

Public Lecture by G.N. Schrauzer, Professor  
Department of Chemistry & Biochemistry  
“Selenium: Role in Cancer prevention and Human Health”  
Wednesday, March 16, 2005 at 7:00 p.m. in the Garren Auditorium, Basic Science Building  
Sponsored by the Sam & Rose Stein Institute for Research on Aging, UCSD

Selenium is required in small amounts for the maintenance of health. It is normally found in foods of animal and plant origin but due to its uneven distribution in soils the Se contents of foods are variable and frequently very low, causing human selenium intakes to be sub-optimal in many countries. Selenium is needed for many important physiological functions. It protects organs and tissues from damage by oxygen radicals, environmental toxins and toxic heavy metals. It is required by all organs, including the immune system. As humans age, plasma selenium levels tend to decline. Low plasma selenium levels in the elderly have been associated with increased morbidity and mortality. Selenium exhibits antiviral properties inasmuch as it prevents nonpathogenic viruses to undergo mutations that cause them to become lethal. The cancer-protecting properties of selenium are receiving particular attention as studies revealed human cancer mortalities to be significantly higher in populations with low dietary selenium intakes. It is estimated that an adult of average weight requires 250 - 350 micrograms of selenium per day for the full utilization of its beneficial effects, corresponding to approximately twice the amount the average American obtains with his or her diet. The additionally needed 100-200 micrograms of selenium can be obtained through prudent diet choices or, more reliably, by taking it in a supplement.