



HAART to heart

Balancing blood lipid levels

by Cheryl Collier

Highly Active Antiretroviral Therapy (HAART) has been changing the face of HIV since its introduction in the 1990s. However, HAART, particularly protease inhibitors, can cause metabolic changes including insulin resistance, lipodystrophy syndrome (abnormal fat build-up and/or loss in various areas of the body) and dislipidemia (abnormally high or low levels of lipids or fat in the blood).

There are a number of commonly measured blood lipids: LDL cholesterol (low density lipoprotein), HDL cholesterol (high density lipoprotein), total cholesterol, and triglycerides. LDL is commonly known as the “bad” cholesterol, which works to take the cholesterol from the liver to other areas of the body. HDL, on the other hand, is known as the “good” cholesterol, bringing cholesterol from the body back to the liver where it can be processed. Total cholesterol refers to the combination of LDL and HDL. Lastly, triglycerides are a major fat in your blood, which can be used as an important energy source for the body; too much in your blood, however, is a risk factor for heart disease.

Blood lipids are usually checked with routine blood work every two to three months if you are on HAART. If you are not on HAART, the frequency with which you are tested will depend on your risk level for heart disease.

In order to get an accurate reading, you need to fast (no food or drink except water) for ten to twelve hours prior to

this type of blood work. Your doctor can explain your results in comparison to normal ranges, but the numbers can change depending on your risk level for heart disease. Along with increased cholesterol and triglycerides, factors like age, diabetes, smoking, and blood pressure are all well known to bump up the risk of heart disease. In fact, HIV itself is a risk factor, and can cause changes in blood lipid levels.

It is well known that high levels of cholesterol accelerate the development of atherosclerosis. Atherosclerosis occurs when artery walls become hard and narrow. Narrow arteries slow down the amount of blood that flows to areas of the body; this means the tissues receive less oxygen. It also means that your heart has to work harder to pump the blood. As atherosclerosis worsens, the risk of a heart attack or stroke increases.

Nutrition choices are key to maintaining the appropriate balance of blood lipid levels.

Fats: don't judge a book by its cover

While it is common knowledge that fat in a person's diet can affect cholesterol and triglycerides in the blood, keep in mind that it is not a good idea to try to cut out all fats from your diet. Fat is important for absorption of vitamins like A, D, E, and K, which are needed for various activities in the body. Fat is also involved in cushioning your joints and organs and helps

control body temperature. However, the fats in food are not all created equal. There are different types that make up the total amount of fat in food. Aim to replace the bad fats with the good fats:

Saturated fat. Saturated fats increase the LDL cholesterol, acting as a “bad” fat. You can find saturated fats in processed foods, coconut oils, palm oils, butter, cheeses, and fatty cuts of meat.

Trans-fat. Trans-fat is also considered a “bad” fat. These types of fats also increase your LDL cholesterol and decrease your HDL cholesterol. Trans-fats can be found in partially-hydrogenated (hard) margarines, baked goods, and many packaged snack foods.

Polyunsaturated fat. Polyunsaturated fats are healthy fats found in sunflower, soybean, and safflower oils. Omega-3 fatty acids are also polyunsaturated fat and the best source is fish and fish oil supplements. These healthy fats can also be found in plant sources such as flax and flaxseed oil. Omega-3 fats help control triglyceride levels.

Monounsaturated fat. Monounsaturated fats are helpful for improving cholesterol levels. Find monounsaturated fats in olive and canola oils, avocados, almonds, and walnuts.

