

## Guillermou

Excellent report by Dr. Mercola on the transcendental importance of NAD in health and the routes to increase it. Nicotinamide adenine dinucleotide (NAD+) increases mitochondrial energy and its deficiency is an essential factor in chronic diseases and aging. NAD+ produces its beneficial effects in multiple pathological pathways, including mitochondrial dysfunction, DNA damage, and oxidative stress, by modulating enzymes such as sirtuins, glyceraldehyde-3-phosphate dehydrogenase, and AP endonuclease. [www.liebertpub.com/.../ars.2017.7445](http://www.liebertpub.com/.../ars.2017.7445) (2018) [journals.lww.com/hnpjjournal/Citation/2021/07000/Nicotinamide\\_Adenine\\_D..](http://journals.lww.com/hnpjjournal/Citation/2021/07000/Nicotinamide_Adenine_D..) (2021)

NAD is highly involved in various metabolic functions, such as glucose and fat regulation, and polymorphisms in these genes have been associated with the development of obesity, type 2 diabetes, cancer, cardiovascular disease. disease and longevity. Nutraceuticals such as resveratrol, quercetin, kaempferol, and curcumin and other therapies such as sirtuin activating compounds, NAD, nicotinamide mononucleotide) are being explored as potential therapies in sirtuin and point to promising treatments to promote metabolic health and reduce obesity and age-related diseases. [journals.lww.com/jaanp/Abstract/2021/05000/Genomics\\_of\\_aging\\_\\_The\\_role..](http://journals.lww.com/jaanp/Abstract/2021/05000/Genomics_of_aging__The_role..) (2021)

NAD+ is a critical metabolic intermediate that serves as an enzyme cofactor in redox reactions, and is also used as a cosubstrate by many enzymes such as sirtuins, adenosine diphosphate ribose transferases, and synthases. Through these activities, NAD+ metabolism regulates a broad spectrum of cellular functions such as energy metabolism, DNA repair, regulation of the epigenetic landscape, and inflammation. NAD+ may have immunomodulatory properties on inflammation with a special focus on multiple sclerosis, inflammatory bowel diseases, and inflammation. [bpspubs.onlinelibrary.wiley.com/.../bph.15477](http://bpspubs.onlinelibrary.wiley.com/.../bph.15477) (2021)

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NAD + improves learning and memory. Secondary endpoints also showed neuroprotective effects of NAD+ in different models of Alzheimer's disease. Proposed neuroprotective mechanisms included, among others, attenuation of oxidative stress, inflammation, and apoptosis, while enhancing mitochondrial function. [link.springer.com/.../s12031-021-01842-6](https://link.springer.com/.../s12031-021-01842-6) (2021) Aging is one of the main pathological factors associated with osteoarthritis. Sirt-1 may be involved in the pathology of degradation of articular cartilage in osteoarthritis, by a mechanism that binds the NAD-dependent deacetylase in Sirt-1 and its modulation by Runx2 in said pathology. [www.oarsijournal.com/.../fulltext](http://www.oarsijournal.com/.../fulltext) (2017)

Quercetin and apigenin increase NAD+ levels through inhibition of the multifunctional protein CD38 that is present in mitochondria, with a Sirt3-dependent mechanism. CD38 levels increase in tissues with age and correlate with decreased NAD [www.timelesslifemag.com/index.php/2016/06/29/quercetin-apegenin-may-sl..](http://www.timelesslifemag.com/index.php/2016/06/29/quercetin-apegenin-may-sl..) (2016 ) [www.sciencedirect.com/.../S1550413116302248](http://www.sciencedirect.com/.../S1550413116302248) (2016) Sirt-1-dependent NAD has an important role in human aging, the metabolic syndrome, chronic inflammation, and other diseases. Sirtuins, when the pattern of cellular metabolism is adjusted to the availability of nutrients, can regulate many metabolic functions related to aging: DNA repair, genome stability, inflammatory response, apoptosis, cell cycle, and mitochondrial functions. In regulating these functions, sirtuins cooperate with many transcription factors, including PGC-1a, NFkB, and p53. [europepmc.org/.../26521204](http://europepmc.org/.../26521204) (2016)

