

## **NAD - Fountain of Youth or Future Fizzled Fad?**

**By Lyndsay Palmobit, RN**

### What IS NAD?

Nicotinamide adenine dinucleotide (NAD or NAD<sup>+</sup> which refers specifically to the oxidized state), as it is pharmacologically known, is a coenzyme. It belongs to a promising, but relatively new, class of anti-aging treatments. Scientists have known about NAD for a century, and have been researching its role in age related conditions for more than a couple decades. As a result we know a lot about the role of the coenzyme in cellular function and its promise as a potential treatment for many age-related conditions<sup>1</sup>. To understand how NAD works in the body, we first have to understand coenzymes. A coenzyme is a compound that is required for the functioning of an enzyme. Without going down the rabbit hole of how NAD works with specific classes of enzymes, the important part is that it works on a cellular level to facilitate processes that regulate metabolism, maintain stable chromosomes, and repair damaged DNA. Furthermore, it is essential to the function of mitochondria which generates our cell's energy and creation of new cells. NAD is also involved in repairing damaged DNA, immune system function, and regulating our metabolism and circadian rhythm (sleep-wake cycle)<sup>2</sup>. Click [here](#) to learn more about the basics of NAD!

### The Bad News

While it's easy to see the important role of NAD in our bodies, the reality is that as we age NAD levels decrease. Other factors have also been linked to prematurely decreasing NAD levels include sedentary lifestyle, high fat/high sugar diets, excessive alcohol intake, sunlight exposure, inflammation, and certain immune challenges. It's not the slowed creation of NAD as we age that we have to worry about, it's the increased consumption of NAD. Since NAD is facilitating these important processes within the cell, it is consumed as well. As we age, our body's production of NAD naturally decreases but at the same time the need for NAD likely increases<sup>2</sup>!

### The Good News

We can naturally increase our body's production of NAD. We can do this by engaging in specific activities such as exercising regularly, eating foods rich in NAD precursors (niacin, tryptophan, and riboflavin), intermittent fasting, specific diets (such as low carb), and taking certain dietary supplements (we'll get into this later!). Additionally, avoid sun exposure or wear sunscreen, decrease or eliminate alcohol consumption, and avoid high sugar foods as these are associated with decreasing NAD levels.

### Supplements to increase NAD

Taking NAD orally has not proven, in clinical trials, to provide any benefits or increase overall NAD levels in the body. However, there is more promising research on supplementing with NAD precursors such as Nicotinamide Riboside (NR), nicotinamide mononucleotide (NMN), and the newest addition to the club - dihydronicotinamide riboside (NRH). But which one, how much, and how often? Unfortunately, this is an area still in need of more extensive research and robust clinical trials. While many supplements exist, the evidence isn't completely researched, backed

by clinical trials, providing specific answers and clear recommendations. The research that does exist in this area, appears promising, but without gold standard human clinical trials with evidence based findings it's impossible to make any specific recommendations at this time.

#### Intravenous and Intramuscular NAD

The most effective administration of NAD demonstrated by clinical trials to date is Intravenous (IV) and Intramuscular (IM). IV and IM administration NAD have been shown in clinical trials to provide benefits and demonstrated increased NAD levels in the body, exact protocols and recommendations are still being vetted for treatment of specific conditions. However, there is compelling evidence that suggests IV and IM administration of NAD at specific doses and intervals can benefit general wellness. The possible benefits are numerous, including mental clarity, increased energy, improved recovery following workouts, as well as improvement of skin and metabolic conditions. The longer term effects are not completely known, but researchers are hopeful that it will lead to breakthroughs in the treatment and prevention of neurological and neurodegenerative diseases such as Parkinson's and Alzheimer's disease<sup>3</sup>. To read about other potential anti-aging benefits of IV therapy click [here](#). If you're interested in receiving NAD for general wellness it's recommended that you discuss treatment options with a healthcare practitioner to determine the best plan for you!

Bio: Lyndsay is a seasoned emergency room RN and social media enthusiast with a background in mathematics and previous career as a biostatistician. While she is right at home writing technical articles and white papers, she also enjoys creating informal content like social media posts, reels, and blog posts. Passionate about learning new things and connecting with people through education on health related topics, Lyndsay excels at breaking down complex information into digestible pieces. Throughout her career she has focused on patient education and empowering individuals to make informed health decisions. She is dedicated to personal fitness and improving her own health as well as others.