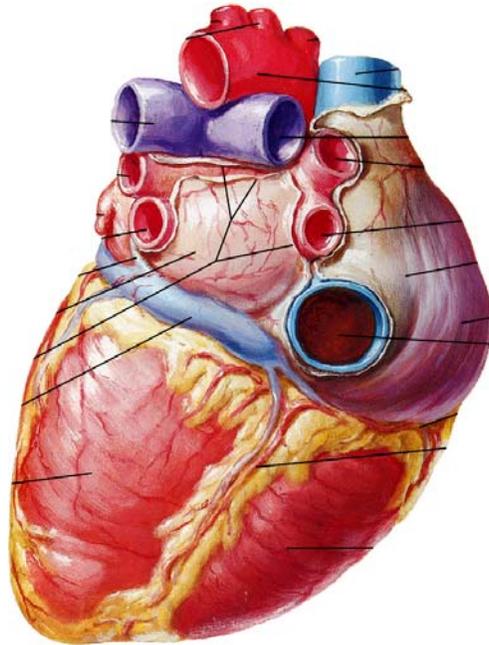


# ***Treatment Topic of the Month*** **March 2008**

## **Take Care of Your Heart!** **Understanding Hyperlipidemia** **A Holistic Treatment Guide**



### **Disclaimer**

The Treatment Resources Program at the Toronto People With AIDS Foundation provides information and resources to empower people living with HIV/AIDS to be proactive around their health by working in partnership with their health providers. We do not recommend or promote any treatment in particular. We strongly urge those interested in any specific treatment to consult a wide range of resources including a qualified medical and/or complementary therapy practitioner who has experience working with HIV+ patients.

For treatment information and resources,  
Contact Rebecca at 416-506-1400 x627 or by e-mail at  
[rgower@pwatoronto.org](mailto:rgower@pwatoronto.org)

# Understanding Hyperlipidemia and HIV

## What is Hyperlipidemia?

In simple terms, hyperlipidemia is high or increased amounts of lipids (fats or fat-like substances) in the blood. The two main types of fats are cholesterol and triglycerides. Cholesterol is a waxy, fat-like substance that is produced by the liver and therefore, naturally occurs in our bodies. You can also get cholesterol from the foods that we eat. The body uses cholesterol to build and maintain cells and to make some hormones. There are two types of cholesterol. It is better to have higher amounts of the good type of cholesterol, which is known High-Density (HDL) cholesterol, and to have very low amounts of the bad kind of cholesterol which is known as Low-Density (LDL) cholesterol. Triglycerides are fats that circulate in the blood and come from fat and sugar in our diets. Triglycerides have an important function of assisting the transfer energy from food into cells.

## What Causes Hyperlipidemia?

The main risk of hyperlipidemia is heart disease because too much cholesterol in the blood can cause the formation of plaques on your arteries. This process of plaquing that causes hardening of the arteries is called atherosclerosis. It can slow down or stop blood flow in an artery which can lead to a heart attack or a stroke. It can also affect your blood pressure because your heart will have to work harder to move the blood in your arteries. Your risk of heart disease is higher with high levels of LDL cholesterol.

## Am I At Risk?

Even before the advent of Highly Active Anti-Retroviral Therapy (HAART), HIV-positive people developed either an increase of fats in the blood (hyperlipidemia) or abnormal levels of fat (dyslipidemia). This demonstrates that the progression of HIV alone increases your risk. In addition, hyperlipidemia can occur as a side effect from specific ARVs. In some studies, low HDL-cholesterol, high smoking rates and other types of metabolic complications are the main contributors to increased cardiovascular risk in HIV-positive patients. It is important that your doctor also considers other risks factors which are not directly associated with being HIV-positive that may increase your likelihood of hyperlipidemia. Some of these risk factors include;

- Family history/genetic factors
- Little or no exercise
- High fat/high sugar diet
- Age (women over 55 & men over 45)
- Obesity
- Smoking
- Diabetes
- High levels of alcohol intake
- Hypothyroidism
- Birth Control Pill

## Signs & Symptoms

In most cases, there are no signs or symptoms of hyperlipidemia. However, in some cases of prolonged or severe hyperlipidemia, you can develop xanthomas which are yellow nodules on the skin around the elbows, eyes and other areas of the body. For this reason, it is important to monitor you cholesterol and triglycerides when you start HAART and every 3-4 months if you have any additional risk factors.

# Managing Hyperlipidemia with Medical Treatment

It is really important to take a comprehensive approach if you have either high cholesterol or triglycerides. Medical Treatment can constitute one part of an approach to lower your cholesterol and triglycerides.

