

# Clinical Update

## **Selenium may reduce prostate cancer markers: Study**

Supplementation with selenium glycinate may increase the activities of related plasma enzymes, and reduce the levels of an important marker for the risk of prostate cancer, according to a new study that contradicts current thinking.

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The research, published in *Nutrition Research*, suggests that selenium glycinate supplementation gave changes consistent with improved selenium functional status and lowered prostate cancer risk in a group of 30 middle-aged US men. The researchers, from Ohio State University, USA, said that the study contradicts conventional wisdom that selenium supplementation should not increase the activities of blood glutathione peroxidase (GPx) nor affect prostate cancer risk.

*"If selenium could lower PSA [prostate-specific antigen] in healthy, middle-aged men, then it could be proposed that selenium can lower prostate cancer risk in some men, especially as part of an overall dietary plan,"* said the authors, led by senior author Dr Robert DiSilvestro, from the Department of Human Nutrition, at Ohio State.

DiSilvestro and his colleagues said that the type of selenium supplementation used in the study (selenium glycinate), which has not been used in previous research, could possess *"especially high bioactivity."*

### **Selenium levels**

Daily selenium intake in US adult men is reported to be around 153 micrograms. This is well above the recommended dietary allowance (RDA), which is intended to maximize blood activities of the selenium enzyme glutathione peroxidase (GPx) enzymes, said the authors. *"Thus, blood GPx activities would not be expected to increase in most US adult men if selenium intake is increased [above the RDA],"* they added.

Despite this, DiSilvestro and colleagues noted interest in selenium intake has risen due to recent suggestions that intakes above the RDA may increase blood activities and reduce prostate cancer risk. The authors noted that such an idea has been supported by several previous studies, but said that other large scale studies have not found selenium to reduce the risk of prostate cancer.

*"In light of the current state of selenium research ... it would seem that further research on selenium supplementation of healthy, US adult men would serve no purpose,"* said the authors. However, they stated that the number of studies on GPx response to selenium supplementation is low.

Additionally, they explained that healthy middle-aged men – a group particularly concerned with preventing prostate cancer – *"have not been singled out for study on selenium supplementation"* in relation to GPx or prostate-specific antigen (PSA) – a risk assessor for prostate cancer risk.

The new study tested whether a 6-week supplementation of 200 micrograms of selenium (in the form of glycinate) affected the activities of 2 blood selenium enzymes (erythrocyte and plasma GPx) and a marker of prostate cancer risk (plasma PSA).

### **Study details**

DiSilvestro and co-workers reported that selenium supplementation, but not placebo, raised both plasma and erythrocyte GPx activities. They also found that selenium glycinate, but again not placebo, lowered the cancer risk marker of serum PSA. The authors explained that reducing a marker of prostate cancer does not necessarily mean a reduction in cancer risk. *"However, this study does justify further study on selenium supplementation and prostate cancer risk, particularly supplementation as selenium glycinate,"* they said.

### **Surprising finding**

The Ohio State scientists said that the findings presented in their study go against the initial beliefs and hypothesis of the research. The authors explained that initially they believed selenium supplementation would have no effect on blood GPx or PSA, but may have effects in non-blood derived biomarkers.

(Source: [www.nutraingredients.com](http://www.nutraingredients.com))