C15:0 & Your Heart Health

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Welcome to Issue 35 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 [illegible]n-Watson, our co-founder and Navy physician, is reading.

HEALTHY AGING

C15:0 ❤️ You

Valentine's Day is in a few days and we're well into American Heart Month, so we're dedicating this week's Science Says issue on the latest and greatest science around C15:0 & healthy hearts.

More than just a crush.

A growing body of science has shown that the relationship between higher C15:0 and healthier hearts is more than just a crush. This is a long-term friendship.

Before sharing the science, however, it is important to note that **supplements are not intended to prevent, treat, manage or cure any disease** - including heart disease. Your health is our tip-top priority, and we always recommend that anyone with an underlying condition consult their doctor before starting any new supplements.

Okay, back to the science:

- In a meta-analysis by Trieu et al, including 18 cohort studies that followed over 15,000 individuals, people with higher C15:0 levels were less likely to develop cardiovascular disease.
- In a separate meta-analysis by Liang et al, including 13 studies with over 7,500 cardiovascular disease patients, higher C15:0 levels were associated with a lower risk of heart failure. A more recent study by Djousse et al. repeated this finding.
- Higher blood and adipose tissue C15:0 levels are both linked to a lower risk of first myocardial infarction in papers by Biong et al. and Warensjo et al.
- In their prospective cohort study following over 25,000 people for 13 years, Khaw et al. showed that people with higher C15:0 levels were less likely to develop coronary heart disease.

In summary, a growing number of studies have shown that higher C15:0 in our bodies is tied to healthier hearts. Further, other studies have helped to elucidate how C15:0 supports our heart health.

A deeper dive into the *how*.

There are many ways to protect our heart health, including maintaining healthy cholesterol and triglyceride levels, blood pressure, and glucose levels. Importantly, higher C15:0 levels have been associated with all of these.

Specifically, higher C15:0 is correlated with:

- **Healthy lipid panels.** In a prospective study following nearly 16,000 people in eight countries, higher C15:0 was correlated with lower total cholesterol, triglycerides, ApoA1 and ApoB.
- **Healthy glucose levels.** Higher C15:0 is also associated with healthier fasting glucose and healthier glucose tolerance.
- **Healthy blood pressure.** A study involving over 3,000 people between the ages of 24-39 years old showed that higher circulating C15:0 is associated with a lower risk of elevated blood pressure.

That's encouraging science. Now, let's move from association to causation.

Association is fine, but causation is better. Here's how C15:0 protects your heart.

All of the encouraging studies above associate higher C15:0 to better heart health.

This is where we dive into what C15:0 does at the cellular level. Not a big surprise, but C15:0's essentiality to promoting our whole body health, including our hearts, centers around our cells and proper cellular signaling.

Here's how:

- **C15:0 is a PPAR–α agonist to lower triglycerides.** C15:0 activates PPAR-α (alpha) receptors, which can lower serum triglycerides. In fact, one of the most commonly used molecules to lower triglyceride levels, called fibrates, works by activating PPAR-α.
- **C15:0 is a PPAR-δ agonist to protect your heart.** Being the overachiever that it is, C15:0 also activates PPAR-δ (delta) receptors, which are heart-protective. People with impaired PPAR-δ signaling have a higher risk of heart disease, and C15:0's activation of these receptors can help the heart function properly.
- **C15:0 activates AMPK.** C15:0 activates AMPK, which is an energy regulator in our cells that helps our heart cells stay healthy (and alive).
- **C15:0 repairs mitochondria.** Brown et al. argue that if we can repair our mitochondrial function, we can repair our heart function. Because C15:0 can restore mitochondrial function, it may play an important role in protecting our heart function, too.

So, enjoy today's big game and this week's Valentine's Day (and all the goodies that go along with them). Then, back to protecting your and your loved one's heart health so that we can all enjoy many (many) more days of football and chocolates.

Happy American Heart Health Month, everyone!

Dive deeper into the science

READ THESE STUDIES

- Meta-analysis: C15:0 & heart health (Trieu et al.)
- Meta-analysis: C15:0 & heart health (Liang et al.)
- C15:0 & heart health (Djousse et al.)
- C15:0 & heart health (Biong et al.)
- C15:0 & heart health (Warensjo et al.)
- C15:0 & heart health (Khaw et al.)
- C15:0 & healthy lipid panels
- C15:0 & healthy glucose
- C15:0 & healthy blood pressure
- C15:0 as a PPAR activator
- PPAR alpha agonists for heart health
- PPAR delta agonists for heart health
- AMPK activation for heart health
- C15:0 activates AMPK
- Mitochondrial function for heart health
- C15:0 repairs mitochondria
- Check out all the C15:0 science at www.discoverC15.com