

VOLUME 01 • ISSUE NO.03

NEW HORIZONS



THE NINE HALLMARKS OF AGING:

Can we turn back time?

NATURE'S GOLD MEDICINE:

The power of raw honey.

REMINERALIZE YOUR SMILE:

Diving into the mineral reservoir hydroxyapatite.

PERFORMANCE ON THE MIND:

The benefits of creatine supplementation on brain function.



Welcome back my friends, it is time to kick back bask in the visual and mental indulgence of Soul issue 3.

This is a special vacaton edition that starts off with reviewing the nine hallmarks of aging and what impacts they have on our long term health. Aging is something that is unfortunately unavoidable but with some lifestyle hacks we can all do it together gracefully.

In my opinion the greatest impact that often times goes unnoticed are environmental factors. Most understand the importance of diet and exercise on general health but what about environmental quality? Air and drinking water are obvious ones but what about the constant onslaught of perfumes and chemicals from personal care and cleaning products that have become common nature. These things are relatively new to our lifestyles. It's time to Reconnect With Real.

Continuing the personal care crusade we cover hydroxyapatite and how it can be utilized as a powerful biomimetic alternative to fluoride based dental care.

Then we jump into natures original superfood and super fuel, Raw Honey. A gift from the Gods and used for centuries for so many notable causes. Our ancestors would risk their lives to obtain such a small amount, we can just walk into our nearest farmers market.

Finally we do a brief review of a study covering the the benefits of creatine supplementation on brain function. A long time and well known supporter of athletes, creatine has been coming more into recent spotlight as a nutrient for brain health.

Till next time my friends...

-Matt

EXPLORE

A narrow alleyway between yellow buildings leading to a lake and mountains. The scene is viewed through an arched opening at the top. The buildings are bright yellow with dark shutters and pipes. A white door is open on the left, leading to a set of stairs that go down to a blue lake. In the distance, there are mountains under a clear sky. A white lace cloth hangs from a balcony on the right.

**“WHY DO YOU
STAY IN PRISON,
WHEN THE DOOR
IS SO WIDE
OPEN?”**

-Rumi

Hallmarks of Aging

As we age, our bodies undergo a series of intricate changes, both at the cellular and molecular levels. To shed light on these changes and offer insights into potential preventative actions, scientists have identified what they call the "Nine Hallmarks of Aging." These hallmarks represent the core processes that underlie aging and the development of age-related diseases. Let's dive into the nine hallmarks.

Genomic Instability

Our first hallmark, is a phenomenon where genetic mutations and damage to DNA accumulate over time. DNA serves as the blueprint of life, and its integrity is crucial. While our cells possess sophisticated DNA repair mechanisms, they become less efficient with age, leading to an increased risk of mutations and age-related diseases, one notably is cancer.

Telomere Attrition

Imagine telomeres as the protective sheath on the outside of wire, ensuring it does not fray. Telomeres play a

similar role for our chromosomes. They naturally shorten with each cell division, and when they reach a critical length, cells can no longer divide. Telomere length is often considered a cellular "biological clock," and is thought to contribute to the aging process.

Epigenetic Alterations

Epigenetics refers to changes in gene expression patterns without altering the DNA sequence itself. Over time, epigenetic alterations can disrupt the normal functioning of cells, contributing to aging. Deciphering these epigenetic changes offers a promising avenue for understanding and potentially influencing the aging process.

Loss of Proteostasis

Maintaining protein balance, or proteostasis, is vital for cell health. As we age, our cells' protein quality control mechanisms become less effective. This can lead to the accumulation of misfolded proteins, a hallmark feature of neurodegenerative diseases.

Deregulated Nutrient Sensing

Cells have intricate mechanisms to sense nutrients and adjust their metabolism accordingly. However, these nutrient-sensing pathways can become dysregulated with age. This can lead to metabolic dysfunction, insulin resistance, and a heightened risk of conditions like diabetes.

The powerhouses of our cells

Mitochondrial Dysfunction

Mitochondria, also known as the "powerhouses" of our cells, are responsible for energy production. As we age, mitochondrial function can decline, resulting in reduced energy production and increased oxidative stress. These factors are major contributors to the aging process.

Cellular Senescence

This is a state where cells lose their ability to divide and function effectively. These senescent cells can accumulate in tissues, releasing harmful molecules that contribute to inflammation and tissue degeneration. Senolytic drugs are being explored to target and eliminate these problematic cells.

