



Diabetes, Dyslipidemia, and Heart Protection

WHAT IS DYSLIPIDEMIA?

Cholesterol and triglycerides, known as lipids, are fatty substances that the body normally produces. Dyslipidemia means that lipid levels in the blood are too high or low. The most common types of dyslipidemia are

- High levels of low-density lipoprotein (LDL or “bad”) cholesterol
- Low levels of high-density lipoprotein (HDL or “good”) cholesterol
- High levels of triglycerides (fats in the blood)

Dyslipidemia contributes to atherosclerosis (“hardening” of the arteries), a disease in which fatty deposits called plaque build up in the arteries over time. The arteries are blood vessels that carry blood from the heart to the rest of the body. If plaque narrows your arteries, you are more likely to have heart disease, heart attack, peripheral artery disease (reduced blood flow in the limbs, most often the legs), and stroke.

DID YOU KNOW?

Abnormal levels of fats in the blood—dyslipidemia—affect people with type 2 diabetes more often than those with type 1 diabetes.

WHY IS DYSLIPIDEMIA A CONCERN FOR PEOPLE WITH DIABETES?

People with diabetes are more likely to develop atherosclerosis, heart disease, poor circulation, and stroke than people who do not have diabetes. Many people with diabetes have several risk factors that contribute to atherosclerosis and its complications. These include high blood pressure, excess weight, and high blood glucose (sugar) levels. Dyslipidemia further raises the risk of atherosclerosis in people with diabetes.

The most common dyslipidemia in diabetes is a combination of high triglycerides and low HDL cholesterol levels. People with diabetes may also have high LDL cholesterol.

HOW WILL YOU KNOW IF YOU HAVE DYSLIPIDEMIA?

Dyslipidemia has no symptoms (what you feel). Health care providers detect it by a blood test called a lipid profile. This test measures the amount of cholesterol, triglycerides, and other fats in your blood. People usually have a lipid profile after fasting overnight.

Many things can affect your lipid levels. They include

- Age, sex, and family history of heart disease
- Lifestyle factors such as what you eat, level of physical activity, alcohol use, and smoking
- High blood pressure
- High blood glucose levels
- Some medications

WHAT SHOULD YOUR LIPID LEVELS BE?

Target values (desired levels of lipids) depend on your risk factors for heart disease. The more risk factors you have, the lower your target LDL level should be. Experts recommend the following target values:

LDL cholesterol: Below 100 mg/dL (milligrams per deciliter), or below 70 mg/dL for people with diabetes, heart disease or atherosclerosis

Below 130 mg/dL for people who don't have diabetes and have few risk factors for heart disease

HDL cholesterol: Above 40 mg/dL for men and above 50 mg/dL for women

Triglycerides: Below 150 mg/dL

Your doctor will work with you to set your target goals.

WHAT CAN YOU DO TO IMPROVE LIPID LEVELS AND KEEP YOUR HEART HEALTHY?

You can improve your lipid levels with a heart-healthy diet and weight loss, increased physical activity, and good blood pressure and blood glucose control. By limiting fat intake, especially animal fats and trans fats (artificial fats found in some foods), you can lower LDL cholesterol. Adding more fruits, vegetables, and fiber to your diet also helps reduce lipid levels. You may also need medication.

Among the drugs available to treat dyslipidemia, statins are often the first choice for lowering total and LDL-cholesterol levels. Pregnant women should never use statins.

Other drugs that lower cholesterol include cholesterol-absorption blockers (ezetimibe), bile acid sequestrants (cholestyramine, colestipol, and colesevelam hydrochloride), and nicotinic acid (niacin). You may need to use these in combination if a single drug does not help reach target levels. Fibrates (gemfibrozil, fenofibrate, and clofibrate) and extended-release niacin may be used to lower triglycerides or raise HDL cholesterol levels.

Your doctor will decide what type of drug is right for you based on your lipid profile. Follow your doctor's advice about diet, exercise, and medications. Routine checkups and a yearly blood test to check your lipid levels will help you manage dyslipidemia and reach your goals.

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April 2011, 2nd Edition

The Hormone Health Network offers free, online resources based on the most advanced clinical and scientific knowledge from The Endocrine Society (www.endo-society.org). The Network's goal is to move patients from educated to engaged, from informed to active partners in their health care. This fact sheet is also available in Spanish at www.hormone.org/Spanish.

Diabetes, Dyslipidemia, and Heart Protection Fact Sheet

Questions to ask your doctor

- What is my lipid profile?
- What are my lipid target values?
- What are my treatment options for abnormal lipids?
- What are the risks and benefits of each of these treatments?
- Should I see an endocrinologist?

RESOURCES

- Find-an-Endocrinologist: www.hormone.org or call 1-800-HORMONE (1-800-467-6663)
- Hormone Health Network diabetes information: www.hormone.org/diabetes
- Hormone Health Network information about lipids: www.hormone.org (search for lipids)
- National Diabetes Education Program (National Institutes of Health--NIH): ndep.nih.gov
- National Diabetes Information Clearinghouse (NIH): diabetes.niddk.nih.gov
- American Heart Association: www.heart.org



www.hormone.org