

# Clinical Update

## **Selenium supplements may boost heart health**

Supplements of selenium may increase levels of an antioxidant enzyme with a reported role in cardiovascular prevention, according to a new study.

**(*American Heart Journal*, December 2008)**

The sodium selenite supplements were found to increase levels of GPx-1, a selenium-dependent protein, according to in vitro and in vivo findings published in the American Heart Journal. Moreover, a plateau effect was observed after 12 weeks, regardless of the dose used.

According to background information in the journal, oxidative stress plays a key role in the progression of coronary artery disease (CAD), a condition where plaque builds up in the coronary arteries. It is the leading cause of death for men and women in the US, according to the National Heart, Lung and Blood Institute at the National Institutes of Health.

The body's antioxidant defense system includes enzymes, such as superoxide dismutase (SOD) and glutathione peroxidases (GPx's). A form of the latter, GPx-1, has been reported to modulate vascular function, according to in vivo animal studies, said the researchers.

Two types of studies were performed – an in vitro human cell study and a prospective clinical trial. The in vitro study involved incubating human coronary artery endothelial cells with different doses of different selenium compounds, including sodium selenite, Se-methylselenocysteine hydrochloride, and seleno-L-methionine. The first two types of selenium were associated with increases in GPx-1 protein activity in a dose-dependent manner.

In the human study, 465 patients with CAD were randomly assigned to receive daily sodium selenite supplements (200 and 500 micrograms) or placebo for 12 weeks. While the higher dose was associated with an increase in the GPx-1 activity during the first half of the study, as well as higher selenium levels in the blood, both doses led to a plateau of GPx-1 activity after 12 weeks. No effects on endothelial function were observed.

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

