## Chapter 1: Overview of Mechanisms of Defense

### Clinical Correlation: Simian Acquired Immune Deficiencies

### Learning Objectives

### Essential Involvement of Animal Immune Systems in All Aspects of Animal Health

### Immune System

- **Cells of Defense**
  - Communication between Cells of the Immune System
  - Communication through cytokines
  - Other cytokines
  - Communication through other signaling molecules
  - Communication through cell–cell contact
- Innate and Adaptive Immune Systems
  - Innate immune system
  - Adaptive immune system

### Clinical Correlation Follow-Up

- Student Considerations
- Possible Explanations

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## Chapter 2: Overview of the Innate Immune System

### Clinical Correlation: Cyclic Neutropenia in Gray Collies

### Learning Objectives

### Anatomical and Physiological Barriers to Microbial Invasion

- Epithelial Barrier
- Secretions
- Mucus and Mucociliary Clearance
- Commensal Organisms

### Cells of the Innate Immune System

- Hematopoiesis
- Coordinating Hematopoiesis
- Monitoring Hematopoiesis

### Overview of the Cells of the Innate Immune System

- Myeloid Innate Immune Cells
  - Neutrophils
  - Eosinophils
  - Basophils
  - Monocytes
  - Macrophages
  - Myeloid dendritic cells
  - Mast cells
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