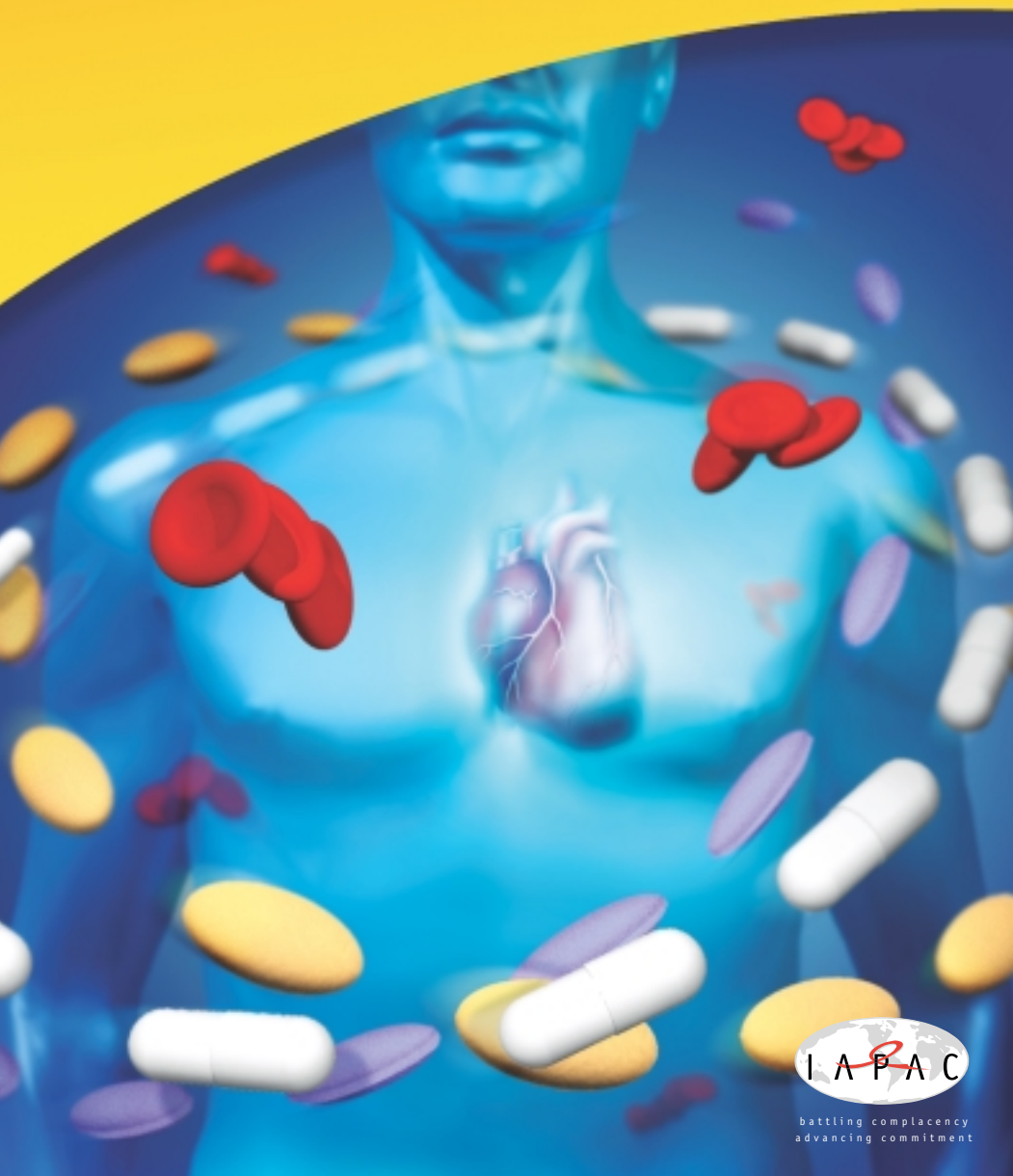

HIV INFECTION AND CARDIOVASCULAR RISK

WHAT YOU SHOULD KNOW



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WHAT YOU SHOULD KNOW

Highly active antiretroviral therapy (HAART) has greatly improved the survival of patients living with HIV/AIDS, but it is not without its side effects. While it can keep your HIV in check, HAART may place you at risk for developing a disease of the heart or blood vessels known as cardiovascular disease (CVD).

HIV-positive people seem to have above average rates of elevated triglycerides and cholesterol.

Conditions that are known to increase the risk of CVD in the general population (eg, insulin resistance, diabetes) could actually be a side effect of HIV and antiretrovirals. The risk of CVD is further increased when seen together with other traditional risk factors such as family history, smoking, obesity, and high blood pressure.¹

LIPID LEVELS

One of the major changes related to antiretrovirals and your heart is called *hyperlipidemia* (pronounced HI-pur-LIP-i-DEEM-ee-ah), which means an increase in levels of blood fats, or lipids. There are two kinds of lipids: triglycerides and cholesterol. HIV-positive people, especially those taking antiretrovirals, seem to have above average rates of elevated triglycerides and cholesterol. When your doctor does blood tests during your clinic visits, lipid levels are most likely being checked. The doctor looks at triglyceride levels and two main types of cholesterol—HDL and LDL.