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This study reviews recent advances in the mechanistic understanding of biological aging, focusing on adenosine monophosphate-activated kinase (AMPK), sirtuin 1 (SIRT1), and mammalian target of rapamycin (mTOR) pathways, which are currently considered critical for ageing. We also discuss how these proteins and pathways can potentially interact with each other to regulate aging. [www.mdpi.com/.../htm](http://www.mdpi.com/.../htm) (2021) NAD<sup>+</sup> depends on the family of 7 Sirtuins (SIRT1-7) that have a central role in NAD<sup>+</sup> translation, changes in the regulation of many metabolic regulatory proteins, DNA repair, stress response, chromatin remodeling, circadian rhythm, and other cellular processes.

By mediating such broad functions, sirtuins are regulators for aging and longevity in various organisms. This article reports on associated diseases. NAD<sup>+</sup> BIOSYNTHESIS, AGING, AND DISEASE [f1000researchdata.s3.amazonaws.com/manuscripts/13118/9bc67958-db1a-44f..](https://f1000researchdata.s3.amazonaws.com/manuscripts/13118/9bc67958-db1a-44f..) (2018) NRPT is a combination of nicotinamide riboside and (NAD<sup>+</sup>), found in milk, and pterostilbene, a polyphenol found in blueberries, was administered to a population of 120 healthy adults between the ages of 60 and 80 years. The study consisted of three treatment groups: placebo, a recommended dose, and a double dose group. NAD<sup>+</sup> concentration increased by approximately 40% in the group and approximately 90% in the double administration group, after 4 weeks. [www.nature.com/.../s41514-017-0016-9](http://www.nature.com/.../s41514-017-0016-9) (2017)

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## juststeve

Hey Gui, perhaps this is why babies & younger people are resistant, nearly immune to Covid?

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It is an important reference Just, aging and previous pathologies are the cause of serious Covid. NAD<sup>+</sup> levels decline with age and oxidative stress over time. Also, during aging, decreased function of genes that control circadian rhythm can reduce NAD<sup>+</sup> levels. In the mitochondria of the young, NADH can easily donate its electrons to generate NAD<sup>+</sup>. During the aging process, increased DNA damage reduces NAD<sup>+</sup>, causing mitochondrial dysfunction. [www.ncbi.nlm.nih.gov/.../PMC4112140](http://www.ncbi.nlm.nih.gov/.../PMC4112140) (2014) .[pubmed.ncbi.nlm.nih.gov/22848760](http://pubmed.ncbi.nlm.nih.gov/22848760) (2012) NAD<sup>+</sup> activation of Sirtuins turns on genes that improve metabolism, aid in weight loss, and lower LDL cholesterol. Additionally, niacin and other NAD<sup>+</sup> precursors are being tested as treatments for cardiovascular disease.

Nicotinamide riboside supplementation protected against diet-induced obesity. These animals may also burn fat better, burn more calories, and become more sensitive to insulin. Sirtuins improve glucose levels and glucose homeostasis [www.ncbi.nlm.nih.gov/.../PMC3963134](http://www.ncbi.nlm.nih.gov/.../PMC3963134) (2014) [www.ncbi.nlm.nih.gov/.../PMC4814520](http://www.ncbi.nlm.nih.gov/.../PMC4814520) (2016) SIRT1/NAD<sup>+</sup> is important for the immune system to eliminate pathogens in part through the activation of MHC II. Hypoxia or low oxygen level prevents MHC II from being activated by decreasing SIRT1 activity (oxidized LDL also decreases SIRT1 in macrophages). [academic.oup.com/.../2409095](http://academic.oup.com/.../2409095) (2011)

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As Dr. Mercola reports, CD38 is an enzyme found on the surface of many immune cells, it also consumes about 100 NAD molecules in each cycle of its reaction. CD38 is a cell signaling enzyme involved in sending calcium signals throughout the cell to activate parts of your immune system. The worldwide spread of the SARS-CoV-2 virus revealed specific susceptibilities to the virus among the elderly and those with age-related syndromes. These populations were more likely to experience a hyperimmune response characterized by refractory acute lung disease accompanied by multi-organ failure.

