

# ***Managing Side Effects***



**of HIV  
Medications**



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## What are side effects?

Side effects are symptoms or problems you may have when you take a medication. Almost all drugs used to treat any type of illness can cause



side effects. For example, some cold medicines that stop a runny nose can also make you sleepy. HIV medications are no different — they can cause different reactions and make you feel sick. Most side effects you can see and feel, like headaches, upset stomach, nervousness, or trouble concentrating. But you might not be aware of some physical side effects, like liver or kidney damage.

Some side effects are very common and will happen to most people taking a drug. Other side effects are very rare. Your age, body weight and size, gender, and overall health can play a role in how you experience side effects.

This booklet explains the common side effects of HIV medications, the more dangerous side effects of certain drugs, and what you can do about them.

**Some  
side effects  
are common.  
Others are  
very rare.**





## Why do I need to know about side effects of HIV medications?

HIV medications are helping many people with HIV infection live longer, healthier lives. Taking these medications on a regular basis lowers the amount of HIV in your body and protects your immune system. However, like most medications, they have side effects. Learning how to handle them is an important part of making HIV medications work best for you.

Dealing with side effects is a lot like taking your HIV medications on schedule — if you have a plan and stick with it, you'll have a better chance of staying healthy. Try to develop a plan for dealing with side effects **before** you begin taking a drug for the first time. Ask your doctor or pharmacist about possible side effects or read about them yourself. Some side effects are so serious that if you begin to feel them, you will need to call your doctor right away. But many other side effects are not so serious, and you may be able to deal with them yourself.

Side effects are one of the main reasons why people stop taking HIV medications. No matter how bad you feel, **keep taking the drug and don't take less than a full dose unless your doctor tells you to.** If you miss just a few doses or take less than a full dose, the drug may stop working. **However, there are some drugs (like abacavir and nevirapine) that you should stop taking right away if a specific side effect occurs.** Abacavir is also contained in the combination drugs Trizivir<sup>®</sup> and Epzicom<sup>®</sup>. If you are taking any of these medications, talk with your doctor about these important precautions.

## ***What should I ask my doctor when he or she first prescribes an HIV medication?***

**First, make sure you understand what the medication does and how to take it.** Ask your doctor:

- What is the name of the drug? Learn the drug's brand name and its generic name.
- What is the drug supposed to do?
- When do I take it? What is the best time of day to take the drug — for example, before bed or first thing in the morning?
- Should I take it with food or without food?
- Are there any foods or drinks I should avoid when taking the drug?
- Are there any other medications I should avoid when taking the drug?

**Your doctor can also help you prepare for any side effects you may get.** Ask your doctor:

- What are the most common side effects of this drug?
- Is there anything I can do to reduce the side effects?
- Are any of the side effects serious?
- Should I call you right away if I get a certain side effect?
- Should I stop taking this drug right away if I get a certain side effect?





**Finally, make sure you know how to get help 24 hours a day.** Ask your doctor or healthcare provider: What should I do if I have a serious problem when your office is closed? Who should I call?

Many HIV clinics must have a doctor, nurse, or other medical staff person on call 24 hours a day. Keep emergency phone numbers and addresses (local rescue squad, emergency room, etc.) handy in case you have to contact them when the clinic is closed. Give that information to a close friend, roommate, spouse, partner, family member, or a person you trust in case you cannot call for help yourself. Don't worry about calling for help if you feel the problem is serious. It's better to be safe than to risk having a bad reaction to a medication.

### ***What should I do when I begin feeling a side effect?***

HIV medications are powerful drugs. And if you're taking more than one medication at a time, you may feel several side effects. It can take time for your body to get used to them. Some side effects may last for a few days or weeks and then lessen or go away.



Keep taking the full dose of the drug unless your doctor tells you to stop. Taking less or skipping doses could make the medication stop working for you. Give your body a chance to adjust to the new medication. If you feel bad at first, remember that this feeling will usually lessen or go away. But be sure to read the instructions that come with the drug. Some drugs, such as abacavir, can produce very serious side effects, and you will have to stop taking them right away (see page 23). Abacavir is also contained in the combination drugs Trizivir® and Epzicom®.

**Give your body a chance to adjust to a drug you just started taking.**

#### **Call your doctor if:**

- he or she has told you to call because the side effect might mean you have to stop taking the drug;
- the side effect is making you feel so sick that you think you need to stop taking the drug right away; or
- you are having a side effect that wasn't listed with the drug information or that your doctor didn't explain to you.

#### **Why does the package insert of my medication list so many side effects?**

The package insert (the piece of paper that may come with your medication) has a lot of information about the drug.





By law, drug companies have to list all the possible side effects, even if they are very rare. The most common side effects usually are listed first, and the rare ones are listed last. Don't be scared off by what **might** happen. You may get few or none of the side effects listed.



## **Common side effects with all HIV medications**

**Some side effects can be caused by any HIV medication (and by many other kinds of medications as well).**

**These include:**

- Diarrhea
- Feeling tired (fatigue)
- Headache
- Liver problems
- Upset stomach (nausea), stomach pain, vomiting, and poor appetite.

