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Hyperlipidemia: High Cholesterol and Triglycerides [1]

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Lipids are fats and fat-like substances in the blood. Cholesterol and triglycerides are lipids. Your body uses cholesterol to build and maintain cells and to make some hormones. After eating, energy that is not needed right away is converted into triglycerides, which are stored in fat cells.

While having some cholesterol and triglycerides in the blood is important for the body to function properly, having too much is unhealthy. Having high levels of lipids is called hyperlipidemia.

Hyperlipidemia and HIV

There are many possible causes for high lipid levels, including HIV and some of the HIV drugs. This puts people living with HIV (HIV+) at particular risk for developing hyperlipidemia. Although you cannot tell if you have this condition without lab tests [2], it can cause serious long-term health problems.

The main danger of hyperlipidemia is heart disease [3]. If you have too much cholesterol in your blood it can build up on the inside of your arteries (blood vessels), and form plaques. This buildup of plaque can lead to a heart attack or a stroke. High triglycerides can also increase your risk of getting pancreatitis (a painful inflammation of an organ in your abdomen called the pancreas).

Some HIV+ people experience lipodystrophy. Lipodystrophy means abnormal body fat changes, and can include body shape changes and metabolic changes like hyperlipidemia. These changes have been linked to increased chances of developing diabetes, heart disease, and strokes. (For more info, see The Well Project's articles on lipodystrophy [4]).

How to Know If You Have Hyperlipidemia

There are two main kinds of cholesterol. One is low-density lipoproteins (LDL) or "bad" cholesterol, which can clog the arteries. The higher your LDL, the higher your risk of heart disease. The other kind is high-density lipoproteins (HDL) or "good" cholesterol, which can help reduce the risk of heart disease.

Your health care provider can tell you if you have high cholesterol or triglycerides by doing a simple blood test called a fasting lipid profile. This will measure total cholesterol, HDL, LDL,

and triglycerides. It is important that you have nothing to eat or drink for eight to 12 hours before the test is done. The following levels are ideal:

- Total cholesterol ? less than 200
- Low-density lipoproteins (LDL) ? less than 100
- High-density lipoproteins (HDL) ? 60 or higher
- Triglycerides ? less than 150

Foods That Affect Cholesterol and Triglyceride Levels

There are several types of fat found in the foods we eat. These include saturated fats, trans fats, polyunsaturated fats, and monounsaturated fats. Saturated and trans fats raise cholesterol and increase the risk of heart disease the most. They are considered "bad" fats. Polyunsaturated and monounsaturated fats tend to keep cholesterol low and are considered to be "good" fats.

Saturated fat is usually solid at room temperature (e.g., butter). It is found in the fat of animal products like meats and dairy. It is also found in a few vegetable products like coconut, palm, and palm kernel oil. To keep your intake of saturated fat low, check food labels and choose dairy products with low fat content like skim (non-fat) or one percent milk, and low fat cheese and ice cream. When you are buying meats, choose leaner cuts of meat and trim off fat before cooking. Lean meat has less visible 'marbling' (white fatty swirls or stripes that can be seen in the pinkish meat). If you have any questions, ask your grocer or butcher to help you find leaner cuts of meat.

Most trans fats are industrial or synthetic fats. These are the result of food processing techniques that partially hydrogenate unsaturated fats. To reduce how much trans fat you eat, check food labels for trans fat and any partially hydrogenated oils.

Polyunsaturated and monounsaturated fats ("good" fats) are usually liquid at room temperature and generally have plant-based sources. These include oils (olive oil, safflower oil, peanut oil), nuts, and avocados. If you use oil in cooking, the two best choices are canola and olive oil.

Eating a lot of "refined" carbohydrates or simple sugars (e.g. sugary foods, sodas, white bread, white rice) can raise triglycerides. If you need to reduce total cholesterol, LDL, and triglyceride levels it is important to limit the amount of bad fats and excess sugar in your diet. See a registered dietitian to help you make good choices and plan your meals. Many AIDS service organizations have registered dietitians on staff who will see you free of charge. For more information, see The Well Project's article on nutrition [5].

Physical Activity and Hyperlipidemia

Aerobic, or cardiovascular exercise [6], is the kind of physical activity that will help lower your lipid levels. A brisk walk, or other activity that gets your heart pumping moderately hard counts as aerobic exercise that can benefit your heart. This kind of exercise has been found to lower total cholesterol, triglycerides, and LDL; it can also raise HDL. It is important to get 30 minutes of moderately hard aerobic exercise five times a week.