## ***Protease Inhibitors:***

Protease Inhibitors (PIs) appear to be the main culprits in increasing the level of lipids or fats in your blood. Some PIs appear to have specific effects on lipids and glucose metabolism. It is well-known that certain PIs may induce or worsen lipodystrophy (abnormal fat distribution), but they may also induce and worsen dyslipidemia and insulin resistance in HIV-positive patients. Some clinical studies of the effects of PIs have shown that they increased total cholesterol by 66%; increased LDL-cholesterol by 37% and increased triglycerides by 80% at 48 weeks.<sup>1</sup> Some of the newer PIs, such as Reyataz (Atazanavir), seem to be less likely to cause elevated fat levels than older ones such as Norvir (Ritonavir). If you have severe hyperlipidemia, your doctor may decide to change your HAART regimen entirely or may decide to only replace your PI with a medication from another class.

## ***Statin Drugs:***

Statin drugs are the most commonly prescribed class of drugs for high cholesterol because they act as cholesterol-lowering agents by helping to prevent the chemical conversion of fats into cholesterol. Some examples include Lipitor (atorvastatin) and Pravachol (pravastatin). Specific statin drugs need to be chosen carefully for HIV-positive people on HAART because of the potential for drug interaction. The current thinking is that the most acceptable choices are Pravachol or Lipitor with fluvastatin considered a secondary possibility. Lovastatin and simvastatin should not be taken with PIs. You can experience the serious side effects from many statin drugs such as muscle toxicity, swelling of the limbs, difficulty breathing or swallowing and unusual bleeding or bruising. You should immediately report any serious side effects of Lipitor to your doctor. All statin drugs seriously deplete Co-Enzyme Q10, so supplementation of 100-400 mg daily is needed.

## ***Fibrates:***

This class of drugs is often used if statins are not effective. They are considered the best choice for those who only have elevated triglycerides and no cholesterol problems. Examples of Fibrates include Lopid (gemfibrozil) and Tricor (fenofibrate). Some believe that Tricor may be preferable to Lopid because it is better tolerated and may do a better job of lowering elevated LDL-cholesterol. Some fibrates, including gemfibrozil deplete both Vitamin E and Co-Enzyme Q10. Therefore, supplementation with Vitamin E (800 IU daily) and Co-Enzyme Q10 (100-400mg daily) is needed.

## ***Herbs:***

Although herbs came from a natural source, they are still medicines that can cause interactions with ARVs. One example is the herbal compound Cholestin that is promoted for the treatment of cholesterol. It works similarly to the statin drugs and may cause interaction problems.

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<sup>1</sup> (Kannel W.B., Giordano M, Long-Term cardiovascular risk with protease inhibitors and management of the dyslipidemia, *American Journal of Cardiology*, 2004. 94:901-6).

# Managing Hyperlipidemia with Nutrition

You should be concerned about your cholesterol if your total cholesterol is greater than 250mg/dl or 5.2mmol/litre on repeated measurements and you have an unfavourable ratio between LDL & HDL. Here are some things you can do to improve your good cholesterol and lower your bad cholesterol:

## ***The Lowdown on Bad Fats:***

LDL “bad”-cholesterol and saturated fats are found in animal products like meat and dairy. You should also avoid hydrogenated fats or trans-fatty acids. Trans fats are found in sweets, commercially prepared foods, margarines, salad dressing and fried foods. Your body has a harder time eliminating trans fats because of their altered chemical structure. An excess of trans fats can lead to plaquing and oxidative damage to the arteries.

## ***Diet Tips:***

Your diet should have less than 30% of calories from fat in order to help lower your lipid levels. One way to lower these levels is by increasing your fibre intake. There are high amounts of fibre in whole grain breads; whole grains like oats, barley and quinoa; oatmeal, fruits, vegetables, cooked beans and whole grain cereals. A high fibre food should contain more than 3 grams of fibre per serving according to the label. It is important to limit the simple sugars in your diet because they raise your triglycerides and can get stored in your body as fat. Triglycerides are found in white breads, potatoes, pasta, sodas, sweets and fruit drinks.

## ***Exercise:***

Cardiovascular exercise has been shown as most effective in lowering your lipid levels especially when done at least three times a week for 20-30 minutes. Specifically, it has been found to lower cholesterol, triglycerides, LDL and raise HDL. Some examples of aerobic exercise includes fast walking, jogging, bicycling and stair climbing. Even when your lipid levels can't be normalized because of specific ARVs, you can still lower your overall risk of heart disease by combining regular exercise, meditation and other stress reduction therapies such as Reiki, therapeutic touch and massage.

