NATAP'S NATIONAL AIDS TREATMENT ADVOCACY PROJECT

POSITIVE + INFORMATION

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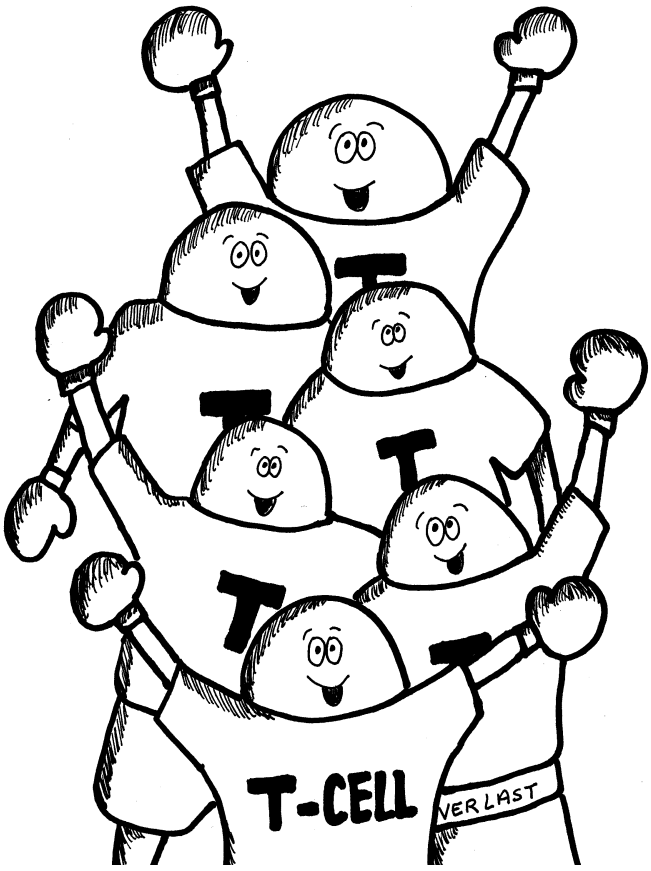

What is the Goal of HIV Therapy?

The goal is to increase T-cells (CD4 cells) as much as possible and to reduce HIV viral load to undetectable levels. HIV-infected persons live longer, healthier lives when CD4s are high and viral load is low or undetectable.

HIV destroys the immune system and kills CD4 cells. When you reduce the amount of HIV you have, which we call viral load, this permits the immune system to regenerate itself and grow new CD4 cells. And so your CD4 cell count increases.

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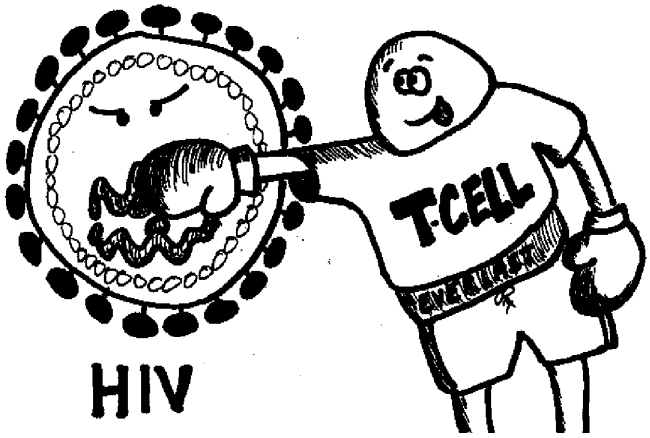
What are T-cells and how many should I have?



The more T-cells you have the better.

If you have 50 or less CD4 cells (T-cells) you may feel ok but you are actually at great risk for developing an opportunistic infection which could lead to you getting very sick. It's very important to get your CD4 cell count as high above 200 as possible, and keep it there. CD4 cells are a type of T-cell.

When you have HIV infection, your CD4 cell count is an important indicator of the amount of damage that has been done to your immune system by the HIV virus. The purpose of your immune system is to keep bacteria, viruses, fungus, parasites and cancers from taking over your body and making you ill. T-cells stimulate the immune system to respond to these invaders.

The immune system is made up of many types of cells. Examples of immune cell types other then T-cells are: B-cells, natural killer cells, macrophages, mast cells, neutrophils, dendritic cells, and many more. T-cells get the most attention when you have HIV infection because they are easy to identify and measure from blood. There are even different types of T-cells.

Each type of T-cell has a specific role in the functioning of your immune system. Some T-cells keep a memory of past infections and remain ready at the first sign of re-infection to mount a rapid defense. Other types of T-cells help directly eliminate HIV infected cells and cancerous cells. Yet another group of T-cells have the ability to give commands to the other types of immune cells (some of which are listed above) calling them into action when required.

A specific and important type of T-cell is the CD4 T-cell. *In this handbook, when we use the term T-cell from this point on we are referring to the CD4 cell.* When you receive your CD4 number, you are being told the calculation of the number of T-cells with a CD4 marker on their cell surface. Early on in the study of HIV infection, before there was any treatment for HIV, it was discovered that CD4 T-cells disappeared from the blood of patients who had HIV infection. As the number of T-cells went down to low levels, patients would develop AIDS illness and die. Thus the more T-cells you have the better your immune system will function and the less risk you are at for an AIDS related illness.

While it is not known exactly how many T-cells are required to live a normal lifespan without any increased risk of infections, it is generally agreed upon that a person with a T-cell number under 200 is at significant risk for AIDS illness. Of course as you lose more T-cells the risk increases. The highest risk of illness and death is among those individuals who have less than 50 T-cells.

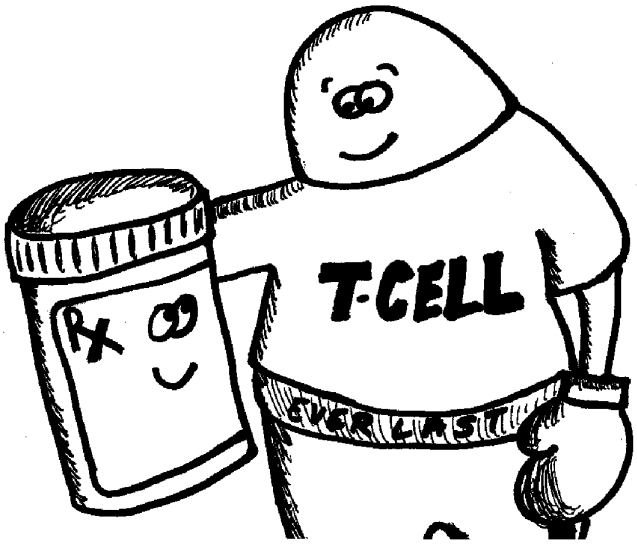
So, your T-cells count is a reflection of your entire immune system and the higher the number the better off you are. In general, a normal CD4/T-cell count can be anywhere between 500 and 1200.

