

# **Module 13: Pathogens — Keys to Success**

## **Key Learning Objectives**

### **1. Introduction to Pathogens**

- Define pathogen and infectious disease
- Identify the major categories of pathogens (bacteria, viruses, fungi, parasites, prions)
- Explain how pathogens cause disease
- Describe routes of transmission

### **2. Bacteria**

- Describe bacterial cell structure
- Compare gram-positive and gram-negative bacteria
- Explain how bacteria cause disease (toxins, tissue damage)
- Describe beneficial bacteria and their roles
- Understand antibiotic mechanisms and resistance

### **3. Viruses**

- Describe the structure of viruses
- Explain why viruses are considered non-living
- Describe the viral life cycle (lytic and lysogenic)
- Explain how viruses cause disease
- Understand antiviral treatments and vaccines

### **4. Fungi**

- Describe fungal cell structure
- Identify common fungal infections
- Explain how fungi are transmitted and cause disease
- Understand antifungal treatments

## **5. Parasites and Prions**

- Distinguish between protozoan and helminth parasites
- Describe common parasitic diseases
- Explain what prions are and how they cause disease

## **6. Body Defenses Against Pathogens**

- Describe first-line defenses (skin, mucous membranes)
  - Explain the inflammatory response
  - Introduce the immune system's role in fighting infection
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### **Study Tips**

1. **Create comparison charts** for pathogen types
2. **Study disease cycles** with diagrams
3. **Connect structure to pathogenesis**
4. **Learn key examples** for each pathogen type
5. **Relate concepts** to public health and personal hygiene