## ***Niacin(B3):***

Is the most well-known of B-vitamins used to treat high cholesterol. In fact, it actually raises the HDL “good” cholesterol more effectively than statin drugs. Some physicians prefer to use it in daily doses of 1000mg because it also impacts overall cholesterol, LDL-cholesterol and triglycerides. There are some drawbacks of Niacin which include flushing, redness, warmth, painful stinging and itching for thirty minutes after it's ingested. You can buy a sustained-release no-flush form of Niacin and there is a safer form called inositol hexaniacinate which is better tolerated in terms of flushing. It can also be toxic with your liver which can be a problem for many HIV-positive people taking certain ARVs for a long time. Make sure your doctor runs liver function tests to watch for this toxicity. A suggested protocol is to take 100mg three times per day and gradually increase it by 100 grams each week to a maximum of 1 000 mg three-times daily.

## ***Evening Primrose Oil:***

Is made from the seeds of *Oenothera biennis* and is rich in Gamma-Linolenic Acid (GLA). It is thought that it may help to ensure adequate levels of GLA through the breakdown of essential fatty acids. There have been no studies with HIV-positive people but has shown significant benefit in decreasing cholesterol in HIV-negative people. You should be cautious with this supplement if you suffer from mania, epileptic seizures or take blood thinning drugs.

***Omega-3 Fatty Acids:***

Essential Fatty Acids (EFAs) are good fats that can help to lower cholesterol, triglycerides and LDL-cholesterol. You can increase the amount of Essential Fatty Acids by eating cold water fish such as salmon, mackerel, sardines, tuna, cod and halibut or taking a good quality supplement. They are also found in nuts (especially walnuts and almonds) and flax seeds

***L-Carnitine:***

This is an amino-acid that helps to move fat to places in a cell where it can be burnt to release energy. A deficiency can cause high lipid levels in the blood, liver dysfunction and problems maintaining steady blood sugar. Its prescription form is called Carnitor which has been shown effective in normalizing HIV-elevated triglycerides when used in doses of 6000 mg per day. Some doctors use a combo of statin drugs with L-Carnitine. It should not be taken with meals but taking it with a little fruit juice will improve absorption. A suggested dose is between 1 to 3 grams daily.

***Other Supplements:***

*Magnesium-* is often deficient in a significant number of HIV-positive people. It can help prevent arterial damage and protect the heart in doses of 500-600 mg daily. However, be careful about taking too much magnesium because it can cause diarrhea. Before you take a separate supplement, check how much magnesium is in your multivitamin.

*Antioxidants-* are extremely important in HIV-positive people to help fight against the action of HIV upon the body. Some examples include Vitamins E and C; bioflavonoids, selenium; coenzyme Q10; N-Acetyl Cysteine (NAC); Alpha Lipoic Acid (ALA); and B-vitamins. These nutrients help prevent chemical changes in the blood vessels and blood fats that are required for plaquing to take place. Thus, they help to prevent damage to the arteries.

*Copper-* deficiency and excess of copper are associated with increased cholesterol and triglycerides. It is deficient in diets of most North Americans. It is important to have copper levels assessed before supplementing. Do not take zinc and copper supplements together because zinc interferes with copper absorption.

*Psyllium-* is the seed and husk of the plant *Plantago isphagula*. It is commonly used to control diarrhea and constipation but since it is a fibre, it may also help lower cholesterol levels. If you plan to take psyllium or any other soluble fibre, make sure to drink lots of water to prevent it causing blockage in the intestine. You should also wait a few hours after other treatments before taking psyllium.

# Managing Hyperlipidemia with Homeopathy

***It is important to consult a qualified and trained Homeopathic Physician in the treatment of acute and chronic conditions. Please do not attempt to treat yourself.***

Homeopathy is a naturally-based form of medicine which targets the underlying cause of disease by assisting the natural tendency of the body to heal itself. Since high levels of cholesterol and/or triglycerides are often asymptomatic, homeopathic treatment will involve taking this condition into consideration as part of the treatment plan. The following are some remedies that have an affinity for the heart. These are not the only remedies for heart disease and homeopathic treatment for chronic conditions is always based assessing your individual symptoms.

***Aconitum Napellus-*** has a marked influence on the heart. Symptoms include numbness of the left arm; tingling in the fingers when associated with heart disease; cardiac congestion with anxiety, oppression and palpitations that is aggravated by walking; especially indicated in inflammatory heart conditions especially when caused by infections.

