

# NMN 300

β-NMN - The Most Bioavailable Precursor of NAD+ | VA-169 / VA-992

## Key Features:

- Contains ONLY the **Bio-identical Beta-Form**
- Derived from a series of **enzymatic manufacturing processes** - higher yield & purity than the chemical and fermentation processes
- **Therapeutic dosage (300mg)** in a **Single Capsule**

## Indications:

- Anti-Aging and Longevity
- Mitochondrial Support
- Improves Physical Performance
- Enhances Insulin Sensitivity
- Post-Viral Infection Recovery
- Cardiovascular Support
- Neurodegeneration and Cognitive Decline

## Description:

**NAD+** (nicotinamide adenine dinucleotide) is a co-enzyme that plays a vital role in myriad physiological processes in the body, including mitochondrial biogenesis, cardiovascular protection, neuroprotection, oxidative stress, DNA damage repair, stem cell rejuvenation, and inflammation.<sup>[1]</sup> However, **supplementing NAD+ directly is not a practical way to increase NAD+ levels in the plasma as it is readily degraded to nicotinamide in the digestive tract.**<sup>[2]</sup> Therefore, most research has been focused on the precursors of NAD+.

## NAD+ Precursors: NMN vs. NR vs. Nicotinamide

The 3 most common precursors of NAD+ with potentials to increase cellular NAD+ levels are: nicotinamide, NR, and NMN.

**Nicotinamide mononucleotide (NMN) has garnered much attention in recent years as a potent anti-aging molecule due to its being the most immediate precursor to NAD+.** There is a common misconception that NMN supplements need to be refrigerated, but this is only the case when NMN is mixed into a liquid solution. In its solid

**Quantity: 42 Vegetarian Capsules**

### Ingredients (per capsule):

NMN (β-Nicotinamide Mononucleotide).....300 mg

**Non-medicinal Ingredients:** L-leucine, silicon dioxide, hypromellose (capsule)

**Suggested Use:** Adults - Take 1 capsule, or as directed by your health care practitioner.

form, NMN is very stable. Upon ingestion, **NMN is absorbed very fast (within minutes) and immediately converted to NAD+ when it reaches tissues.**<sup>[4]</sup> Increasing NAD+ levels through supplemental NMN has demonstrated the ability to protect against age-associated diseases such as metabolic disorders, neurodegenerative disease, and age-related physiological decline.

While nicotinamide riboside (NR) is also a NAD+ precursor, it must be converted to NMN before NAD+ can be formed; so NMN is one step further down the pathway to NAD+ synthesis compared to NR. (Figure 1) **NMN is also more stable as NR is rapidly degraded to niacin in the plasma** and, therefore, unable to be utilized by the cells directly.<sup>[3]</sup>

Nicotinamide is the least modified precursor of the three and, hence, often considered the least effective in increasing serum NAD+ concentrations.

In the major biosynthesis pathway for NAD+, nicotinamide is converted to NMN by the rate-limiting enzyme NAMPT. Supplemental NMN is rapidly absorbed in the gut and bypasses this rate-limiting enzyme to increase the body's levels of NAD+. A double-blind RCT of 66 healthy subjects between 40 and 65 years old were given **300 mg NMN daily** or placebo for 60 days.<sup>[6]</sup> At the end of the trial period, the NMN group had a **38% increase in NAD+/NADH levels** compared to baseline, versus a 14% increase in the placebo group.

## Longevity and Anti-Aging

The process of aging is a combination of DNA damage, chronic inflammation, oxidative stress, and an increase in NAD+ consuming enzymes (sirtuins, CD38/CD157, PARP, TNKS and BST), all of which accelerate the degradation of NAD+.<sup>[7]</sup> (Figure

