



## What are the results of studies regarding longevity-increase with caffeine, using mold-free coffee?

Studies on caffeine show it can increase longevity and healthspan by activating protective pathways in model organisms like *C. elegans*, and observational human studies link moderate caffeinated coffee intake with healthier aging and reduced risk of death from multiple causes. However, regarding mold-free coffee, the presence of mold toxins (mycotoxins) in coffee can be a concern because these toxins survive roasting and may impact health negatively. Research suggests that while roasting kills mold, it does not completely destroy the toxins produced by mold, which can contribute to fatigue, immune disruption, and inflammation.

Observational cohort studies show that people drinking 3-5 cups of coffee have a significantly lower risk of dying from various causes, with caffeinated coffee (not decaf or soft drinks) associated with healthier aging, particularly in women. Coffee also appears to reduce biological or epigenetic aging by about 0.7 to 1 year per daily cup. The longevity benefits seem linked to caffeine's interaction with key genetic and metabolic pathways.

Regarding mold contamination, coffee beans can become moldy during growing and storage, producing mycotoxins that persist through roasting and brewing, which might reduce the coffee's health benefits or pose health risks. Consuming mold-free coffee, which is carefully processed to avoid mycotoxin contamination, could maximize these longevity benefits by avoiding potential toxic effects.

In summary:

- Caffeine contributes to longevity and healthier aging via biological pathways studied in animals and humans.
- Moderate intake of caffeinated coffee is linked to reduced mortality and slowed biological aging.
- Mold toxins in coffee beans survive roasting; mold contamination could negatively affect health.
- Mold-free coffee may offer the best health and longevity benefits by avoiding mycotoxins.

This indicates that using mold-free coffee to ensure a clean caffeine source could potentially enhance longevity benefits seen in caffeine and coffee consumption studies. [\[1\]](#) [\[2\]](#) [\[3\]](#) [\[4\]](#) [\[5\]](#) [\[6\]](#)

# What are the results of studies regarding longevity-increase with pharmaceutical grade nicotine?

Pharmaceutical grade nicotine, when consumed orally in long-term, low doses, has shown promising results in increasing longevity and delaying systemic aging in animal studies, particularly mice. Research published in *Advanced Science* (2025) demonstrated that continuous oral nicotine consumption preserves motor function and exploratory behaviors typical of younger ages in older male mice. It also increases levels of NAD<sup>+</sup>—a critical molecule that tends to decline with age—in several tissues such as liver, pancreas, and muscle. Higher NAD<sup>+</sup> levels are strongly associated with slowed aging. Nicotine also favorably alters gut bacteria and reduces levels of ceramide, a gut bacteria metabolic byproduct linked to aging processes.

Further research (2023) reveals that nicotine enhances NAD<sup>+</sup> biosynthesis by increasing NAMPT enzyme activity and decreasing protein acetylation that impairs NAMPT, thus boosting NAD<sup>+</sup> availability systemically and stabilizing telomeres, which protect chromosomes from age-related damage. Nicotine-treated aged mice exhibited improved redox status, reduced oxidative stress markers, and longer telomeres in multiple tissues, contributing to enhanced longevity with lower age-related mortality. These effects appear dose-dependent, with higher doses yielding stronger benefits.

Unlike smoking, which introduces harmful combustion chemicals, pharmaceutical-grade nicotine isolates nicotine's biological effects without toxic byproducts. Cognitive functions seem unaffected by nicotine, but motor and physical functions improve, likely contributing to healthier aging overall.

In summary, studies suggest pharmaceutical-grade, long-term, low-dose nicotine can significantly enhance longevity by raising NAD<sup>+</sup> levels, protecting telomeres, reducing oxidative stress, and maintaining youthful motor behaviors. These findings support nicotine as a potential anti-aging supplement under controlled pharmaceutical conditions, distinct from harmful cigarette smoking. [\[11\]](#) [\[12\]](#)

Given these benefits and risks, further human clinical research is warranted before broad recommendations, but current animal studies are compelling for nicotine's role in longevity enhancement.



# What are the results of studies regarding longevity increase and health benefits with creatine?

Creatine supplementation has been shown in many studies to increase longevity and improve health, especially in aging populations. Animal research demonstrates creatine-fed mice live about 9% longer than controls, equivalent to an extension of over seven human years, along with reduced aging markers such as lipofuscin in the brain. This suggests creatine enhances mitochondrial energy production, which slows aging processes and improves cognitive function.

In humans, creatine supplementation combined with resistance training significantly increases muscle mass, strength, and physical performance in older adults, reducing risks of sarcopenia (age-related muscle loss) and falls. Creatine also shows neuroprotective effects, potentially delaying neurodegenerative diseases like Parkinson's and Huntington's by preserving brain energy metabolism. Improvements in glucose metabolism and insulin sensitivity have also been observed with creatine use.

Some studies note bone density effects are less clear or minimal, though creatine aids muscle quality improvements that indirectly benefit bone health through enhanced physical function and reduced fall risk. Dosages around 5 to 20 grams daily in older adults have been effective and are considered safe.

In summary:

- Creatine extends lifespan in animal models significantly.
- It improves muscle mass, strength, cognitive function, and energy metabolism in older adults.
- Creatine shows neuroprotective and metabolic benefits related to aging.
- Evidence supports creatine as a safe, effective anti-aging supplement especially when combined with resistance exercise.
- Bone density benefits are less conclusively established but muscle improvements aid overall physical health.

Creatine's role in longevity and healthy aging is promising and aligns with its central function in cellular energy transfer and mitochondrial health, crucial in aging biology. [\[20\]](#) [\[21\]](#) [\[22\]](#) [\[23\]](#) [\[24\]](#)



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