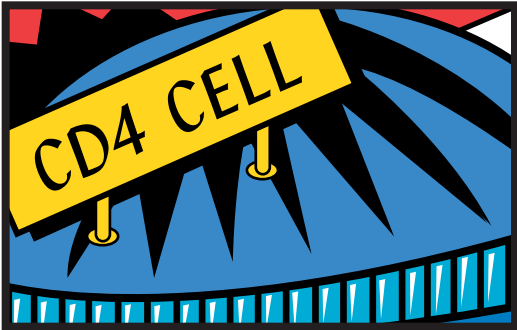


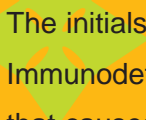


How **HIV** Works in Your **Body**



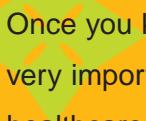
It helps to know what's going on with your virus

What is HIV and how do people get it?

A green diamond-shaped graphic with a white outline and a white cross inside, positioned to the left of the text.

The initials **HIV** stand for Human Immunodeficiency Virus—meaning a virus that causes the immune system to become weak. Your immune system normally protects you from germs, such as bacteria and viruses. HIV is passed from person to person by exchanging body fluids. You can get HIV by having unprotected sex with someone who is infected or by sharing an infected needle. Or, an infected mother can pass HIV to her infant.

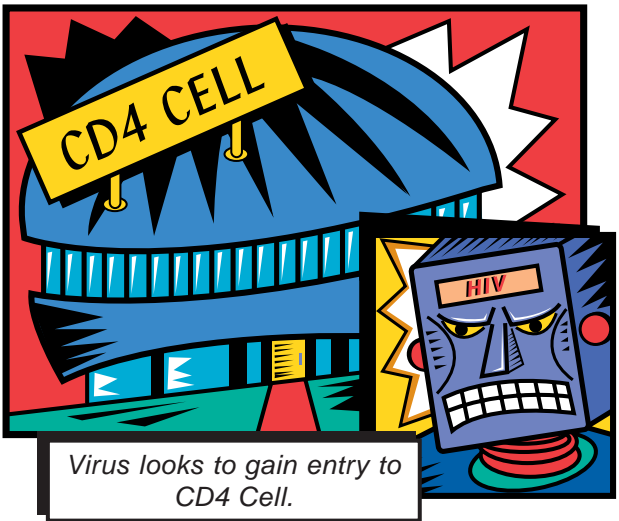
How do you fight HIV?

A green diamond-shaped graphic with a white outline and a white cross inside, positioned to the left of the text.

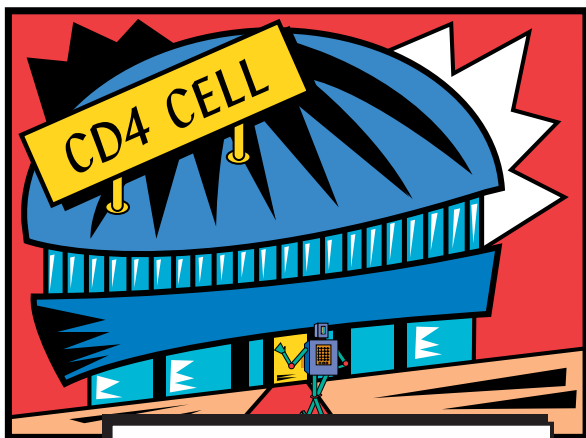
Once you know that you have HIV, it is very important to always work with your healthcare professionals. It's easier to stay on your therapy if you know how it works. How does the virus multiply? How do the drugs you take help fight the virus? Here are answers to these questions to help you better understand what is really going on with your virus and your drug therapy.

