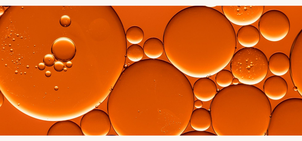
Healthy Cholesterol & Triglycerides

September 11, 2022



Welcome to Issue 16 of Science Says! Our weekly newsletter where you'll learn the latest healthy aging and C15:0 research news that our team of doctors, scientists, and experts are most excited about—without having to go search for it.

Eric and Steph
Co-Founders, Doctors, Nerds

What Dr. Eric Venn-Watson, our co-founder and Navy physician, is reading.

HEALTHY AGING

The Evolving Story of Cholesterol & Triglycerides

The American Heart Association recently published eight updated and enhanced health tips, called Life's Essential 8, in the journal, *Circulation*. We are dedicating our latest round of newsletters to Life's Essential 8.

Let's talk lipids

Instead of defining whether or not you have heart *disease*, Life's Essential 8 is used to define whether or not you have heart *health*. Meeting all of these essential 8 goals is expected to help us not only have healthier hearts, they can enable us to live longer, healthier lives.

This week, let's talk about:

- ☑ Healthy cholesterol & triglycerides

So, what is healthy cholesterol?

The American Heart Association uses ***non-HDL cholesterol*** as its primary measurement of healthy cholesterol. Specifically, they provide the following point system, with the goal of achieving the highest health points possible:

Non-HDL cholesterol

- < 130 mg/dl = 100 health points
- 130-159 mg/dl = 60 health points
- 160-189 mg/dl = 40 health points
- 190-219 mg/dl = 20 health points
- ≥ 220 mg/dl = 0 health points

What happened to "LDL is bad cholesterol, and HDL is good cholesterol"?

While this phrase had long been accepted as true, advances in technology have since complicated what once was a straight forward belief.

- **Size matters.** When LDL cholesterol particles are big and fluffy, they don't appear to be harmful. If these same particles are small and dense, however, they are more susceptible to oxidation and can more easily invade vessels. This leads to atherosclerosis.
- **Non-LDL particles can be bad apples, too.** Traditional equations that measure LDL-cholesterol don't include other lipids that contain apolipoprotein B (aka apoB), which can cause atherosclerosis.
- **Association vs. causation.** While higher HDL cholesterol is associated with a lower risk of atherosclerosis, high HDL does not appear to be the *cause* of reduced cardiovascular disease. Instead, high HDL may simply be an indicator of lower triglycerides, which more directly supports your heart health.

As a result of these latest studies, both non-HDL cholesterol and apoB have emerged as leading measurements of cardiovascular disease risk.

Wait, do triglycerides matter again?

Yes, they do. A review in *Current Atherosclerosis Reports* discusses how high triglycerides increase our risk of developing atherosclerosis. The Mayo Clinic provides the following reference ranges for triglycerides:

- Normal: Less than 150 mg/dL
- Borderline high: 150 to 199 mg/dL
- High: 200 to 499 mg/dL
- Very high: 500 mg/dL or above

High triglyceride levels occur when we eat more carbohydrate-rich calories than we burn. As such, you can help keep your triglycerides under control by minimizing your carbs and increasing your steps.

Take home message

When it comes to your lipid health, it is especially important to visit your doctor and get those blood tests routinely. Your physician will be most up to date on the evolving science defining healthy cholesterol and triglyceride levels.

Stay tuned for next week's newsletter around our Healthy Heart series, which will focus on the latest scientific studies around healthy levels of blood glucose.

C15:0 for healthy lipid maintenance*

Did you know that daily C15:0 supplementation over three months supported healthy cholesterol and triglyceride levels in relevant models? In addition, our fellow dolphins (who are also susceptible to developing higher cholesterol with age) developed healthy cholesterol concentrations when fed a fish-based diet higher in C15:0.

C15:0's lipid health benefits may be due to its demonstrated ability to activate AMPK, which is a recognized mechanism that supports healthy cholesterol levels. C15:0 also activates PPAR-alpha, a mechanism long used to support healthy triglyceride levels. While clinical trials are needed to confirm C15:0's role in supporting healthy lipid levels in humans, this may yet another heart-healthy benefit that explains why dozens of human studies have linked higher circulating C15:0 concentrations to healthy hearts.

Dive deeper into the science

READ THESE STUDIES

- Life's Essential 8: Updated tips from the American Heart Association
- Low HDL associated with but does not cause healthy hearts
- High triglycerides and small-particle LDL-C as risk factors for atherosclerosis
- Mayo Clinic triglyceride reference ranges
- C15:0 supports healthy cholesterol and triglycerides
- C15:0 diet in dolphins supports healthy cholesterol
- C15:0 as an AMPK activator
- AMPK activators for healthy cholesterol
- Higher C15:0 linked to heart health