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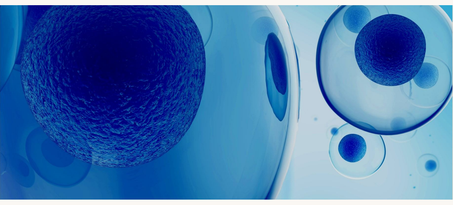
How to Slow Aging, Part I

Reset our DNA Repair Shop

May 22, 2022



Welcome to Issue 2 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 co-founder and a global leader in healthy aging and longevity, is reading.

HEALTHY AGING

Our Ability to Slow Down Aging is Becoming a Reality

It was once treated like science fiction. Now it's getting closer and closer to reality. With a growing understanding of how we age and interventions that can target these processes, science is becoming more serious about taking steps to slow aging and lengthen how long we can stay healthy (aka, our healthspan).

A summarized list of anti-aging mechanisms was recently published in a peer-reviewed paper in *Trends in Endocrinology & Metabolism*. This paper is so extensive that we are going to take the next five Science Says issues to highlight some of the most exciting avenues that scientists are pursuing to slow aging and help us enjoy more healthy years.

This week, let's talk about **epigenetics.**

Simply put, epigenetics involves the adaptation of our genes to the world around us. While many of us think of DNA as our hard-coded selves, our genes can actually be influenced based on how we live our lives.

The good news is that this adaptation of our genes can help our bodies adjust appropriately to our environment. The bad news is that this process can become dysregulated, leading to epigenetic-driven diseases and accelerated aging. The back-to-good news is that the science world is figuring out how to target this dysregulation, enabling a sort of DNA reset.

As you can imagine, our ability to continuously repair our DNA is critical to maintaining *whole-body health* - from our muscles to our hearts, to our brains. As we age, our DNA repair shop starts shutting down - and the primary culprits for this shut-down are called histone deacetylases (or, HDACs).

Excitedly, small molecules have been discovered that inhibit HDACs and enable our DNA repair shops to get back to work. These HDAC inhibitors have shown a lot of promise, including stemming age-related breakdown, reversing heart and metabolic disease states, stopping cancer cell growth, and even increasing longevity.

Science fiction question: If we could repair our DNA infinitely, would we live forever?

While promising, the science is still early, so stay tuned!

Did you know that C15:0 is an HDAC inhibitor?

Given the emerging role of odd-chain saturated fatty acids as healthy fats, a research team in South Korea tested five of these fats (C5:0 to C15:0) for HDAC-inhibiting powers. They found that C15:0 had the strongest HDAC-inhibiting properties, supporting that C15:0 has natural DNA-repairing superpowers.

Dive deeper into the science

READ THESE STUDIES

- Targeting aging mechanisms: pharmacological perspectives
- From molecular promise to preclinical results: HDAC inhibitors in the race for healthy aging drugs
- Odd-chain fatty acids as novel histone deacetylase 6 (HDAC6) inhibitors