Terms you should know:

<table>
<thead>
<tr>
<th>non-specific defenses</th>
<th>phagocytosis</th>
<th>lymphocytes</th>
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</thead>
<tbody>
<tr>
<td>barriers</td>
<td>fever</td>
<td>degranulation</td>
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<tr>
<td>lysozyme</td>
<td>neutrophils</td>
<td>myeloperoxidase</td>
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<tr>
<td>inflammation</td>
<td>basophils</td>
<td>complement</td>
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<tr>
<td>inflammatory mediators</td>
<td>eosinophils</td>
<td>opsonization</td>
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<tr>
<td>capillaries</td>
<td>monocytes</td>
<td>interferon</td>
</tr>
<tr>
<td>vasodilation</td>
<td>macrophages</td>
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</tbody>
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Questions you should be able to answer:

- What is the difference between non-specific and specific defenses?
- What are some examples of barriers (physical, mechanical, chemical) that protect the body?
- What are the functions of the inflammatory response?
- What are the functions of the various types of white blood cells?
- What are two kinds of protective proteins, and how do they work?

Lecture outline:

I. Barriers

   A. Skin: tightly joined, keratinized cells; lysozyme; fatty acids; salt
   B. Tears: lysozyme and flushing action
   C. Ciliated cells and mucus lining the respiratory system
   D. Stomach acid and flushing action in the upper digestive system
   E. Flushing action of urine in the urethra
   F. Acidity of the vagina

II. Inflammatory response

   A. Inflammatory mediators released in response to tissue damage
   B. Vasodilation: increases blood flow and tissue fluid
   C. Phagocytosis: phagocytes attracted and activated
      1. Neutrophils: phagocytosis and degranulation (release of antibacterial chemicals)
      2. Basophils: degranulation only
      3. Eosinophils: degranulation and some phagocytosis
      4. Monocytes: efficient phagocytosis; become even more active macrophages
      5. Lymphocytes: not phagocytic; involved in immune system (specific defenses)
   D. Fever can result from bacterial toxins or leukocyte products

III. Defensive proteins

   A. Complement (blood protein) activated in response to infection
      1. Opsonizes bacteria or viruses
      2. Attacks membranes and lyses bacteria
   B. Interferon released by virus-infected cells helps protect neighboring cells