

## HIV and cardiovascular disease

Cardiovascular disease comprises a series of ailments that affect the heart, the veins and the arteries. People with HIV, moreover, also have a greater chance of suffering from it as both the infection itself and chronic use of specific antiretroviral drugs increase the risk.

### Cardiovascular disease

Cardiovascular disease is the most common cause of death worldwide among the general population. According to the World Health Organisation (WHO) it includes:

- **Coronary cardiopathy:** a disease of the blood vessels that irrigate the cardiac muscle (myocardium).
- **Cerebrovascular disease:** disease of the blood vessels that irrigate the brain.
- **Peripheral arteriopathies:** disease of the blood vessels that irrigate the upper and lower limbs.
- **Rheumatic cardiopathy:** lesions of the myocardium and cardiac valves resulting from rheumatic fever, an illness caused by what are known as streptococci bacteria.
- **Congenital cardiopathies:** malformation of the heart present from birth.
- **Profound venous thrombosis and pulmonary embolism:** blood clots (thrombi) in the veins of the legs, which may migrate (emboli) and settle in the vessels of the heart and the lungs.
- **Heart attacks and strokes:** these tend to be acute phenomena caused particularly by obstructions that stop the blood from flowing to the heart or the brain. The most common cause is the formation of fat deposits in the walls of the blood vessels that irrigate the heart or the brain. Strokes may also be due to haemorrhaging of the cerebral vessels or to blood clots.

### Causes of cardiovascular disease

HIV itself may cause inflammation, which increases the risk of cardiovascular problems. Antiretroviral treatment may prompt rises in blood fat levels (cholesterol and triglycerides; see [InfoVIHtal # 16: 'Cholesterol'](#)), which may cause obstruction and hardening of the arteries (atherosclerosis) and increase the long-term risk of cardiovascular disease. Not all antiretroviral drugs have this side effect. Your HIV doctor will monitor the fat levels in your blood analyses to assess whether they should be reduced.

The drugs lopinavir and indinavir, from the family of protease inhibitors, and abacavir and didanosine, from the nucleoside reverse transcriptase inhibitor group, have recently been associated with increased risk of myocardial infarction. It is important for your doctor to assess your cardiovascular risk factors if he or she is prescribing any of these drugs.

It is nonetheless important to consider that the benefits of treatment outweigh these possible risks. It is a known fact that in addition to preventing the deterioration of the immune system and development of illnesses, well-controlled antiretroviral therapy can lower levels of the chronically inflammatory markers that occur in untreated HIV infection. This inflammation augments cardiovascular risk because it increases blood clotting.

### Reducing risk

In general, proper control of risk factors, a careful choice of antiretroviral drugs, bearing in mind each person's characteristics and risk factors, and the adoption of a healthy lifestyle, such as eating a healthy diet and doing moderate, regular exercise (see [InfoVIHtal # 54: Physical exercise and HIV'](#)), can lessen cardiovascular risk considerably. Simply being older than 45 (in men) and 55 (in women) is itself a factor of cardiovascular risk.

### Other factors to be taken into account are:

- Sex (being male means higher risk)
- Family history of cardiovascular disease
- Smoking
- High levels of cholesterol and/or triglycerides
- High arterial pressure, particularly diastolic (the minimum value)
- High blood sugar levels, resistance to insulin or diabetes
- Sedentarism

Different studies have shown how physical exercise can reduce blood fat and glucose levels. Stopping smoking can also reduce arterial pressure notably.

There exist tools for calculating cardiovascular risk. If you enter your age, sex, cholesterol and triglyceride levels, and other risk factors such as smoking, you will obtain an estimate of 5- or 10-year risk of cardiac disease. People with a high risk of cardiac disease who require anti-HIV treatment may use new anti-HIV drugs, which involve less chance of increasing the risk of cardiovascular disease, and may receive support should they wish to make changes to their lifestyle.