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## **Lipodystrophy Treatments Part III: Treatments for Metabolic Changes**

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Image



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## Fat in the Body

Fat is needed for the body to function. It plays an important role in keeping the skin and hair healthy, protecting body organs, and maintaining body temperature. Fat is also stored to use for energy.

There are different types of fat found in the body. Visceral fat is located deep in the belly under the muscle. Subcutaneous fat is the layer of fat just under the skin. Lipids are fats or fat-like substances in the blood, such as cholesterol and triglycerides.

Lipodystrophy means abnormal fat changes. It is used to describe a number of potentially unhealthy changes, including:

- **Body shape changes**
  - Lipohypertrophy: Fat gain in the breasts; back of the neck (buffalo hump); visceral fat gain in the belly; round lumps that appear under the skin (lipomas)
  - Lipoatrophy: Loss of subcutaneous fat in the arms, legs, butt, or face (sunken cheeks)
- **Blood fat and sugar changes (metabolic problems)**
  - Increased fats (lipids) in the blood
  - Increased sugar (glucose) in the blood

People living with HIV who have lipodystrophy can have both body shape changes and metabolic problems. Some treatments can help with certain lipodystrophy changes, but no current treatment gets rid of all of them.

This article looks at treatments for metabolic complications (problems). For treatments of fat gain or fat loss, see our fact sheets on [Lipodystrophy Treatments Part I: Treatments for Fat Gain](#) and [Lipodystrophy Treatments Part II: Treatments for Fat Loss](#).

## Metabolic Problems

Many people living with HIV see their blood fats and blood sugar increase. There are many possible causes for these metabolic changes, including the HIV virus itself and medicines used to treat HIV. Although you cannot see these changes, they can cause serious long-term health problems.

- High lipid levels: High levels of blood fats, such as cholesterol and triglycerides, can increase your chances of having heart disease, strokes, fatty liver, and peripheral vascular disease (a problem with blood circulation).
- High blood sugar levels: When you eat, your body changes the food into glucose, a form of sugar. Glucose is carried through the bloodstream to provide energy to all of your cells. For glucose to get into your cells, you need insulin. Insulin is a hormone made by the pancreas (an organ in the upper left of your belly). If your body has a problem making or using insulin, the sugar in your blood cannot get into your cells. As a result, glucose stays in the blood and the cells do not get enough. Some [protease inhibitors](#) (PIs) can make it difficult for insulin to get glucose into the cells. This is called insulin resistance. It can lead to pre-diabetes and diabetes. Pre-diabetes and diabetes are serious health conditions. For more information, see our fact sheet on [Diabetes](#).

## Treatments

## Switching HIV Treatment

There are some HIV medicines that affect cholesterol and triglycerides less. If you have high blood sugar or lipid levels, your healthcare provider may recommend changing your HIV medicines. Some studies have shown that switching to a combination that does not include a PI can help bring these levels under control. Switching is not the best choice for everyone, and it is important that you speak to your healthcare provider before stopping or switching any HIV medicines.

## Nutrition and Physical Activity

Some people are able to control their blood sugar levels and lower their lipid levels by staying at a healthy weight, changing their diet, and increasing their level of physical activity.

A couple of small studies in people living with HIV showed that higher levels of physical activity lowered lipid levels.

While very few studies have looked at the effect of [nutrition](#) on lipodystrophy, some small studies have shown benefits. For example, lowering the amount of fats and carbohydrates you eat may help reduce triglyceride levels. More fiber in the diet may help control insulin resistance.

See a registered dietitian or nutritionist to help you make good food choices and plan your meals. Many AIDS service organizations have registered dietitians on staff who will see you free of charge.

The health benefits of [exercise](#) and physical activity are well known. A couple of small studies in people living with HIV showed that higher levels of physical activity lowered lipid levels. There are two types of exercise: cardiovascular (aerobic) and resistance (strength or weight training). Both can help improve the way your body processes cholesterol and blood sugar.

Cardiovascular exercise is any physical activity that raises your heart rate (makes your heart beat faster). Examples include walking at a fast pace, jogging, roller blading, dancing, and climbing stairs. At a gym, you can also use treadmills, elliptical machines, and stair climbers.

Resistance training consists of using weights to improve muscle strength and growth. Examples include push-ups, squats, and the use of free weights and machines at the gym.