What can I do to increase the number of T-cells I have?

Thankfully, T-cells don't just go down.

With HIV antivirals (medications that can slow the reproduction of the HIV virus in a person's body), T-cell numbers can increase. It is not uncommon for a person who starts with less than 50 T-cells when he or she finds out they are HIV infected, to have over 400 T-cells after a few months or years of antiviral therapy.

A word of caution regarding low T-cells.
There is evidence that if a person's T-cells cells have gone down to low numbers, for example 50, and then come back up to higher numbers, for example 400, their immune system is not restored to the strength it had for someone whose CD4 cells have never gone down below 400. So, it is important not to let your T-cells cells drop too low, because this can cause permanent damage to your immune system. In other words, *the new T-cells you get after starting HAART do not function*



as well as the T-cells that are lost as T-cell count declines.

In addition to antivirals, T-cells can also be increased by the use of drugs that act directly upon T-cells causing them to divide thus giving you a larger number. One of these agents is an injectable medicine called IL-2. IL-2 (Interluekin 2) is a T-cell growth factor that is made by the body during times of infection to increase the number of T-cells. IL-2 can be made in a laboratory and injected causing the number of T-cells to increase. The exact role of this medication in HIV disease is still being studied. Research is still looking at whether or not increases in T-cells resulting from IL-2 treatment are effective.

Finally, raising one's T-cells by taking antivirals is not the entire story surrounding the fight against HIV infection. While taking antivirals halts and even reverses the immune destruction done by HIV, the current approach of lifelong antiviral therapy must be improved. One solution could be a method by which the immune system is taught or manipulated to control HIV on its own. There are a number of experiments underway that are exploring various ways of reaching this goal. (See page 4: "*What happens if I stop taking my HIV medica - tions?")*

What does it mean to have an undetectable HIV viral load?

Undetectable does not mean having no HIV virus.

Reducing viral load to undetectable causes the T-cell count to increase.

Currently, once a person is infected with HIV, he or she will remain infected with HIV for life, even when the virus is "undetectable." HIV antivirals, as well as a few people who have genetically special immune systems, are able to keep the HIV virus from replicating at high levels thus maintaining a low viral load. When the amount of virus copies are so low that it cannot be found by the viral load test your lab is using, it is called "undetectable".

Various viral load tests have different minimum levels at which they can detect HIV viral copies. The early HIV viral load tests were able to identify virus copies down to around 5000. More recently doctors have had at their disposal tests that go down to 500 or 50 copies. The latest tests, which may come to your clinic in the future, are able to go down to as low as 3 copies of virus in about 1 drop of blood. Unfortunately, even with these very sensitive tests, HIV is still making copies of itself in the body.

While not meaning HIV is eliminated, being undetectable does have advantages.

Being undetectable while taking HIV antivirals is an indication that the regimen you are taking is working effectively. Being undetectable means that your ability to transmit HIV sexually may be reduced when compared to someone who is not undetectable. But, even when viral load is undetectable there is still a risk that you can transmit HIV.

Being undetectable while taking antivirals provides protection against developing HIV viruses that are resistant to the medications you are taking. If your HIV develops resistance to the HIV medications you are taking, the drugs you are on and some others will not work as effectively.

Generally, if you don't have HIV virus resistant to HIV medications, it takes about 4 - 12 weeks after starting therapy to reach undetectable. In some cases however, it can take longer. The sooner you reach undetectable, the better the therapy will work over the long term.

The best way to reach undetectable is to be completely adherent. Adherence means you:

- take your HIV antivirals on time
- do not skip a dose
- follow recommendations regarding dietary and fluid intake directions*

(*Examples include: certain pills must be taken with a meal, its OK to take certain pills on an empty stomach, and when taking Crixivan, its important to drink plenty of water).

Even if I achieve undetectable viral load, I hear everyone will eventually fail therapy?

This is not true.

Many people achieved and have maintained less than 50 copies (<50) of HIV viral load since they started HAART about 7 years ago, when protease inhibitors were first made available. Some studies suggest that individuals who achieve and maintain <50 copies for the first one or two years after starting therapy can maintain <50 copies for at least 10 years or longer. However, in order to accomplish this you must be completely adherent and your therapy regimen must be properly selected by your doctor to be potent enough for you and your situation.

What happens if I stop taking my HIV medications?

Recently this has become a very hot topic in HIV medicine and among HIV infected patients.

Sometimes a patient may need to interrupt their medications due to side effects and toxicities. The goal is to switch the person to a more tolerable regimen. In such a case, interrupting therapy is beneficial if the person finds a more tolerable regimen. Remember, the goal of therapy has been to raise the T-cell count, reduce viral load to undetectable, and to maintain these improvements. However, nowadays sometimes patients often want to stop therapy because they are simply tired of taking pills, side effects, body shape changes such as stomach paunch or thinning face, or to try and boost the immune system. If a holiday is taken because you simply no longer want to take HIV medications, caution is advised.

Stopping your HIV medications is associated with risks:

• Your T-cell may go down and your viral load may go up immediately. As a result you may develop an opportunistic infection.

• It's possible that your T-cell may not go down for months but then they may take a nosedive.

• You may develop an opportunistic infection with or without a T-cell decline.