Stem Cell Exhaustion

Stem cells are essential for tissue repair and regeneration. However, with age, the pool of functional stem cells decreases, impairing the body's ability to replace damaged cells and tissues effectively.

Strategies to stimulate, rejuvenate, or even supplement with stem cells have been under constant development for many years.

Altered Intercellular Communication

Aging cells can disrupt the signaling between cells and tissues, leading to chronic inflammation and tissue dysfunction. This contributes to age-related diseases, including cardiovascular conditions. Understanding and modulating these communication pathways could hold the key to healthier aging.

The journey into the realm of the Nine Hallmarks of Aging provides a theoretical roadmap for potential interventions.

Scientists and researchers are constantly exploring various strategies, from genetic manipulation and senolytic drugs targeting senescent cells to lifestyle interventions like calorie restriction.

Without a doubt the most impactful anti-aging strategy is living a lifestyle that incorporates all factors of health. A nutrient dense diet, frequent physical activity, positive mental state, deep community, and environmental factors, such as air and water quality.

While we may not be able to turn back time entirely, this deeper understanding of the science behind aging offers hope for a future where age can remain just a number and we can enjoy longer, healthier, and more vibrant lives.



Unfiltered
Unprocessed
Raw Honey...

POWER OF RAW HONEY

Raw honey, the classic true superfood crafted from bees is more than just a delicious treat. Unlike its processed counterpart, raw honey is not heated, pasteurized, or extensively filtered, allowing it to retain its maximum nutrient goodness. Let's take an in-depth look at raw honey, exploring its composition and health benefits

GOLDEN GOODNESS

Raw honey is a complex mixture of various components, each contributing to its potent qualities. It serves as a natural energy source, thanks to its high carbohydrate content. Approximately 80% of raw honey is composed of natural sugars like glucose and fructose. I have found it to be a great nutrient dense source of nutrition when endurance racing, breaking up the monotony of sugary drinks.

Raw honey contains trace amounts of essential elements that bees collect from the environment. These include magnesium, potassium, calcium, sulfur, phosphorus, iron, zinc, copper, and manganese. While present in small quantities, these elements contribute to its overall nutritional profile.

Several enzymes are naturally present in raw honey. Diastase aids in breaking down complex carbohydrates, invertase converts sucrose into glucose and fructose, catalase helps break down hydrogen peroxide, and glucose oxidase produces hydrogen peroxide and gluconic acid. These enzymes play a role in various biological processes.

Raw honey is also packed with antioxidants including flavonoids, phenolic acids, and enzymes like catalase. These are compounds that can help neutralize harmful free radicals in the body.

NOTABLE ADVANTAGES

Nature's sweet medicines composition gives rise to numerous health benefits that have been celebrated for centuries. Raw honey's natural antimicrobial properties have been well-documented. These properties arise from factors such as the presence of hydrogen peroxide, low pH, and other compounds.

For centuries, honey has been used for wound healing due to its ability to inhibit the growth of certain bacteria. It has also been used as a natural remedy for sore throats and coughs. Additionally, raw honey acts as a prebiotic, promoting the growth of beneficial gut bacteria. A healthy gut microbiome is crucial for proper digestion and overall digestive health.

One interesting belief surrounding raw honey is its potential to alleviate allergies. The theory suggests that consuming local raw honey, which may contain trace amounts of local pollen, can help desensitize the body to allergens over time.

Raw honey, with its unprocessed nature and rich composition, offers more than just sweetness.

It serves as a natural source of energy, antioxidants, vitamins, and minerals. The antimicrobial and soothing properties of raw honey have been appreciated for centuries, while its potential digestive health benefits and role in allergies continue to be areas of interest.

Unrivaled goodness

A gift from the Gods, raw honey can be a delicious and beneficial addition to a nutrient dense diet. So, the next time you savor a spoonful of raw honey, relish in nature's golden gift and appreciate its unrivaled goodness.



Remineralize Your Smile

Hydroxyapatite a bioactive mineral, has emerged a promising compound, capturing attention due to its potential

to impact various aspects of health, particularly in the domains of dental and bone health. Often seen with its particles scaled down to nanosize dimensions as nano hydroxyapatite (nHA), enhancing surface area and increasing bioactivity.

DENTAL HEALTH RENAISSANCE

Research has shown the remarkable potential of hydroxyapatite to facilitate enamel remineralization. Enamel, the outermost shield of teeth, often falls prey to demineralization and cavities.