Many people find that these side effects get less severe over time and may go away completely. But there are other side effects — like the beginning stages of liver and kidney damage — that you can't feel. So you'll need to have your doctor test for them. Read about these side effects on the next few pages and review the tips to help you reduce and manage them.

## Diarrhea

If your HIV medications are causing the diarrhea, the first step is to drink plenty of fluids to replace what you lose through diarrhea. Drinks like Gatorade that replace minerals and nutrients are a good choice. Over-the-counter medications such as Imodium®, Kaopectate®, Lomotil®, or Pepto-Bismol® can help.

Many people with HIV have controlled their diarrhea for years by eating some foods and avoiding others. Different things work for different people. Try these tips:

- The BRAT diet: **B**ananas, **R**ice (white), **A**pplesauce, and **T**oast. Oatmeal and tofu can also help.
- Avoid spicy, fatty, starchy, or processed foods, caffeine, alcohol, dairy products, and foods that give you gas (beans, broccoli).
- Try soluble fiber drinks (like Metamucil®, Citrocel®, or psyllium) or foods like oatmeal or Cream of Wheat®.
- Take calcium supplements (500 mg twice a day).
- Ask your doctor or nutritionist about digestive enzymes or acidophilus.

*If your HIV drugs are causing diarrhea, changing your diet may help.*





## Feeling tired (fatigue)

Feeling tired (fatigue) is a common side effect when you begin taking a medication. Sometimes it is difficult to tell whether the medication or the HIV itself is tiring you out. You may feel tired just getting out of bed or climbing stairs; mentally, you may have trouble concentrating or often feel sleepy. Like many other side effects, you should be concerned if it continues for a long time period. Many people find that they feel less tired as their bodies get used to a new drug for several weeks or more.

You may feel tired due to anemia — a low amount of red blood cells. Some HIV drugs, like AZT, can cause anemia. If the anemia is severe, your doctor may change your HIV medication or prescribe medications to increase your red blood cell count (see **Blood Problems**, page 19).

### Here are some ways to help get your energy back and feel less tired:

- If your fatigue is not caused by anemia, try doing easy aerobic exercise — workouts where you don't push yourself and get out of breath (jogging, swimming, riding a bike). Resistance exercise (weight lifting) is good, too. Exercise can ease your stress and make you feel stronger. But don't overdo it!
- Keep a regular sleep schedule; too much sleep can make you feel more tired.
- Eat a balanced diet, with enough calories and protein. Drink plenty of fluids.

**Exercise  
and good  
nutrition give  
you energy.**

- Talk to your doctor or a nutritionist about taking vitamins or supplements that are safe to boost your energy level.

If your fatigue is not caused by anemia, talk with your doctor about what kinds of exercise can help you and not make you feel more tired.



## Headache

Headaches are a common side effect of many HIV medications, especially during the first few weeks that you take a new drug. They may become worse when you're under pressure or feel tense. Several over-the-counter medications may help. These steps may help with headaches:

- Eat regularly and drink plenty of fluids.
- Sit or lie down in a quiet, dark room; place a cold washcloth over your forehead and eyes.
- Gently massage the base of your skull with your thumbs.
- Use aspirin, acetaminophen (Tylenol®), or ibuprofen (Advil®, Motrin®) according to the directions on the label. Ask your doctor which pain reliever is best for you.

Talk with your doctor if your headaches are very painful and occur often. These may be migraine headaches that aren't caused by your HIV medications and need special treatment.





## Liver problems

The liver is important because it releases **enzymes** — proteins that help you digest foods and process the medications you take. But some HIV medications cause the release of too many enzymes, which can damage the liver, especially in people who have both HIV and hepatitis C. If you have previous liver damage from alcohol, street drugs, viral hepatitis, HIV, or medications, this side effect can become worse. If you have both hepatitis and HIV, the medication side effects can be damaging. Certain herbs and alternative treatments can also harm the liver.

*If you have both viral hepatitis and HIV, the medication side effects can damage the liver.*

### To reduce liver side effects:

- Drink less alcohol or stop drinking completely.
- Have your doctor do regular checks of your liver enzyme levels, such as AST, ALT, bilirubin, and alkaline phosphatase.
- Ask your doctor about getting a hepatitis test. If you test positive, there are treatments that may help.

If your liver is damaged, avoiding alcohol is the best thing you can do to keep it healthy. Be sure to tell your doctor about all of the prescription drugs, over-the-counter medications, and alternative treatments you take, including herbs or vitamin supplements. Some of these treatments may be harmful to your liver.

## Upset stomach (nausea), stomach pain, vomiting, poor appetite

These common side effects usually lessen or go away in a few weeks. If you vomit or have stomach pain for several days in a row, call your doctor. Prescription drugs called **antiemetics** can help control nausea and vomiting. Ask your doctor about taking Compazine®, Marinol®, Zofran®, or Phenergan®. Over-the-counter drugs like Pepto-Bismol® may relieve nausea. To help settle an upset stomach:

*For most people, the nausea will lessen or go away after a few weeks.*

- Use the **B**ananas, **R**ice (white), **A**pplesauce, and **T**oast (BRAT) diet.
- Avoid hot, spicy, or greasy foods.
- Eat dry foods like crackers, toast, and dry cereal.
- Sip cold, carbonated drinks (like ginger ale) or try peppermint, chamomile, or ginger tea.