These observations underscore the interplay between the virus, the biology of aging, and the outcomes seen in the most severe cases of SARS-CoV-2 infection. Evidence to support the hypothesis that CD38 plays a central role in altered immunometabolism as a result of COVID-19 infection. The authors discuss a critical but underappreciated trifecta of CD38-mediated NAD, aging, and the COVID-19 immune response and speculate that the CD38/NAD 1 axis is a promising therapeutic target for this disease. [europepmc.org/.../34494892](https://europepmc.org/.../34494892) (2021)

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NAD acts as a cofactor in several oxidation-reduction (redox) reactions and is a substrate for several nonredox enzymes. NAD is critical to a variety of cellular processes, including energy metabolism, cell signaling, and epigenetics. NAD homeostasis appears to be of paramount importance for health and longevity, and its dysregulation is associated with multiple diseases. NAD metabolism is dynamic and is maintained by synthesis and degradation. CD38 dysregulation causes changes in NAD homeostasis and contributes to the pathophysiology of multiple conditions.

Indeed, in animal models, the development of infectious diseases, autoimmune disorders, fibrosis, metabolic diseases, and age-associated diseases, including cancer, heart disease, and neurodegeneration, are associated with altered CD38 enzyme activity.

[pubmed.ncbi.nlm.nih.gov/35138178](https://pubmed.ncbi.nlm.nih.gov/35138178) (2022) This study aimed to assess altered critical metabolic pathways with disease severity in hospitalized patients with COVID-19. The results show that obesity, respiratory rate, blood pressure and oxygen saturation, as well as some analytical parameters and radiological findings, were associated with the severity of the disease. Furthermore, ceramide metabolism, tryptophan degradation, and reductions in various metabolic reactions involving nicotinamide adenine nucleotide (NAD) at the time of inclusion were significantly associated with respiratory severity and correlated with inflammation.

[www.mdpi.com/.../htm](https://www.mdpi.com/.../htm) (2021)

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## juststeve

Gui, I'm wondering if the NAD is different than the Niacin in B vitamin supplement? If so, would taking NAD along with the regular doses of Niacin or b-complex formula be an overload situation?

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Good thought, Just, I understand that individual metabolic processes to produce NAD may be different based on age, disease, and genetics. As Dr. Mercola reports, the "raw materials" or "building blocks" (metabolic precursors) that the body needs to make (synthesis) NAD+: 1.- Nicotinamide riboside (NR) 2.- Tryptophan (L-Trp) 3.- Nicotinic acid (NA; also commonly known as vitamin B3) 4.- Nicotinamide (NAM, also called "niacin without rinse") 5.- Nicotinamide mononucleotide (NMN) Supplementation with NAD+ precursors involved in "recovery pathways" (such as nicotinamide riboside and NMN) is relatively more effective at increasing cellular levels of NAD+ compared to those involved in the "de novo" pathway. This is because the NAMPT enzyme can act as a major limiting factor in NAD+ production.

[www.ncbi.nlm.nih.gov/.../PMC4112140](http://www.ncbi.nlm.nih.gov/.../PMC4112140) (2014) [pubmed.ncbi.nlm.nih.gov/19286518](http://pubmed.ncbi.nlm.nih.gov/19286518) (2009)

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## Buddhi

Except that NAMPT inhibitors have potent anticancer activity in several preclinical models by depleting NAD+ and ATP levels. So there is that. Unfortunately. [www.science.gov/.../nampt+inhibition+reduces](http://www.science.gov/.../nampt+inhibition+reduces) And: "Elevated eNAMPT were reported in several metabolic and inflammatory disorders, including obesity, diabetes, and cancer, while eNAMPT is emerging as a biomarker of sepsis and septic shock." [www.frontiersin.org/.../full](http://www.frontiersin.org/.../full) The reasonable and intelligent question we have failed to ask is can one have too much NAD Plus. A possible speculative attempt at an answer, though not empirical, is we should not go past that which we had at age 20 or so.

