

DIETITIANS' NEWS

Flax Supplementation, Not Dietary Fat Restriction, Decreases Cell Proliferation in Men with Prostate Cancer

A new study has shown that men with prostate cancer who consumed 30 g or about 3 tbsp of milled flax daily experienced decreased prostate cancer cell proliferation compared with men who did not consume milled flax.¹ The study, published in December 2008, was carried out by Dr. Wendy Demark-Wahnefried and her colleagues at The University of Texas M. D. Anderson Cancer Center in Houston.

Dr. Demark-Wahnefried's research group has been studying the effects of milled flax supplementation on prostate cancer biology and associated biomarkers for nearly a decade. In two small pilot studies published previously,^{2,3} results showed that flax supplementation decreased the mean prostate cancer cell proliferation rate significantly ($p \leq 0.05$), but the outcome could not be attributed conclusively to flax because of a weakness in the study design – flax was consumed as part of a low-fat diet.

The new 2008 study was a full clinical trial involving 161 men with prostate cancer who were awaiting surgery.¹ The men were randomly assigned to one of four groups, with the study design allowing the researchers to separate the effects of flax from the effects of a low-fat diet: (1) control group (usual diet); (2) diet supplemented with milled flax (30 g/day); (3) low-fat diet; or (4) flax-supplemented, low-fat diet. The men followed the assigned dietary protocol for an average of 30 days. Proliferation rates were assessed using the Ki-67 biomarker at two time points: prior to randomization and within 3 days of surgery.

In these men with prostate cancer, the mean proliferation rate was significantly lower ($p < 0.002$) among those assigned to the flax-supplemented diets. In other words, the tumor proliferation rate in the low-fat diet group was not different from the control group, thus indicating that it was the flax supplementation and not the low-fat diet that led to the effect. The researchers noted that dietary flax supplementation has consistently resulted in reduced cancer cell proliferation assessed by the Ki-67 biomarker, whether cell proliferation was studied in humans²⁻⁴ or mice⁵⁻⁷ or measured in prostate tissue^{2,3,5} or breast tissue.^{4,6,7} Based on the findings of this new study, Demark-Wahnefried and her colleagues concluded that consumption of milled flax is safe, well tolerated and may be protective for prostate cancer.

References

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