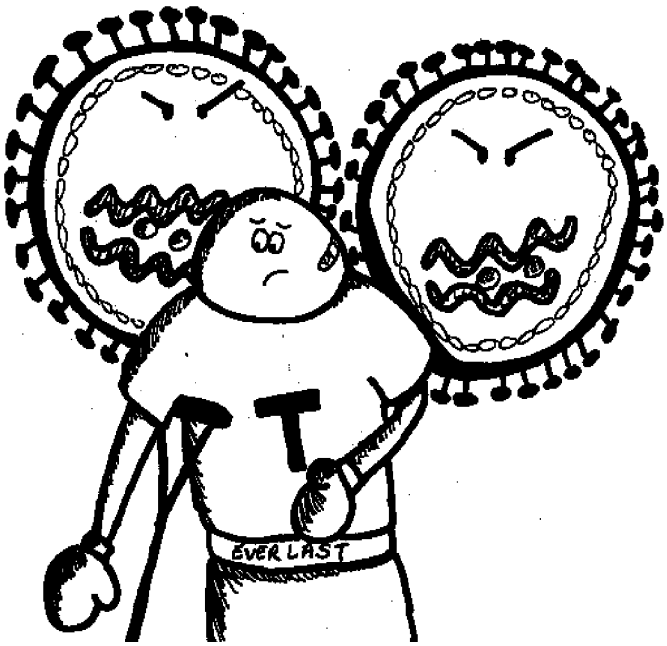
• Your viral load could increase above where it was before you started therapy and you may have trouble getting your viral load back down to undetectable.

• The risk of passing the virus onto an HIV negative sexual partner and your unborn baby (if pregnant) increases.

There is also an immediate risk of an illness called seroconversion syndrome. Seroconversion syndrome is a bunch of symptoms that may occur when a patient is first infected with HIV. They include but are not limited to: sore throat with or without thrush, rash, fever, extreme fatigue, fever, night sweats, nausea, and etc. This also happens in some individuals when they go from an undetectable HIV viral load to a high viral load. This syndrome can come on within a few days to weeks after the stopping antivirals and usually lasts from days to weeks.

You may lose gains in immune system repair.

The gains in immunity that come from HIV antivirals typically take months and years to acquire. There is now some evidence that gains in immunity while on antivirals can be rapidly lost. As mentioned above, once a person stops taking their



medications, their T-cell count can decline and viral load can increase. One should be especially cautious if you have a history of low T-cells. Once HIV antivirals are stopped and HIV levels rise in a person with a history of low T-cells, those newly gained T-cell numbers often decline rapidly.

A number of patients who have become frustrated with either side effects, the fear of developing side effects, or simply have medication adherence fatigue, have stopped taking their HIV antivirals. If you are thinking about stopping or have been contemplating a medication holiday, speak with your HIV primary care provider first. Hopefully they will be able to understand and support your decision even if they disagree with it. Keep in mind that HIV hasn't changed, if untreated it remains a deadly infection for the vast majority of people it infects. If you are not taking HIV antivirals and effectively controlling your HIV, it is vital to closely monitor your T-cells, to watch your viral load regularly, and to be extra safe with your sexual practices.

Can interrupting therapy help me or harm me?

There are clearly known risks as outlined above. It's possible that researchers may find a way to interrupt therapy without risk but we haven't figured out how to do this yet. There are currently research studies looking at different ways of interrupting HIV antivirals. One example is a study where patients first become undetectable by taking HIV medications daily for a year then switch to a medication schedule of 7 days on therapy and 7 days off therapy. It is currently not known if taking HIV medications in this manner is equal to, greater then, or less effective when compared to the current method of taking lifelong daily medications. A second approach being researched is the use of a therapeutic vaccine together with HIV therapy. If interested, you may contact NATAP for currently enrolling clinical trials exploring staggered therapy or talk to your primary care provider about this subject.

How do I know if I have AIDS? What is the difference between AIDS and HIV infection?

HIV infection means that you are infected with the HIV virus. People are diagnosed with AIDS after the HIV virus has caused significant damage to their immune system.

AIDS is more of a governmental term than medical term. The word AIDS stands for Acquired Immune Deficiency Syndrome, which means you do not have an inherited genetic problem with your immune system, but rather one that has developed, specifically due to infection with HIV. Throughout the 1980s and until the advent of effective HIV antivirals in the mid 1990s, it was necessary to have a way of distinguishing between those who had HIV infection but were not currently ill or at high risk of developing illness in the near future, from those who were either sick or were at high risk of getting sick soon. Thus the federal government, through the Centers for Disease Control came up with a definition of what AIDS was, and how AIDS differed from HIV infection. People with AIDS, prior to about 1997 could qualify for disability (SSI & SSD) due to AIDS. The definition of AIDS was reviewed and expanded as more was understood about the diseases AIDS patients developed. Just a few examples of what constitutes AIDS are: T-cells under 200 or less then 12% of total lymphocytes (a type of white blood cell), PCP pneumonia, invasive cervical cancer, KS (Karposi Sarcoma), and many more usually rare diseases.

Thankfully, due to effective antiviral therapy, many now question the usefulness of the term AIDS. Today a person may discover he or she has HIV infection and at the same time discover that their T-cells cells are very low (example 50). That person has an AIDS diagnosis. That person can start HIV antivirals and rapidly, within months, be at a relatively low risk for many of the AIDS illnesses (pneumonia, KS, toxoplasmosis, etc). However, once a person has a diagnosis of AIDS, either because their T-cells went below 200 or because they had an illness from the list of "AIDS illnesses", they keep the label of having AIDS for their entire life. The list of AIDS illnesses has not been examined or altered by the government since 1993. Once again the term AIDS is more applicable for governmental services then accessing a person's health status. For example, in New York City you can qualify for housing assistance from the city if you have an AIDS diagnosis and meet certain income requirements. Some states where there is a wait to be accepted into ADAP allow patients with an AIDS diagnosis to qualify more rapidly then those without an AIDS diagnosis.

Why should I take at least 3 HIV antivirals?

Three is the minimum amount of antivirals that should be taken daily for most people.

Taking 3 or more HIV antiviral drugs is called "combination therapy". Prior to the availability of protease inhibitors (*examples of Protease inhibitors are: Agenerase, Crixivan, Fortovase, Kaletra, Ritonavir, and Viracept*) and another class of drugs called NNRTI's (*examples of NNRTI's are: Virammune, Rescriptor, and Sustiva*) people with HIV disease had available for therapy a combination of 2 nucleoside antivirals (*examples of Nucleoside antivirals are: Epivir, Retrovir, Tenofovir, Videx, Zerit, and Ziagen*). Much less success in preventing disease progression was seen with the use of 2 nucleoside antivirals when compared to the current standard of 3 antivirals. Still, some individuals may be on only 2 drugs. If those 2 drugs are keeping HIV under control and are well tolerated, those individuals may or may not have reason to be taking 3 antivirals. This is a question to discuss with your doctor. Still others may be taking more than 3 antivirals. More recent studies have suggested that 4 antivirals taken each day may have a greater effect on stopping HIV replication. Still others may be on more than 4 antivirals. Those individuals are on what is called MEGA-HAART. MEGA-HAART is, on occasion given to individuals who have been on many antivirals in the past, and three antivirals could no longer control HIV for them.

