

THE IMMUNE RESPONSE

OBJECTIVES/RATIONALE

The mechanism by which the human body protects itself from disease is an essential component in medical microbiology. The student will describe the infectious process and identify the body's immune response and defenses against infection.

TEKS 121.14 5D

TAKS ELA 1, 4
Science 1, 3

National Science Education Standards A9-12; C9-12; F9-12; G9-12

National Health Care Skills Standards.01, .07, .09

National Curriculum Standards for School Mathematics S1; S3; S11

KEY POINTS

- I. Review of the Infectious Process (PowerPoint Presentation from Coherent Sequence)
- II. Factors determining the occurrence of infection
 - a. Type of microorganism (bacterial, fungal, virus, etc.)
 - b. Virulence of pathogen
 - c. Susceptibility of host
 - d. Route of transmission
- II. Basic concepts in immunology
 - a. Natural immunity – pathogens enter the body and cause illness
 - b. Acquired immunity – a host for a disease agent and successfully fighting against
 - c. Artificial immunity – body is injected with vaccine
 - d. Passive immunity – occurs when antibodies are transferred from one person to another
 - e. Active immunity – host contacts and antigen and forms antibodies against
 - f. Immunization

Activities

- I. Create a community awareness project using **HOSA guidelines** on infectious diseases (hepatitis, meningitis, etc.), and include the following information for each:
 - a. Mode of transmission
 - b. Portal of entry
 - c. Virulence
 - d. Signs and symptoms
 - e. Pathogenesis
 - f. Treatments

Materials/Resources

<http://www.hosa.org>

Fong, Elizabeth, *Microbiology for Health Careers*, Fifth Edition, Delmar Publishers, 1994, Section 3.

Paul, William E., M.D., *Fundamental Immunology*, Third Edition, Raven Press, New York 1993, Chapters 1-7 and Chapters 26-29.

Rose, Noel, *Manual of Clinical Laboratory Immunology*, Third Edition, A.S.M., Washington, D.C., 1986, Section G.

Assessment

HOSA Event Guidelines Rubric

Accommodations

For reinforcement, the student will design a chart depicting the infectious cycle of Hepatitis A. Indicate methods to break the chain.

For enrichment, the student will predict the possible consequences of infection by genetically altered bacteria.

Reflections
