

Chapter 23

Communicable Diseases

1. Understanding Communicable Diseases
2. Common Communicable Diseases
3. Fighting Communicable Diseases
4. Emerging Diseases and Pandemics

#Onedaylwokeup #Doppitup

Lesson 1 — Understanding Communicable Diseases

A **communicable disease** spreads from one living organism to another or through the environment. It happens when **pathogens** enter your body and multiply, causing an **infection**.

■ Viruses	Invade cells and hijack them to replicate. Antibiotics DO NOT kill viruses. Examples: cold, flu, COVID-19, HIV
■ Bacteria	Single-celled; some produce toxins. Many treatable with antibiotics — but resistance is a growing crisis.
■ Fungi	Cause infections like athlete's foot and ringworm. Treated with antifungals.
■ Protozoa	Single-celled organisms causing diseases like malaria — transmitted by mosquitoes; kills hundreds of thousands globally.

Lesson 2 — Common Communicable Diseases

Common Cold	200+ different viruses; spreads via droplets and contaminated surfaces; no antibiotic cure
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Influenza (Flu)	Viral; hits harder and faster than a cold; antivirals like Tamiflu reduce severity if taken within 48 hours
Strep Throat	Bacterial; treatable with antibiotics; untreated can cause rheumatic fever
Hepatitis C	NOW CURABLE with direct-acting antivirals (DAAs) — >95% cure rate in 8–12 weeks. Major update from original textbook.

Lesson 3 — Fighting Communicable Diseases

Vaccines train your immune system to recognize and fight specific pathogens without causing the disease. They have prevented more death and disability than almost any other medical intervention in history.

Live-attenuated	Uses weakened pathogen; strong, often lifelong immunity. Examples: MMR, chickenpox
Inactivated	Uses dead pathogen. Examples: flu shot, hepatitis A
Toxoid	Uses inactivated toxin. Examples: tetanus, diphtheria
mRNA (NEW since 2011)	Genetic instructions teach cells to make a harmless piece of pathogen. Examples: COVID-19 vaccines (Pfizer, Moderna)

Lesson 4 — Emerging Diseases and Pandemics

COVID-19 — the biggest pandemic since 1918 — killed over 7 million people worldwide. The mRNA vaccines (developed in ~11 months using decades of prior research) were authorized in December 2020. **Mpox** caused a global outbreak in 2022 and a renewed WHO emergency in August 2024.

Chapter Vocabulary

Lesson 1

Communicable disease	A disease that spreads from one organism to another or through the environment
Infection	The condition that results when pathogens multiply in the body and damage cells
Vector	An organism (such as a mosquito or tick) that carries and transmits pathogens

Lesson 2

Pneumonia	An infection of the lungs in which air sacs fill with fluid; can be viral or bacterial
Jaundice	Yellowing of the skin and eyes; a common symptom of hepatitis

Lesson 3

Immune system	The body's network of cells, tissues, organs, and chemicals that fight pathogens
Inflammatory response	The immune system's first response to tissue damage or infection
Antibody	A protein produced by B cells that targets a specific antigen, marking it for destruction
Vaccine	A preparation that stimulates the immune system to develop protection against a disease
Immunity	The state of being protected against a specific disease

Lesson 4

Emerging infections	Communicable diseases whose occurrence in humans has increased significantly in recent decades
Pandemic	A global outbreak of an infectious disease
Epidemic	A disease outbreak that affects many people in the same place at the same time