How to keep our brains healthy

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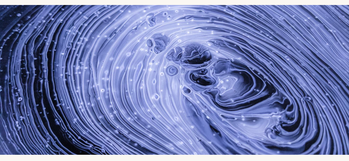

Welcome to Issue 10 of Science Says! Our weekly newsletter where you'll learn the latest healthy aging and C15:0 research news that our team of doctors, scientists, and experts are most excited about—without having to go search for it.

Eric and Steph
Co-Founders, Doctors, Nerds

What Dr. Nik Schork, our Lead Scientist and author of over 300 peer-reviewed scientific publications, is reading.

HEALTHY AGING

Here are 13 ways to improve your brain health today

Over the past couple of months, we focused on the science of aging, including key hallmarks that define how our body breaks down over time. This week, let's turn to the latest science on health, specifically brain health.

First, what is health?

While health is often defined as the absence of disease, an extensive review by Lopez-Otin and Kroemer in the journal, *Cell*, challenges the world to think of health more holistically. Specifically, health should be contemplated as our level of mental and physical fitness. In this paper, eight Hallmarks of Health are covered that define optimized fitness, all of which are intricately interconnected.

This point of view - in which health is not simply an antonym of disease - is shared in a paper by Chen et al. as it relates to brain health.

Okay, so what is brain health?

Good question. In fact, the medical and scientific worlds are yet to agree upon a single definition of brain health. That's why Chen et al. took on the task of reviewing the literature, conducting an international survey among brain experts across different cultures and languages, and looking for common themes between these two tasks to propose a consistent way to define brain health.

In summary, the authors conclude that brain health is a life-long state of cognitive, emotional and motor domains underpinned by physiological processes. This definition is close to the World Health Organization's definition, which states that 'health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.'

Bottom line: Brain health is important at every stage of our life, which encompasses our physical, mental, and emotional health.

A dozen ways you can improve your brain health *today*.

This broadly encompassing definition of brain health means that anyone can improve their health at any point of their life. In their 2020 report, The *Lancet* Commission proposes twelve feasible actions that can protect brain health, and even reduce 40% of worldwide dementia cases. Many of these are feasible actions that can be taken today:

- Prevent and address hypertension, hearing impairment, depression, diabetes, and traumatic brain injury
- Maintain a healthy body weight
- Stay physically active
- Maintain social contact
- Stop smoking
- Avoid excessive alcohol consumption
- Minimize exposure to air pollution
- Increase access to education

Plus one more: C15:0 & brain health.*

Here's where C15:0 comes in. Numerous peer-reviewed studies have linked higher circulating C15:0 to better health, including healthy hearts, blood pressure, and metabolism - all of which also support good brain health. Additionally, a recent paper published in *PLOS ONE* showed that C15:0 can support mental health, too.

Perhaps most exciting are studies looking at C15:0 and aging-related breakdown in the brain. Fonteh et al. linked higher C15:0 levels to a lower risk of having Alzheimer's disease. This finding is supported by a separate study published in Neuroscience Letters, which showed that mouse models of Alzhiemer's disease had lower C15:0 levels in their cerebral cortex compared to healthy mice. Based on this finding, the authors conclude that "...the potential importance of odd carbon fatty acids [to brain health]...needs further study."

Stay tuned for more science on C15:0's role in supporting whole-body health - brain health included.

Dive deeper into the science

READ THESE STUDIES

- Hallmarks of health
- Defining brain health: a concept analysis
- Lancet Committee recommendations for protecting brain health
- Summary of C15:0 peer-reviewed publications
- C15:0 and brain health: supporting mental health
- Higher free fatty acid C15:0 in CSF linked to better brain health in humans
- Higher C15:0 in cerebral cortex linked to better brain health in mice