

Lipodystrophy

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Lipodystrophy (lip-oh-diss-troh-fee) is the name for changes in body shape first reported in 1997 among people taking HIV treatment. It was originally thought that the cause was protease inhibitors, but it seems that some drugs in the nucleoside reverse transcriptase inhibitor (NRTI) class may be the main cause.

What does it look like?

Strictly speaking, lipodystrophy means the accumulation of fat.

However, body fat changes seen in people with HIV include both fat gain and fat loss. This may result in: increased waist size (without rolls of fat); increased breast size; fat gain around the back of the neck and upper back; fat gain around the neck and jaw; facial wasting, especially of the cheeks; wasting of the face and buttocks; prominent veins in the arms and legs (because of fat loss).

The abdominal fat gain in lipodystrophy is made up of visceral fat which accumulates around the internal organs, causing the belly to feel taut and pushed out. This is different to the squeezable fat gained if people put weight on through over-eating or lack of exercise.

How common is lipodystrophy?

Doctors now have a good understanding of which anti-HIV drugs are most likely to cause lipodystrophy (AZT and d4T). This means that their use can be avoided as much as possible.

The drugs used most widely in HIV treatment today are not thought to cause lipodystrophy. Therefore the risk of developing lipodystrophy with the currently preferred drugs is very low.

But a lot of people developed lipodystrophy when taking older HIV drugs.

Metabolic disorders

Metabolism refers to the range of processes which maintain the body, including the transformation of fat and sugar into energy.

People with lipodystrophy are commonly affected by metabolic disorders, such as raised levels of fats (or lipids) in their blood.

However, the link between body fat changes and these disorders is unclear. Some examples include: high levels of blood fats called triglycerides or cholesterol; high blood sugar; diabetes (an inability to use sugar); insulin resistance (an inability to respond to insulin, which is necessary for processing sugar); raised liver enzymes.

What causes lipodystrophy?

As already noted, the drugs d4T (stavudine, *Zerit*) and AZT (zidovudine) have been associated with fat loss and their use is now avoided because of this.

A number of factors have been linked with body fat changes, including type and duration of HIV therapy, duration of HIV infection, extent of damage to the immune system when HIV therapy was commenced, gender, age, family history, diet, and body mass and fat prior to treatment. However, none of these have been proven to cause lipodystrophy.

Some experts believe that the range of body fat and metabolic changes seen represent several separate conditions, each with their own causes which may or may not be related.

What are the implications?

Body fat changes alone do not seem to substantially contribute to poor health in the future.

Nevertheless, body fat changes may be stigmatising, and research has shown that they are a potential source of stress and worry amongst people taking HIV treatment.

High levels of fat in the blood are associated with heart disease, stroke and pancreatitis, causing concern that the metabolic disorders associated with combination therapy may lead to an increased risk of heart disease.

But it is important to note that HIV itself can increase the risk of heart disease, and this risk seems to be greater than any risk associated with HIV treatment.

Any risk is likely to be highest in people with other risk factors such as high blood pressure, diabetes, obesity, smoking, or a family history of heart disease.

Don't forget – the risk of heart disease can be reduced with exercise, diet and by stopping smoking.

Treatment options

The anti-HIV drugs d4T and AZT are not recommended for routine treatment if you have other treatment options available. Slow fat gain in the limbs has been seen in people who switched from d4T to tenofovir (*Viread*).

A number of treatments for body fat changes are being studied including human growth hormone, anabolic steroids, appetite stimulants, and weight training.

In extreme cases, fat deposits at the back of the neck may be surgically removed. Several forms of surgery have been used to repair facial fat changes, and *New Fill* is becoming increasingly available at NHS HIV clinics.

High blood fats may be treated with drugs such as pravastatin or gemfibrozil, and insulin resistance with anti-diabetes drugs. Some statins can interact with some HIV drugs, so your doctor will choose your drugs with care and monitor you closely.

There are also things you can do yourself. As noted above, regular exercise, a good diet with lots of fresh fruit and vegetable, and stopping smoking can all help reduce your risk of heart disease.

Monitoring changes

You'll have regular blood tests to monitor levels of fats and sugars in your blood once you start HIV treatment.

Looking at changes in your appearance can be a good monitoring tool as can your clothes becoming too tight or too big.

Remember though that the body fat changes associated with HIV drugs aren't like normal weight loss or weight gain, so don't assume that changes in your body shape are automatically caused by your treatment. It's a good idea to bring them to the attention of your doctor so you can discuss the possible causes.

Special body scans can also be conducted to see if you are losing body fat.