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Thank you Buddhi. The metabolism is very complex but the reality is that we must consider adopting natural measures for the prevention and cure of cancer. For example, fasting and exercise increase NAD and are a good treatment against cancer. In addition many phytochemicals enhance NAD and also the transcription factor Nrf2 which is essential for NAD production. [academic.oup.com/.../4688715](https://academic.oup.com/.../4688715) (2004) Natural dietary phytochemicals, such as curcumin and resveratrol, are generally considered the most promising breast cancer preventive agents.

Nuclear erythroid factor-related factor 2 (Nrf2) is a transcription factor that plays a key regulatory role in the expression of multiple antioxidant and anti-inflammatory enzymes, which can effectively suppress excessive accumulation of carcinogens and their metabolites. The transcription factor Nrf2 is essential for the induction of NAD(P)H. Therefore, modulation of Nrf2 by dietary phytochemicals appears to be a promising approach for breast cancer prevention. [pubs.rsc.org/en/content/articlelanding/2022/fo/d2fo00186a/unauth](https://pubs.rsc.org/en/content/articlelanding/2022/fo/d2fo00186a/unauth) (2022) Very important is to consider the warburg effect, the propensity of some cells to metabolize glucose into lactate in the presence of oxygen has been observed for a long time in cancer and other contexts of cell proliferation, but only in the last two decades has it had significant gains . has been done to understand how and why this metabolic transformation occurs. [aacrjournals.org/cancerres/article/81/19/4896/670303/Cancer-Signaling-..](https://aacrjournals.org/cancerres/article/81/19/4896/670303/Cancer-Signaling-..) (2021)

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NRF2 activation makes cells resistant to chemical carcinogens and inflammatory challenges. In addition to antioxidant responses, NRF2 is involved in many other cellular processes, including metabolism and inflammation, and its functions go beyond what was originally anticipated. NRF2 activity is tightly regulated through a complex transcriptional and post-translational network that allows it to orchestrate the cell's response and adaptation to various pathological stressors for the maintenance of homeostasis.

The complex regulatory network of NRF2 activity and its roles in metabolic reprogramming, unfolded protein response, proteostasis, autophagy, mitochondrial biogenesis, inflammation, and immunity. [www.mdpi.com/.../4777](http://www.mdpi.com/.../4777) (2020) Nicotinamide (NAM) is a precursor to vitamin B 3 commonly sold over the counter as a nutritional supplement with anti-aging properties. Accumulating preclinical evidence indicates that NAM also mediates oncopreventive effects against a variety of neoplasms.

Supporting the translational relevance of dietary NAM supplementation, results from a Phase 3 randomized clinical trial demonstrated that oral NAM was safe and efficiently reduced the incidence of new non-melanoma skin cancers and actinic keratoses among individuals of high risk. However, the molecular and cellular mechanisms underlying this ability of NAM to delay carcinogenesis remain to be elucidated, as discussed in this short review. [pubmed.ncbi.nlm.nih.gov/32383227](https://pubmed.ncbi.nlm.nih.gov/32383227) (2021)

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NAD(H) and NADP(H) have traditionally been viewed as cofactors (or coenzymes) involved in a myriad of oxidation-reduction reactions, including electron transport in the mitochondria.

However, NAD pathway metabolites have many other important functions, including roles in signaling pathways, post-translational modifications, epigenetic changes, and regulation of RNA stability and function through NAD protection of RNA. Nonoxidative reactions ultimately lead to net catabolism of these nucleotides, indicating that NAD metabolism is an extremely dynamic process. Indeed, recent studies have clearly shown that NAD has a half-life on the order of minutes in some tissues. [www.sciencedirect.com/science/article/abs/pii/S1550413121001698](https://www.sciencedirect.com/science/article/abs/pii/S1550413121001698)

