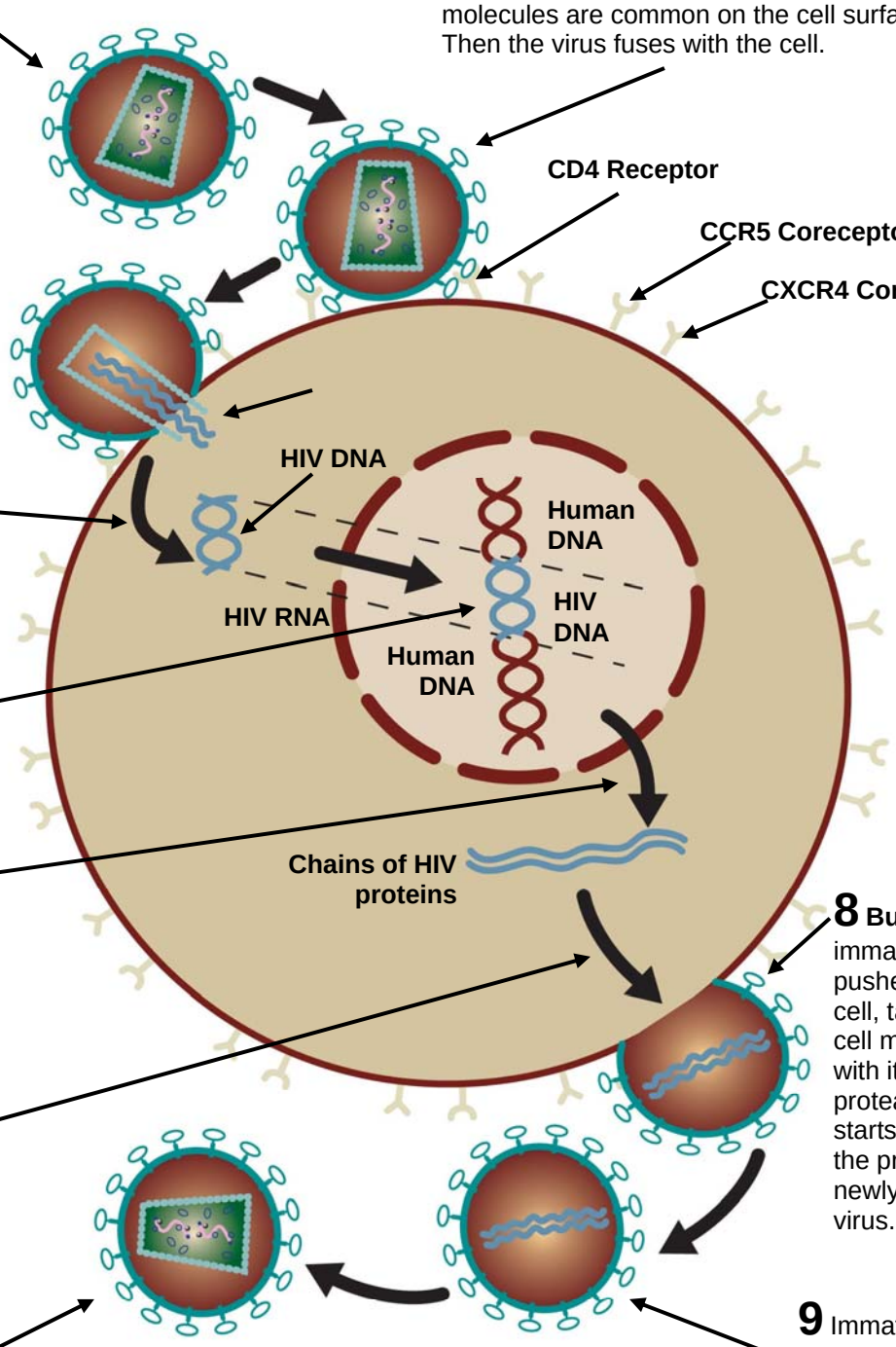
HIV LIFE CYCLE

1 Free Virus

2 Attachment and Entry: Virus binds to a CD4 molecule and one type of "coreceptor" (either CCR5 or CXCR4). Receptor molecules are common on the cell surface. Then the virus fuses with the cell.



3 Penetration: virus empties its contents into cell.

4 Reverse Transcription: The reverse transcriptase enzyme makes a “mirror image” of viral RNA strands to create double-stranded DNA.

5 Integration: viral DNA is inserted into the cell's own DNA by the integrase enzyme.

6 Transcription: When the infected cell divides, the viral DNA is "read" and long chains of proteins are made.

7 Assembly: sets of viral proteins chains come together.

8 Budding: immature virus pushes out of the cell, taking some cell membrane with it. The protease enzyme starts processing the proteins in the newly forming virus.

9 Immature virus breaks free of the infected cell.

10 Maturation: the protease enzyme finishes cutting HIV protein chains into individual proteins. These combine to form the viral core and make a new working virus.

Revised April 21 2010

A project of the New Mexico AIDS Education and Training Center. Partially funded by the National Library of Medicine
Fact Sheets can be downloaded from the Internet at http://www.aidsinfonet.org