HIV invades a healthy CD4 cell

- ❖ Viruses, including HIV, cannot make copies of themselves on their own
- ❖ To survive, HIV must invade a healthy cell in your body
- ❖ HIV likes to invade CD4 cells—special cells that help the body's immune system protect you against germs and viruses that can make you sick



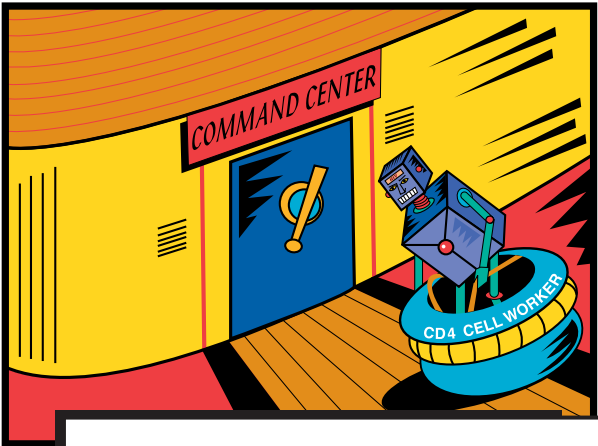
HIV has the key to unlock the cell



Using a special chemical as a key, HIV enters the CD4 Cell.

- ❖ HIV has a special chemical to unlock and enter the CD4 cell
- ❖ The chemical is like a key on the surface of the virus, ready to open CD4 cells for invasion and infection

HIV changes to enter the CD4 cell command center

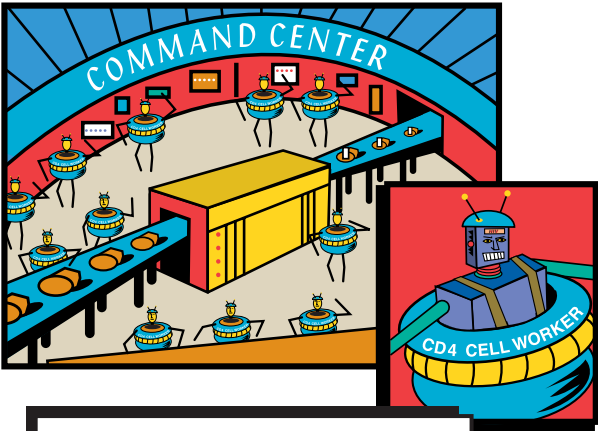


Using the Enzyme Reverse Transcriptase, HIV is disguised as a CD4 Cell worker.

- ◆ HIV uses another chemical, the enzyme known as “reverse transcriptase,” to change so it can gain entry into the cell’s command center

HIV gets inside the command center

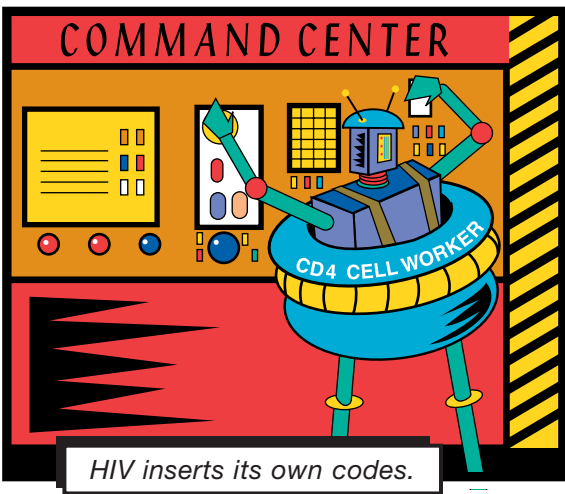
- ❖ In a healthy CD4 cell's command center, or nucleus, substances are being produced to signal the immune system to protect the body against disease
- ❖ HIV uses another enzyme known as "integrase" to get inside the command center



*In the Command Center,
CD4 workers are making
substances to protect the
Body against disease.*

