# C15:0 Boosts a Gut Longevity Superhero

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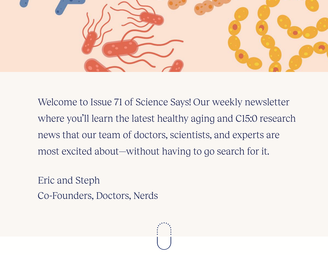

Welcome to Issue 71 of Science Says! Our weekly newsletter where you'll learn the latest healthy aging and C15:0 research news that our team of doctors, scientists, and experts are most excited about—without having to go search for it.

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

## Meet *Bifidobacterium adolescentis*, a healthy gut overachiever

Last week, we shared exciting results of a clinical trial published in the *American Journal of Clinical Nutrition*, which showed that C15:0 supplementation lowered LDL cholesterol and total fat mass - even above and beyond caloric restriction.

This week, we're covering another important finding from this study: C15:0 boosted a gut superhero, *Bifidobacterium adolescentis*.

**Amazing! Wait, what is *Bifidobacterium adolescentis*?**

Our gut contains many (many) bacteria, which make up our microbiome. When we have the right mix of bacteria, these microbes happily churn out biochemicals that help to keep our gut and whole body balanced. One healthy probiotic bacterial group is called *Bifidobacterium*. Among different members of this group is *Bifidobacterium adolescentis*.

**So, what's special about *Bifidobacterium adolescentis*?**

This bacterium is a fabulous gut buddy. And like a good buddy, it's there to help on multiple fronts, including:

**Restoring metabolic homeostasis of the gut microbiome.** Studies by Chen et al. have shown that naughty diets which cause type 2 diabetes concurrently decrease the nice bacteria, including *B. adolescentis*. When *B. adolescentis* is actively delivered to the gut, healthy bacterial populations are restored - as are improved glucose control, insulin sensitivity, cholesterol levels, and pancreatic and liver health (at least in mice).

**Making a great brain calmer.** Duranti et al. review studies showing associations between *B. adolescentis* and lower risks of depression and anxiety. They then went on to prove that *B. adolescentis* is a "key member of the gut microbiota in the production of GABA" (gamma-aminobutyric acid), a natural chemical used by our brains that makes us feel calmer. Association, meet causation.

**Improving gut lining integrity and function.** By improving the integrity of our gut lining, lowering pro-inflammatory cytokines, and rebalancing healthy microbiota, Fan et al. showed how *B. adolescentis* helps to keep our gut calm.

**Supporting healthspan and lifespan.** As reviewed by Chen et al., *B. adolescentis* effectively extends both healthspan and lifespan in multiple species, in part by scavenging harmful oxidative radicals via an enzyme called catalase.

Pretty impressive resume, eh?

### C15:0 supplementation increases *Bifidobacterium adolescentis* in a clinical trial.

Give a man a fish, and you feed him for a day. Teach a man to fish, and you feed him for a lifetime. This holds true for our healthy gut microbiota, too. Take a probiotic, and you feed your gut for a day. Teach your gut how to make its own healthy microbiota, and you benefit for a lifetime.

While the world of probiotics has been compelling, the science supporting various types of bacteria in various people with various microbes has been mixed. And it's no wonder, right? The microbiome is crazy complicated.

Chooi et al.'s recently published randomized controlled clinical trial with C15:0 supplementation showed that - above and beyond the benefits of caloric restriction and the Mediterranean diet, C15:0 supplementation effectively lowered "bad" LDL cholesterol and total fat mass (which we covered in last week's *Science Says!*).

The added finding of this clinical trial that C15:0 supplementation resulted in higher levels of *Bifidobacterium adolescentis* is particularly exciting. Why? Well, it shows that C15:0's role as an essential fatty acid - in addition to strengthening our cells, repairing our mitochondria, and restoring core cellular signaling throughout our body to enhance our healthspan and lifespan - is to help reset and rebalance our gut microbiome, in part by enabling *Bifidobacterium adolescentis* to thrive. Essential, indeed.

We'll continue to keep you updated on the latest and greatest C15:0 and healthy aging science right here at *Science Says!* In the meantime, have a great week, everyone!

## Dive deeper into the science

### READ THESE STUDIES


- Chooi et al. Randomized controlled clinical trial of an Asian-adapted Mediterranean diet and pentadecanoic acid on metabolic health indices
- Chen et al. Bifidobacterium adolescentis supplementation ameliorates visceral fat accumulation and insulin sensitivity in an experimental model of the metabolic syndrome
- Duranti et al. Bifidobacterium adolescentis as a key member of the human gut microbiota in the production of GABA
- Fan et al. B. adolescentis ameliorates chronic colitis by regulating Treg/Th2 response and gut microbiota remodeling
- Chen et al. Bifidobacterium adolescentis regulates catalase activity and host metabolism and improves healthspan and lifespan in multiple species
- Venn-Watson et al. C15:0 as a leading longevity-enhancing molecule
- Check out all the C15:0 science at discoverC15.com