(2021) NAD<sup>+</sup> precursor transporters and receptors are critical in maintaining cellular NAD<sup>+</sup> levels. The tissue level of NAD<sup>+</sup> is maintained by the balance between NAD<sup>+</sup> biosynthesis and degradation. [www.sciencedirect.com/science/article/abs/pii/S1550413121001698](https://www.sciencedirect.com/science/article/abs/pii/S1550413121001698) (2021)

NAD precursors span pathways in cellular energy, inflammation, metabolism, and cell survival. Several metabolic and neurological diseases exhibit reduced tissue NAD levels, improved lifespan, and lifespan in animal models. Recent studies suggest a causal link between senescence, the age-associated reduction in tissue NAD, and the enzymatic degradation of the NAD precursor (nicotinic acid or niacin, nicotinamide, and nicotinamide riboside) that allowed a better understanding of its role in the cellular homeostasis, including signaling functions. that are independent of their + functions, information continues to evolve about the role of this molecule in health and disease. [www.sciencedirect.com/science/article/abs/pii/S0026049521002237](https://www.sciencedirect.com/science/article/abs/pii/S0026049521002237) (2022)

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Extended-release niacin may have some muscle health benefits after chronic supplementation, as indicated by several molecular markers of mitochondrial biogenesis and muscle strength, although side effects related to flushing are of concern. Nicotinamide riboside supplementation was shown to increase muscle acetylcarnitine after exercise in one study; however, prolonged study duration and optimal dosing protocols may be necessary to show other benefits.

Tryptophan has been shown to benefit exercise performance. [faseb.onlinelibrary.wiley.com/doi/abs/10.1096/fasebj.2021.35.S1.05282](https://doi.org/10.1096/fasebj.2021.35.S1.05282) (2021) Sirtuins are important regulators of energy metabolism; especially sirtuins 1 and 3 increase during exercise.

Sirtuin 1 has a positive effect on mitochondrial biogenesis, thus increasing mitochondrial energy supply capacity.+(which accumulates during exercise), as a substrate for sirtuins, is capable of upregulating the flow of sirtuins in a feedback manner . There is also an exercise-dependent upregulation of NAD<sup>+</sup> synthesis. Sirtuin 4 regulates long-chain fatty acid oxidation by inhibiting malonyl CoA carboxylase. Elevated levels of malonyl CoA inhibit mitochondrial uptake of long-chain fatty acids. [www.sciencedirect.com/.../B9780128141182000161](https://www.sciencedirect.com/.../B9780128141182000161) (2021)

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Chronic age-related inflammation promotes cellular senescence, chronic disease, cancer, and reduced life expectancy. Interventional exercise, when applied early in the disease, was effective in reducing tissue inflammation, oxidative damage, and cellular senescence, and reversed hepatic steatosis and prevented tumor development. Behind these benefits were transcriptional changes in the enzymes that drive the conversion of tryptophan to NAD<sup>+</sup>. Increased SIRT activity correlated with increased deacetylation of the key transcriptional regulators of inflammation and metabolism, NF-κB. Moderate exercise can effectively reprogram inflammatory and metabolic pathologies pre-established in aging with the benefit of disease prevention. [www.jimmunol.org/.../904.abstract](https://www.jimmunol.org/.../904.abstract) (2021)

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## marmur

Dr. Mercola thank you for this article, interview and for every single thing you do to help humanity. You have put yourself in harms way with the evil people trying to control freedom. I support you by always buying my products from you. God bless you. Guillermou thank you for enhancing whatever subject Dr. Mercola brings to us. You are so wise and bring even more information that I savor. Thank you and Buddhi too!

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## Guillermou

Si, marmur, Dr. Mercola is a hero who defends humanity with true science with his health reports and the defense of freedom. . Thanks. for me it is an honor to be useful based on the excellent reports of Dr, Mercola.. ❤️👍

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## bradpais

Thanks Dr. Mercola for posting this. I've read about some of Dr. Sinclair's work in the past, sirtuins, NMN, methyl groups, C38, etc. It can be complicated. Perhaps my previous exposure to this field helped me absorb more of what you wrote here, which, by the way, really makes things more clear in ways other articles I read weren't able to do (for me, anyways). As usual, I love that you promote cheap alternatives, as I already have Niacinamide in my cupboard. All of this is a reminder that although our bodies are complex with all sorts of compensatory mechanisms that we are not aware of, good lifestyle choices (exercise, sleep hygiene, healthy foods high in methyl groups, limiting environmental hazards, etc) go a long way - in fact, way further than most of us are away of! PS: I forgot to note fasting! How could I forget to mention this (as Dr. M has)? So many benefits for so little a price (once you get used to it ;-)).