Treatment for HIV can consist of a regimen containing a protease inhibitor or a NNRTI in combination with 2 NRTIs. Or, the regimen can consist of 3 NRTIs –which would include Ziagen (NRTI) plus 2 other NRTIs. This is called a triple NRTI regimen. A treatment regimen can be taken twice or 3 times per day. Ask your doctor to discuss the pluses and minuses of these 3 types of regimens for you. (See pg: 12)

What happens when I forget to take my HIV antivirals?

This is a question that is good for you and your medical care provider to discuss.

Generally if you forget to take your HIV medication by a matter of a few hours, you should take the forgotten dose when you remember or when you are first able to take it. Then take your next dose as originally scheduled.

If, however, you are close to your next dosing time, or it is already time for your next dose, **it is not advised to double that dose.**

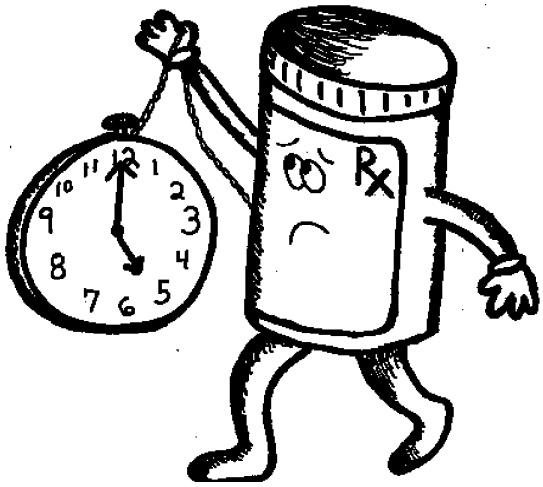
Taking 2 doses of your medication at once, or very close time-wise, can make you sick with short term side effects.

Once again, the best way to address this question is to talk to your care provider about such an event prior to it happening so that you have a plan in place.

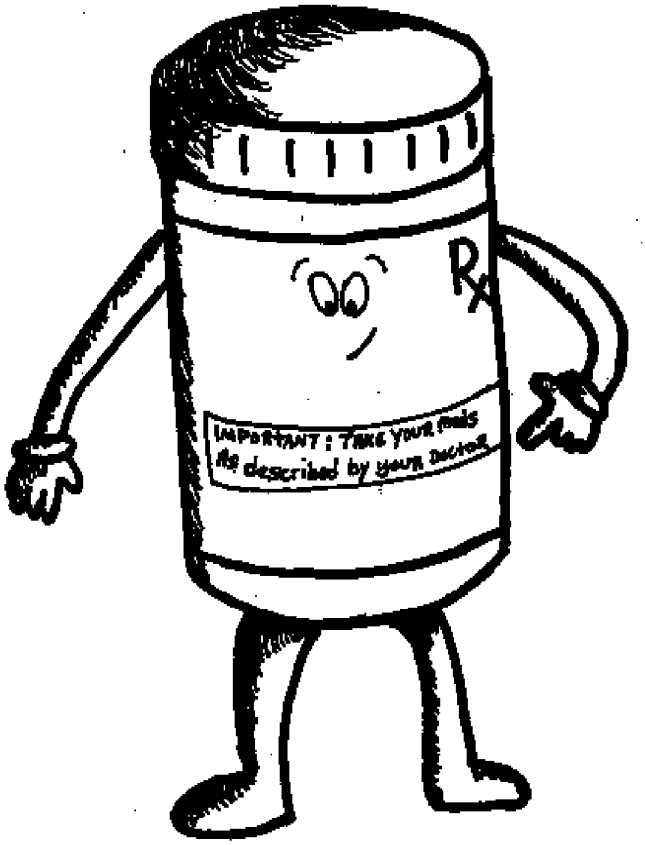
You can bet that if you take your medications as prescribed for years you will have times when:

- you will forget your dose
- you will run out of pills
- you fall asleep before taking your meds
- you do not arrive at home when you had planned

Thinking ahead and planning for these types of scenarios is advised. Also keep in mind that the occasional missed or delayed dose will probably not have an effect on your overall success in controlling HIV.



How much of my medicine do I have to take? All doses? Most doses?



Adhering to medication on a daily basis is now one of the most challenging issues faced by many individuals who have HIV disease.

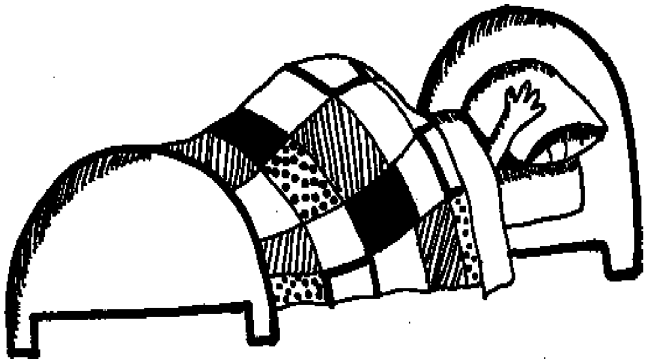
Unfortunately, most of the medications used only stay in the body for a relatively short period of time. Therefore, it is necessary to continually replenish the levels by taking another dose. Once the medication levels in the body drop, the amount of HIV quickly goes up. Keeping a steady level of medication is vital to controlling HIV.

Numerous studies have shown that people who have the best control of the HIV virus have taken 18, 19 or 20 of their last 20 doses. Those who take 17 or less out of 20 doses tend not to have the best HIV control.

Often times it is best not to begin, or to completely stop taking HIV medications, if you are unable to take over 95% of your doses.

One of the worst things you can do is miss doses on a regular basis. This allows the virus to become resistant to the medications, thus limiting the future effectiveness of HIV medications perhaps when they are needed to save one's life.

