



# Face to face with lipodystrophy

Details on the disorder

by Dr. Jean-Guy Baril

**You're not alone if you have questions about lipodystrophy, a disorder in people with HIV/AIDS that affects how the body processes and distributes fat. It can result in lipoaccumulation, an increase in fat in the back and belly, or lipoatrophy, a loss of fat in the face and limbs. Here's a look at what's known so far about what causes the disorder and what can be done to help.**

**Dr. Jean-Guy Baril** is a general practitioner specializing in HIV/AIDS at the Clinique médicale Quartier Latin in Montréal. He is Chief of Service Consultation-Liaison VIH-sida at CHUM, and he chairs the Québec advisory committee on the care of people living with HIV/AIDS.

Lipodystrophy is one of the most troublesome problems faced by people living with HIV because it changes your body appearance and the face you present to people. It can make you feel you're marked as being HIV+ and can lead to depression and discrimination. In addition to the physical changes (see the sidebar on the next page for more details), lipodystrophy can also be associated with metabolic changes. These involve alterations in how the body processes lipids, sugar and some chemicals contained in the blood, like lactic acid. These changes can increase levels of cholesterol, triglycerides and blood sugar and could lead to diabetes in rare cases. Over the long

term, increased levels of lipids and sugar in the blood could increase your risk of having a heart attack. Because you may be unaware of these metabolic shifts, it's important to have regular blood tests so your doctor can catch the changes early on and treat them if necessary.

## Who gets it?

There isn't yet a definitive answer to who's likely to be affected by lipodystrophy. Researchers have lots of theories that include medication side effects, effects of HIV itself or possibly the results of immune restoration after treatment. So far, though, the risk of developing lipodystrophy appears to be higher if you're:

- taking antiretroviral drugs
- over 40
- a woman
- diagnosed with high triglycerides
- showing a low CD4 cell count (see Glossary)
- at an advanced stage of HIV/AIDS infection.

## Assessing lipodystrophy

Doctors and researchers are having a hard time pinning down the exact causes of lipodystrophy, partly because there's no exact and clear way of measuring it. To get firm answers, everyone studying the disorder needs to be using the same scientific assessment tools. Right now, there's no consensus on how to measure lipodystrophy, so doctors in clinical practice rely mostly on physical exams and information they get from their HIV+ patients about changes in body fat. It's important to point out these changes to your doctor as soon as possible after you notice them in order to explore options that may slow down the process.

## Is it anti-HIV therapy?

Various medications have been shown to be associated with lipodystrophy. Research to date has found that:

- people taking protease inhibitors (PIs) are more likely to experience lipoaccumulation, which mostly shows up as increase in belly size, breast enlargement or as a hump on the back;
- those prescribed nucleoside reverse transcriptase inhibitors (NRTIs) are more likely to see fat shrinkages or lipoatrophy, usually most obvious in the face.

In many studies, d4T has been shown to be associated with lipoatrophy more often and more rapidly than other NRTIs. Yet other studies show different results. In October 2004, d4T was downgraded from "preferred" to "alternative" treatment in the American guidelines for HIV therapy due to an increase in reports of lipoatrophy and other toxicities.

Many pathways are thought to be involved in the process of lipodystrophy. One of them is the reduction of mitochondrial DNA in fat cells due to NRTIs. It has been shown that d4T and AZT reduce mitochondrial DNA in cells. Newer NRTIs, like abacavir and tenofovir are less likely to reduce mitochondrial DNA. Other mechanisms are very likely to be involved in the development of lipo-

## Lipodystrophy defined

The word **lipodystrophy** combines the prefix for lipid, "lipo," which essentially means "fat," with the word "dystrophy" — a disorder or problem associated with the way the body processes food. So, lipodystrophy refers to an **abnormal change** in the way the body **metabolizes** and **distributes** fat.

## Types of lipodystrophy

Lipodystrophy is a global term for three different types of changes in body fat distribution:

- **Lipoatrophy** refers to shrinkage or loss of fat in certain areas of the body, including the face, arms, legs, butt and trunk. Because it's most evident in the face — sunken cheeks are typical — the abnormality is often psychologically difficult for affected people to handle.
- **Lipoaccumulation** involves an unusual build-up of fat in the abdomen, around the neck, or on the back between the shoulder blades, sometimes called a "buffalo hump". In women and sometimes men, the condition can also trigger increases in breast size that may be painful. The accumulation typically also affects the belly, giving it a look that's very different from the "love handles" of aging or weight gain. This fat gets distributed more deeply inside the abdomen. Small fat masses or "lipomas" that usually cause no symptoms may also appear beneath the skin.
- **Mixed type lipodystrophy** is a combination of lipoatrophy and lipoaccumulation, where both increases and decreases in fat proportions affect different parts of the body.

dystrophy and research teams all over the world are studying different treatments for HIV to assess effects on fat redistribution.