For health benefits, the US Department of Health and Human Services (DHHS) suggests that adults do the following:

- at least 30 minutes of moderate-intensity aerobic activity five times per week (moderate intensity describes activity during which you can talk but not sing)
- muscle-strengthening activities at least two days a week at moderate to high levels of intensity. These activities should work all the major muscle groups, including the arms, legs, chest, back, and abdomen (belly).

It is a good idea to check with your healthcare provider before you begin an exercise program to make sure you get off to a good start and do not hurt yourself. For more information, see our fact sheet on [Physical Activity, Exercise, and HIV](#).

## Lipid-lowering drugs

Early studies show that statins, a type of cholesterol-lowering drug, can reduce the build-up of plaque in the arteries of people living with HIV.

If the triglyceride or "bad" cholesterol levels (LDL) do not drop with diet and physical activity, or if they

are very high to begin with, your healthcare provider may prescribe cholesterol-lowering drugs. Some of these medications interact with HIV drugs, so it is important that your healthcare provider review all your medications before prescribing anything.

Early studies show that statins, a type of cholesterol-lowering drug, can reduce the build-up of plaque in the arteries of people living with HIV. Plaque build-up can lead to heart attacks and strokes. A large-scale trial called REPRIEVE (Randomized Trial to Prevent Vascular Events in HIV) just showed that a statin drug called pitavastatin can reduce heart disease in people living with HIV.

People who cannot tolerate statins may benefit from another type of drug, fenofibrates, which lowers cholesterol and triglycerides while increasing high-density lipoprotein, the "good" cholesterol.

## Diabetes drugs

Sometimes, even with a healthy diet and regular exercise, blood sugar cannot be controlled without the help of medications and/or insulin. A number of medications lower blood sugar levels. Because these medications work in different ways, they may be used together. Some of the diabetes drugs may interact with HIV drugs. To reduce the chance of [drug interactions](#), it is important that your healthcare provider know about all medications you take.

## Supplements

Omega 3 oils: Oil derived from cold-water fish (e.g., mackerel, tuna, salmon, herring, sardines) has been shown to decrease triglycerides when it is taken at a dose of 2,000 mg – 3,000 mg a day. It is better to find sources that are free of heavy metals.

Again, speak to your healthcare provider about all drugs you are taking, including over-the-counter drugs, prescription medications, street drugs, herbs, vitamins and [supplements](#), even if you only use them occasionally.

## Taking Care of Yourself

Some body shape changes and metabolic problems have been linked to heart disease and strokes in people living with HIV. To lower your risk of heart disease and/or stroke:

- Get checked and, if needed, treated for high blood pressure
- Have regular [lab tests](#) to check your [lipid](#) and glucose levels
- Eat a healthy [diet](#); see a dietician or nutritionist if you need help with this
- Get regular [exercise](#)
- Stay at a healthy weight
- [Stop smoking](#)
- For more information, see our fact sheet on [Caring for Your Heart](#)

If you are experiencing lipodystrophy, it is especially important to take care of yourself by keeping all of your medical appointments, getting regular lab tests, and telling your healthcare provider about any changes in the way you feel or in your body shape. It is also important not to make changes to your medication regimen without your healthcare provider's guidance.

## Additional Resources

Select the links below for additional material related to lipodystrophy treatment.

- [Body Fat, Lipodystrophy and HIV \(TheBody\)](#)

- [Changes to Your Face and Body \(Lipodystrophy, Wasting and Weight Gain\) \(POZ\)](#)
- [Facing Facts: Dealing with Lipodystrophy \(POZ\)](#)
- [HIV and Cardiovascular Disease \(CATIE\)](#)
- [REPRIEVE \(Randomized Trial to Prevent Vascular Events in HIV\) \(AIDS Clinical Tr...](#)
- [Exercise and HIV \(aidsmap\)](#)
- [Find a Nutrition Expert \(US Academy of Nutrition and Dietetics\)](#)
- [Outsmarting HIV with Healthy Eating \(Positively Aware, via TheBody\)](#)
- [HIV and Your Heart \(POZ\)](#)
- [Cholesterol and HIV \(aidsmap\)](#)
- [Type 2 Diabetes and HIV \(aidsmap\)](#)
- [People With Lifelong HIV Are More Likely to Have Metabolic Problems \(POZ\)](#)
- [Lipodystrophy and HIV Treatment \(aidsmap\)](#)
- [HIV: Nutrition and Exercise \(US Department of Veterans Affairs\)](#)
- [Lipodystrophy and HIV Treatment \(aidsmap\)](#)



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