Drugs for Hyperlipidemia

Sometimes, despite diet and exercise, lipids cannot be kept at healthy levels without the help of drugs. There are a variety of drugs available to help lower cholesterol and triglycerides. Some of these may interact with HIV drugs. To reduce the chance of drug interactions [7], make sure your health care provider is aware of all the medications you take.

If you take a lipid-lowering drug, it is still important to include a good diet and exercise in your lifestyle to help the drug work its best. It is also important to take the drug consistently.

HIV Drugs and Hyperlipidemia

Some HIV drugs have been:

- Found to cause changes in lipid levels
- Tied to diabetes [8]?another risk factor for heart disease
- Linked to an increased risk of heart attacks, for reasons that are not clearly understood

While experts agree that heart disease risks are associated with some HIV medications, there are also important benefits to the heart and immune system from HIV treatment. It is important to work with your health care provider to weigh the risks and benefits of the HIV medications you choose.

There are some HIV drugs [9] that have less of an impact on cholesterol and triglycerides. These include Edurant (rilpivirine), Viramune (nevirapine), Intelence (etravirine), Isentress (raltegravir), and Selzentry (maraviroc). Reyataz (atazanavir) and Prezista (darunavir) are also less likely to increase lipids, but both require use with Norvir (ritonavir), and Norvir does increase lipids.

If you take HIV drugs, be aware of the possible side effects [10]. Get monitored at regular medical check ups for high lipid levels. It is important that you not stop or make changes to your HIV drug regimen without speaking to your health care provider.

Other Risks for Heart Disease

Other factors that increase a person's risk of heart disease include:

- Family history of heart disease
- Little or no physical activity [6]
- High fat, high sugar diet
- High blood pressure
- Age (women over 55, men over 45)
- Obesity
- Diabetes [8]
- Smoking [11]

Try these tips for lowering cholesterol and triglycerides and decreasing other risk factors:

- Avoid fried foods
- Avoid adding extra fats like butter, sour cream, dressings, and gravies to foods
- Limit sweets and snack foods
- Cut excess fat and skin off meats
- Choose skim or one percent milk instead of whole or two percent milk
- Limit cheese or try low fat cheeses
- Choose whole grain breads instead of white breads; choose brown rice instead of white rice
- Increase fiber with whole grains, fruits and vegetables, and cooked beans
- Eat fish three times a week
- Increase aerobic exercise to five times a week for 30 minutes or more
- If your health care provider has prescribed lipid-lowering drugs, make sure to take them consistently
- Try to lose weight if you are overweight
- If you smoke, try to quit or at least cut down

Taking Care of Yourself

If you have hyperlipidemia, it is especially important to take care of your body. It is important to keep all of your medical appointments, get regular lab tests [2], and tell your health care provider about any changes in the way you feel or in your body shape.

Hyperlipidemia and other conditions associated with lipodystrophy have been linked with heart disease and strokes in HIV+ people, so make sure you are monitored closely. Other factors also contribute to the risk of heart attacks and strokes, including high blood pressure. If you have high blood pressure, make sure it is treated. You can also support your body, and especially your heart, with a healthy diet, regular exercise [6], and limiting or stopping tobacco use [11].

Tags:

- hyperlipidemia [12]
- Hyperlipidemia and HIV [13]
- lipids [14]
- cholesterol [15]
- triglycerides [16]
- heart disease [17]
- fats [18]
- diet [19]
- exercise [20]
- atherosclerosis [21]
- HDL cholesterol [22]
- LDL cholesterol [23]
- cholesterol HIV [24]
- triglycerides HIV [25]
- lipodystrophy [26]

- lipodystrophy HIV [27]
- heart disease HIV [28]
- lipid-lowering drugs [29]

Additional Resources

Select the links below for additional material related to hyperlipidemia.
Cholesterol (NIH) [30]
HIV and Cardiovascular Disease (The AIDS InfoNet) [31]
Risks to your Heart (AIDSMEDS) [32]
Lipids profile [33]
Dietary fats: Know which types to choose (Mayo Clinic) [34]
Women and Cholesterol (American Heart Association) [35]
Cholesterol: Top 5 foods to lower your numbers (Mayo Clinic) [36]
Cholesterol (AIDSmap) [37]
Your Guide to Lowering Cholesterol with Therapeutic Lifestyle Changes (NIH) [38]

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Links:
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[33] http://www.labtestsonline.org/understanding/analytes/lipid/glance.html
[34] http://www.mayoclinic.com/health/fat/NU00262
[35] http://www.heart.org/HEARTORG/Conditions/Cholesterol/UnderstandYourRiskforHighCholesterol/Women-and-Cholesterol_UCM_305565_Article.jsp
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