Some medications are easier on the stomach if you take them with food. But some HIV medications that you're supposed to take with food may still be hard on your stomach. Ask your doctor or nutritionist how to time your meals and medications to avoid upsetting your stomach.





**Long-term loss of appetite and weight loss can be a serious problem when you have HIV. Starting a new medication may reduce your appetite or upset your stomach so that you eat less. Try these steps to restore your appetite and avoid weight loss:**

- Eat foods that appeal to you even when you are not hungry.
- Eat five or six small meals a day rather than three large ones.
- Avoid foods and drinks that fill you up but don't provide useful calories.
- Try nutritional supplement shakes like Ensure<sup>®</sup> or Boost<sup>®</sup>.
- Keep track of your weight closely. Is your weight loss due to lack of appetite or vomiting? Did it begin when you started a new medication? Is it related to exercise, stress, or other factors?

People with HIV need to maintain their weight. If you feel that your medications are causing you to eat less or lose weight, talk with your doctor or nutritionist.

## Side effects of dietary supplements and natural therapies

Many people with HIV take over-the-counter supplements, herbs, and natural therapies to improve their health. They also take these products to reduce the side effects of HIV drugs. Most natural therapies have not been scientifically studied. Several of them have their own side effects or may not be totally safe. Here are some things to remember:

- Nutritional supplement shakes are safe to drink and can help you keep weight on.
- A basic, single multivitamin pill is safe and healthy to use. Large doses of vitamins and minerals can make you sick and may hurt your liver. Talk with your doctor about taking more than a single multivitamin.
- Herbal and natural remedies have not been studied. You can't tell how well they work, how much you should take, or whether they are safe.
- Some herbal products can affect your HIV medications. For example, protease inhibitors will not work if you take St. John's Wort; and garlic supplements can block the effect of saquinavir.

Some herbs and alternative treatments may also hurt your liver. Tell your doctor about all of the medications or treatments you use, including prescription drugs, over-the-counter drugs, and alternative treatments like herbs or vitamin supplements.





## Side effects from different types of HIV drugs

**In the next section, you will find information about side effects that are caused mainly by one type, or class, of HIV medication: protease inhibitors, NRTIs, or NNRTIs. These side effects include:**

- Fat storage problems (lipodystrophy): a change in the way your body stores fat.
- Metabolic problems: the way your body balances its use of sugars (glucose), fats, and proteins.
- Heart (cardiovascular) problems: a greater risk of heart-related illness because of higher fat and cholesterol levels in your blood.
- Lactic acidosis: your body has unusually high lactic acid levels, which causes a variety of serious problems.
- Nerve problems (neuropathy): tingling, numbness, or burning in the fingers or toes that doesn't go away.
- Blood problems: a low number of different types of blood cells.
- Bone problems: bones become thinner and break more easily.
- Rash: itching, redness, dry skin, or a reaction to something in the HIV medication.

Some of these side effects happen to many people, others are very rare. Some can be dangerous. Your doctor, nurse, or others at your clinic can tell you more about how to handle these side effects.

## Side effects of protease inhibitors

**Agenerase® (amprenavir)**

**Lexiva® (fosamprenavir)**

**Aptivus® (tipranavir)**

**Norvir® (ritonavir)**

**Crixivan® (indinavir)**

**Prezista® (darunavir)**

**Fortovase®, Invirase® (saquinavir)**

**Reyataz® (atazanavir)**

**Kaletra® (lopinavir, ritonavir)**

Some people taking protease inhibitors have **problems storing fat (lipodystrophy)** or **metabolic problems**. Not everyone who takes these drugs will get these side effects. Some of these effects are very rare. Ask your doctor, nurse, or pharmacist if you have concerns about possible side effects of protease inhibitors.

### **Fat problems (lipodystrophy)**

Lipodystrophy is a change in the way your body stores fat. It usually occurs in people who have taken protease inhibitors for many months. If you have lipodystrophy, you may:

- lose weight, especially in the arms, legs, buttocks, or face (lipoatrophy);
- gain weight in the waist, stomach, base of the neck, or breasts (lipohyperatrophy); or
- In rare cases, develop fat deposits at the base of the neck.

The exact cause of lipodystrophy is not known, but most experts believe it is a side effect of HIV medications.

There are no proven treatments for this disease. If you have lipodystrophy, your doctor may advise you to change HIV medications, get more exercise, or change your diet. But don't do anything before talking to your doctor.





## Metabolic problems

These are side effects on your body's **metabolism** — the way your body stores and uses its nutrients: sugars (glucose), fats, and proteins. HIV medications and HIV itself tend to change the level of fats (triglycerides and cholesterol), sugar (glucose), and insulin (which controls glucose) in your blood. These metabolic changes can lead to heart disease, heart attacks, stroke, and diabetes. Protease inhibitors cause metabolic problems more often than other types of HIV medications. Because you probably won't feel these side effects, your doctor will need to do blood tests and exams to keep track of these levels.