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Yes, calorie restriction (CR) prolongs life expectancy in a wide variety of species. CR induces an increase in the NAD(+)/NADH ratio in cells and results in the activation of SIRT1, an NAD(+)-dependent protein deacetylase that is believed to be a metabolic master switch related to the modulation of exp of life. CR also affects the expression of peroxisome proliferator-activated receptors (PPARs). All three subtypes, PPARalpha, PPARgamma, and PPARbeta/delta, are expressed in multiple organs. They regulate different physiological functions such as energy metabolism, insulin action and inflammation, and apparently act as important regulators of longevity and aging. [pubmed.ncbi.nlm.nih.gov/20148352](https://pubmed.ncbi.nlm.nih.gov/20148352) (2010) NF-kappa B is one of the main mediators of aging and is activated by toxic, oxidative, and inflammatory stresses.

The most abundant protein in the mitochondrial inner membrane, adenine nucleotide translocator 1 (ANT1) plays a critical role in mitochondrial function, including adenosine triphosphate/adenosine diphosphate (ATP/ADP) exchange in mitochondria, leakage of Basal proton and mitochondrial permeability transition pore (MPTP). ANT1 transcription is regulated by the transcription factor NF-kappa B (NF-kB). NF-KB signaling can repress ANT1 gene transcription and impair mitochondrial functions. Calorie restriction and fasting increase insulin sensitivity, Sirt1, and reduce inflammation. Insulin stimulates NF-kB impairing mitochondrial function. SIRT1 increases mitochondriogenesis, enhancing the oxidative stress response, p53-altered apoptosis, and decreasing the inflammatory response through NF-KB suppression [www.nature.com/.../srep44708](https://www.nature.com/.../srep44708) (2017) [www.ncbi.nlm.nih.gov/.../PMC3295063](https://www.ncbi.nlm.nih.gov/.../PMC3295063) (2018)

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Sirtuins help cells adapt energy production. SIRT1 and some of the other sirtuins enhance fat metabolism and modulate mitochondrial respiration to optimize energy harvesting. The AMP kinase/SIRT1-PGC-1 $\alpha$ -PPAR axis and mitochondrial sirtuins appear to be essential for maintaining mitochondrial function. Nutraceuticals like resveratrol have a multiplicity of actions in addition to sirtuin activation. Their net health benefit and relative safety may have stemmed from the animals' ability to survive environmental changes. [www.sciencedirect.com/science/article/abs/pii/S089158491201756X](http://www.sciencedirect.com/science/article/abs/pii/S089158491201756X) (2013)

Mitochondrial sirtuins SIRT3, SIRT4, and SIRT5 function as the primary site of oxidative metabolism, control basic mitochondrial biology, and play crucial roles in energy production, apoptosis, and intracellular signaling. Its dependence on NAD<sup>+</sup> directly links its enzymatic activity to the metabolic state of the cell. In mammalian tissues, mitochondrial sirtuin expression and/or activity may decrease with age and contribute to mitochondrial dysfunction, an important hallmark of aging and the development of age-related diseases, including neurodegeneration, insulin resistance, and heart disease. [www.sciencedirect.com/.../S1471491417300242](http://www.sciencedirect.com/.../S1471491417300242) (2017)

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## Hel5896

Wowsa! Dr. Mercola's never-ending search for human betterment combined with the desire to share what's learned with us is a gift. Many thanks, Doctor Mercola.

Posted On 03/27/2022

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## junieb

Wow, then we definitely don't want to be taking the 500mg capsules on sale! That is way too much!