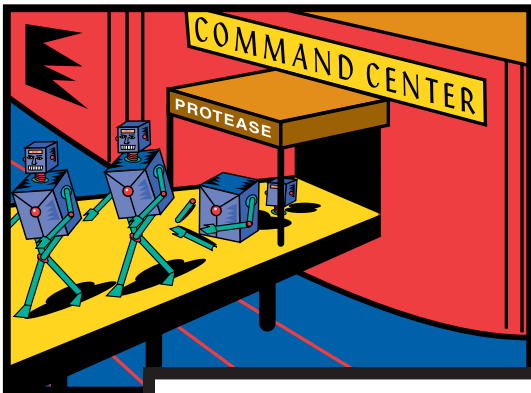
HIV takes over the CD4 cell

- ◆ HIV now takes control, inserting its own codes into the command center so that the reprogrammed CD4 cell will make new virus



CD4 cell becomes an HIV factory

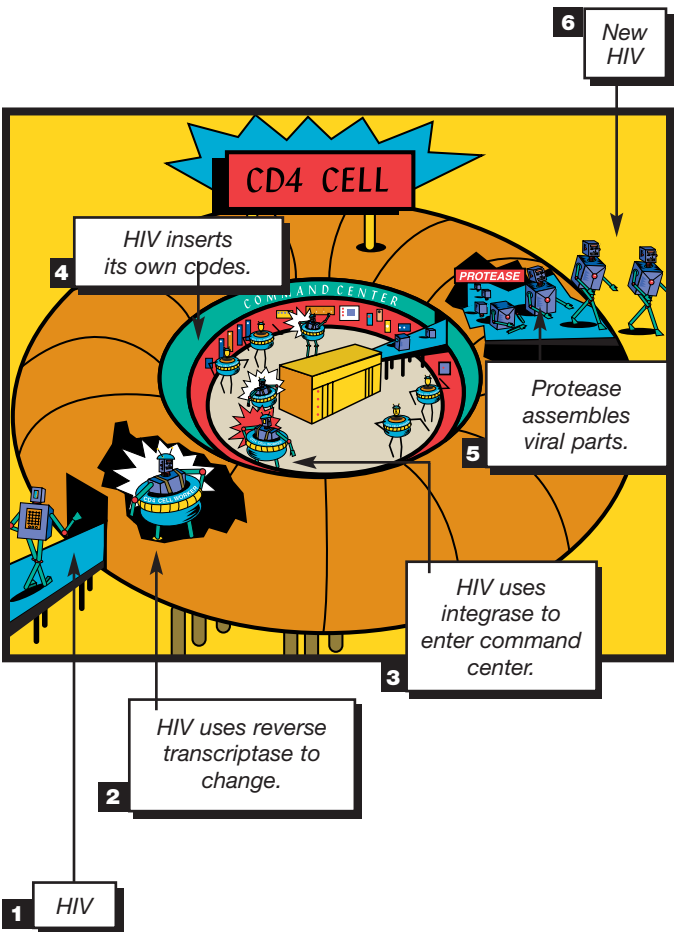
- ◆ The infected CD4 cell is now an HIV factory, pumping out new viral parts
- ◆ A third enzyme, called “protease,” cuts out and assembles the new viral parts into new copies of the virus
- ◆ New copies of the virus leave the cell ready to seek out more and more CD4 cells to invade



CD4 Cell starts making new viral parts. The enzyme protease assembles the parts into new copies of HIV.

Overview: HIV infects a healthy CD4 cell

- Once inside a CD4 cell, HIV uses three special enzymes to make copies of itself—reverse transcriptase, integrase, and protease.



Anti-HIV medications battle the enzymes

- ❖ All anti-HIV medications attack the virus inside the CD4 cell where the virus is trying to make copies of itself
- ❖ These medications, called enzyme inhibitors, work by blocking the enzymes used by HIV
- ❖ There are three types of anti-HIV medications:
 - NRTIs (nucleoside reverse transcriptase inhibitors)
 - NNRTIs (non-nucleoside reverse transcriptase inhibitors)
 - PIs (protease inhibitors)