Should I be afraid of side effects from HIV antivirals?



Yes. But afraid is not the best choice of words, though it does describe an emotion many individuals experience when contemplating HIV antiviral therapy.

For many, the best way to calm fears of side effects is information. Remember that all medications, not just HIV medications, have potential side effects.

Just because a medication has the potential to cause a side effect doesn't mean you will experience that side effect.

Many people experience short-term side effects when they first begin HIV therapy or change to a new combination of antivirals. These short-term side effects are called short-term because they generally last a few days or weeks before disappearing. Most people are able to continue the activities of daily life, perhaps with some modification during this period of adjustment.

Examples of short- term side effects are:

- upset stomach
- diarrhea
- headache
- vivid dreams
- anxiety (this can stem from the fear of getting side effects)

One short-term side effect that requires special attention is medication allergy.

An allergic reaction, which occurs infrequently, can be caused by any kind of medicine and in some cases can be life threatening. If you suspect an allergy to any medication you should contact your medical provider immediately.

Symptoms of an allergy can include:

- fever
- unusual fatigue
- skin rash

Generally when people speak of fear related to HIV therapies, they are considering the reports of body shape changes.

Changes in body shape can include:

- bellies that have gotten large
- faces that have lost fat and seem sunken
- limbs that have thinned and now have pronounced veins
- butts that have gotten smaller
- enlarged breasts for women

Much less is understood about these side effects. For the most part, if one is to develop one or more of these side effects, it will not be until after 1-2 or more years of taking HIV antivirals.

Not everyone who takes HIV antivirals has developed these side effects.

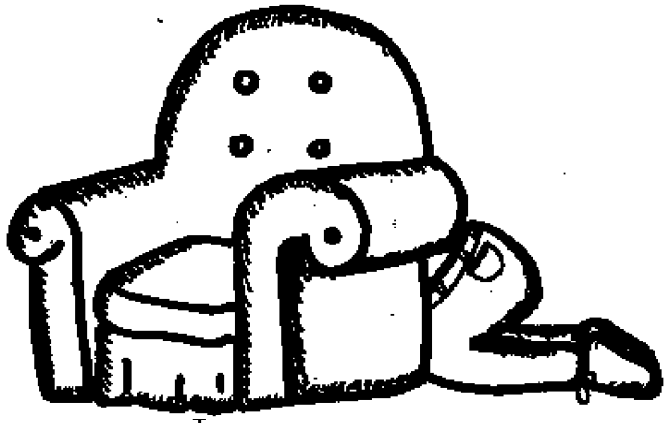
It has been estimated that perhaps up to 50% or 60% who take HIV antivirals have so far developed these symptoms. But, an exact percentage or chance of developing one or more of these side effects is unknown. There are currently no precise tests available to predict if you are someone who might be at risk for developing these long term side effects. Results from research studies suggest that several factors might be involved, although researchers are unsure of the precise causes of these side effects.

Your genes may play a role.

For example, if your parents had diabetes or you have diabetes, or insulin resistance, you may be more likely to experience these body shape changes.

HIV antivirals appear to play a contributing role leading to these side effects. But there appear to be a number of other potential contributing factors. What causes these side effects in different individuals may vary from person to person. Other contributing factors may include the length of time you have had HIV and your age. As a person ages they may be more likely to develop stomach paunch and elevations in sugar, cholesterol, and triglycerides. Increased duration of taking HIV therapy may play a role. Research has found that perhaps patients with the greatest improvement in their immune system from HIV therapy may be more likely to experience these symptoms. So people with low CD4 counts before therapy who have very good CD4 increases after starting therapy and reduce their viral load to undetectable may be more likely to experience these symptoms.

Taking a broad view of all risks is important when discussing potential side effects from HIV therapy. While HIV therapy poses a potential for unpleasant side effects, HIV itself poses a much greater threat. HIV if left untreated, leads to death in the overwhelming majority of those infected. Making a wise decision about when to start therapy and being well informed about potential side effects should lessen the fear surrounding HIV side effects.



How do I know if I have a good doctor?

First let's expand the term doctor to include other clinicians who might be providing primary HIV care. That would mean we could be referring to a Doctor (MD or DO) or a Nurse Practitioner (NP) or a Physician Assistant (PA).

To evaluate whether your clinician is meeting your needs you can ask yourself these few simple questions:

- Does my clinician listen to me when I speak?
- Does he or she take my complaints seriously?
- Does he or she have adequate time for me during appointments or am I rushed in an out of the office?
- Does he or she take time to teach me when I have questions?
- Is he or she available to me during evening and weekend hours for emergencies?
- Can I walk-in or get an appointment soon if something comes up between scheduled appointments?
- Do I get to see my clinician each time I come in or am I constantly shuffled to whoever is available on the day of my appointment?

Does your clinician keep up with the rapid changes in HIV medicine?

This is a difficult one to answer. Generally speaking, if you seem to be more informed then your clinician, this should raise caution. In general, clinicians who only see a few HIV patients might be less informed about recent developments in HIV medicine when compared to someone who only or predominately practices HIV medicine.

An informed patient who is confident enough to ask questions will most often get the best services.

Don't be afraid to ask:

- What are the possible side effects of this medicine?
- What other options exist?
- Can you review my lab tests from the last visit and help me understand what they mean?

WHAT CAN I DO?

- Become educated about HIV and treatment. Your ability to evaluate your doctor's knowledge and his or her capacity to help you increases when you have greater education and knowledge about HIV.