Nutrition tips to help keep your cholesterol and triglycerides in check:

- ▶ *Watch out for “bad fats.”* Cut down the amount you consume by avoiding greasy meals and processed foods. Stay clear of the fat readily visible on meats. Read the nutrition labels on food items to compare the amounts of saturated and trans-fats in different products. Note that if the label indicates “partially-hydrogenated,” the product contains trans-fats.
- ▶ *Choose healthier fats.* Try cooking with olive or canola oil. Use a non-hydrogenated margarine for a spread, but be careful not to use too much. Restrict added fats to one to two teaspoons per meal.
- ▶ *Limit dietary cholesterol.* We used to believe that cholesterol in the diet had a strong effect on the cholesterol in the blood. We now know that people with increased cholesterol do not need to eliminate foods high in cholesterol, but should limit them to two or three servings per week. One serving is the equivalent of one whole egg, three-quarters of a cup of shrimp/prawns, or two ounces of organ meat.
- ▶ *Cash in your Omega-3s.* Fatty fish like canned tuna, salmon, and herring provide your body with a boost of Omega-3. Aim for a meal with fish twice per week. If you have high triglycerides, you may benefit from taking an Omega-3 fish oil supplement containing between two to three grams (2,000 to 3,000 mg) of fish oil per day. Recent research shows that Omega-3 fish oils can be helpful for lowering triglycerides in people with HIV. You can also get Omega-3s from vegetarian sources like flax seed oil, but some scientific studies suggest that Omega-3s from fish have the best effects for heart health. Ask your doctor or dietitian if you are interested in learning more about Omega-3 supplements.
- ▶ *Maintain a healthy weight.* Keeping your body at a healthy weight helps prevent cholesterol and triglyceride levels from climbing.
- ▶ *Eat regular meals.* Erratic eating habits can bump up triglyceride

levels. Eating regular meals, as well as a nutritious snack between meals, helps your body process food better.

- ▶ *Limit alcohol use.* Alcohol causes the liver to produce more triglycerides. Abstaining from alcohol is the best choice if your triglycerides are very high. If you are going to drink alcohol, remember that moderation means one to two standard drinks daily for men, and one (or none) standard drinks daily for women. As glass sizes vary, note that one standard drink equals five ounces of wine OR one and a half ounces of hard liquor OR 12 ounces of beer. Alcohol is also very high in empty calories, so it tends to contribute to unhealthy weight gain, which also worsens dyslipidemia.
- ▶ *Keep an eye on your sweet tooth.* Sweet, sugary foods work to increase triglycerides and can add empty calories. Limit soft drinks, and try to eat a piece of fruit instead of drinking too much juice. Choose smaller portions of desserts.
- ▶ *Add fibre.* Try oats, barley, and psyllium for soluble fibre which cuts down cholesterol absorption in the gut. When increasing your fibre, look for food labels that read: “an excellent source of fibre” or “good source of fibre.” Products containing more than three grams of fibre per serving are a good choice. Choose whole grain breads and cereals. Be sure to include fruit and vegetables with each meal and try adding legumes (beans, lentils) to your soups, salads, and casseroles.
- ▶ *Get nutty.* In particular, reach for the almonds and walnuts, which are packed with healthier fats. As well, nuts contain plant protein that may decrease cholesterol production in the body. Be careful to not go overboard, however, since nuts are packed with calories. Keep portions to one-quarter of a cup five times a week.
- ▶ *Give soy a shot.* Try experimenting with tofu, edamame, and soy milk. Blend half a cup of frozen berries, three ounces of soft tofu, and a cup of one percent milk for a tasty snack that contains both soy and fibre.

Sometimes people think that because their medications have caused an increase in their cholesterol or triglyceride levels, this means they do not need to make changes to their diet. However, research has shown that making dietary changes can reduce cholesterol and triglyceride levels. If you want to keep your blood fats in check with lifestyle changes, ask your doctor for a referral to a registered dietitian. We recognize that other medical conditions or social situations may play a role in the nutrition choices you are able to make. A dietitian can help you balance the big picture and set nutrition goals that are right for you. ⊕

Cheryl Collier, MSc, RD is a clinical dietitian with the HIV program at St. Paul's Hospital, Vancouver, BC. She also works as a research dietitian with the Portfolio Diet Study, a multi-centre research project based out of St Michael's Hospital in Toronto, ON which investigates the effects of a vegetarian diet on cholesterol.