Understanding Cardiovascular Health

What is Cardiovascular Disease (CVD)?

Cardiovascular Disease, or CVD, includes a range of heart and blood vessel conditions that can lead to heart attack, stroke or other serious heart conditions. High cholesterol is one of the main causes of CVD.

CVD Risk Factors and What You Can Do

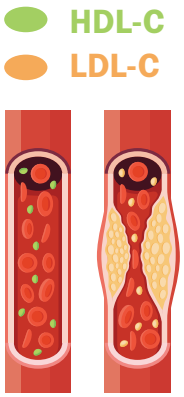
Some risk factors that impact your heart health are things you cannot change:

- **Age –** CVD risk increases with age
- **Race and ethnicity –** Some groups may have higher risk of certain conditions such as diabetes, which increase the risk of CVD
- **Genetics –** family history and genetic conditions may increase risk of CVD

Others risk factors are changeable. Your risk of CVD may be reduced by lifestyle changes such as:

- Maintaining a healthy weight
- Exercising regularly
- Managing blood sugar levels
- Not smoking
- Following a heart healthy diet
- Managing blood pressure
- Getting enough sleep

Understanding Cholesterol Levels



Your body needs cholesterol, which is a type of fat (or lipid), because it helps your body perform many important functions. However, too much cholesterol in your blood is not good and can lead to CVD.

If you have high cholesterol, you will usually not have symptoms until it causes an event such as a heart attack or stroke. That is why it is important to have your blood tested for lipid levels. This test is called a lipid profile or lipid panel. The results show the type and amount of cholesterol, and other lipids, in your blood, so you can monitor your levels over time.

Lipid profiles usually measure four types of lipids:

Lipid Test Name	What is it?
TC Total Cholesterol	The **total amount** of cholesterol, good and bad, in your blood
LDL-C Low-density lipoprotein cholesterol	Often called **"bad cholesterol"** because high levels can build up into fatty deposits (plaques) in blood vessels, which can harden or narrow the arteries. This is called atherosclerosis and may cause stroke or heart-attack.
HDL-C High density lipoprotein cholesterol	Previously called **"good cholesterol"** because those with higher levels tend to have lower risk of CVD.
TG Triglycerides	These are fats that are created when you eat or drink more calories than your body needs. They are **stored inside fat cells** to be used for energy in-between meals as needed. Regularly eating fatty foods or drinking too much alcohol can result in high TG levels in blood, which, like LDL-C, can harden or narrow arteries.

High LDL-C Might Present a Greater Issue for Certain People

While high LDL-C levels are harmful to everyone, they are particularly serious and more challenging to manage for certain groups of people. Below are several such instances:

Hypercholesterolemia

Elevated levels of Low Density Lipoprotein Cholesterol (LDL-C)

When someone has high levels of LDL-C, it can lead to the buildup of cholesterol in the arteries, increasing the risk of heart disease and stroke. For any given LDL-C level several additional factors such as diet, lifestyle, genetics, and others, affect whether an individual will develop CVD.

Heterozygous Familial Hypercholesterolemia (HeFH)

HeFH is an inherited condition which results in life-long high LDL-C levels so there is often a family history of high LDL-C, or even CV events such as heart attacks or strokes early in life.

Homozygous Familial Hypercholesterolaemia (HoFH)

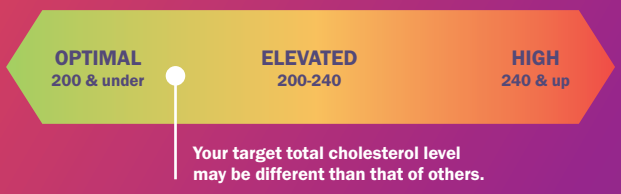
HoFH is a rarer and more severe form of inherited high cholesterol where LDL-C levels can be extremely high. Managing cholesterol in HoFH is challenging and often requires intensive treatments with several medicines to reduce LDL-C levels.

Coronary Artery Disease (CAD)

Coronary artery disease, CAD, is a type of atherosclerotic cardiovascular disease (ASCVD). CAD results from the fatty deposits forming in the arteries that supply blood and nutrients to the heart, called coronary arteries. CAD usually occurs in old age. People with high LDL-C who have suffered from serious heart conditions before the age of 65 in women or before the age of 55 in men would be considered to have premature CAD. These conditions may include heart attack, stroke, blocked blood vessels, heart failure, heart valve problems, or abnormal heart rhythm. People with these conditions require lifelong aggressive lowering of LDL-C levels.

Normal vs. Target Total Cholesterol

Normal total cholesterol levels refer to a range that is considered healthy in the general population. Your target total cholesterol levels are the levels determined by medical experts to be the best for you based on your health and risk factors. In order to achieve your target total cholesterol levels, your doctor may recommend treatment.



Treatment Options for High Cholesterol

If your doctor determines that you should be on cholesterol-lowering medication, treatment typically is required lifelong.

Along with lifestyle modifications, physicians will often prescribe statins, a type of medicine, to help lower total cholesterol and reduce the risk of a heart attack or stroke. Statins include Lipitor® (atorvastatin), Crestor® (rosuvastatin), or Zocor® (simvastatin). Other medications, known as PCSK9 inhibitors, including Praluent® (alirocumab), Repatha® (evolocumab), or Leqvio® (inclisiran) may also be prescribed. These medications target the PCSK9 protein which is associated with high LDL-C. Yet even with available therapies, some people are unable to lower their LDL-C levels to their target level.

Take Control of Your Cardiovascular Health

Taking control of your cardiovascular health means understanding CVD risk factors, collaborating with healthcare providers to set realistic goals, making heart-healthy lifestyle choices, and following prescribed medication instructions. If you have high LDL-C levels and still cannot reach your target levels despite taking medication, talk to your doctor and see if you are eligible to participate in a clinical trial that may help you reach your goals.

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