

# “YOU HAVE HIGH



**Dr. Gary Lewis** is a professor in the Department of Medicine and Physiology at the University of Toronto, Head of Endocrinology and Metabolism at the University Health Network and Mount Sinai Hospital in Toronto, as well as a Canada Research Chair in Diabetes.

# CHOLESTEROL”

## Four words that mean it's time for change

by Dr. Gary Lewis

**R**EMEMBER the last time that you had blood work done? It was hardly memorable, just a routine part of your annual check-up. A few weeks after the blood tests, you're back in your doctor's office and you hear those dreaded words: "your cholesterol looks a bit high." Gulp. Now what?

### Get the facts

Cholesterol is carried in the blood stream in particles called lipoproteins. Not all cholesterol-carrying particles are created equal. There's 'good' cholesterol and 'bad' cholesterol. LDL, or low-density lipoproteins are the 'bad' guys: They carry and deposit cholesterol in the artery walls. This leads to thickening of the arteries and contributes to heart disease. HDL, or high-density lipoproteins are the 'good' guys: They act like vacuum cleaners for arteries, removing cholesterol and reducing the thickening of artery walls.

HDL actually helps protect against heart disease, so having high HDL isn't such a bad thing.

High triglycerides, a fat found in the blood, are also linked to heart disease. They're usually high in people who are physically inactive, overweight or obese, and people with adult onset (type 2) diabetes. Heavy alcohol consumption, kidney disease, rare genetic conditions and some medication can also raise triglycerides.

### Metabolic Syndrome

If your triglycerides and blood pressure are high, your HDL low and your blood sugar tests a bit high, then you might have Metabolic Syndrome. This is a pre-diabetic condition characterized by insulin resistance, in other words your body is not affected by the normal

action of insulin. Metabolic Syndrome increases your risk for both heart disease and diabetes and it's most often found in people with abdominal obesity and low levels of physical activity.

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### The big picture

If both your cholesterol and triglycerides are elevated this is known as hyperlipidemia. 'Lipids' is a word that doctors use to refer to both cholesterol and triglycerides. Your lipid profile is the big picture of your LDL, HDL and triglyceride levels. An

abnormal lipid profile is when LDL or triglycerides are high, HDL is low, or a combination of all three.

An abnormal lipid profile can be caused by eating habits, lifestyle, an inherited (genetic) condition, or most likely, a combination of these factors. In some rare cases, lipid abnormalities may be a sign of some other underlying illness like low thyroid function, liver or kidney disease. Some medications can also raise cholesterol and triglyceride levels. In this case, treating the underlying condition or stopping the medication may correct the problem.

### Nature versus nurture

Genetic causes of lipid abnormalities are inherited from at least one of your parents. Exclusively genetic

causes resulting from a single gene abnormality are not common and make up the minority of all cases. Most cases result from a combination of many small gene defects interacting with environmental factors and are called polygenic diseases. In other words, many small changes or mutations in a number of different genes, rather than one big change in a single gene, lies at the root of the lipid problem. Unfortunately, we lack straightforward laboratory tests to determine which cases of hyperlipidemia are genetic.

For most people, lifestyle factors like lack of exercise and poor diet play an important part in lipid problems, although genetics may also play a role. When cholesterol and triglyceride problems are due to lifestyle more than genetics, chances are that lifestyle modifications will be beneficial. Indeed, in these cases the lipid profile can sometimes be corrected completely with weight loss and exercise, eliminating the need for lipid-lowering medication.

### Where do you stand?

To figure out if your lipid problems are more genetic or lifestyle-related, you and your doctor should look at your laboratory results as well as your lifestyle and family history. For example, if your total cholesterol and LDL are extremely high (over 8 and 6 mmol/l respectively) with no apparent underlying cause, and your parents, grandparents or siblings also have very high cholesterol or had heart disease before the age of 60,

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there's a good chance that your cholesterol problem is strongly genetically determined. A condition known as familial hypercholesterolemia fits this description and it's unlikely to respond to lifestyle improvements. Long-term treatment with cholesterol-lowering therapy will likely be needed. If your doctor suspects familial hypercholesterolemia, you might suggest that family members get checked out for the condition as well.

