

Decision question: What does current human evidence justify saying about oral NMN?

EXECUTIVE SIGNAL

Human evidence supports biological target engagement: oral NMN can raise circulating NAD-related biomarkers. Evidence for broader metabolic, functional or 'healthy-aging' outcomes remains mixed, population-specific and short-term.

EVIDENCE	LIMITATION	DECISION
SIGNAL 01 NAD-related biomarkers Randomized trials and a 2025 meta-analysis report increases in blood NAD/NAD-related measures after oral NMN.	Biomarker movement is not a clinical benefit. Assays, doses, populations and treatment durations vary.	MODERATE Supports target engagement - not broad efficacy or anti-aging claims. [1][2]
SIGNAL 02 Glucose & lipid metabolism A 2025 meta-analysis of 12 RCTs (513 participants) found higher blood NAD but no significant overall benefit for most glucose/lipid outcomes. A small 2021 RCT in prediabetic women found improved muscle insulin sensitivity.	Small samples, heterogeneous populations and short follow-up limit generalization. One subgroup signal should not be generalized.	LOW / MIXED Treat metabolic benefit as population-dependent. Avoid category-wide claims without population-specific evidence. [1][3]
SIGNAL 03 Physical function & wellbeing Some short RCTs report signals in walking performance, sleep or wellbeing; other primary functional endpoints have been null.	Trials are generally small and short. Secondary endpoints and multiple comparisons raise over-interpretation risk.	LOW / MIXED Useful for R&D prioritization, not definitive efficacy messaging. Stronger claims need larger, longer trials. [2][4][5]

DO NEXT | Larger, longer randomized trials; defined target populations; prespecified clinical endpoints; consistent NAD measurement; link biomarker change to patient-relevant outcomes.

WHAT THIS SAMPLE DEMONSTRATES

- Evidence compression without removing caveats
- Study-level traceability
- Evidence -> limitation -> decision

APPLIED TO YOUR TEAM

Ingredient evidence

Claims substantiation

Dose / endpoint mapping

Pipeline intelligence

SOURCE TRACEABILITY

[1] Zhang J et al. Crit Rev Food Sci Nutr. 2025;65(22):4382-4400. PMID 39116016. doi:10.1080/10408398.2024.2387324
[2] Yi L et al. Geroscience. 2023;45(1):29-43. PMID 36482258. doi:10.1007/s11357-022-00705-1
[3] Yoshino M et al. Science. 2021;372(6547):1224-1229. PMID 33888596. doi:10.1126/science.abe9985
[4] Yamane T et al. GeroScience. 2024. PMID 38789831.
[5] Kim M et al. Nutrients. 2022;14(4):755. PMID 35215405. doi:10.3390/nu14040755

What decision is your team trying to make? CALYNTIQ can structure the evidence around that question.