



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35

Accredited by NBA-AICTE and Accredited by NAAC – UGC with A++ Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai



19GET277 / Biology For Engineers IV YEAR / VII SEMESTER UNIT-IV: HUMAN DISEASES

INFLUENZA

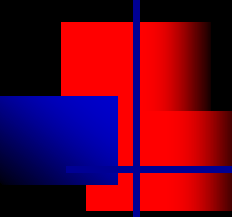
Treatment of HIV-Related Illnesses and AIDS



Is HIV and AIDS the same thing?



World AIDS Campaign



Chapter 21.1 Key Terms

- Human Immunodeficiency Virus (HIV)- virus that primarily infects cells of the immune system and that causes AIDS
- Acquired Immune Deficiency Syndrome (AIDS)- disease that is caused by HIV infection, which weakens the immune system
- Pandemic- disease that spreads quickly through human populations all over the world



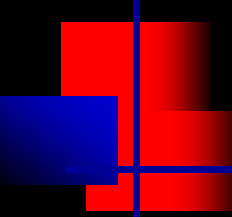
HIV

- “Human Immunodeficiency Virus”
- A specific type of virus (a retrovirus)
- HIV invades the helper T cells to replicate itself.
- No Cure



AIDS

- Acquired Immunodeficiency Syndrome
- HIV is the virus that causes AIDS
- Disease limits the body's ability to fight infection
- A person with AIDS has a very weak immune system
- No Cure



Chapter 21.2 Key Terms

- Helper T Cell- white blood cell that activates the immune response and that is the primary target cell of HIV infection
- Opportunistic Infection- illness due to an organism that causes disease in people with weakened immune systems; commonly found in AIDS patients
- Asymptomatic stage- infection in which the infectious agent, such as HIV, is present but there are few or no symptoms of the infection

Three Phases of HIV



Phase 1- Asymptomatic Stage

- Short, flu-like illness, swollen glands, fatigue, diarrhea, weight loss, or fevers - occurs one to six weeks after infection
- no symptoms at all
- Infected person can infect other people
- Lasts for an average of ten years
- HIV antibodies are detectable in the blood



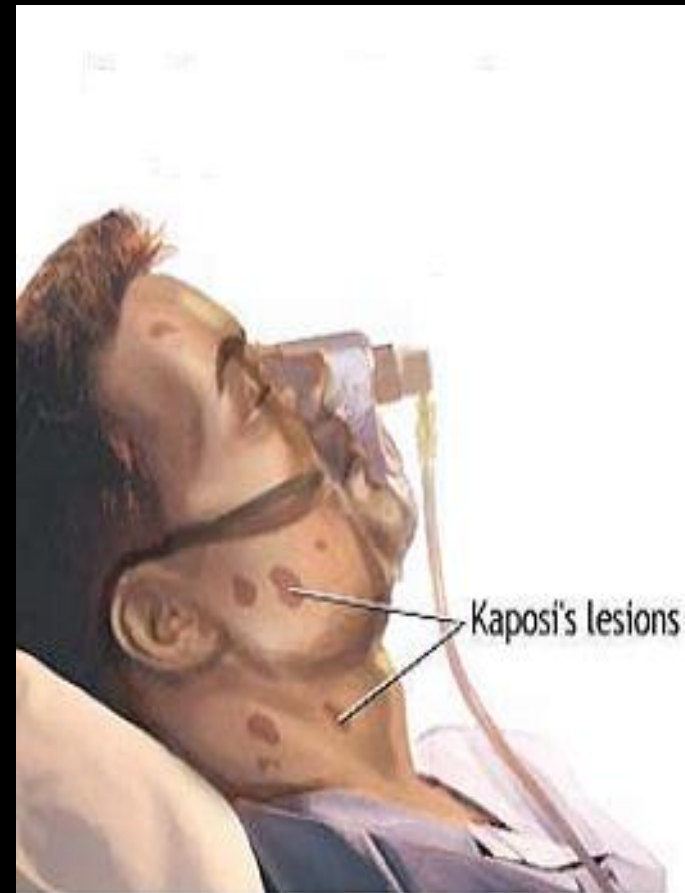
Phase 2 - Symptomatic

- The symptoms worsen
- Mental changes, forgetfulness & abnormal thinking patterns



