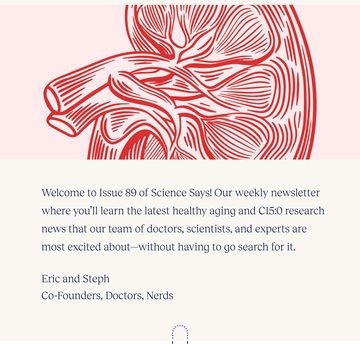
Cognition, Kidneys & Cancer

June 9, 2024



Welcome to Issue 89 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

C15:0's relevance continues to broaden

While perusing the latest science on C15:0, we found two exciting preprints and one new peer-reviewed paper on three different topics: cognition, kidney stones, and bladder cancer. It's important to note that ***the two preprint papers have not yet completed the full peer review process***, but we thought it would be good to share some initial findings while we await their graduation to official peer-reviewed publications.

Moms with higher C15:0 levels have kiddos with better overall cognitive development.

A team from France and Singapore evaluated 1,200 mother-child pairs as part of a long-term prospective cohort study called EDEN. Impressively, this study has followed moms from the end of their first trimester of pregnancy through their kids turning 18 years old.

In this study preprint, Yuan et al. found that moms with higher C15:0 in their red blood cell membranes during pregnancy and higher C15:0 in their colostrum after pregnancy had children with better language abilities by age 3 and better overall cognitive development at ages 3 and 5 to 6 years old. Amazing!

Higher C15:0 levels are associated with happier kidneys.

In a cross-sectional study, data collected from over 4,000 people during 2011 to 2014 were analyzed to test for potential links between C15:0 levels and kidney health. At this point, you're probably not surprised to hear that Chen et al.'s preprint showed the following: people with *higher* C15:0 blood levels had a *lower* risk of developing kidney stones.

In fact, for every single unit rise in circulating C15:0 levels (with a unit being 1 μM C15:0), there was a 2% decrease in kidney stone risk. For reference, the average healthy person has C15:0 levels of around 20 μM (or 5 μg/ml or 0.2% of total fatty acids). Here's another important point from this preprint: the most significant associated protective effects of C15:0 were among people with type 2 diabetes. This suggests that prior links between higher C15:0 and lower risks of type 2 diabetes extend to diabetes-related complications, such as kidney stones.

There are associations between C15:0 and healthier bladders, too.

Finally, a peer-reviewed study was published in the *Journal of Dairy Science* last month, which compared risks of bladder cancer among around 400 participants, based on a variety of different saturated fatty acids in red blood cell membranes.

What did Teng et al. find? Well, they found that higher levels of C18:0 were associated with an *increased* risk of bladder cancer. In contrast, higher circulating levels of C15:0 and C17:0 were associated with a *lower* risk of bladder cancer. Similar to the kidney stone study above, there was a linear relationship between higher C15:0 and lower risk of disease.

Specifically, people with C15:0 red blood cell membrane levels less than 0.08% of total fatty acids had a higher risk of bladder cancer, while those with the highest C15:0 levels (0.15%) had the lowest risk. As a result of this study, the authors propose that measurements of C15:0 and C17:0 may be useful to help determine one's risk of bladder cancer.

A couple of important points.

Important Point #1: All three studies above evaluated *associations* between circulating C15:0 and better health, and more studies need to be done to test whether C15:0 plays an active role in these particular aspects of cognitive, kidney, and bladder health.

Important Point #2: While we are always excited to share the latest C15:0 science, it is good to remember that supplements are not intended to prevent, manage, treat, or cure any disease. If you have an underlying condition, we always recommend that you check with your physician before starting any new supplement regimen. A good place to start is to have your physician visit DiscoverC15.com.

2024 is promising to be yet another big year for new C15:0 science, and we'll keep you up to date here at *Science Says!* Have a wonderful week!

Dive deeper into the science

READ THESE STUDIES

- Yuan et al. Associations between perinatal biomarkers of dairy fat intake and child cognitive development: result from the EDEN mother-child cohort.
- What is EDEN?
- Chen et al. Serum levels of pentadecanoic acids and heptadecanoic acids correlate with kidney health: Evidence from NHANES 2011-2014.
- Teng et al. C15:0 and C17:0 partially mediate the association of milk and dairy products with bladder health.
- Nerd out on all the C15:0 science at DiscoverC15.com.