The Washington Post Feature: NAFLD's Impact on Our Longevity

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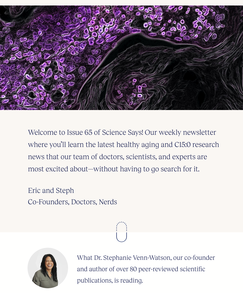

Welcome to Issue 65 of Science Says! Our weekly newsletter where you'll learn the latest healthy aging and C15:0 research news that our team of doctors, scientists, and experts are most excited about—without having to go search for it.

Eric and Steph
Co-Founders, Doctors, Nerds

What Dr. Stephanie Venn-Watson, our co-founder and author of over 80 peer-reviewed scientific publications, is reading.

HEALTHY AGING

Younger people are getting older-people conditions

This past week, The Washington Post published results from a year-long investigation into why our lifespans have been *decreasing* since 2014. The primary culprit? An alarming rise in deaths caused by chronic illnesses in younger and younger people - including nonalcoholic fatty liver disease (also called NAFLD).

This week, let's talk about ***The Washington Post's in-depth feature on our compromised longevity, the role of NAFLD, and their call-out of hope with our C15:0 studies.***

Big picture first: We're dying earlier than we should.

Here in the U.S., we have super fancy science, hospitals, and doctors. Through billions of dollars poured into advancing promising biotechnologies at prestigious institutions, we are attempting to biohack our way to live 200+ years.

But there's a glitch. Since 2014, life expectancy of Americans has been steadily *decreasing*. That means not only are we not getting older, we are dying earlier. This fact is the focus of The Washington Post's front-cover health story from October 3rd entitled *America's life expectancy crisis: An epidemic of chronic illness is killing us too soon.*

Yikes. Which chronic illnesses are they talking about?

Not surprisingly, for those of us between 35 and 65 years old, heart disease and cancer continue to be our top two causes of mortality. What is more surprising... two chronic diseases that have risen quickly as causes of death since 2000: diabetes and liver disease. Not only have these conditions increased - they are getting to us at younger and younger ages. Enter, nonalcoholic fatty liver disease (NAFLD).

Okay, what is NAFLD again?

NAFLD is a metabolic liver disease involving excessive fat deposition in the liver. This chronic condition can progress to nonalcoholic steatohepatitis (NASH), which includes liver inflammation and cirrhosis. As shared by Teng et al., today, 1 in 3 people have NAFLD, including 1 in 10 children, and this disease is quickly becoming the leading cause of liver cancer and liver transplants. While exercise and diet can help manage this condition, there remains no FDA-approved cure for NAFLD.

Here's the thing. **Not all people who are overweight have excessive fat in their liver.** And as described by Muriel et al., **people who are thin are increasingly being diagnosed with NAFLD.** In The Washington Post deep-dive article by Ariana Cha, entitled *Fatty liver disease was a disease of the old. Then kids started getting sick*, she shares an alarming graph of the rise in NAFLD among most age groups - but especially among kids (0 to 17 years old):

But, why now?

The Washington Post article covers the usual reasons proposed for the rise in NAFLD over the past 20 years, including:

- Pollution and contaminants
- Genetics
- Ultra-processed foods
- Piles and piles of sugar
- Decreased dietary intake of cow's milk

Cha also describes how Dr. Jeffrey Schwimmer, a pediatric gastroenterologist and global NAFLD expert, was intrigued by a different hypothesis - that was coming from dolphins.

Dolphins get NAFLD. And it's not because of sugar and ultra-processed foods.

The Washington Post goes on to share how our co-founder, Dr. Stephanie Venn-Watson, published an article back in 2013 on dolphins with fatty liver disease (aka, NAFLD - since even Navy dolphins don't drink alcohol). Jeff reached out to Steph to find out how dolphins were getting NAFLD. Steph had discovered that healthier dolphins - including those without NAFLD - had higher dietary and circulating levels of C15:0 (pentadecanoic acid).

NAFLD may be a C15:0 nutritional deficiency syndrome.

Since they met 10 years ago, both Jeff and Steph have worked in parallel on extensive studies to pursue the hypothesis that nutritional C15:0 deficiencies may be driving the rise in NAFLD - in dolphins and humans, including children.

Here's what we (and others) have discovered so far:

- When dolphins are provided a higher C15:0 diet (via mullet and pinfish), their metabolism improves, including improvements related to liver health.
- Pure C15:0 activates liver-health supporting PPARα/δ receptors.
- Pure C15:0 calms immune responses and cells that cause tissue scarring.
- Pure C15:0 supports healthy insulin and glucose handling, including in liver cells.
- Daily supplementation with pure C15:0 protects liver health in a relevant model.
- Children with higher C15:0 levels have less fat in their livers.
- Adults with higher C15:0 levels have healthier livers.

While studies are still early on whether fixing nutritional C15:0 deficiencies can stem the NAFLD pandemic, they continue to support that C15:0 is an essential nutrient that protects our long-term liver health... and dolphins, too.

Next up, an important clinical trial.

Dr. Schwimmer recently completed an independently led, randomized, double blinded and placebo controlled clinical trial in young adults from his clinic to evaluate potential physiologic benefits of pure C15:0 (aka fatty15) supplementation, including liver health. It is hoped that this study will get the world closer to a safe and practical way to keep our (and our kids') livers healthy for a long, long time.

So, stay tuned, and have a great week, everyone!

Dive deeper into the science

READ THESE STUDIES

- Achenbach et al. America's life expectancy crisis: An epidemic of chronic illness is killing us too soon
- Teng et al. Global incidence and prevalence of NAFLD
- Muriel et al. Nonalcoholic fatty liver disease development in normal-weight individuals
- A.E. Cha Fatty liver was a disease of the old. Then kids started getting sick
- Venn-Watson et al. Hemochromatosis and fatty liver disease in bottlenose dolphins
- Venn-Watson et al. Higher C15:0 diet improved health in dolphins
- Venn-Watson et al. C15:0 mechanisms and activities related to liver health
- Bishop et al. C15:0 promotes insulin-regulation in liver cells
- Fu et al. C15:0 promotes insulin-stimulated uptake
- Sawh et al. Higher C15:0 is inversely associated with liver fat in children
- Yoo et al. Fatty acids & NASH: Focus on C15:0
- J.B. Schwimmer. C15:0 supplementation in young adults at risk for metabolic syndrome (Registered Clinical Trial NCT04947176)

- Check out all the C15:0 science at discoverC15.com