



# Adherence

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## **WHAT IS ADHERENCE?**

For people with [HIV](#), treatment adherence means:

- Starting HIV treatment, called [antiretroviral therapy \(ART\)](#)
- Keeping all medical appointments
- Taking HIV medicines, called [antiretroviral medications \(ARVs\)](#), every day and exactly as prescribed (also called medication adherence)

Adherence to treatment is a key part of staying healthy with HIV.

## **WHY IS MEDICATION ADHERENCE IMPORTANT?**

Taking ARVs every day prevents HIV from multiplying, which reduces the risk that HIV will mutate and produce drug-resistant HIV. Skipping ARVs allows HIV to multiply, which increases the risk of drug resistance and ART failure.

Poor adherence to an ART regimen also allows HIV to destroy the immune system. A damaged immune system makes it hard for the body to fight off infections, called [opportunistic infections \(OIs\)](#), and certain [cancers](#).

## **HOW MUCH ADHERENCE IS ENOUGH?**

Adherence means taking your medications correctly. If you don't, HIV might multiply out of control. Several research studies have measured how much adherence is enough. They found that, for the best [viral load](#) results, people had to take over 90% of their pills correctly. The 90% figure came from studies of ART regimens containing [protease inhibitors \(PIs\)](#). Recent studies suggest that adherence levels to regimens based on [non-nucleoside reverse transcriptase inhibitors \(NNRTIs\)](#) may be lower than 90%. However, the fewer doses you miss, the better the chances of keeping HIV under control and the lower the risk of developing viral resistance.

## **HOW DO ARVs WORK?**

The HIV virus can make millions of copies of itself every day. ARVs can't kill the virus, but they can almost stop it from multiplying.

A viral load test measures the amount of virus in your blood. If you take ARVs, the amount of virus in your blood should go down. If your viral load is very low, you probably won't develop any OIs.

### **WHAT IS RESISTANCE?**

The HIV virus is sloppy when it makes copies of itself. Many new copies of HIV are slightly different from the original (mutations). Some mutations can multiply easily even though you are taking ARVs. This is called developing resistance to the drugs. If your virus develops resistance, it will multiply faster and your HIV disease will probably get worse.

Sometimes, when HIV becomes resistant to a drug you are taking, it will also be resistant to other ARVs--even if you haven't used them yet. This is called cross-resistance. Many ARVs are at least partly cross-resistant. If your virus develops resistance to an ARV, you might not be able to use any other drugs of the same type. To avoid using up your treatment options, take all of your medications according to instructions. [Read more about HIV drug resistance.](#)

### **KEEP PRESSURE ON THE VIRUS**

When you take medications, they get into your blood and are carried around your body. Then your liver and kidneys start to clean the drug out of your system and the amount of medication in your blood goes down.

Some drugs get into your bloodstream better if there is no food in your stomach. You take these medications on an empty stomach. Other drugs get into your bloodstream better if your stomach is full. You should take these drugs with food. With some drugs, food doesn't matter.

The instructions for taking each drug tell you how many pills to take, when to take them, and how to take them in order to keep enough medicine in your blood. If you skip a dose, reduce your dose, or don't follow the eating instructions, the drug levels in your blood will drop.

If there is not enough medicine in your blood, HIV can continue to multiply. The more HIV multiplies, the greater the chance that resistance will develop.

The best way to keep pressure on HIV is to take all the pills you're supposed to, every time you're supposed to, and follow the directions about food.

### **MAKE IT EASY ON YOURSELF**

It can be difficult to take your medications the way you're supposed to. Make it as easy as you can!

When you choose medications, tell your healthcare provider about your daily schedule so that you can use the medications that will be easiest for you to take. Adherence is easier when all of your medications are on the same schedule, for example once a day or twice a day.

Make sure you understand your medications:

- Which medications to take
- How many pills to take and how many times a day
- Whether to take your pills with food or on an empty stomach

- How to store your pills
- Side effects you might have and what to do about them

**PLAN AHEAD** for refills or trips so you don't run out of any medications. Also, be sure you know what's going to happen if you change medical insurance plans. Use a pillbox and count your pills out ahead of time. Some boxes hold enough for a week or two.

If you need help remembering to take your medicines every day, try these suggestions:

- Set medication reminders. Your phone's alarm feature could be useful. Just choose the time you want to take your pill and label the alarm something like, "take medicine."
- Tools for remembering to take your daily pills:
  - Medisafe Meds and Pill Reminder ([iPhone](#) or [Android](#))
  - Every Dose, Every Day app ([iPhone](#) or [Android](#))
  - [MyMedSchedule.com](#)
- Choose a regular daily activity to help you remember to take pills:
  - Making your morning coffee
  - Getting out of bed
  - A favorite TV show
  - Coming home from work
- Make sure your family members know how important it is for you to take your pills. Ask them to help you remember.

You might have problems with side effects or it might be difficult to take your pills as prescribed. **Don't cut back or stop taking your medications until you have talked to your healthcare provider.** You might be able to change your medications and get some that are easier for you to take.

## **PILL FATIGUE**

Several research studies have shown that adherence declines over time. This happens even to people who took their medications very successfully. This is called pill fatigue or treatment fatigue.

Good adherence is not a one-time event. It has to continue as long as you are taking medications. Anyone taking ARVs may need help to keep taking their pills correctly.

## **THE BOTTOM LINE**

In order for your antiretroviral medications (ARVs) to work, you need to take them according to the instructions. If you don't, your HIV might develop resistance to drugs you are taking. If your virus becomes resistant to one drug it might also be resistant to other ARVs. For the best results you have to take over 90% of your pills correctly.

Be sure that you understand which medications your healthcare provider has prescribed. Make sure you know how many to take, when to take them, and whether you need to take them with food or when your stomach is empty.

Work with your healthcare provider to make it as easy as possible to take your medications. Use whatever you need to keep on your medication program: pillboxes, timers, friends, apps, or support groups. Be sure to talk with your healthcare provider **before** you make any changes in your medications or how you take them.

## ***MORE INFORMATION***

HIVinfo.NIH.gov: [HIV Treatment Adherence](#)

HIVinfo.NIH.gov: [Following an HIV Regimen: Steps to Take Before and After Starting HIV Medicines](#)

CDC: [ART Adherence](#)

POZ: [HIV Treatment Adherence](#)

healthline: [6 of the Best Reminders for Your Medications](#)

onlinedoctor: [The 10 Best Medication Reminder Apps](#)

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