Posted On 03/27/2022

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**der75060**

Seriously! My husband takes those - now I'm wondering!

Posted On 03/27/2022

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**rrealrose**

take apart capsules (gently twist plastic sleeve) and store pwdr contents in a brown or blue liddled jar! Only issue then is excipients used to fill the caps in the first place...

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**catspring47**

Junie The capsules will have fillers in them, so if you were to measure the contents to take the 1/64th tsp. dose, it would be very inaccurate. It might be worth it to pitch the capsules and get the pure powder.

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**bee70578**

junieb - I've seen those, they seem to be diluted with other substances for most part, at least on UK Amazon. Good point.

Posted On 03/27/2022

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**lindatoo**

Blue berries in my yogurt will down the sups, nice thank you.

Posted On 03/28/2022

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**junieb**

People can also do a search of "niacinamide powder" on Duck Duck Go, click on the link above the page that says "shopping", and it will bring up a list of products available from different retailers other than Amazon

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**pjmauigirl**

Excellent information, thank you!

Posted On 03/27/2022

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**brianjstiles**

One reader is complaining that Dr Mercola doesn't give details of where to order supplements mentioned in his newsletters specifically his one on NAD+...He does so in order to maintain impartiality... I tried myself to obtain Niacinamide (aka Nicotinamide) powder in a pharmaceutical grade and it wasn't easy...Here is one source I found: [www.amazon.co.uk/Pure-Vitamin-B3-Niacinamide-Powder/dp/B013KX00US?th=1](http://www.amazon.co.uk/Pure-Vitamin-B3-Niacinamide-Powder/dp/B013KX00US?th=1)

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## Prismmelody7

I have had debilitating anxiety and panic from the virus. At first, I didn't realize it was from the virus. But after watching an FLCCC video on long haul, I realized it could be. I tried ivermtn and that helped tremendously. Since then, I have still been fighting inflammation, specifically, it seems like my heart has been overactive even though I was checked by a cardiologist and I appeared to be "fine." I read that Alpha Lipoic Acid could help with reducing inflammatory responses such as interleukin 6, so I tried it, and within hours it felt like a bucket of cold water was being poured on an electrical fire in my chest. I have been taking all kinds of anxiety supplement since I first had the panic attack that landed me in the ER: passionflower (a lot!), inositol, choline, PS100, melatonin, and something called True Hope.

They have all helped, but it has felt like I hadn't been addressing the underlying cause until the ivermtn, then the Alpha Lipoic Acid. After reading this, I am going to try the Niacinamide. My energy gets depleted easily where I feel weak and feel I could have a panic attack. Yesterday was the first day in 4 months I was able to do a full weighted workout without feeling like I could have a panic attack, but overnight, it felt like my body was playing catch up. Panic is an awful feeling. I have had times when I felt like I was dying. I have a feeling it's somehow connected to what is described here. Thank you for this helpful article!!

Posted On 03/27/2022

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## jef185069

I began taking niacinamide about three years ago at the recommendation of my skin Dr., based on a study ([www.ncbi.nlm.nih.gov/.../PMC4570055](http://www.ncbi.nlm.nih.gov/.../PMC4570055)) that found 500mg (twice daily) showed a 28% decrease in precancerous skin issues. My concern here is that I could be inhibiting sirtuins with too much intake. I was also curious, after much reading, if niacinamide was the same as nicotinamide -- I saw both recommended in the study data on the web. Any insight on this matter would be greatly appreciated.

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Nice article. Given the low typical oral levels of niacinamide needed, could it safely be used topically instead?

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## Guillermou

Niacinamide helps control acne, rosacea, pigmentation problems and wrinkles. Niacinamide can be effective in skin care products because it is a precursor to two very important coenzymes within cells: nicotinamide adenine dinucleotide (NAD<sup>+</sup>/NADH) and nicotinamide adenine dinucleotide phosphate (NADP<sup>+</sup>). Both molecules are critical to the chemical reactions your cells, including skin cells, need to repair damage, reproduce, and function normally. Many of these essential reactions cannot occur at all without NAD<sup>+</sup>, which your cells cannot produce without niacinamide.