***Aurum Metallicum-*** symptoms include frequent attacks of anguish around the heart with tremulous fearfulness; violent heart beat not synchronous with the pulse; constriction of the chest with a painful spasmodic sensation of the heart; fatty degeneration of the heart; violent orgasm of blood as if it was boiling; visible beating of the carotids and temporal arteries; sensation as if the heart stood still.

***Cactus Grandiflorus-*** is an excellent remedy for rheumatic carditis and angina pectoris. Symptoms include chest soreness and constriction; pains shooting into the left arm; edema; great irritation of the cardiac nerve; intense palpitation and fluttering sensations around the heart; the sensation as if the heart were grasped with an iron hand which clutches and relaxes alternatively.

***Digitalis Purpurea-***This remedy is well known for its action on the heart. ***You must be cautious with its use and should only be used when indicated homeopathically.*** Symptoms include an irregular and intermittent pulse that is aggravated by exertion; the heart feels as if the blood stood still; weakness and numbness of the left arm; blueness of the surface of the body; patient fears that the heart will stop beating with any motion; disturbed sleep; apprehensiveness; slow respiration; dry cough and suffocative spells.

***Lachesis Muta-*** This remedy has an affinity for the heart, circulation and the blood itself; symptoms include palpitation of the heart; smothering sensation about the heart that wakes the patient out of sleep; cannot tolerate pressure on the chest, small and weak pulse; a lot of pain in the heart; the sensation that the heart feels too big for the chest; heart seems to stand still and then start with a tremendous bound followed by a rapid tremor.

# Wellness Resource Guide

## Health Promotion Services at PWA:

**Contact Rebecca, Treatment Resources Coordinator for;**

- Student Massage Clinic
- Holistic Treatment Counselling
- Community Naturopathic Clinic for People with HIV
- Harm Reduction

**Contact Kevin, Programs Coordinator for;**

- Volunteer Massage Program
- Reiki
- Therapeutic Touch

**Contact Greg, Speakers Bureau Coordinator for;**

- The Energy Healing Circle

**Contact Llewellyn, Treatment Access Coordinator for;**

- Trillium
- Compassion Access to Medications (H-MAP)

## Treatment Websites:

CATIE	<a href="http://www.catie.ca">www.catie.ca</a>
The Body	<a href="http://www.thebody.com">www.thebody.com</a>
AIDSInfonet (New Mexico AIDS Project)	<a href="http://www.aidsinfonet.org">www.aidsinfonet.org</a>
AIDS Map	<a href="http://www.aidsmap.org">www.aidsmap.org</a>
AIDS Treatment News	<a href="http://www.aidsnews.org">www.aidsnews.org</a>
HIV/AIDS Medications	<a href="http://www.aidsmeds.com">www.aidsmeds.com</a>
Multilingual HIV Treatment Information	<a href="http://www.treathivglobally.ca">www.treathivglobally.ca</a>
The Well Project (geared towards women)	<a href="http://www.thewellproject.org">www.thewellproject.org</a>
Project Inform	<a href="http://www.projectinform.org">www.projectinform.org</a>

## Nutrition:

Jon Kaiser	<u><a href="#">Immune Power: The Comprehensive Healing Program for HIV</a></u>
Jon Kaiser	<a href="http://www.jonkaiser.com">www.jonkaiser.com</a>
Lark Lands	<a href="http://www.larklands.net">www.larklands.net</a>
CATIE	<u><a href="#">A Practical Guide to Nutrition for People Living with HIV</a></u>

## Complementary Therapies:

CATIE	<u><a href="#">Practical Guide to Complementary Therapies</a></u>
Complementary Therapists List	<a href="http://www.actoronto.org">www.actoronto.org</a>
Homeopathy	<a href="http://www.csoh.ca/Homeopathy_Introduction.htm">http://www.csoh.ca/Homeopathy_Introduction.htm</a>
Traditional Chinese Medicine	<a href="http://www.docmisha.com">www.docmisha.com</a>
Nutrition Services:	<a href="http://www.stmichaelshospital.com/programs/nutrition">www.stmichaelshospital.com/programs/nutrition</a>
Community Naturopathic Clinic	416-324-4187 (to book an appointment)

## Community Resources:

Toronto People With AIDS Foundation	<a href="http://www.pwatoronto.org">www.pwatoronto.org</a>
VOICES of Positive Women	<a href="http://www.vopw.org">www.vopw.org</a>
Black Coalition for AIDS Prevention	<a href="http://www.black-cap.com">www.black-cap.com</a>
Asian Community AIDS Services	<a href="http://www.acas.org">www.acas.org</a>
Alliance for South Asian AIDS Prevention	<a href="http://www.asaap.ca">www.asaap.ca</a>