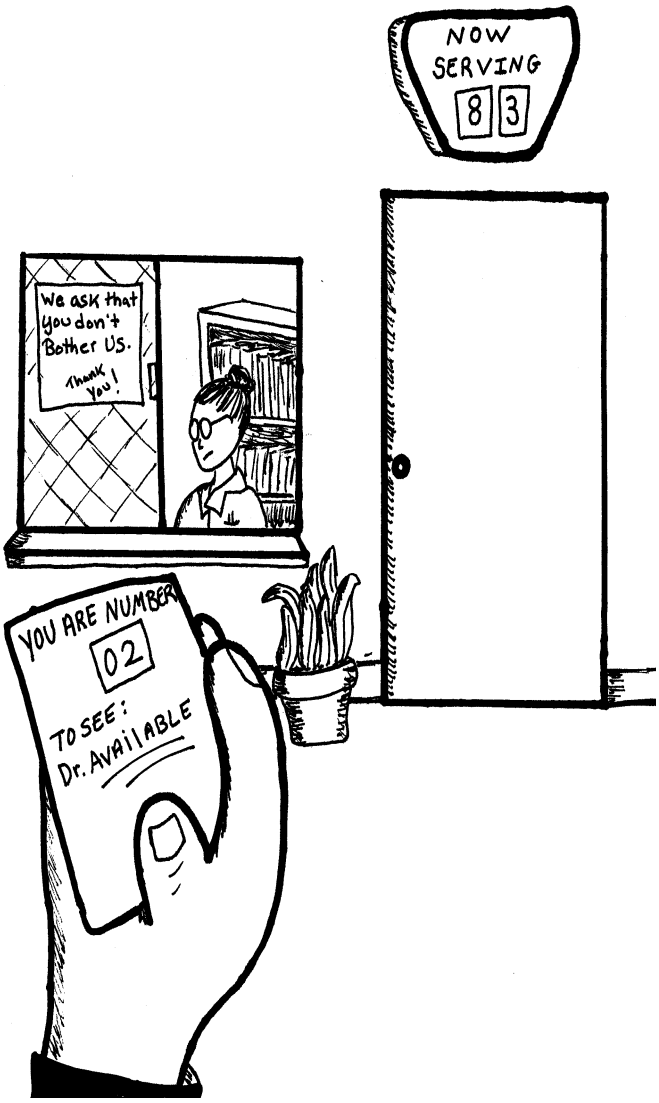
- Be honest with your doctor. Provide him or her with as much family history and background such as previous illnesses as possible.

Finally, one should remember that the clinician is not the only component of a good healthcare relationship that needs evaluation. In many cases, patients may be happy with their provider but do not like the system the provider works in or the support staff that surround the provider.

- Clinics that specialize in HIV care are notoriously understaffed and overworked.

- University based medical school settings offer many resources but are plagued with the problems associated with being too large. They struggle with providing an individual touch and provider turnover is high because doctors complete fellowships and move on.

- HMO's pose a problem in that they limit the patient to a provider inside their network. Often times patients are forced to abandon a successful relationship developed over years with a clinician.



What happens when I take my HIV medications and also use: alcohol, cigarettes, heroin, cocaine, ecstacy, and etc.

This is an area where science has very few answers. There are no studies looking at the interactions of most of these drugs with HIV medications. If a person has a problem abusing drinking or using drugs, this can make adherence much more difficult. It's hard to remember to take your medications because you are very busy and pre-occupied. By seeking support such as Harm Reduction (clean needle exchange), counseling, and treatment to stop drugs this will increase your ability to be adherent, to succeed with HIV therapy, and to beat HIV.

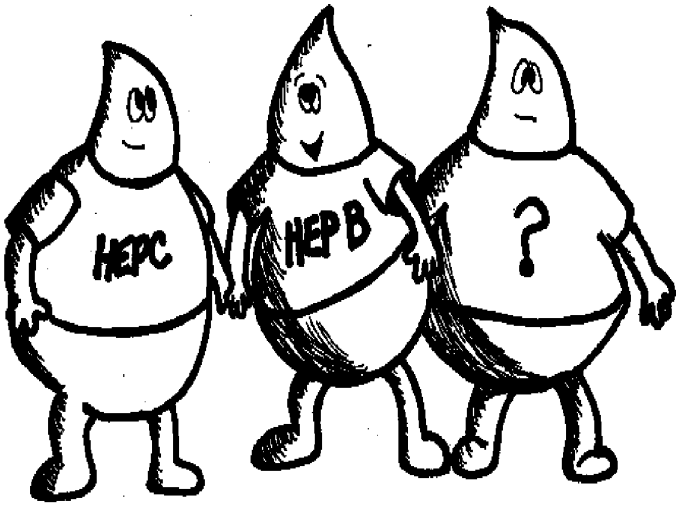
Heroin and cigarettes pose specific health risks of their own. Still many of the patients who use those substances on a regular basis are able to maintain an undetectable HIV viral load.

Taking HIV drugs can be a lethal combination when one is drunk or using crack.

Heavy alcohol consumption or regular **cocaine (crack)** use are also health risks, but together with HIV disease they can be a lethal combination.

It is difficult to say how much risk, but undoubtably even mild to moderate alcohol consumption in combination with some HIV antivirals poses some risk of liver damage. *Remember that both HIV medications and alcohol are eliminated from the body by the liver.*

Even less is known about the so-called party drugs: **ecstasy**, **GHB**, **special K**, **crystal meth**, **etc**. One of the associated risks that accompanies each of these substances is that individuals are less likely to be adherent to their HIV therapy when high on any of these mood altering agents.



If I have hepatitis C or B what does that mean?

Hepatitis viruses are given letters to distinguish one from another. Hepatitis means inflammation of the liver. Hepatitis C and B are thus two separate viruses that affect the liver.

Hepatitis C is a virus that is predominately acquired through recreational drug use. It is most readily transmitted by needle sharing. Even sharing a needle one time, many years ago with someone who had hepatitis C is probably enough to infect you. Hepatitis C may also be transmitted through other drug devises that are shared (example: crack pipes, cocaine straws, tourniquets). Hepatitis C can be transmitted from mother to child during pregnancy or during the birthing process. Hepatitis C can be transmitted sexually, however the risk of being infected through sex with hepatitis C is much less when compared to HIV, hepatitis B or other sexually transmitted viruses. The risk of being infected with hepatitis C sexually appears to be increased substantially when a person has HIV. The presence of an STD may also increase the risk of sexual HCV transmission. Hepatitis C is a problematic infection in that, like HIV, most people do not have an immune response that is able to clear or control the hepatitis C virus. It is estimated that hepatitis C infection affects as many as 4 to 5 times more individuals in the United States then HIV. Usually, hepatitis C causes its destruction to the liver over 20 to 30 years. It is generally accepted that hepatitis C is a greater problem, causing more rapid liver disease, for individuals who also harbor the HIV virus when compared to individuals who have only hepatitis C. No vaccine currently exists for the protection against chronic hepatitis C infection. Medication for hepatitis C exists and is addressed below in the answer to the next question.