Phase 3 - HIV ⇒ AIDS

- Immune system weakens
- Emergence of opportunistic infections and cancers
- The illnesses become more severe leading to an AIDS diagnosis



Opportunistic Infections associated with AIDS

■ Bacterial

- Tuberculosis (TB)
- Pneumocystis pneumonia

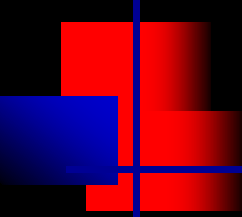
■ Viral

- Kaposi Sarcoma-
purple-red blotches
on the skin
- Influenza (flu)



Modes of HIV/AIDS Transmission



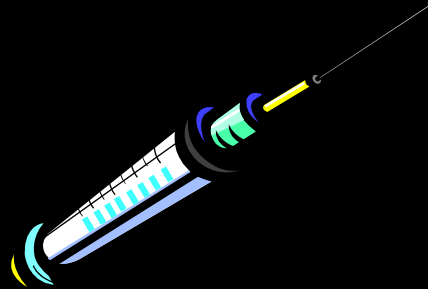


Through Bodily Fluids

- Blood products
- Semen
- Vaginal fluids
- Breast Milk

Through IV Drug Use

- Sharing Needles
 - Without sterilization
- Increases the chances of contracting HIV





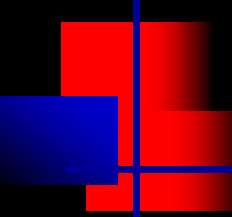
Through Sex

- Intercourse (penile penetration into the vagina)
- Oral
- Anal
- Digital Sex

Mother-to-Baby

- Before Birth
- During Birth
- Postpartum
 - After the birth





Chapter 21.3 Key Terms

- Universal Precautions- set of procedures used to avoid contact with body fluids & to reduce the risk of spreading HIV & other diseases
- HIV-antibody test- detects HIV antibodies to determine if a person has been infected with HIV
- HIV Positive- person who tests positive in 2 different HIV tests
- Drug Combination Therapy- AIDS treatment program in which patients regularly take more than one drug

Testing Options for HIV



Anonymous Testing

- No name is used
- Unique identifying number
- Results issued only to test recipient





Confidential Testing

- Person's name is recorded along with HIV results
 - Name and positive results are reported to the State Department and the Centers for Disease Control and Prevention
- Results issued only to test recipient

Oral Testing

- Orasure
 - The only FDA approved HIV antibody.
 - As accurate as blood testing
 - Draws blood-derived fluids from the gum tissue.
 - **NOT A SALIVA TEST!**





T cell count test

- Shows the strength of a patient's immune system
- This test can also tell whether a person has developed AIDS



Viral load test

- Measures of the number of viruses in the blood
- The higher the viral load, the more infectious the person's body fluids are likely to be and the closer that person is to having AIDS



Retest

- Should be retested 6 months after the first test
- An initial negative test can be misleading if the test is done too soon after infection

Treatment Options





Three ways to protect yourself?

- Practice abstinence
- Avoid multiple partners- Monogamous Relationship
- Don't share needles, syringes, drug injection equipment, or any item that may put a person in contact with blood



Abstinence



- It is the only 100 % effective method of not acquiring HIV/AIDS.
- Refraining from sexual contact: oral, anal, or vaginal.
- Refraining from intravenous drug use



Monogamous relationship

- A mutually monogamous (only one sex partner) relationship with a person who is not infected with HIV
- HIV testing before intercourse is necessary to prove your partner is not infected



Protected Sex



- Use condoms (female or male) every time you have sex (vaginal or anal)
- Always use latex or polyurethane condom (not a natural skin condom)
- Always use a latex barrier during oral sex



When Using A Condom

Remember To:

- Make sure the package is not expired
- Make sure to check the package for damages
- Do not open the package with your teeth for risk of tearing
- Never use the condom more than once



HIV/ AIDS drugs

- Side effects include kidney & liver damage
- 30% of people who start taking some of these drugs become so sick they have to stop taking them