

Selenium proves itself as powerful anti-cancer medicine

The mineral selenium has been shown in multiple studies to be an effective tool in warding off various types of cancer, including breast, esophageal, stomach, prostate, liver and bladder cancers. Not many people get the recommended dose of 200 micrograms a day. Most Americans only get between 60 and 100 micrograms of selenium daily from dietary sources, according to the Life Extension Foundation's Disease Prevention and Treatment.

Selenium was first used in conventional medicine as a treatment for dandruff, but our understanding of the mineral has come a long way since then. Today, research shows selenium, especially when used in conjunction with vitamin C, vitamin E and beta-carotene, works to block chemical reactions that create free radicals in the body (which can damage DNA and cause degenerative change in cells, leading to cancer).

Selenium also helps stop damaged DNA molecules from reproducing. In other words, selenium acts to prevent tumors from developing. "It contributes towards the death of cancerous and pre-cancer cells. Their death appears to occur before they replicate, thus helping stop cancer before it gets started," says Dr. James Howenstine in *A Physician's Guide to Natural Health Products That Work*.

In addition to preventing the onset of the disease, selenium has also been shown to aid in slowing cancer's progression in patients that already have it. The mineral also helps "enhance the effectiveness of chemo, radiation, and hyperthermia while minimizing damage to the patient's normal cells; thus making therapy more of a 'selective toxin,'" says Patrick Quillin in *Beating Cancer with Nutrition*.

A 1996 study by Dr. Larry Clark of the University of Arizona showed just how effective selenium can be in protecting against cancer. In the study of 1,300 older people, the occurrence of cancer among those who took 200 micrograms of selenium daily for about seven years was reduced by 42 percent compared to those given a placebo. Cancer deaths for those taking the selenium were cut almost in half, according to the study that was published in the *Journal of the American Medical Association*.

While the study concluded the mineral helped protect against all types of cancer, it had particularly powerful impacts on prostate, colorectal and lung cancers. Jean Carper, in *Miracle Cures*, called Dr. Clark's findings an "unprecedented cancer intervention study" that "bumped up the respectability of using supplements against cancer several notches."

Although extremely high doses of selenium can have toxic effects, most people are not at risk for such an overdose, and could, in fact, use more of the mineral. Simply adding more selenium-rich foods, such as organically grown vegetables and fruits to your diet, along with supplements, can help reduce your risk of cancer. And another positive side effect of selenium,

according to Eat and Heal, by the Editors of FC&A Medical Publishing, is that it can actually improve your mood.

In test tube studies, selenium inhibited tumor growth and regulated the natural life span of cells, ensuring that they died when they were supposed to instead of turning "immortal" and hence malignant. Because of this particular action, the University of Arizona researchers say that selenium could be effective within a fairly short time frame.

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Selenium deficiency inhibits macrophage-mediated tumor destruction, and inhibits tumor necrosis factor-alpha production in animals (Kiremidjian-Schumacher et al., 1992).

Much more relevant information at the following link,

http://www.naturalnews.com/016446_selenium_nutrition.html

Zhongguo Fei Ai Za Zhi. 2008 Aug 20;11(4):551-4.

[Effects of selenium and reduced glutathione on the proliferation and apoptosis of XWLC-05 cell.]

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Abstract

BACKGROUND: Selenium is an essential micronutrient for mammals but toxic in large amounts. Most studies indicate that selenium has inhibitory effect on cancer. The aim of this study is to investigate the effects of selenium and reduced glutathione (GSH) combined application on the proliferation and apoptosis of human lung adenocarcinoma cell line XWLC-05.

METHODS: XWLC-05 cells were respectively treated in vitro by four factors (sodium selenite, GSH, sodium selenite+GSH and blank control (RMPI-1640 +10% calf serum) in different concentrations for 24 h. Cell growth inhibition rates were determined by MTT assay, cytomorphology was observed under inverted phase contrast microscope and changes of cell cycle were detected by Flow Cytometry (FCM).

RESULTS: Both selenium and GSH individual on the XWLC-05 cells were found to possess obvious growth inhibition effect on the XWLC-05 cells. Selenium and GSH combined application on the XWLC-05 cells had cooperative inhibition effect ($P < 0.01$). The inhibition rate was increased in a dose-dependent relationship as selenium with concentrations between (0.5-4.0) $\mu\text{g}/\text{mL}$ ($P < 0.01$) whether it was selenium single factors or selenium and GSH combined effect. FCM results showed that some XWLC-05 cells were induced apoptosis and G1 phase cells were markedly increased and S, G2/M phase cells decreased in both selenium individual groups and selenium and GSH combined groups.

CONCLUSIONS: Selenium and GSH combined application on XWLC-05 cells can enhance directly the cell growth inhibitory effect compared with selenium and GSH individual. The mechanism seems to inhibit the synthesis of RNA and protein and prevent cells from entering S phase.
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