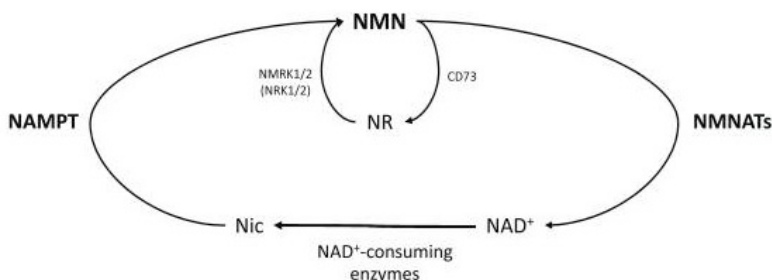


Figure 1. The NAD + biosynthetic pathway from the precursor nicotinamide. <sup>[5]</sup>



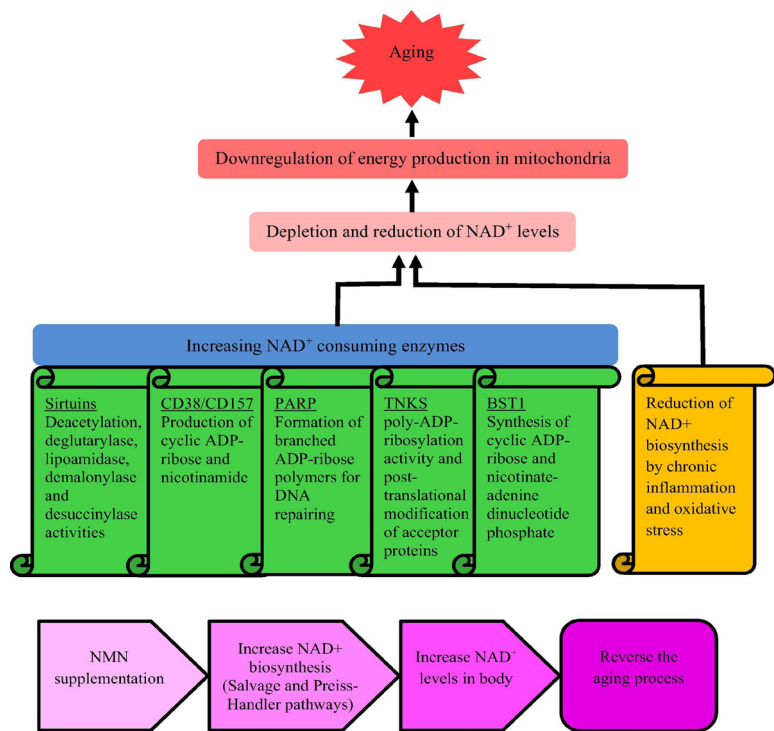


Figure 2. Causes for reducing NAD+ levels when aging and mechanism underlying anti-aging activity of NMN.<sup>[7]</sup>

2) The reduced levels of NAD+ cause downregulation of energy production in the mitochondria, leading to aging and various age-associated diseases. NMN supplementation can reinstate NAD+ levels in the body through biosynthesis pathways, reversing the aging process and preventing age-associated diseases.

Numerous research studies have pointed to a variety of mechanisms underlying the health benefits of NMN, including enhancing cellular energy levels and oxygen utilization, improving insulin sensitivity, supporting mitochondrial function, and helping prevent age-related changes in gene expression.<sup>[8]</sup>

### Potential Clinical Applications Associated with Anti-Aging

- **NMN (>250 mg/day)** is clinically shown to **improve physical performance** (gait speed, grip strength, lower limb function) in elderly individuals,<sup>[9,10]</sup> as well as **aerobic capacity** in runners by enhancing the oxygen utilization (VO<sub>2</sub> and VO<sub>2</sub> max)<sup>[11]</sup>.
- **NMN (250 mg/day)** **enhances insulin sensitivity & restores insulin secretion in islet cells.**<sup>[11,12]</sup>
- Supports **neurodegenerative disorders and cognitive function** by **boosting NAD+ levels, improving the**

**survival of neurons, energy metabolism, and reducing reactive oxygen species.**<sup>[1,13,14]</sup>

- Supports **cardiovascular function by protecting the heart from ischemia/reperfusion<sup>[1]</sup> injury, as well as improving vascular endothelial function.**<sup>[15]</sup>
- Potentials in protection against **post-COVID-19 infection syndrome.**<sup>[16,17]</sup>

Reference:

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