NRTIs and NNRTIs keep HIV from changing

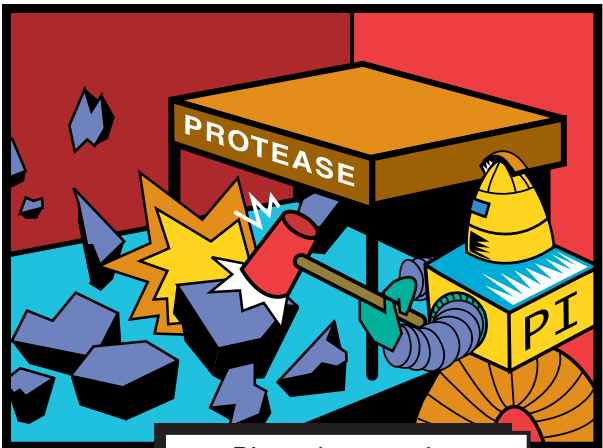


NRTIs and NNRTIs stop HIV from changing.

- ❖ NRTIs and NNRTIs stop the enzyme “reverse transcriptase”—the enzyme HIV uses to change itself and enter the CD4 cell
- ❖ Unable to change, HIV cannot get into the cell’s command center
- ❖ HIV is unable to make new copies of itself

PIs stop the assembly of new virus

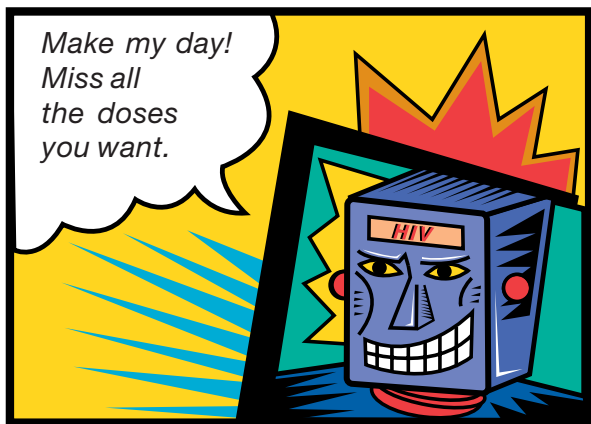
- ❖ PIs stop the enzyme “protease”—which HIV uses to cut out and assemble new viral parts
- ❖ Although new viral parts may be produced, the parts don’t go together properly
- ❖ The defective virus cannot go on to infect other cells



PIs make sure that new HIV parts are not put together.

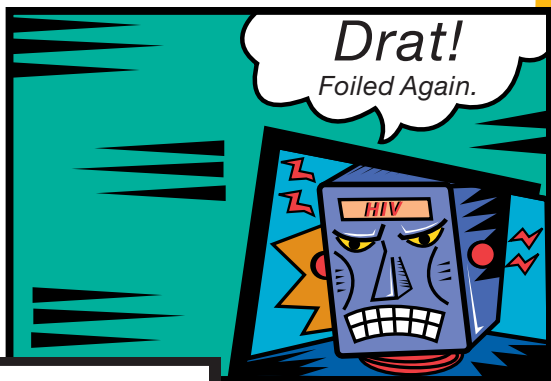
HIV makes copies if you miss doses

- ❖ As the anti-HIV medications work to stop the virus from making more copies of itself, the amount of HIV in the blood (viral load) drops dramatically
- ❖ If you miss a dose of your NRTI or NNRTI, HIV can enter some new CD4 cells
- ❖ If you miss a dose of your PI, then HIV can make good copies of itself to attack more cells
- ❖ Although missing a single dose is not a disaster, the more you miss, the more HIV will copy itself in you



Stay on anti-HIV medications to keep down viral load

- ◆ Your medicines are working if the amount of virus in your blood goes down and remains low
- ◆ “Undetectable” means that the number of HIV copies in the blood is so low that it cannot be measured by blood tests, but does not mean the virus is gone
- ◆ That’s why staying on anti-HIV medicines can help you live a longer, healthier life



By taking your HIV medication you help to ensure that viral load goes down.



GlaxoSmithKline

©2002 The GlaxoSmithKline Group of Companies
All rights reserved. Printed in USA. CBV498R7 May 2005