**“Metabolism” means the way your body processes food and other substances.**

## Heart disease, heart attacks, stroke

Higher levels of fats in your blood can raise your risk of heart attack, heart disease, diabetes, stroke, and pancreatitis (see **Pancreatitis**, page 26). Protease inhibitors, especially Norvir<sup>®</sup>, seem to increase fat levels in many people. Before you begin treatment with HIV medications, your doctor should ask you about your personal habits and medical history to see if you have these problems to begin with. During treatment, your doctor should test your cholesterol and triglyceride levels every three or four months. If the levels get too high, these things might help:

- Quit smoking.
- Get regular exercise.
- Change to a low-fat diet that lowers cholesterol.
- Ask your doctor about medications that can help lower your cholesterol.

**Smoking can greatly increase the risk of heart disease.**

## Diabetes

Diabetes is a disease where your body doesn't produce the right amount of insulin to control your blood sugar (glucose). Too much glucose in the blood can slowly damage the eyes, kidneys, blood vessels, heart, and nerves. High blood pressure, high cholesterol, being overweight, and being African American or Hispanic can raise your risk of getting diabetes. Diabetes symptoms include:

- being thirsty all the time;
- needing to urinate often; and
- dry mouth

If you have diabetes before you start taking HIV medications, or if you develop diabetes, your doctor will probably tell you to keep taking the drugs unless your diabetes gets worse. However, some diabetes medications can harm the liver, just like HIV drugs. If your doctor doesn't have experience treating diabetes, ask for a referral to a specialist.





## **Bleeding in the brain (intercranial hemorrhage)**

Aptivus® (tipranavir) may cause bleeding in the brain if you have had a head injury or brain surgery or if you take medicines that raise the risk of bleeding, such as blood thinners. These include aspirin, warfarin (coumadin), clopidogrel (Plavix®), and non-steroidal inflammatory drugs (ibuprofen).

## **Common side effects of NRTIs and NNRTIs**

|   |   |
|---|---|
| <b>ABC, Ziagen® (abacavir)</b>                              | <b>Rescriptor® (delavirdine)</b>                |
| <b>Atripla® (efavirenz +<br/>emtricitabine + tenofovir)</b> | <b>Sustiva® (efavirenz)</b>                     |
| <b>AZT, Retrovir® (zidovudine)</b>                          | <b>Trizivir® (AZT+ 3TC + ABC)</b>               |
| <b>Combivir® (AZT + 3TC)</b>                                | <b>Truvada® (tenofovir<br/>+ emtricitabine)</b> |
| <b>Emtriva® (emtricitabine, FTC)</b>                        | <b>Videx® (ddl)</b>                             |
| <b>Epivir® (3TC, lamuvidine)</b>                            | <b>Viramune® (nevirapine)</b>                   |
| <b>Epzicom® (Epivir® + Ziagen®)</b>                         | <b>Viread® (tenofovir)</b>                      |
| <b>Hivid® (ddC)</b>   | <b>Zerit® (d4T)</b>                             |

NRTIs can cause **blood problems, lactic acidosis, lipoatrophy, nerve problems (neuropathy), rash, or thinning bones (osteoporosis, osteopenia)**. But not everyone who takes these drugs will get these side effects. Some of the effects are very rare.

## Blood problems

Some NRTIs slow the production of different types of blood cells. HIV itself may also be the cause.

Three main blood problems are:

- **Anemia:** a decrease in the number of red cells in your blood, which can make you feel very tired (see **Feeling tired [fatigue]** on page 8).
- **Neutropenia and leukopenia:** a decrease in the number of white blood cells. These cells fight bacteria and infection and help to keep your immune system healthy.
- **Thrombocytopenia:** a decrease in **platelets**, the cells that make blood clot and help stop bleeding.

Your doctor can check your blood through tests to tell if you have any of these side effects.

*Anemia can make you feel very tired.*

If you have mild blood problems, you may not need to change your HIV medications.

Other prescription drugs can help your body produce more blood cells. If you have a severe blood problem, your doctor may also suggest changing HIV medications.

## Lactic acidosis

This rare but dangerous side effect occurs when your body's lactic acid level becomes too high. Lactic acidosis is more common in women and in people who are very overweight. It can lead to liver failure and death. It occurs most often in people who are taking NRTIs (see pp. 31-32). Symptoms include:





- shortness of breath when exercising (if this has usually not happened to you before)
- feeling extremely tired
- upset stomach and throwing up
- stomach pain
- bloating

*If you experience several of the symptoms of lactic acidosis at the same time, call your doctor right away.*

If you feel several of these symptoms at the same time, call your doctor right away. You will need a blood test to find out if you have lactic acidosis.

## ***Nerve problems, tingling hands and feet (neuropathy)***

Neuropathy is damage to your nerves that gives you tingling, numbness, or burning in the fingers or toes that doesn't go away. It is a fairly common side effect of NRTIs. But if you have any of these symptoms, tell your doctor right away.

