LEARNING OBJECTIVES:

1. Note the key features of retrovirus HIV particles.
2. Recognize how retrovirus HIV replication is set apart from other viruses.
3. Note details of the stages in HIV replication; entry, reverse transcription, provirus integration, latent infection, virus production.
4. Indicate the advantages of retroviruses for human gene therapy.
5. Note the transition of HIV from rare zoonotic to human epidemic virus.
6. Indicate features of HIV transmissibility and ways to halt transmission.
7. Recognize HIV variabilities, both worldwide and within individual patients.
8. Discuss prolific HIV infection in CD4+ cells, cytotoxic infection of CD4+ T cells, role of CD4+ T cells in regulation of the immune system.
9. Describe the typical course of HIV progression in patients.
10. Recognize hallmarks of late-stage HIV disease (AIDS); opportunistic secondary infections and AIDS-related dementia.
11. Discuss HAART and its benefits and drawbacks.
12. Compare and contrast HIV with lymphotropic HTLVs.

KEY CONCEPTS:

1. HIV: an enveloped RNA virus
2. HIV: A retrovirus that replicates according to well-known reverse transcription processes.
3. HIV: zoonotic virus that is common but only moderately contagious by virology standards
4. HIV: an RNA-containing retrovirus that is genetically diverse, many strains and variants to keep track of
5. HIV: a complex retrovirus that encodes gene products that control viral pathogenesis
6. HIV: cytotoxic to CD4+ T cells and thus potently immunosuppressive
7. HIV: a slow infection, latently-infecting and residing for decades or more in patients
8. HIV: vaccines not yet in place but antivirals are useful if taken continuously
9. HIV: a lethal immunosuppressive virus that opens up opportunities for lethal secondary infections and also causes dementia
10. HIV: a virus similar to lymphotropic HTLVs