Hydroxyapatite, acting as a mineral reservoir, assists in the deposition of vital calcium and phosphate ions onto the tooth surface, effectively restoring enamel health and bolstering its resilience against decay. Fluoride be damned.

Japan played a significant role in pioneering hydroxyapatite toothpaste. In the early 70's a Japanese company purchased the rights to synthetic hydroxyapatite from NASA and launched the first ever toothpaste containing the ingredient. From the late 2000's on it has become much more commercially available.

Tooth sensitivity, attributed to exposed dentinal tubules, can be alleviated with the aid of hydroxyapatite. By forming a protective barrier over exposed nerve endings, these tiny particles effectively occlude dentinal tubules, offering relief from sensitivity and elevating overall oral comfort. Its chemical composition closely resembles that of natural teeth and bone mineral, rendering it biocompatible and conducive to seamless integration with existing structures.

Even naturally whiter teeth are a possibility. By adhering to tooth surfaces and filling in microscopic irregularities, nano hydroxyapatite can contribute to the removal of surface stains, presenting a non-invasive or aggressive avenue for achieving a whiter smile.

Biom NOBS original toothpaste tablets are my current favorite option.

THE BENEFITS OF CREATINE SUPPLEMENTATION ON BRAIN FUNCTION

Creatine, a popular supplement among athletes and fitness enthusiasts, has long been known for its potential to improve physical performance. However, a recent study (**PMC8912287**) is continuing to shed light on the lesser-known effects of creatine supplementation on cognitive function, mood, and overall brain health.

What Is Creatine?

Before delving into the study, it's essential to understand what creatine is and how it functions in the body. Creatine is a naturally occurring compound found in small amounts in certain foods, such as red meat and fish. It is also synthesized in the liver, kidneys, and pancreas. Creatine plays a crucial role in energy metabolism, particularly in muscle cells, by helping to regenerate adenosine triphosphate (ATP), the primary source of cellular energy.

Review of Creatine's Effects On The Brain

The study involved a systematic review of existing literature as well as a meta-analysis of randomized controlled trials. The authors hypothesized that creatine supplementation could increase brain creatine content, which may help explain some of the observed benefits. To test their hypothesis, the researchers analyzed data from numerous studies that investigated the effects of creatine supplementation on various cognitive tasks and mood measures. These tasks included tests of short-term memory, intelligence, attention, and executive function.

Improved Cognitive Function and Mood

The results of the study were quite promising. They found that creatine supplementation had a positive effect on cognitive function, particularly in tasks that require short-term memory and intelligence. This suggests that creatine supplementation may help enhance mental performance, especially in situations that demand quick thinking and problem-solving.

Additionally, creatine supplementation was found to have a positive effect on mood, reducing symptoms of depression and anxiety. This is particularly noteworthy, as mood disorders are prevalent and can significantly impact an individual's quality of life.

Potential Mechanisms Behind Creatine's Effects on the Brain

While the exact mechanisms behind creatine's effects on the brain are not yet fully understood, several theories have been proposed. One possibility is that creatine supplementation increases the availability of ATP in the brain, which could enhance neuronal function and overall brain energy metabolism. Another theory suggests that creatine may have neuroprotective properties, helping to protect brain cells from damage and promoting overall brain health.

THE TAKEAWAY

More research is needed to fully understand the mechanisms at play, however the study suggests that creatine supplementation may improve cognitive function and mood. As we continue to learn more about the effects of creatine on the brain, it's exciting to consider the potential impact this supplement could have on our overall well-being.

Reference Study
<https://doi.org/10.3390/nu14050921>



Curation of The Month

Body

Gear up for ultra running:

Shoes

Nike Zegama

Hoka Speedgoat 5

Race Vest

Salomon ADV Skin 12

Socks

Injiji Ultra Run

Underwear

Smartwool

Clothes

Anything comfortable and dry wicking

Mind

Extreme Ownership:

By Jocko Willink and Leif Babin

Environment

Basic countertop water filter I use

Waterdrop Chubby Water Filter Pitcher

A serene landscape at sunset. The sky is filled with vibrant orange and yellow clouds, with the sun low on the horizon. The foreground is a calm body of water, likely a lake or a wide river, which perfectly reflects the sky and the surrounding forest. The forest consists of tall, dark evergreen trees that line both banks of the water. In the lower-left foreground, a large, dark, mossy log or rock sits partially submerged in the water. The overall mood is peaceful and mystical.

As We Sail Into The Mystic