- 1) Good cholesterol is called HDL.** It protects against heart disease and is often reduced in people with HIV and other chronic illnesses. Depending on the drug (some are known to have a positive effect), levels of HDL cholesterol may rise or fall after starting antiretroviral therapy.
- 2) Bad cholesterol is called LDL.** LDL levels may rise after starting antiretroviral therapy, particularly with combinations including several of the protease inhibitors (PIs).

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High triglyceride and LDL cholesterol levels, and/or low HDL cholesterol levels increase your risk of CVD.

Antiretrovirals and abnormal cholesterol levels have been linked to another metabolic condition called *lipodystrophy* (LY-puh-DIS-truh-fee). This means changes in the placement and buildup of body fat.

A lipid panel or lipid profile helps determine your risks for CVD by measuring triglycerides, LDL, and HDL.²

LIPID	BLOOD LEVEL (mg/dL)	RISK LEVEL
Total Cholesterol	< 200 200-239 ≥ 240	Desirable Borderline High
LDL	< 100 100-159 ≥ 160	Optimal Borderline High
HDL	< 40 ≥ 60	High Desirable
Triglycerides	<150 150-199 200-499 ≥ 500	Normal Borderline High Very high

< = less than
≥ = greater than, or equal

REDUCE YOUR CVD RISK³

ADOPT A HEALTHIER LIFESTYLE



STOP SMOKING

Cigarette smoking can double your risk of heart attack, but even long term smokers show a lower risk for heart disease over time after quitting.



LOSE EXCESS WEIGHT

The good news is that a modest weight loss of 10-20 lbs. can produce improvements. Before pursuing any weight loss plan, consult your doctor—especially since "crash" diets and other quick fixes can be dangerous to your health.

Choose healthy foods, reduce fat, and watch your portion size. Consult your doctor before making any change in your eating habits, especially since some antiretrovirals have food requirements.

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EXERCISE REGULARLY

Adding physical activity to your life does not mean having to join a gym. An everyday exercise plan should include regular aerobic exercise (such as walking), and strength training (such as lifting weights).



EAT A BALANCED DIET

Abnormally high levels of cholesterol, LDL cholesterol, and triglycerides can increase your chances of CVD.

To lower blood-lipids, nutrition experts recommend diets low in fat, especially the saturated fat found in red meat, poultry with skin, whole-milk dairy foods, and coconut and palm oils. Cholesterol, also found in meats and dairy products, should be limited. Instead, choose a diet rich in whole-grains, beans, fruits, and vegetables, which are associated with decreasing cholesterol.



CONSUME ALCOHOL IN MODERATION

Drinking alcohol can raise your blood pressure and cause heart problems. Cutting back or getting into a rehab program is recommended.

KEEP MEDICAL CONDITIONS UNDER CONTROL



CONTROL DIABETES

Even when under control, diabetes is a serious risk factor for heart disease. HAART can also cause diabetes, especially in patients who are older or have a family history of the disease. In addition to medication to treat diabetes, there are lifestyle changes that can make the disease easier to control, such as weight loss, physical activity, and a balanced diet.



CONTROL HIGH BLOOD PRESSURE

High blood pressure (hypertension) makes the heart work harder, increasing the risk of heart attack and stroke. Pay attention to your blood pressure when it is checked during your next clinic visit. If it is high, speak with your doctor about diet and lifestyle changes to lower your blood pressure. Your doctor may prescribe an antihypertensive medication if diet and exercise are not enough to lower blood pressure on their own.



CONTROL LIPID LEVELS

If your goal for lowering CVD is not reached through lifestyle changes, then you and your doctor may consider drug therapy, such as lipid-lowering drugs. Drug therapy needs to be suited to your particular situation, especially since lipid-lowering drugs interact with antiretrovirals. A *statin* or a *fibrate* may be necessary.

**YOUR PHYSICIAN MAY CHANGE
YOUR HIV MEDICATION**



LIPID-FRIENDLY ANTIRETROVIRALS

Studies suggest that some antiretrovirals are more lipid-friendly than others—for example, atazanavir (Reyataz®) and nevirapine (Viramune®). Thus, changes in antiretrovirals may provide some benefits to your lipid profile.



SWITCHING ANTIRETROVIRALS

Some studies have shown an improvement in lipid levels when switching from one class of antiretroviral to another, or switching within classes.^{4,5}



MONITORING

If antiretrovirals are changed, a patient's progress should be even more closely and frequently monitored to check for any changes in viral load and T-cell count.

When considering CVD risk, you and your doctor may want to consider lipid-friendly antiretrovirals.



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