

Combination of exercise, omega-3 fatty acids and vitamin D reduces cancer risk in the elderly

Rod Tucker

13 May, 2022

A randomised trial has found that a combination of exercise, omega-3 fatty acids and vitamin D significantly reduces [cancer risk](#) in patients over 70

[Cancer is the second leading cause of death globally and in 2018, it accounted for approximately 9.6 million deaths.](#) Although cancer can strike at any age, [many types of cancer become more prevalent with increasing age.](#) However, [recent research has found that for most adults, cancer does not have to be an inevitable consequence of growing older.](#) In fact, adoption of healthy lifestyle measures based on a combination of exercise, diet, smoking status, alcohol consumption, and anthropometry, in other words, simple behavioural modifications, [have been shown to produce a sizeable reduction in the risk of some cancers.](#) Among healthy interventions, [there is evidence that physical activity is associated with a lower risk of several cancers.](#) Equally, use of vitamin D supplements has [some evidence to support its use in reducing the incidence of advanced \(metastatic or fatal\) cancer.](#) Finally, [an omega-3 fatty acid-rich diet, can significantly delay mouse tumour growth when compared with a monounsaturated fatty acid-rich diet.](#) Nevertheless, whether a combination of exercise, vitamin D and omega-3 fatty acids provides a synergistic and preventative effect against cancer is less clear.

For the present study, the researchers undertook a randomised controlled trial, which sought to examine the combination of exercise, supplementation with vitamin D and omega-3 fatty acids in older adults and how this impacted on the subsequent development of cancer. Their [DO-HEALTH trial](#) examined the combined effect of simple home strength exercise (SHEP), vitamin D (2000 IU/day) and/or 1g/day of marine omega-3 fatty acids, in healthy adults 70 years of age and older. For the primary outcome, the team considered the time to the development of a verified invasive cancer.

Combination of exercise, omega-3 fatty acids, vitamin D and cancer development

A total of 2157 individuals with a mean age of 74.9 years (61.7% female) were included in the study and followed for a median of 2.99 years. During this period of time there were 81 invasive cancers diagnosed and verified.

For the three separate interventions, the adjusted hazard ratios (compared to controls) were 0.76 (95% CI 0.49 – 1.18) for vitamin D, 0.70 (95% CI 0.44 – 1.09) for omega-3 fatty acids and 0.74 (95% CI 0.48 – 1.15) for SHEP). In other words, while there were beneficial effects from the individual interventions, the effects were not statistically

significant, but when two of the interventions were combined, the effect did become statistically significant. For instance, the combination of SHEP and omega-3 resulted in an adjusted hazard ratio of 0.52 (95% CI 0.28 – 0.97, $p = 0.039$). However, the greatest benefit was derived from the combination of exercise, vitamin D and omega-3 fatty acids, with an adjusted hazard ratio of 0.39 (95% CI 0.18 – 0.85, $p = 0.017$).

The authors calculated that the number needed to treat to prevent one incident case of cancer after three years with the three treatments combined was 35.

They concluded that future studies should focus on the benefit of combining interventions as a means of cancer prevention.

Citation

Bischoff-Ferrari HA et al. [Combined Vitamin D, Omega-3 Fatty Acids, and a Simple Home Exercise Program May Reduce Cancer Risk Among Active Adults Aged 70 and Older: A Randomized Clinical Trial Am J Clin Nutr 2022](#)