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## Does Selenium Prevent Prostate Cancer?

By: Kathleen Wildasin

David J. Waters, DVM, PhD, Director of the Gerald P. Murphy Cancer Foundation and Professor of Comparative Oncology at Purdue University, is leading a research team in the investigation of how selenium, a nutrient essential to the functioning of several metabolically important enzymes, inhibits the development of prostate cancer.

"Using elderly beagles to mimic 65-year-old men, we evaluated the effect of selenium on prostate cells in an appropriate context ... in vivo in an aging prostate gland," Waters said.

Although most information on the mechanisms of anticancer agents has been gleaned from studies using animal tumor models, studying prostate cancer in the laboratory has been hampered by the fact that only one non-human species, the dog, develops this cancer spontaneously and with appreciable frequency.

The research of Waters and colleagues complements the Selenium and Vitamin E Cancer Prevention Trial (SELECT), a study initiated in 2001 by the National Cancer Institute to evaluate whether selenium and/or vitamin E decreases the incidence of human prostate cancer. The largest prostate cancer prevention study ever undertaken, SELECT will evaluate more than 32,000 men during a 12-year period. The Murphy Foundation is one of more than 400 sites in North America that will enroll men into the SELECT Trial.

"In this study supported by the Department of Defense Prostate Cancer Research Program, we found that 7 months of daily oral supplementation, using the same form and dose of selenium currently being used in SELECT, significantly reduced the accumulation of DNA damage within prostate cells," Waters said.

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In the February 5, 2003 issue of the Journal of the National Cancer Institute, the group also reported that daily selenium supplementation was accompanied by a two-fold increase in prostate cell apoptosis. Apoptosis, an orderly process of cell death, can remove damaged cells from the prostate, which may lower the risk of cancer.

"Although several previous studies have shown that selenium can induce apoptosis in the cell culture laboratory, our results represent the most convincing evidence to date that DNA damage and apoptosis are selenium-responsive events within the prostate," Waters said.

The long-term research goal of Dr. Waters' comparative oncology team is to accelerate the development and application of effective cancer prevention strategies that will benefit both people and pet animals who are at high risk of developing cancer.

For more information regarding this article, contact Kathleen Wildasin at [kwildasin@insightbb.com](mailto:kwildasin@insightbb.com).

For more information regarding research on selenium and prostate cancer, visit the Murphy Foundation website ([www.gpmcf.org](http://www.gpmcf.org)), under the section "About Selenium."

*Bio: Kathleen Wildasin is a full-time freelance medical/science writer and editor. She holds B.A. degrees in biology and music theory/composition from Indiana University and the University of Minnesota, respectively, and an M.A. degree in music theory from the University of Iowa. Her articles have been published in magazines, education manuals, newsletters, and online, and her medical thriller and short stories have received recognition in national writing competitions. She lives in Lexington, Kentucky.*

SOURCES:

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