If the cause of the neuropathy is not stopped, it can spread to the arms or legs.

You may need to get a biopsy (cutting out a small part of the nerve and testing it) to see if the problem is due to the medication or to another cause.

### ***Tips for Managing Neuropathy***

- **Avoid long walks or standing for a long time**
- **Soak your feet in cool water**
- **Ask a friend to give you a massage**
- **Keep your feet uncovered at night**
- **Avoid tight socks or shoes**

If the HIV medication is the cause, your doctor may replace the drug with a different one. Milder cases of neuropathy can be treated with over-the-counter pain relievers or creams. For more serious cases, your doctor may prescribe a certain type of antidepressant drug or a narcotic pain reliever.

## **Skin-related side effects**

Some HIV medications (mostly NNRTIs) can cause a rash, itchiness, or very dry skin. In some cases, you may be allergic to something in the medication. You might be able to avoid this by starting off taking very small amounts of the drug and gradually work up to the full dose. In rare cases of severe rash, symptoms can also include fever, throwing up, and abdominal pain. Call your doctor right away if you get a rash, especially if it itches or looks like hives (large red bumps).

### **For less severe skin problems:**

- Use a good, natural skin moisturizer, like aloe vera.
- Antihistamines like Benadryl® can help clear up many mild rashes.
- Your doctor may prescribe an antihistamine corticosteroid (like Prednisone®) for a more serious rash or itching. This is used for bad cases of poison ivy.
- Avoid using harsh soaps and perfumes.

***A rash may be a sign of a bad reaction.***





## *Thinning bones (osteoporosis, osteopenia)*

Everyone's bones become thinner as they grow older — it's a normal part of aging. However, there is some proof that NRTIs may make your bones become thinner more quickly than normal. If the bones become so thin that they break easily, this is called **osteoporosis or osteopenia**.

Doctors do not recommend testing for thinning bones, except for women who are past menopause. However, you can reduce your risk of osteoporosis by:

- getting enough calcium (from supplements, dairy products, tofu);
- getting enough vitamin D (from sunlight, fortified milk, and some fortified soy or rice milks); and
- doing weight-bearing exercise, like walking or weightlifting.

## *Drug-specific side effects*

Now you understand that most side effects can be caused by different HIV medications. However, some side effects can occur only when you take a specific HIV medication. Not everyone who takes these drugs will get these side effects. Some of the effects are very rare.

Ask your doctor, nurse, or pharmacist if you have concerns about possible side effects of these medications.

## **Abacavir: Abacavir allergic reaction**

About 5 out of every 100 people who take abacavir (ABC, Ziagen®) will have an allergic reaction that can be dangerous. Abacavir is also contained in the combination drugs Trizivir® and Epzicom®, which can produce the same allergic reaction. You may be having this reaction if you have a type of skin rash or if you have two or more of the following sets of symptoms when taking abacavir:

- Fever
- Nausea, vomiting, diarrhea, or stomach pain
- Severe tiredness, achiness, or generally feeling ill

**If you notice these symptoms while taking abacavir, Trizivir®, or Epzicom® call your doctor or clinic right away.** These symptoms usually go away soon after you stop taking abacavir. You should not begin taking the drug again unless your doctor tells you that the symptoms were not part of a hypersensitivity reaction.

## **Viread® (tenofovir), Truvada® (tenofovir/emtricitabine), Atripla® (efavirenz + emtricitabine + tenofovir): Chronic renal insufficiency (kidney failure)**

HIV infection hurts the ability of the kidneys to function properly. Some HIV medications also may harm the kidneys. Viread®, an NRTI, has caused kidney failure in some patients. Viread® is also part of the combination drugs Truvada® and Atripla®.





## **Aptivus® (tipranavir): Hepatotoxicity (liver injury)**

If you have liver illness — such as chronic hepatitis B or hepatitis C — you could get very sick from taking Aptivus®. Your doctor will closely monitor your liver enzymes (a test of your liver health). Ask your doctor about your risk of developing liver problems if you take Aptivus.®

## **Sustiva® (efavirenz) and Atripla® (efavirenz + emtricitabine + tenofovir): Dizziness, confusion, and sleeping problems**

About half the people who take these medications have dizziness, confusion, and trouble concentrating, sleeping problems, depression, or anxiety. These nervous system side effects usually lessen or go away in two to four weeks. Many people find that taking Sustiva® or Atripla® at bedtime reduces these side effects. Your doctor also may adjust the dosage. Some tips for starting out taking Sustiva® or Atripla® are:

- Consider taking a few days off from work while you adjust to this medication.
- Don't drive.
- Don't use recreational drugs, including marijuana.
- If you take Sustiva® or Atripla® before bedtime, don't drink or eat anything with caffeine or sugar for at least five hours beforehand.

## Sleeping problems (insomnia)

Insomnia is a common problem for people with HIV. It may be caused by the disease itself or by HIV medications (especially Sustiva® or Atripla®).

Insomnia may also be caused by other health problems (such as chronic pain) and the medications used to treat them

or by lifestyle habits that can be changed. Insomnia can include having trouble getting to sleep, waking during the night and not being able to get back to sleep, or waking up too early in the morning.



