobotta: Atlas der Anatomie des Menschen  
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