## What can be done?

Options to help reduce lipodystrophy are limited by the uncertainty about what causes it and what can make it better or worse. Talking to an experienced healthcare professional who knows what medications you're taking and is familiar with your symptoms is the best way to find out what you can do.

The outward signs of lipodystrophy can trigger depression, anxiety and even suicidal thoughts. It can be stigmatizing, leading people to withdraw and become socially isolated. It's important, when discussing options for dealing with lipodystrophy, that you inform your doctor if it is seriously compromising your psychological well-being.

## Changing meds

Your doctor might recommend changing your medication to try to reduce the symptoms of lipodystrophy. A few studies have shown some success after switching NRTIs, though the changes tend to be gradual and fat that has been lost is less likely to reappear. In one study, a small percentage of people who changed drug therapy reported visible improvement after two years. But we don't know if a longer follow-up will lead to more improvement.

More testing needs to be done to confirm who benefits most from this approach and whether it's effective over the long run.

Changes in drug therapy are not possible for everyone without compromising treatment effectiveness. Discuss your options with your doctor and if changing medication is an option, it should be done soon after signs of lipodystrophy appear, to minimize the possibility of the process becoming irreversible.

## Lipodystrophy poses many challenges for those who have it and for the doctors and scientists committed to understanding it

Stopping treatment is an option for some, but not if your CD4 count was low before starting treatment, if you have HIV-associated symptoms or have developed AIDS. In a few patients, discontinuing meds has been shown, over many months, to slow down or reverse the symptoms of lipodystrophy. Only people who started therapy early in the course of infection (when the CD4 count was over 350, for example) should consider this option. Because it could increase the risk of progression to AIDS, you must be closely monitored. It's a decision that should be made with your doctor. Ongoing trials are being done to determine if some patients could benefit from treatment interruption strategies.

### Physical activity

Exercise can sometimes help offset lipoaccumulation, the increase in fat most often affecting the belly or the back, in the same way that working up a sweat helps anyone beat excess pounds. A combination of cardiovascular (aerobic) and strengthening (weight training) exercises can help with some symptoms of lipodystrophy. If you're suffering from a loss of fat (lipoatrophy), excessive cardio workouts might not be the best option, as you could end up losing more weight.

Whatever type of activity you choose, the side effects are all good — vital boosts in energy and feelings of well-being!

### Nutrition

Diet plays a key role for people living with HIV, whether or not they have symptoms of lipodystrophy. Seeing a nutritionist is a good idea. In some areas, expert nutritional advice may be available at no cost with a recommendation from your doctor. Some of the community groups listed in the Resources section also offer nutritional tips or can point you in the right direction.

### Human growth hormone

Research on the effects of recombinant human growth hormone (rhGH) to treat lipodystrophy shows mixed results. Although initial outcomes looked promising for lipoaccumulation, this treatment is expensive and can interfere with glucose metabolism, meaning the drug may dangerously elevate your blood sugar levels. Other unpleasant side effects can also occur with this treatment and it's not clear how long the benefits will persist once treatment is stopped. Ongoing studies should clarify the picture in the near future.

### Reconstructive surgery

Surgery is possible but remains out of reach to most because of the expense involved. Liposuction has been used to remove the fat accumulation on the back, but some people reported that the hump eventually returned. Most government plans do not reimburse the full cost of this surgery, and there are very long waits to see doctors who provide it.

Sunken cheeks caused by lipoatrophy are now being treated, at high cost, in the US with injections of poly lactic acid (Sculptra™ or New Fill®) just under the skin. Those who've undergone this procedure said they were much happier with their appearance and that it made a huge difference in how they felt about life. Fat graft transfer is another option, yet not readily available in Canada, and consists of removing subcutaneous fat from another body area and re-injecting it into the cheeks. However, it's too early to say how long these treatments last, as there's no guarantee that they're permanent. At the moment, Canadian approval of poly lactic acid is still in progress.

### Stay tuned

Lipodystrophy poses many challenges for those who have it and for the doctors and scientists committed to understanding it. The most important thing you can do for yourself is to stay actively informed, share your personal experience with others and tell your doctor about any changes you're noticing. A lot of research is currently underway and we should stay hopeful that lipodystrophy will be effectively prevented and treated in the near future.

It's important to remember that despite the problems associated with lipodystrophy, antiretroviral therapy has vastly improved the outlook for life with HIV. With treatment, people living with HIV aren't nearly as vulnerable to opportunistic infections — and are living longer than ever before. **R**

Adapted from: Baril J-G, Junod P, LeBlanc R, Dion H, Therrien R, Laplante F, Falutz J, Côté P, Hébert M-N, Lalonde R, Lapointe N, Lévesque D, Pinault L, Rouleau D, Tremblay C, Trottier B, Trottier S, Tsoukas C, Weiss K (2004): *HIV Associated Lipodystrophy Syndrome: A review of clinical aspects including definition, investigation and management*. Submitted for publication.