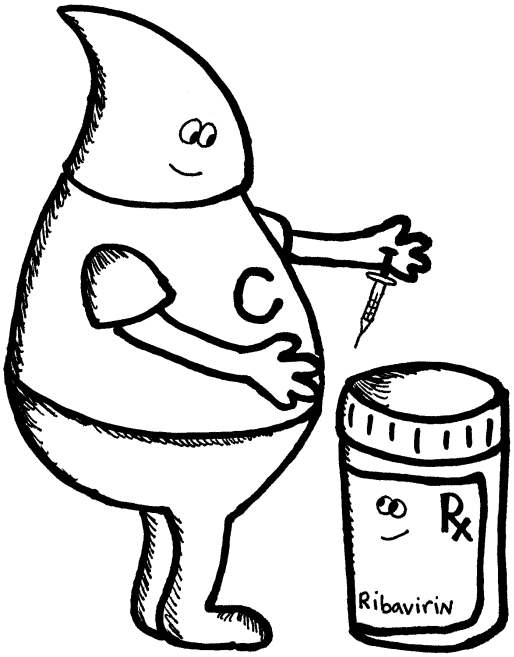
Hepatitis B is a different hepatitis virus then hepatitis C. Hepatitis B is most often transmitted either sexually, through needle sharing with an infected person, or from mother to child during pregnancy or birth. In most cases, hepatitis B does not pose a problem. Many individuals who have had hepatitis B do not even know they had it. Blood tests looking for hepatitis can show whether someone has had an infection with hepatitis B in the past. If you have had hepatitis B in the past, and you made an adequate immune system response to it you are now protected for life. For those whose blood tests show they never had hepatitis B, safe and effective vaccines exist to provide protection against future infection. The problem with hepatitis B is that a percentage of those who acquire the infection are not able to make an immune response that fully clears the virus. They are left with what is termed chronic hepatitis B. Chronic hepatitis B, like chronic hepatitis C is a significant infection that is probably compounded when one has HIV. Fortunately medication exists for this virus as well.

Both hepatitis B and C pose special problems for patients who also have HIV. If your liver is under stress from chronic hepatitis B or C, taking HIV medications may increase the risk of liver problems associated with taking HIV medications. This doesn't mean a patient with chronic hepatitis B or C shouldn't

take HIV medications, it simply means close monitoring should be involved.

Another problem for patients who have HIV and one of the hepatitis viruses may be that an immune system weakened by HIV could be less able to fend off the hepatitis virus thus leading to end stage liver disease in more patients and more rapidly when compared to individuals without HIV. Therapy for HCV can help address this.

Can I take medication for hepatitis?



Yes!

Hepatitis C is currently being treated with a combination of interferon plus Ribavirin (tablets). This combination has the potential to eradicate or cure hepatitis C. A new form of interferion has been developed called *pegylated interferon* which permits a once a week injection rather than three times a week.

Treatment is not for everyone and not everyone with HCV needs treatment. It should be determined on a case by case basis. It is important to note that HIV can accelerate HCV progress. So, if you have HIV you should monitor your HCV closely. Blood tests, plus a liver biopsy is the best way to determine if treatment is necessary, and, how urgently.

The current treatment - long-acting interferons plus ribavirin, has numerous side effects including but not limited to:

- fatigue
- anemia
- depression
- loss of appetite leading to weight loss
- hair loss
- irritability
- anxiety
- thyroid disease (infrequently)

Still the prospect of being cured or extending the life of one's liver are reasons why many individuals who have both HIV and hepatitis C should consider this therapy without waiting too long. Also of interest is the fact that currently in the developmental stages are numerous therapies for hepatitis C.

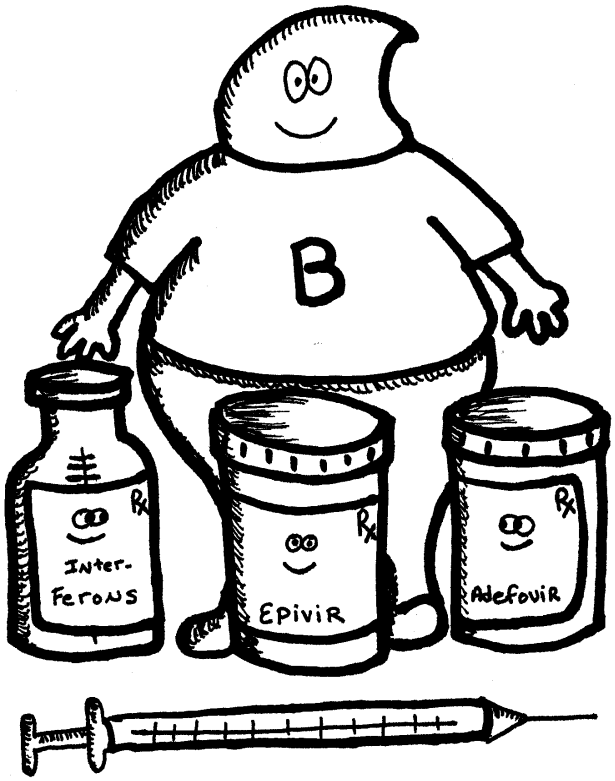
Hepatitis B is currently being treated with a variety of medications. They include but are not limited to:

- Interferons
- Epivir (3TC)
- Adefovir (not approved yet - still in studies)

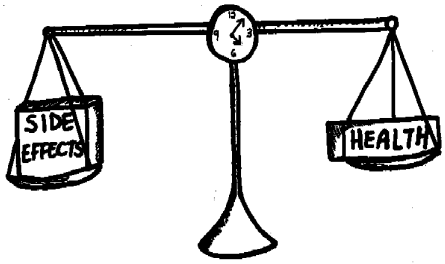
The oral treatments for hepatitis B tend to have very low side effects. Some of the interferon side effects are listed above under hepatitis C. As with hepatitis C, the best way to determine if therapy for chronic hepatitis B should begin is with the use of blood tests and a liver biopsy.

If your primary HIV clinician is not trained or does not currently offer hepatitis therapies, it is advised that you seek the care of someone who can access the status of your liver and help you decide if hepatitis therapies could benefit you.

Your HIV clinician should be able to facilitate this by a referral to someone who is knowledgeable in this area.



When should I start HIV therapy?