**Getting regular sleep is an important part of maintaining your health and treating HIV.**

**Here are some tips for reducing insomnia:**

- Avoid or reduce your use of alcohol and caffeine in the evening. Cola and other soft drinks contain caffeine.
- Keep a regular sleep schedule — go to bed and get up at the same time. Don't spend too much time in bed if you can't get to sleep.
- Exercise regularly.
- Eat a consistent, healthy diet. Don't go to bed hungry. In the evenings, eat foods that increase your level of melatonin: chicken, turkey, rice, bananas, cottage cheese, ginger, soy nuts, and pumpkin seeds.
- Talk with your doctor about the benefits of using sleep supplements such as melatonin.





- Use relaxation techniques as part of a bedtime routine to reduce restlessness and anxiety and help you “wind down.” These might include meditation, prayer, biofeedback, or yoga.
- If you have been prescribed sleep medications, use them only when you really need them. If you become dependent on these drugs, withdrawal from them can make insomnia worse.

Frequent insomnia may also be a symptom of depression. Other common symptoms include feelings of sadness and hopelessness, loss of interest in favorite pastimes, and changes in eating habits. Many people with HIV experience depression at some time. If you experience symptoms of depression for long time periods, ask your doctor for a referral to a mental health care provider for a depression screening and for counseling. Antidepressant medications may also be helpful.

### ***Pancreatitis: ddI (didanosine, Videx<sup>®</sup>), d4t (stavudine, Zerit<sup>®</sup>), ddC (zalcitabine, Hivid<sup>®</sup>), (Epivir<sup>®</sup> in children)***

The pancreas produces fluids that help the body digest and store food. HIV medications can cause problems with your pancreas, or pancreatitis. Protease inhibitors can increase amounts of fat in your blood, which can also cause pancreatitis (see **Metabolic problems**, page 16).

## Symptoms of pancreatitis include:

- stomach pain;
- upset stomach (nausea);
- throwing up;
- yellow skin and/or yellowing of the whites of the eyes (jaundice).

Drinking less alcohol or no alcohol is a good way to reduce your risk of pancreatitis. Mild pancreatitis can be treated with special medications, and your doctor may stop prescribing any NRTIs. With severe pancreatitis, you may need hospital care and surgery.



## Fusion inhibitors

Fusion inhibitors may help patients who are resistant to many other drugs from the other classes of HIV medications. Fuzeon® (enfuvirtide, T-20) is the only approved fusion inhibitor. Because the stomach destroys the drug, you have to inject it with a needle into your bloodstream twice a day. Patients sometimes have problems with their skin — called injection site reactions — where they place the shots. These problems can include:

- itching
- swelling
- redness
- pain and tenderness
- hardened skin





- bumps
- pneumonia

### To reduce the effects of the needle injections:

- Try showering before taking the shot to soften the skin.
- Pinch a small layer of skin and fat between your thumb and index finger and inject the needle there so that you don't push the needle into muscle.
- Wear loose clothing that doesn't rub against the skin where the shot was injected.

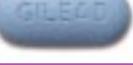
## Keeping your quality of life

We know that drugs that fight HIV improve the health of people with HIV. How you feel when you take those drugs — your quality of life — is important, too. Many of the side effects you have from HIV medications will decrease over time. But if you have side effects that don't go away, talk with your doctor, case manager, nurse, nutritionist, pharmacist, or caregiver about what you can do. They may have tips to help you reduce the symptoms and make the drug easier to take. Because there are many different medications that fight HIV, your doctor will probably be able to find others that work if you need to switch.

Be sure to let your doctor know if side effects make you feel like skipping doses or seriously reduce your quality of life. Missing doses is dangerous, because if you miss just a few doses, the drugs may stop working completely. If you find that side effects are making it hard to take every dose, tell your doctor. Drugs that fight HIV can dramatically improve your health, but only if you don't miss doses!

## HIV Medications

|                                |   |
|--------------------------------|---|
| Epivir® (lamivudine/3TC)       |    |
| Agenerase® (amprenavir)        |    |
| Ziagen® (abacavir)             |    |
| AZT, Retrovir®                 |     |
| d4T, Zerit® (stavudine)        |      |
| ddC, Hivid® (zalcitabine)      |    |
| ddl, Videx® (didanosine)       |     |
| Viread® (tenofovir)            |   |
| Rescriptor® (delavirdine)      |    |
| Sustiva® (efavirenz)           |    |
| Crixivan® (indinavir)          |      |
| Kaletra® (lopinavir/ritonavir) |    |
| Viracept® (nelfinavir)         |    |

|  |   |
|--|---|
| Viramune® (nevirapine)                           |    |
| Norvir® (ritonavir)                              |    |
| Fortovase®, Invirase® (saquinavir)               |    |
| Emtriva® (emtricitabine)                         |    |
| Lexiva® (fosamprenavir)                          |    |
| Reyataz® (atazanavir)                            |    |
| Fuzeon® (enfuvirtide)                            |    |
| Truvada® (emtricitabine/tenofovir)               |   |
| Epzicom® (Epivir®/abacavir)                      |  |
| Aptivus® (tipranavir)                            |  |
| Prezista® (darunavir)                            |  |
| Atripla® (efavirenz + emtricitabine + tenofovir) |  |