The above example is an extreme case. You probably won't have such high cholesterol levels and a genetic link may be less obvious, so it'll be harder to tell to what extent your cholesterol problem is genetic or lifestyle-related. In this case, unless you've already had a heart attack or have evidence of

other vascular disease, there's no urgency to begin lipid-lowering therapy and it's worth trying lifestyle modification to try to improve your lipid profile before considering medication.

### Take control

Lifestyle modification involves changing both your diet and physical activity levels, and may help you avoid taking medication.

Ask your doctor for a referral to a registered dietitian for nutritional counseling. He or she will take a food 'history' and then identify the areas of your diet that need improvement. The dietitian will take into account whether your weight is normal or if you're overweight, what you like to eat, and if you have preferences for particular ethnic foods. They'll then create a diet plan to best suit your needs.

Ask your doctor about starting an exercise program and what level of exercise is safe for you. Most likely you'll get started on a moderate exercise program and then build up slowly. Health Canada recommends an average of 30 to 60 minutes of moderate activity like brisk walking, raking leaves or biking every day, or 60 minutes of lighter activities like easy gardening, stretching or light walking.

### The alcohol connection

Another lifestyle modification you'll want to explore is limiting your alcohol intake. Although alcohol in moderation doesn't cause heart disease, it can raise

### RISK FACTORS FOR HEART DISEASE

- High LDL
- Low HDL
- Inactive lifestyle
- Obesity
- Smoking
- Age (risk increases with age)
- Diabetes
- High blood pressure
- Family history of heart disease in close relatives under age 60

triglycerides in some people. The Heart and Stroke Foundation recommends that healthy adults drink no more than two alcoholic drinks a day with a weekly limit of 14 drinks for men and nine for women. Binge drinking should be avoided completely. Alcohol also contains a considerable amount of calories and sugar, so if you're trying to lose weight, limiting your alcohol intake can be very helpful.

### Are meds needed?

Unfortunately, lifestyle modifications don't guarantee lipid success. Although your overall health and fitness will definitely improve, your lipid levels may still be a problem. Four to six months of solid effort at lifestyle modification should give you a pretty good idea if your lipid profile will improve without medication. After this time, if your lipid profile is still abnormal, it's time for you to seriously consider lipid-lowering medication.

There are many different lipid-lowering meds available in Canada. Most belong to a class of drugs called statins that block the production of cholesterol

in the liver. Other medications act in different ways: some grab on to cholesterol-containing bile acids to prevent cholesterol from re-entering the bloodstream (these are called "bile acid sequestrants"). Others stop cholesterol absorption, and yet another class acts to reduce triglycerides (called "fibrates"). Ask your doctor which one is right for you.

There's no single level of cholesterol or triglycerides at which people are advised to start lipid-lowering therapy. The decision to start medication will depend on your individual risk factors for developing heart disease. If you're young with no other risk factors for heart disease (see Risk factors box, previous page) then your overall risk is very low and there's no urgency to start lipid-lowering medication, unless your cholesterol and triglycerides are very high.

Although alcohol in moderation doesn't cause heart disease, it can raise triglycerides in some people

If you're middle-aged with other risk factors for heart disease like smoking, high blood pressure, diabetes, established cardiovascular disease, overweight or with a family history of heart problems, then your risk for developing heart disease is much higher. Your doctor needs to assess your total risk for heart disease in relation to your lipid levels in order to decide whether medication is necessary.

### Stay healthy

Once you and your doctor have made the decision to start lipid-lowering medication, you'll probably need to take it for the rest of your life. Lipid-lowering medication doesn't cure high cholesterol; it only keeps the levels down as long as you're taking it.

After starting on meds, your doctor will monitor your lipid levels and adjust the dose or even switch your meds so you'll reach your target lipid levels. Be sure to have a check-up at least once a year to confirm your treatment is working well. In addition to testing your lipids annually, you should also arrange to have muscle, blood sugar, kidney and liver tests done to monitor for side effects.

With proper management and follow-up, high cholesterol doesn't have to be a burden. If you stay in touch with your doctor to regularly monitor your lipids, and follow a healthy diet and exercise program, your heart can rest a little easier. 