Making the decision to start HIV therapy is best made on an individual basis in conjunction with one's primary HIV care provider.

Currently the U.S. Department of Health and Human Services Guidelines for the start of therapy call for beginning therapy when T-cells fall below 350 or when the viral load exceeds a certain level (35,000 bDNA or 55,000 PCR copies depending on the type of blood test used). The guidelines call for patients to start therapy when they experience HIV related illness regardless of T-cell count or viral load. Thus, if you have 400 T-cells but are experiencing thrush or have had a bout with pneumonia or other AIDS related illness, the guidelines recommend HIV therapy.

If you recently (within weeks) became infected with HIV, starting therapy immediately may prevent HIV from significantly damaging the immune system. The effectiveness of early therapy is still being studied.

Unfortunately, there have not been any great studies that point to whether starting HIV therapy with higher T-cells or waiting for lower T-cells makes a significant difference in keeping HIV related illnesses at bay. To design and carry out such experiments would take many resources and perhaps decades to obtain useful information. Therefore, patients and their providers are left with this decision.

When considering HIV therapy a person should contemplate the commitment required to take therapies at the same time everyday, for at least years, and perhaps a lifetime.

Does one have the structure, discipline, and family support that are vital to medication adherence? If not, you can seek and receive support and counseling

One should carefully weigh the side effects and what is known about the risks associated with taking HIV therapies.

Any person contemplating HIV therapies should certainly understand why they will be taking the medication and what possible benefits are being derived from keeping HIV at very low levels.

The most impressive benefits from HIV therapy are that they can prevent HIV from destroying your immune system. If you've already suffered significant immune loss, HIV therapies appear able to rebuild that immune system.

What's different for women with HIV?

What is known is that women, like men, develop AIDS related illness, and that HIV untreated, can cause immune destruction and death in women as in men.

Some of the types of illness and damage done to a woman's body by HIV is different than a man's. Women can experience a number of women specific problems. This is why it is important for a woman to have PAP smears and gynecological examinations every 6 months. Little is known about the effect of HIV on female hormonal levels.

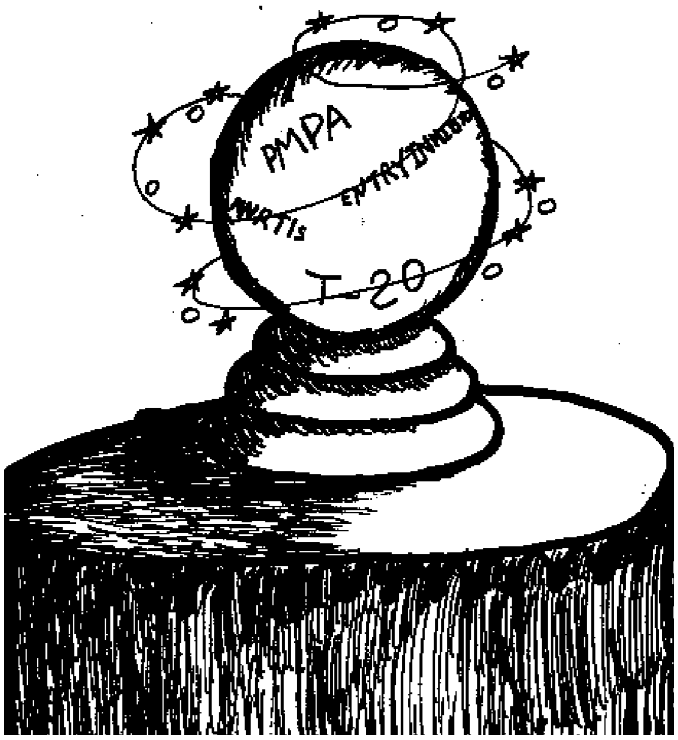
As in men, little is understood about long-term side effects from HIV therapies. But there can be differences between men and women in the short and long term side effects they experience.

It is not uncommon for HIV positive women to experience early menopause. HIV viral loads, specifically during the first years after HIV infection, tend to be lower in women then in men. Although women appear to progress to AIDS in the same amount of time as men, we are not sure if this viral load difference has important implications. For example, how do the viral load differences affect the question of when to begin therapy for a woman? In deciding when a woman should begin therapy the T-cell count may be a better yardstick than viral load.

It should be emphasized that the risk of contracting HIV through heterosexual sex appears greater for women than for men (meaning it is easier for a woman to get HIV from a man than a man to get HIV from a woman). However, it is generally accepted that a woman *can* transmit HIV to a man.

It is important to ask your doctor questions about you as a woman and women's HIV-health issues and infections rather than about just your HIV. It is clear that there are many unanswered questions about HIV and treatment for women, so much more research is needed to get these answers.

The future of HIV treatment



Earlier in this booklet we described currently used treatment regimens (pgs: 5-6). We talked about regimens in which pills are taken 2 or 3 times per day. Some regimens require taking more pills while other regimens contain less pills. At this time, there are a few drugs that can be taken once a day. You can ask your doctor about this.

In the near future, there will be additional drugs that can be taken once per day. For patients with resistance to the currently available drugs, new drugs are coming. PMPA (Tenofovir) is a *nucloeTide* (as opposed to a *nucleoside* like AZT or d4T) and is taken once per day; PMPA was made available in the pharmacy during November 2001.

There is a whole new class of drugs being researched called *entry inhibitors*. HIV is reproduced inside the T-cell. Currently available drugs block HIV from reproducing after HIV enters the T-cell. But entry inhibitors prevent HIV from even entering the T-cell. Because these drugs are an entirely new class, patients should not have any resistance to them at all despite having resistance to the currently available drugs.

T-20 is the first entry inhibitor in advanced human trials. If development goes smoothly, T-20 should be available in about a year or shortly afterwards.

New protease inhibitors and NNRTIs are currently in human studies. These new drugs should be effective against HIV that is resistant to currently available protease inhibitors and NNRTIs. Therapeutic vaccines are in studies to see if they help to control HIV after stopping HAART.

HIV has received much research attention in the last 10 years. As a result of this research many great treatment advances and discoveries have been made. Although side effects can develop, HIV-infected persons can live productive lives, and have the potential prospect for living a normal lifespan. We can be hopeful that new scientific advances will occur and bring us safer, more tolerable, easier to take, more effective therapies.