



## Diabetes, Dyslipidemia, and Heart Protection

### What is dyslipidemia?

Cholesterol and triglycerides, known as *lipids*, are fatty substances normally produced by the body. *Dyslipidemia* means lipid levels in the bloodstream 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

Dyslipidemia contributes to *atherosclerosis*, 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 suffer from heart disease, heart attack, peripheral artery disease (reduced blood flow in the limbs, usually the legs), and stroke.

### 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 conditions called 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.

Dyslipidemia affects people with type 2 diabetes more often than those with type 1 diabetes. The most common dyslipidemia in diabetes is the combination of high triglycerides and low HDL levels. People with diabetes may also have elevated LDL cholesterol.

### How will you know if you have dyslipidemia?

Dyslipidemia has no symptoms, so the diagnosis is made by a blood test called a *lipid profile*. This test measures the amount of cholesterol, triglycerides, and other fats in your bloodstream.

Your lipid levels can be affected by age, sex, and family history. Lifestyle factors such as diet, physical activity, and smoking also affect lipid levels. High blood glucose levels may also contribute to dyslipidemia.

### 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. The American Diabetes Association recommends the following target values for people with diabetes:

LDL cholesterol: below 100 mg/dL, or below 70 mg/dL for people with heart disease or atherosclerosis

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

Triglycerides: below 150 mg/dL

As an alternative to these target values, your doctor may advise you to reduce your LDL cholesterol to 30 to 40 percent below its original level. 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 lipid levels with a heart-healthy diet and weight loss, increased physical activity, and good blood glucose control. Limiting fat

intake, especially animal fats and trans fat, 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, bile acid sequestrants, and nicotinic acid. These may be used in combination if a single drug is not effective in reaching target levels. Fibrates 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.

### What should you do with this information?

Talk with your doctor about what you should do to prevent or control dyslipidemia and protect your heart. Follow your doctor's recommendations for diet, exercise, and medications. Routine checkups and an annual blood test to monitor your lipid levels will help you manage dyslipidemia.

### Resources

Find-an-Endocrinologist:  
[www.hormone.org](http://www.hormone.org) or call  
1-800-HORMONE (1-800-467-6663)

Hormone Foundation Diabetes  
Information: [www.hormone.org/diabetes](http://www.hormone.org/diabetes)

National Diabetes Education Program  
(NIH): <http://ndep.nih.gov>

National Diabetes Information  
Clearinghouse (NIDDK):  
<http://diabetes.niddk.nih.gov>

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