

Essay for September 2021 – Cholesterol Awareness

Hello Blessed parishioners,

An important part of living in Christ is to stay healthy and able enough to do the Lord's work. A part of being healthy and hale is to manage our lipid profile, more commonly known as our cholesterol. Managing cholesterol helps delay or hold off the blockages in our blood vessels that can contribute to many serious conditions which can render us infirm.

Cholesterol/Lipid normal values come from several components of your total cholesterol makeup. I listed first the recommended values, then the components of your lipid test results. Checking with your health care provider first will start you on your journey to keep your lipids in normal levels and your heart and blood vessels healthy and clear.

The following information comes from the Harvard School of Public Health – [Cholesterol | The Nutrition Source | Harvard T.H. Chan School of Public Health](#)

- The biggest influence on blood cholesterol level is the mix of fats and carbohydrates in your diet—not the amount of cholesterol you eat from food.
- Although it remains important to limit the amount of cholesterol you eat, especially if you have diabetes, for most people dietary cholesterol is not as problematic as once believed.
- The body uses cholesterol as the starting point to make estrogen, testosterone, vitamin D, and other vital compounds.
- Cholesterol in the bloodstream, specifically the bad LDL cholesterol, is what's most important in determining health risk.
- Digestion and intake of fat and cholesterol:
Fat and cholesterol can't dissolve in water or blood. Instead, the body packages fat and cholesterol into tiny, protein-covered particles called lipoproteins. Lipoproteins can transport a lot of fat; they mix easily with blood and flow with it. Some of these particles are big and fluffy, while others are small and dense. The most important ones are low-density lipoproteins (LDL), high-density lipoproteins (HDL), and triglycerides.

How it's made: Cholesterol production in your body: July 31, 2019

Cholesterol has a bad reputation, thanks to its well-known role in promoting heart disease. Excess cholesterol in the bloodstream is a key contributor to artery-clogging plaque, which can accumulate and set the stage for a heart attack. However, the role of cholesterol in your body is not all negative.

To fully explain cholesterol, you need to realize that it's also vital to your health and well-being. Although we measure cholesterol production in the blood, it's found in every cell in the body. The [Harvard Special Health Report *Managing Your Cholesterol*](#) explains cholesterol as a waxy, whitish-yellow fat and a crucial building block in cell membranes.

Cholesterol also is needed to make vitamin D, hormones (including testosterone and estrogen), and fat-dissolving bile acids. In fact, cholesterol production is so important that your liver and intestines make about 80% of the cholesterol you need to stay healthy. Only about 20% comes from the foods you eat.

If you eat only 200 to 300 milligrams (mg) of cholesterol a day (one egg yolk has about 200 mg), your liver will produce an additional 800 milligrams per day from raw materials such as fat, sugars, and proteins

Cholesterol and other lipids circulate in the bloodstream in several different forms. Of these, the one that gets the most attention is low-density lipoprotein— better known as LDL, or "bad" cholesterol. But lipoproteins come in a range of shapes and sizes, and each type has its own tasks. They also morph from one form into another. These are the five main types:

Chylomicrons - are very large particles that mainly carry triglycerides (fatty acids from your food). They are made in the digestive system and so are influenced by what you eat.

Very-low-density lipoproteins (VLDL) - particles also carry triglycerides to tissues. But they are made by the liver. As the body's cells extract fatty acids from VLDLs, the particles turn into intermediate density lipoproteins, and, with further extraction, into LDL particles

Intermediate-density lipoprotein (IDL) - particles form as VLDLs give up their fatty acids. Some are removed rapidly by the liver, and some are changed into low-density lipoproteins.

Low-density lipoprotein (LDL) - particles are even richer in pure cholesterol, since most of the triglycerides they carried are gone. LDL is known as "bad" cholesterol because it delivers cholesterol to tissues and is strongly associated with the buildup of artery-clogging plaque.

High-density lipoprotein (HDL) - particles are called "good" cholesterol because some of them remove cholesterol from circulation and from artery walls and return it to the liver for excretion.

- By Julie Corliss; Executive Editor, Harvard Heart Letter

Cholesterol chart for adults

From: Healthline: [What Are the Recommended Cholesterol Levels by Age? \(healthline.com\)](https://www.healthline.com/health/cholesterol-levels)

According to the 2018 guidelines on the management of blood cholesterol published in the [Journal of the American College of Cardiology \(JACC\)](https://www.jacc.org/), these are the acceptable, borderline, and high measurements for adults.

All values are in mg/dL (milligrams per deciliter or milligrams %) and are based on fasting measurements. The units are those commonly used to report cholesterol numbers.

	Total cholesterol	HDL cholesterol	LDL cholesterol	Triglycerides
Good	Less than 200 (but the lower the better)	Ideal is 60 or higher; 40 or higher for men and 50 or higher for women is acceptable	Less than 100; below 70 if coronary artery disease is present	Less than 149; ideal is <100
Borderline to moderately elevated	200–239	n/a	130–159	150–199
High	240 or higher	60 or higher	160 or higher; 190 considered very high	200 or higher; 500 considered very high
Low	n/a	less than 40	n/a	n/a

Once you learn your numbers, dividing your total cholesterol number by your HDL number, you can find a ratio called Chol/HDL ratio. A ratio above 5.0:1 is generally considered a risk, while a ratio of 3.5:1 is considered good. Most of us fall in between. This is one of the reasons why it is important to know and understand your cholesterol profile and in teamwork with your health care provider, keep your numbers at a safe level.

The University Of Rochester Medical Center has this information (among other useful knowledge).

[Lipid Panel with Total Cholesterol: HDL Ratio - Health Encyclopedia - University of Rochester Medical Center](#)

Your total-cholesterol-to-HDL ratio can be figured out by dividing your total cholesterol number by your HDL cholesterol number (tChol/HDL). Together, these numbers provide more information about your coronary heart disease risk than knowing only 1 of these numbers.

In general:

- The higher the ratio, the higher the risk.
- Most healthcare providers want the ratio to be below 5:1.
- A ratio below 3.5:1 is considered to be very good.

Runaway cholesterol or lipids can contribute to several serious and possibly debilitating diseases. Among them if uncontrolled, it may lead to increased risk of:

- Atherosclerosis or deposition of cholesterol in the walls of arteries causing poor circulation including leg pain on exercise/walking, some cognitive deficits (memory or mental processing)

- Reduced blood flow to the heart and brain due to atherosclerosis leading to angina or other chest pain
- Heart diseases including heart attack
- Stroke

Take care of your lipids, know your numbers. Continue the healthy lifestyles that help keep our hearts and arteries clear to continue our lives. What we eat, our activity levels, and our daily choices will help us live long and productive lives.

Thank you all for being Blessed Saint Timothy's parishioners and followers.
Dave Kotun.