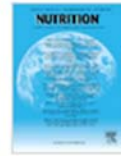




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Telomere shortening in elderly people with mild cognitive impairment may be attenuated with omega-3 fatty acid supplementation: A randomised controlled pilot study

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Abstract

Background/objectives

Excessive shortening of the telomeric ends of chromosomes is a marker of accelerated ageing. Oxidative stress and nutritional deficiency may influence this process. We investigated the effect of omega-3 polyunsaturated fatty acid (n-3 PUFA) supplementation on telomeric shortening in elderly people with mild cognitive impairment (MCI).

Subjects/Methods

Thirty-three adults >65 years with MCI were randomised to receive a supplement rich in the long-chain n-3 PUFAs EPA (1.67g EPA+0.16g DHA/day; $n=12$) or DHA (1.55g DHA+0.40g EPA/day; $n=12$), versus $n=6$ PUFA linoleic acid (LA; 2.2g/day; $n=9$) for 6 months.

Results

The intervention did not show an increase in telomere length with treatment and there was a trend towards telomere shortening during the intervention period. Linear mixed modelling produced a robust model although statistically underpowered. Telomere shortening was greatest in the LA group ($d=0.21$) versus the DHA ($d=0.12$) and EPA groups ($d=.06$). Increased erythrocyte DHA levels were associated with reduced telomere shortening ($r=-0.67$, $P=0.02$) in the DHA group.

Conclusions

Telomeric shortening may be attenuated by n-3 PUFA supplementation, requiring further investigation in larger samples.