## Possible Side Effects of HIV Medications

| <b>IMPORTANT:</b><br>Liver problems, diarrhea, nausea, and other stomach problems are possible side effects of any HIV medication, so they are not included in this chart. See pages 6-11 for more information about these more common side effects. | Anemia and other blood problems | Bone thinning | Depression, euphoria, anxiety, hallucinations | Headache | Increased fats in the blood | Increased sugar in the blood |
|--|---------------------------------|---------------|---|----------|-----------------------------|------------------------------|
| Epivir® (lamivudine/3TC)   | ▲                               |               |   |          |                             |                              |
| Agenerase® (amprenavir)  |                                 | X             |   | X        | X                           | X                            |
| Ziagen® (abacavir)   |                                 |               |   | X        |                             |                              |
| AZT, Retrovir® (zidovudine)  | X                               |               |   | X        |                             |                              |
| d4T, Zerit® (stavudine)  |                                 |               |   | X        | X                           |                              |
| ddC, Hivid® (zalcitabine)  |                                 |               |   |          |                             |                              |
| ddl, Videx® (didanosine)   |                                 |               |   |          |                             |                              |
| Viread® (tenofovir)  | ▲                               | X             |   |          |                             |                              |
| Rescriptor® (delavirdine)  |                                 |               |   |          |                             |                              |
| Sustiva® (efavirenz)   |                                 |               | X   |          |                             |                              |
| Crixivan® (indinavir)  |                                 | X             |   |          | X                           | X                            |
| Kaletra® (lopinavir/ritonavir)   |                                 | X             |   |          | X                           | X                            |
| Viracept® (nelfinavir)   |                                 |               |   |          | X                           | X                            |
| Viramune® (nevirapine)   |                                 |               |   |          |                             |                              |
| Norvir® (ritonavir)  |                                 | X             |   | X        | X                           | X                            |
| Fortovase®, Invirase® (saquinavir)   |                                 | X             |   |          | X                           | X                            |
| Emtriva® (emtricitabine)   | ▲                               |               |   | X        |                             |                              |
| Lexiva® (fosamprenavir)  |                                 |               |   |          | X                           | X                            |
| Reyataz® (atazanavir)  |                                 |               |   | X        |                             |                              |
| Fuzeon® (enfuvirtide)  |                                 |               |   | X        |                             |                              |
| Truvada® (emtricitabine/tenofovir)   | ▲                               | X             |   | X        |                             |                              |
| Epzicom® (Epivir®/abacavir)  | ▲                               |               |   | X        |                             |                              |
| Aptivus® (tipranavir)  |                                 |               |   | X        | X                           | X                            |
| Prezista® (darunavir)  |                                 |               |   |          | X                           | X                            |
| Atripla® (efavirenz + emtricitabine + tenofovir)   | ▲                               | X             | X   | X        |                             |                              |

▲ Hepatitis B infection may worsen if patient stops use.

| Kidney stones | Lactic acidosis (rare) | Pancreatitis | Rash | Sleeping problems | Tingling hands, feet (neuropathy) | Injection site reactions | Chronic renal insufficiency | Hepatotoxicity (liver illness) |
|---------------|------------------------|--------------|------|-------------------|-----------------------------------|--------------------------|-----------------------------|--------------------------------|
|               | X                      | X*           |      |                   |                                   |                          |                             |                                |
|               |                        |              | X    |                   |                                   |                          |                             | X                              |
|               | X                      |              | X    |                   |                                   |                          |                             |                                |
|               | X                      |              |      |                   |                                   |                          |                             |                                |
|               | X†                     | X            |      |                   | X                                 |                          |                             | X                              |
|               | X                      | X            |      |                   | X                                 |                          |                             |                                |
|               | X                      | X            |      |                   | X                                 |                          |                             |                                |
|               | X                      |              |      |                   |                                   |                          | X**                         |                                |
|               |                        |              | X    |                   |                                   |                          |                             | X                              |
|               |                        |              | X    | X                 |                                   |                          |                             | X                              |
| X             |                        |              |      |                   |                                   |                          |                             | X                              |
|               |                        |              |      |                   |                                   |                          |                             | X                              |
|               |                        |              |      |                   |                                   |                          |                             | X                              |
|               |                        |              | X    |                   |                                   |                          |                             | X                              |
|               |                        |              |      |                   |                                   |                          |                             | X                              |
|               |                        |              |      |                   |                                   |                          |                             | X                              |
|               |                        |              | X    |                   |                                   |                          |                             | X                              |
|               |                        |              |      |                   |                                   | X                        |                             |                                |
|               | X                      |              |      |                   |                                   |                          |                             |                                |
|               | X                      |              | X    |                   |                                   |                          |                             |                                |
|               |                        |              | X    |                   |                                   |                          |                             | X                              |
|               |                        |              | X    |                   |                                   |                          |                             | X                              |
|               |                        |              | X    |                   |                                   |                          |                             | X                              |
|               | X                      |              | X    | X                 |                                   |                          | X                           | X                              |

\*In children

\*\*If chronic hepatitis C or past kidney problems

†Most likely cause

### Diarrhea

#### On your own

Try soluble fiber drinks that contain psyllium (like Metamucil®).  
Eat bananas, rice (white), applesauce, toast, or oatmeal.  
Avoid spicy foods, fatty foods, and foods that give you gas.  
Drink lots of liquid to replace the fluids that you lose.

