"God gave you a gift of 84,600 seconds today. Have you used one of them to say thank you?"

- ***William Arthur Ward***

This quote seemed especially pertinent for the month in which we celebrate Thanksgiving. That's a great time to remind people to be thankful because with all the craziness life can bring, it's easy to forget to do it. We often tend to count our problems, not our blessings. We also tend to count the blessings of others rather than our own. Thanksgiving is a good time to reflect on all the blessings we've been given and an even better time to cherish them. Charles Dickens once said, *"Enjoy the little things, for one day you may look back and realize they were the big things."* Take a few moments right now to think about all the things for which you are thankful. I'll name a few of mine to get you started:

- I am healthy.
- I am loved.
- I am blessed.

It's pretty obvious that being thankful isn't as easy as it should be. Like anything, we need to work on it to get better at it. It's just like someone who trains for a sport or who works out. You'll never improve without practice and practicing gratitude and thankfulness is certainly a worthy sport. I wrote back in May 2020 about how practicing gratitude can change your life. You can read it here: Gratitude

Moving forward, make it a point to choose gratitude. Make it a point to choose to be loving. Make it a point to be thankful. Make it a point to find some good in any and every situation you're facing. My dad often talked about *"negative emotions."* Gratitude and thankfulness are the antidote for those negative emotions. Start focusing on the things that improve your life and they'll multiply. Remember that it's not the happy people who are thankful. It's the thankful people who are happy.

Yours in health,

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What the Heck is NMN?



I recently learned about an interesting supplement and was so impressed, I started taking it a couple of weeks ago. Nicotinamide mononucleotide, more commonly known as NMN, is essentially a naturally occurring molecule (called a nucleotide) that helps power the body. Nucleotides are one of the building blocks of DNA and play a number of roles in the body. NMN is a derivative of vitamin B3. When it's in your cells, NMN is converted to another molecule known as NAD+ (nicotinamide adenine dinucleotide), which is an essential coenzyme that declines with age. It's critical for the production of cellular energy, the repair of DNA, and the expression of genes. The amount of NAD+ your body can make depends on the amount of NMN that's available. By middle age, NAD+ levels have plunged to half of what they were during youth. Likewise, NMN levels also decrease. This may be one of the reasons that health often declines with age.

All the body's cells use NAD+ and as a result, require NMN to properly function. When ingested, NMN is absorbed quickly into the small intestine and from there, is transported into the cells of the body. Once in the cells, it's converted into NAD+ through the body's pathways, which enables it to bypass the instability issues associated with taking NAD+ directly. This process restores declining NAD+ levels, enabling cells to maintain metabolic function and repair mechanisms. This helps to improve health.

While I'm not a doctor, I can tell you from my own experience and research that there are numerous potential benefits to supplementing with NMN. A few are listed here:

- **Enhances Cellular Health:** Increased NAD+ supports mitochondrial energy production and activates proteins involved in DNA repair, cellular maintenance and stress response.

- **Provides Metabolic and Physical Benefits:** Research suggests improvements in insulin sensitivity, aerobic capacity, muscle strength, and overall physical function in aging adults. NMN seems to activate the metabolic pathways involved in energy metabolism, suggesting it may help regulate blood sugar and utilize energy efficiently.
- **Reduces Drowsiness:** NMN appears to help improve sleep quality, which can subsequently make you feel more awake and energized during the day.
- **Enhances Aerobic Capacity:** Since NMN helps support energy production, it seems to help support physical performance and endurance and decrease recovery times. It appears to improve the way muscles use oxygen.
- **May Protect Against Cancer:** Higher levels of NAD+ may help protect cells against oxidative stress (the cause of a lot of disease) and DNA damage, which are two triggers frequently associated with the development of cancer.
- **May Support Brain Health:** Emerging research is suggesting that MNM may help support healthy brain aging and cognitive function. Researchers have found that supplementing with NMN for 12 weeks significantly raised NAD+ levels in the blood of people over the age of 65. At the same time, it seems to help maintain physical and neurological function associated with brain aging.
- **May Help with Jet Lag:** Some research suggests that NAD+ may help adjust the body's internal clock, which has the potential to help alleviate jet lag.