In its topical actions, it should be noted that niacinamide is being applied in the prevention and treatment of various skin diseases, due to the fact that most of its actions are exerted by inhibiting poly (ADP-ribose) polymerase (PARP). Among these skin diseases, atopic dermatitis, acne or hyperpigmentation stand out, as detailed below. Niacinamide decreases the transfer of melanosomes --which are found in melanocytes-- to keratinocytes, as has been shown in in vitro studies performed on co-cultures of melanocytes and keratinocytes.

Inhibition of melanosome transfer is a reversible and dose-dependent process of niacinamide. There is evidence that topical niacinamide may increase the production of ceramides (lipids that help maintain the skin's protective barrier), which may contribute to its topical effects on wrinkles, fine lines, and the skin's moisture barrier . All of this is probably why you're seeing niacinamide in a lot of skin care products.

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## Guillermou

Niacinamide's anti-inflammatory properties make it an attractive treatment for skin conditions marked by inflammation, such as acne. a study published in 2013 in the International Journal of Dermatology found that a topical preparation of 4% niacinamide significantly improved moderate acne when applied twice daily for eight weeks Niacinamide had significant improvements in hyperpigmentation spots, fine lines and wrinkles compared to the control side. Dr. Trovato echoes that niacinamide could improve hyperpigmentation by reducing the transfer of cells that cause pigmentation, called melanocytes [ipi.oregonstate.edu/.../niacin](http://ipi.oregonstate.edu/.../niacin) | [pubmed.ncbi.nlm.nih.gov/10971324](http://pubmed.ncbi.nlm.nih.gov/10971324) | [onlinelibrary.wiley.com/.../ijd.12002](http://onlinelibrary.wiley.com/.../ijd.12002) | [onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-2494.2004.00228.x](http://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-2494.2004.00228.x) | [onlinelibrary.wiley.com/doi/abs/10.1111/j.1473-2130.2004.00115.x](http://onlinelibrary.wiley.com/doi/abs/10.1111/j.1473-2130.2004.00115.x) | [onlinelibrary.wiley.com/doi/abs/10.1046/j.1365-2133.2002.04834.x](http://onlinelibrary.wiley.com/doi/abs/10.1046/j.1365-2133.2002.04834.x) | [link.springer.com/.../b9pp00146h](http://link.springer.com/.../b9pp00146h) .

Posted On 03/27/2022

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## rrealrose

Great links Gui, Thanks!!

Posted On 03/27/2022

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## uneamie

Here is an Amazon link for the "powder niacinamide" and a link to the tiny measuring spoons that you use for the powder...read the article for the dosage. I believe it is 1 to 1/2 of the 1/64th size spoon 3 times a day. I think I will start out with once a day....since I get some niacinamide in my multi. The powder: [smile.amazon.com/gp/product/B08N5HFS9S/ref=ppx\\_yo\\_dt\\_b\\_asin\\_title\\_o00\\_..](https://smile.amazon.com/gp/product/B08N5HFS9S/ref=ppx_yo_dt_b_asin_title_o00_..) measuring spoons: [www.amazon.com/gp/product/B00KH9PSNI/ref=ppx\\_yo\\_dt\\_b\\_asin\\_title\\_o00\\_s0..](https://www.amazon.com/gp/product/B00KH9PSNI/ref=ppx_yo_dt_b_asin_title_o00_s0..)

Posted On 03/27/2022

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**tbsmyth**

The powder you recommend is listed as "not available." 😞. Is Amazon deliberately sabotaging the attempts to purchase this product?

Posted On 03/27/2022

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**grb6384**

Can you please clarify the optimum daily amount of nicotinamide. Is 1 to 1.5 of a 1/64th teaspoon, or 0.5 to 1.0? Is 25-50mg the total amount for the day or the amount to be taken 3x per day?

Posted On 03/27/2022

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**junieb**

1/4 to 1/2 of a 1/64th tspn, 3 times a day

Posted On 03/27/2022

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