#### With your doctor

Check for infections.  
Ask about digestive enzymes or medication for diarrhea, such as Imodium® (loperamide).

### Dizziness, Confusion, and Sleeping Problems

#### On your own

Take medications at the best time of day to reduce side effects (often at bedtime).

#### With your doctor

Consider other causes, like depression.  
Ask about changing or dividing your doses.

### Upset stomach (Nausea) and Poor Appetite

#### On your own

Eat dry foods: crackers, toast, and dry cereal.  
Sip clear liquids like ginger ale or juice mixed with water.  
Eat foods that appeal to you, even when you are not hungry.  
Eat small, frequent meals.

#### With your doctor

Ask about medications for your upset stomach. But **DO NOT TAKE** any over-the-counter medication unless your doctor approves of it (e.g., antacids, Zantac, or Prilosec cannot be taken with Reyataz [atazanavir]).  
Ask about medications to improve your appetite.  
Ask about timing your meals and medication to avoid nausea.

### Headache

#### On your own

Eat regularly.  
Drink plenty of fluids.

#### With your doctor

Ask about which over-the-counter medication is best for you.

### Feeling Tired (Fatigue)

#### On your own

Exercise regularly if you can.  
Eat a healthy diet.

#### With your doctor

Check for anemia.

### Nerve Problems, Tingling Hands & Feet (Neuropathy)

#### On your own

Avoid long walks or standing for a long time.  
Soak your feet in cool water.  
Ask a friend to give you a massage.  
Keep your feet uncovered at night.  
Avoid tight socks or shoes.

#### With your doctor

Ask if you should change your medication.  
Ask to see a neurologist.

### Fat Problems (Lipodystrophy)

#### On your own

Get regular exercise and eat a healthy diet. This may not reduce lipodystrophy, but it will keep your weight and overall body fat at a healthier level.

#### With your doctor

Ask about experimental treatments.

### Liver Problems

#### On your own

Quit or cut down on drinking alcohol.

#### With your doctor

Learn about your liver enzyme blood tests and keep track of the results.

Tell your doctor about any other medications or alternative treatments you use.

### Metabolic Problems

#### On your own

Exercise on a regular basis if possible.  
Quit or cut down on smoking.

#### With your doctor

Keep track of the results of your cholesterol, triglycerides, and glucose tests (which measure fats and sugar in the blood)

### Bone Problems

#### On your own

Get enough calcium and vitamin D (from supplements, fortified milk, fortified soy or rice milks, and other sources)  
Do weight-bearing exercise like walking or weight lifting.

### Dangerous Reactions

No matter what medications you are taking, always call your doctor right away if you have a rash. Don't take the next dose until you have talked to your doctor.

If you are taking Ziagen® (abacavir) or Epzicom®, call your doctor right away if you have a rash or if you have two or more of the following sets of symptoms:

- Fever
- Nausea, vomiting, diarrhea, or abdominal pain
- Severe tiredness, achiness, or generally feeling ill

### Important Phone Numbers

Statewide toll-free numbers:

- |                       |  |
|-----------------------|--|
| <b>1-800-541-AIDS</b> | <b>General Information</b>                 |
| <b>1-800-233-SIDA</b> | <b>Spanish AIDS Hotline</b>                |
| <b>1-800-872-2777</b> | <b>HIV Counseling</b>                      |
| <b>1-800-542-2437</b> | <b>AIDS Drug Assistance Program (ADAP)</b> |

You can put contact information for your doctor or clinic here:

Doctor's name \_\_\_\_\_

Doctor's phone number \_\_\_\_\_

If the clinic is closed, call \_\_\_\_\_

Pharmacy phone number \_\_\_\_\_

## To learn more...

Please call (518) 474-9866 or email [www.nyhealth.state.ny.us/diseases/aids/publications](http://www.nyhealth.state.ny.us/diseases/aids/publications) to order:

- more copies of this booklet
- copies of *Staying on Schedule: Taking Your HIV Medicines*, a companion piece to this booklet.
- other NYSDOH AIDS Institute materials about HIV and AIDS.

To download a PDF version of this and other HIV/AIDS educational materials on the NYSDOH AIDS Institute website: [www.nyhealth.state.ny.us/diseases/aids/publications](http://www.nyhealth.state.ny.us/diseases/aids/publications).

For clinical information on HIV/AIDS, go to: [www.nyhealth.state.ny.us/diseases/aids/publications](http://www.nyhealth.state.ny.us/diseases/aids/publications).



State of New York  
George E. Pataki, Governor  
Department of Health