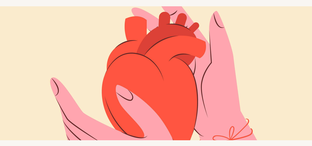
Protecting Your Long-Term Heart Health

March 2, 2025



Welcome to Issue 124 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. Stephanie Venn-Watson, our co-founder and author of *The Longevity Nutrient* and over 80 peer-reviewed scientific publications, is reading.

HEALTHY AGING

Let's Get To The Heart of C15:0

The countdown is on until Simon & Schuster's March 25th release of *The Longevity Nutrient*. This book tracks our 20-year scientific journey - starting with an unexpected discovery of C15:0's health benefits while helping dolphins - which has culminated in a movement to improve global health. And dare we say, humanity?

In this series of *Science Says!*, we provide a behind-the-scenes science peek relevant to each of the book's chapters - from surprising dolphin discoveries to longevity molecule must-haves, from how essential fatty acids are discovered to the many ways C15:0 works, from how a newly found nutritional deficiency accelerates aging to how fixing and optimizing our C15:0 levels can slow aging to help us live healthier, longer.

This week, let's talk about how research teams throughout the world are helping us gain a deeper understanding of how C15:0 protects our heart health.

How is our heart health these days?

Well, not great. Throughout the world, including in the U.S., heart disease continues to be our #1 cause of death. For those of us 50 years and older, the prevalence of heart disease has declined. So, that's good. But for younger people (that's you, 40's and under), Li et al. describe an *increase* in coronary heart disease.

Uh oh.

One of the proposed drivers for this increase in heart disease is the alarming rise in metabolic dysfunction-associated steatotic liver disease (MASLD), a fatty liver disease we covered a couple of weeks ago. As shared by Driessen et al., it ends up that MASLD and heart disease are intricately linked. In addition to both conditions having shared risk factors (like, insulin resistance and type 2 diabetes), there is evidence that MASLD can both cause and worsen heart disease.

For these reasons, it has become more important than ever to protect our long-term metabolic, liver, and heart health.

So, how does C15:0 help support our heart health?

As an essential fatty acid, numerous studies have shown how C15:0 can protect our heart health. For example, C15:0:

- **Supports healthy cholesterol levels.** From early studies in models of cardiometabolic health to Chooi et al.'s clinical trial with humans, C15:0 has been shown to lower LDL cholesterol levels.
- **Lowers proinflammatory cytokines.** Cytokines (like IL-6, TNFα, and MCP-1) ramp up our immune responses, which can impair vascular function. C15:0 has been repeatedly shown to calm these cytokines to protect our vessels.
- **Maintains healthy glucose control.** As we shared last week, C15:0 can help support healthy glucose and insulin control, thanks to its ability to activate AMPK and AKT. This supports not only our metabolic health, but our heart health, too.
- **Protects liver health.** By protecting our liver against the effects of nutritional C15:0 deficiencies and ferroptosis (as described two issues ago), C15:0 also protects our hearts.
- **Strengthens red blood cells.** One of C15:0's core roles is to strengthen cells, including our red blood cells. Robinson et al.'s clinical trial showed that C15:0 supported higher, healthier hemoglobin levels (a core biomarker of red blood cell health). Tanaka et al. have shown that people who have healthy red blood cells are stronger (aka less frail) and have healthier hearts.

Thus, C15:0 has multiple mechanisms that directly support our heart health. This explains why meta-analyses, including a large study by Trieu et al., have repeatedly shown that people with higher C15:0 levels have better long-term heart health.

Hungry for more science? Well, a deep dive into the studies and heart health benefits of C15:0 are provided in *The Longevity Nutrient*.

Next up, profiling a new cell killer - and how C15:0 keeps us safe.

Next week, we'll dive deep into the importance of C15:0 in protecting each and every one of our cells against a new cell killer: ferroptosis (thank you, C15:0).

In the meantime, have a wonderful week, everyone!

Dive deeper into the science

READ THESE STUDIES

- Ahmad et al. The leading causes of death in the U.S.
- Lee et al. Prevalence and trends of coronary heart disease in the United States.
- Driessen et al. Metabolic dysfunction-associated steatotic liver disease and the heart.
- Venn-Watson et al. Efficacy of dietary odd-chain saturated fatty acid pentadecanoic acid parallels broad associated health benefits in humans: could it be essential?
- Chooi et al. Effect of An Asian-Adapted Mediterranean Diet and Pentadecanoic Acid: The TANGO Randomized Controlled Trial.
- Zhang et al. Pro-inflammatory cytokines and heart health.
- Fu et al. C15:0 activates AMPK.
- Bishop et al. C15:0 activates AKT, regulates glucose, and improves insulin sensitivity.
- Venn-Watson S. The Cellular Stability Hypothesis: Evidence of Ferroptosis and Accelerated Aging-Associated Diseases as Newly Identified Nutritional Pentadecanoic Acid (C15:0) Deficiency Syndrome. Metabolites. 2024; 14(7):355.
- Venn-Watson et al. C15:0 as an essential fatty acid that activates PPARα/δ.
- Venn-Watson, S. The Cellular Stability Hypothesis and evidence of C15:0 nutritional deficiencies.
- Robinson et al. C15:0 Supplementation in Young Adults at Risk for Metabolic Syndrome: A Randomized Controlled Trial.
- Tanaka et al. Links between red blood cell health, heart health, and physical strength.
- Trieu, K. et al. Biomarkers of dairy fat intake, incident cardiovascular disease, and all-cause mortality: A cohort study, systematic review, and meta-analysis.
- Nerd out on all the C15:0 science at DiscoverC15.com