The website www.pubmed.gov has a number of studies on NMN and its benefits. One interesting study I found showed that *"in mice who were bred to be diabetic or obese, NMN improved the action and secretion of insulin. It also protected the mouse heart, restored skeletal muscle in aging mice, and slowed cognitive decline in a mouse model of Alzheimer's."*[1] An interesting fact was that older mice appeared more responsive to NMN than young mice. Other studies have shown that NMN was able to "*suppress age-associated weight gain, enhance energy metabolism and physical activity, improve insulin sensitivity, improve eye function, improve mitochondrial metabolism and prevent age-lined changes in gene expression."*[1]

In another Harvard study, mice given NMN showed between a 56% and 80% greater exercise capacity, compared with mice given a placebo. The mice taking NMN ran 1.6 times further on average than untreated mice. NMN also restored the number of blood capillaries and density as those seen in younger mice. Blood flow to muscles also increased. I'm sure you're thinking, *"That's great Susan, but what about humans?"* I'm glad you asked. One noted anti-aging researcher, Harvard's David Sinclair, whose research on resveratrol and NAD+ is world renowned, has been conducting human trials. He's taking NMN himself and has stated that his lipid profile has dramatically improved and that he feels more energetic. He also proudly disclosed that although he is nearly 60 years old, his blood markers are closer to those of a 31-year-old. That's pretty exciting! I also found another study, conducted over a two-year period on military special forces members, who are some of the strongest and fittest people in the word. Turns out they were getting the same results as those found in mice. Endurance exploded, strength increased and cognitive scores went through the roof.

Here's how you know NMN is an important supplement that works. Several years ago, there were groups trying to keep NMN from the general public. This group included unelected bureaucrats, drug companies, and even my least favorite governmental agency, the FDA. They clearly had it out for this natural compound your own body makes. Then in 2022, a pharmaceutical company moved to develop NMN as a drug, prompting the FDA to ban its sale as a supplement, declaring that NMN is not a legal dietary ingredient. We all know that no company would be willing to spend millions of dollars on something that doesn't work, right?

Fortunately, the Natural Products Association ("NPA"), a powerful trade association, sued the FDA over its ban of the sale of NMN. Then in August 2024, the NPA filed a complaint in the District Court of DC against the FDA, the Department of Health and Human Services ("HHS") and the directors of both agencies. In its lawsuit, the NPA requested a declaration from the courts that NMN should NOT be excluded from the definition of a dietary supplement and also requested that the Court cease its unlawful retroactive application of the Food, Drug and Cosmetic Act against NMN. Thankfully, the Court granted NPA's request and issued a joint motion to stay the case, meaning the FDA would not be allowed to pursue unauthorized punitive and disciplinary measures of NMN products during the stay. The Court also required the FDA to respond to a citizen petition filed by the NPA and Alliance for Natural Heath, which requested the FDA to determine that NMN is NOT excluded from the definition of a dietary supplement or commit to exercise enforcement discretion regarding the sale of NMN as a supplement. Then in September 2025, the FDA reversed course and concluded that NMN is NOT excluded from the dietary supplement definition. This allowed NMN to stay on the shelfs for consumers to buy. After the course reversal, the NPA filed a notice to voluntarily dismiss (without prejudice) it's lawsuit against the FDA in Federal District Court.

I'm so thankful there are organizations willing to take on these fights. The FDA issued a similar ban in 2022 on the sale of NAC, which was also subsequently reversed thanks again to the NPA. I wrote about NAC in March 2017. You can read it here: Newsletter on NAC

It's possible to get NMN naturally by eating foods such as cabbage, edamame, cucumbers, mushrooms, shrimp, tomatoes, broccoli, avocados and even raw beef. Unfortunately, these natural sources typically contain lower amounts of NMN than supplements and probably don't provide enough NMN to make a big difference in your health. Doses of up to 1,200 mg per

day are considered safe, but it's important to figure out what works best for your body. Be sure to do your own research or talk to a trusted doctor before starting to use it. I personally take 1,000 mg/day and use the product pictured above. Overall, in my humble opinion, NMN is a great supplement if you're looking to increase the cellular levels of NAD+ in your body because it's very well tolerated. Studies on both humans and animals have shown there are minimal side effects, but research as of now is still pretty sparse. Be sure to reach out if you have any questions.

Happy Thanksgiving and have a wonderful month!

[1]Pubmed.com