# do the studies on NR and NMN indicate telomere lengthening

Studies on NMN indicate that oral supplementation can increase telomere length significantly. One clinical trial found NMN nearly doubled telomere length in human blood cells after 90 days of supplementation and increased telomere length by 20-25% in mice over short periods. This suggests NMN may support telomere maintenance and potentially enhance healthspan by slowing telomere shortening associated with aging.[1][2]

Regarding Nicotinamide Riboside (NR), the evidence from studies is mixed. Some preclinical and cellular studies suggest NR reduces telomere damage and dysfunction by improving NAD+ metabolism, decreasing oxidative stress, and enhancing mitochondrial function. However, NR did not significantly lengthen short telomeres in fibroblasts from patients with telomere biology disorders in some studies. More recently, NR has been shown to support telomere health by reducing DNA damage and inflammation and improving mitochondrial quality, but direct telomere lengthening effects in humans remain less clear compared to NMN.[3][4][5][6]

Additionally, combining NR with antioxidants like NAC shows potential to preserve telomere length under oxidative stress conditions in cellular models, suggesting that NR may help slow telomere attrition indirectly through metabolic and oxidative stress pathways.[7]

In summary:

- NMN supplementation in humans shows clear evidence of telomere lengthening.
- NR shows promise in reducing telomere damage and supporting telomere health but has less direct evidence for telomere lengthening in humans.
- NR combined with antioxidants may further help preserve telomere integrity.
- Both compounds support NAD+ metabolism, which is linked to telomere maintenance mechanisms.[4][5][6][1][3][7]

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1. https://www.nmn.com/news/nmn-improves-telomere-length-blood-cells-middle-aged-people
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7. https://www.nad.com/news/new-study-combining-nr-with-nac-may-slow-telomere-shortening
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