

# NMN – Nicotinamide Mononucleotide

## About NMN

- Nicotinamide mononucleotide, or NMN, is a bioavailable building block for nicotinamide adenine dinucleotide (NAD<sup>+</sup>). NAD<sup>+</sup> is a critical component for over 500 enzymes and is important for a wide range of biological processes.<sup>1</sup>
- Many of the enzymatic reactions that use NAD<sup>+</sup> are among a cell's most important functions, including energy production, DNA repair, oxidative stress and inflammation reduction, and mitochondrial function.<sup>1,2</sup>
- NAD<sup>+</sup> is known to decline with age. This decline has been linked to many aspects of the aging process as well as age-related diseases, including cardiovascular and metabolic diseases.<sup>2,3</sup>
- Supplementation with NMN has been shown to increase NAD<sup>+</sup> levels in human clinical trials. Other precursors require several steps to be converted to NAD<sup>+</sup>, while NMN is only one step away.<sup>4,5</sup>
- A number of benefits have been observed in clinical trials with NMN supplementation. Among women with impaired glucose metabolism, for example, supplementation was shown to improve insulin sensitivity.<sup>6</sup> Supplementation has also been associated with improved exercise (aerobic) capacity in healthy runners, and reduced drowsiness and improved sit-to-stand ability (a marker for muscle function/strength) in older adults.<sup>7,8</sup>
- Supplementation for 12 weeks was also associated with a trend toward reduced arterial stiffness in adults. Arterial stiffness has been associated with the aging process and is an independent risk factor for metabolic and cardiovascular disease.<sup>9</sup>

## How to Use NMN

- Take 1 capsule 2 times per day or as directed by a health care practitioner. Consult a health care practitioner for use beyond 6 weeks.

## Cautions and Contraindications

- Consult a health care practitioner prior to use if you are pregnant or breastfeeding, or have diabetes. Keep out of reach of children.

## Drug Interactions

- No known drug interactions.

PATIENT NAME: \_\_\_\_\_

### PRACTITIONER NOTES:

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## Quick Tips for Optimal Health

- Maintaining healthy diet and lifestyle patterns has been clearly shown to promote healthy aging and reduce the risk of most age-related diseases.
- Perhaps the most well-studied dietary approach is the Mediterranean diet, which is rich in vegetables, fruits, legumes, unrefined cereals, nuts, and olive oil while limiting dairy products, meat, poultry, and saturated fat. Greater adherence to this diet has been associated with a lower risk for many age-related diseases, including neurodegenerative and cardiovascular diseases, as well as all-cause mortality.<sup>10,11</sup>
- The Mediterranean diet and its components have also been shown to improve mitochondrial function and reduce oxidative stress and inflammation, which may underlie its multiple benefits.<sup>12</sup> Many phytonutrients present in plant foods have also been suggested to reduce oxidative stress and improve mitochondrial function, thereby promoting healthy aging.<sup>13</sup>
- Maintaining a healthy body weight is also important to healthy aging, at least in part by limiting inflammation.<sup>14</sup>
- While a low-calorie diet has been shown to be effective in promoting longevity in animal-based trials, it needs to be better established in humans. There is also a concern that a low-protein intake (as part of a low-calorie diet) may have negative consequences for older adults, such as loss of muscle strength/mass.<sup>15</sup>
- Physical activity, including both aerobic and resistance exercise, should be an important foundation for healthy aging. Exercise increases the “health span” (the period of life without disease and with good function) through many mechanisms, while sedentary time is associated with detrimental effects.<sup>16,17</sup>
- Healthy sleep is also connected to a longer health span. In a large cohort with over 300,000 participants, a healthy sleep pattern was associated with a 15% lower risk of a reduced health span.<sup>18</sup>

PRACTITIONER CONTACT INFORMATION:

## References

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