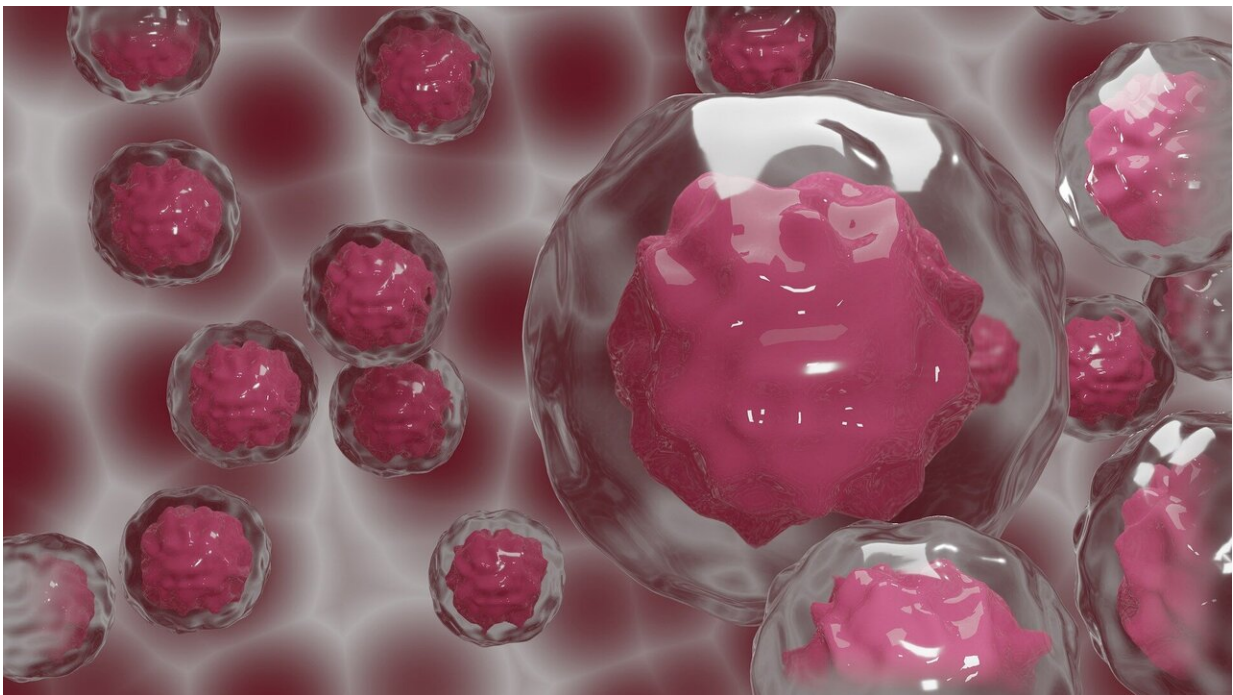


A combination of three simple treatments may reduce invasive cancer risk by 61% among adults aged 70+

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A new study published in *Frontiers in Aging* found that a combination of high-dose vitamin D, omega-3s, and a simple home strength exercise program (SHEP) showed a cumulative reduction by 61% in cancer risk in healthy adults aged 70 or older. It is the first study to test the

combined benefit of three affordable public health interventions for the prevention of invasive cancers. Following future studies, the results may impact the future of cancer prevention in older adults.

Cancer is considered a major age-related disease in Europe and the US. It is the second leading cause of mortality in older adults and the chances of getting most cancers increases with age.

Apart from preventative recommendations such as not smoking and sun protection, public health efforts that focus on [cancer prevention](#) are limited, according to Dr. Heike Bischoff-Ferrari of the University Hospital Zurich: "Preventive efforts in middle-aged and older adults today are largely limited to screening and vaccination efforts."

Vitamin D, omega-3, and exercise

Mechanistic studies have shown that [vitamin D](#) inhibits the growth of cancer cells. Similarly, omega-3 may inhibit the transformation of normal cells into [cancer cells](#), and exercise has been shown to improve immune function and decrease inflammation, which may help in the prevention of cancer.

However, there was a lack of robust clinical studies proving the effectiveness of these three simple interventions, alone or combined.

Bischoff-Ferrari and her colleagues wanted to fill these knowledge gaps by testing the effect of daily high-dose vitamin D3 (one form of vitamin D supplements), daily supplemental omega-3s, and a simple home exercise program, alone and in combination, on the risk of invasive cancer among adults aged 70 or older.

A combination of simple treatments

To do so, the researchers conducted the [DO-HEALTH](#) trial: a three-year trial in five European countries (Switzerland, France, Germany, Austria, and Portugal) with 2,157 participants.

"In DO-HEALTH, our aim was to test promising combined interventions for cancer prevention taking advantage of potentially small additive benefits from several public health strategies," explained Bischoff-Ferrari. "In fact, novel cancer treatments aim to block multiple pathways for cancer development by combining several agents. We translated this concept into cancer prevention."

The participants were randomized into eight different groups to test the individual and combined benefit of the interventions: group one received 2,000 IU per day of Vitamin D3 (equivalent to > 200% the amount of current recommendations for older adults, which is 800 IU per day), 1g per day of omega-3s, and three times per week SHEP; group two vitamin D3 and omega-3s; group three vitamin D3 and SHEP; group four omega-3s and SHEP; group five vitamin D3 alone; group six omega-3s alone; group seven SHEP alone; and the last group received a placebo.

Participants received check-up phone calls every three months and had standardized examinations of health and function in the trial centers at baseline, year 1, year 2, and year 3.

Preventing invasive cancer

The results show that all three treatments (vitamin D3, omega-3s, and SHEP) had cumulative benefits on the risk of invasive cancers.

Each of the treatments had a small individual benefit but when all three treatments were combined, the benefits became statistically significant, and the researchers saw an overall reduction in [cancer risk](#) by 61%.

"This is the first randomized controlled trial to show that the combination daily vitamin D3, supplemental marine omega-3s, and a simple home exercise program may be effective in the prevention of invasive cancer among generally healthy and active adults aged 70 and older," Bischoff-Ferrari commented.

The results may impact the future of invasive cancer prevention in [older adults](#). Bischoff-Ferrari concluded: "Our results, although based on multiple comparisons and requiring replication, may prove to be beneficial for reducing the burden of cancer."

"Future studies should verify the benefit of combined treatments in the prevention of [cancer](#), also extending to longer follow-ups beyond the three-year duration assessed in this trial."

More information: Heike A. Bischoff-Ferrari 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, *Frontiers in Aging* (2022). [DOI: 10.3389/fragi.2022.852643](#)

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