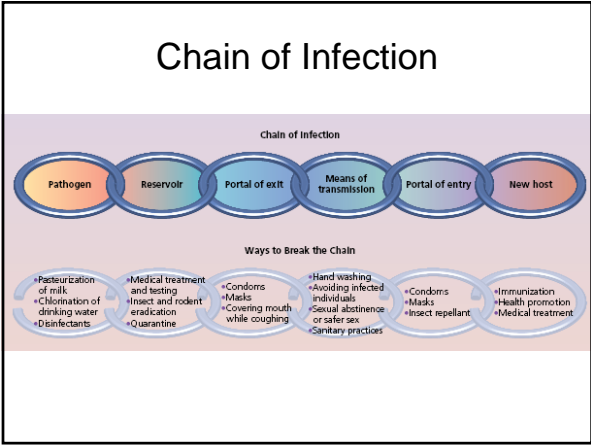


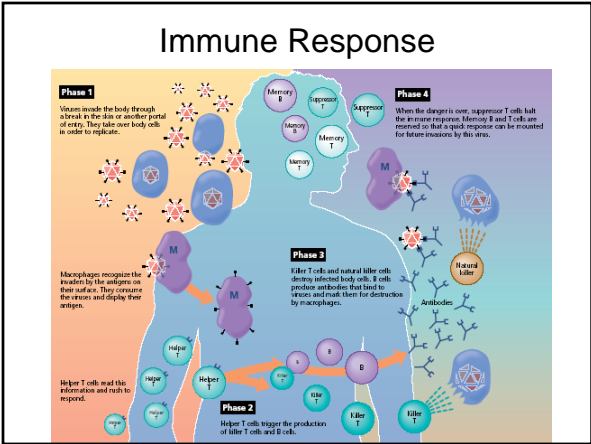
Chapter 13 Immunity and Infection

Hlth 2 Health and Wellness
 Dr. Tomita

- ## Learning Objectives
1. Define the following terms: infection, pathogen, lymphatic system, systemic infection, macrophage, killer T-Cell, B-Cell, antigen, antibody, autoimmune disease, histamine, incubation, prodromal period, vaccine, allergy, allergen, bacterium, bacteria, endemic, virus, contagious, epidemic, pandemic, fungus, prions, parasite, sexually transmitted disease (STD).
 2. Define the following diseases: pneumonia, tuberculosis, influenza, West Nile virus*, hepatitis, Mad Cow disease, HIV/AIDS, SARS*, plague*, Chlamydia, gonorrhea, syphilis, human papilloma virus (HPV), genital warts, herpes.
 3. Describe the process by which the infectious diseases are transmitted.
 4. Explain how the immune system responds to an invading organism.
 5. List the major types of pathogens, and describe the common diseases they cause.
 6. List strategies for protecting yourself against sexually transmitted diseases (STDs).



- ## Body's Defense System
- Physical and chemical barriers- physical barriers include skin, membranes, enzymes that kill pathogens
 - The immune system- kill pathogens once inside body and make antibodies against pathogen to mark them for killing
 - Immunization- get injection to build immunity against pathogen
 - Allergic reactions- rather than pathogen, allergens cause immune system to respond



- ## Immune Response
- Phase 1** - Macrophages go to and consume pathogens and provide information about them to helper T cells
- Phase 2** - Helper T cells multiply rapidly and trigger production of killer T cells and B cells
- Phase 3** - Killer T cells destroy foreign and infected cells (cell-mediated response). B cells produce antibodies that bind to pathogens and mark them for destruction (antibody-mediated response)
- Phase 4** - Once the pathogen is under control, suppressor T cells stop immune response

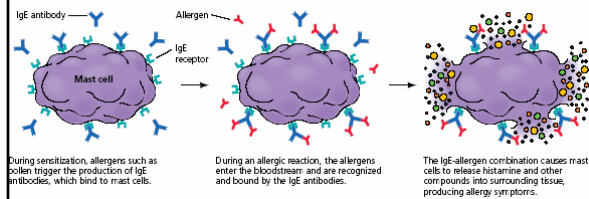
Stages of Disease

- Incubation
- Prodrome
- Clinical
- Decline
- Convalescent

Immunization

- **Vaccines**- injection of dead or weak pathogen and make antibodies against it
- **Active immunity**- exposed to pathogen and make your own antibodies
- **Passive immunity** – injected with gamma globulin

Allergic Response



Pathogens

- Bacteria (staph, strep, TB)
- Viruses (HIV, herpes, HPV, hepatitis, cold, flu, SARS)
- Fungi (athlete's foot, candida, thrush, jock itch, ringworm)
- Protozoa (trichomoniasis, malaria, giardiasis)
- Parasitic worms (pinworms, tape worms)
- Prions (mad cow, CreutzfeldtJakob disease)

Factors Related to Increased Infectious Diseases

- Drug resistance
- Poverty
- The breakdown of public health measures
- Environmental changes
- Travel and commerce
- Mass food production and distribution
- Human behaviors

To Keep Yourself Well

- Eat a balanced diet and maintain a healthy weight.
- Get enough sleep—6 to 8 hours per night.
- Exercise (but not while you're sick).
- Don't smoke.
- Drink alcohol only in moderation.
- Wash your hands frequently.
- Avoid contact with people who are contagious with diseases transmitted via the respiratory route.
- Handle and prepare foods safely
- Don't drink water from streams or lakes.
- Avoid contact with mosquitos, ticks, rodents, and other disease carriers.
- Practice safer sex, and don't inject drugs, to protect yourself against diseases such as hepatitis and HIV infection.
- Get all appropriate immunizations, and use antibiotics as directed.