

# SODIUM SELENITE DROPS

## General Description

Each 'ml' of **Sodium Selenite Drops** contains 800 mcg elemental selenium, equivalent to 40 mcg per drop of elemental selenium. This is an economical form of selenium with superior absorption.

## Product Highlight

Inexpensive yet highly active selenium supplement.

## Active Ingredients

|                 |                          |
|-----------------|--------------------------|
| Sodium Selenite | 89 mcg per drop (50 mcl) |
| Eq. Selenium    | 40mcg per drop (50 mcl)  |

## Dosage

1 drop daily in half a glass of water, best if taken away from meals and other supplements.

This provides 40mcg of elemental selenium per day.

## Indications

Sodium Selenite Drops is a dietary supplement of selenium, for the treatment and prevention of selenium deficiencies.

## Possible Uses

The active ingredients in **Sodium Selenite Drops**, when appropriately prescribed, may assist patients suffering from the following conditions. This statement does not imply or make a claim for a cure for these disorders. The use of **Sodium Selenite Drops** should be based on published and relevant clinical data for each condition.

## Literature Review

### **Selenium**

Selenium is an essential trace element and, until the late 1980's, its only known biological role was its presence at the centre of glutathione peroxidase, the enzyme that acts to protect against the toxic effects of Hydrogen peroxide. Glutathione peroxidase also has the vital duty of dissociating lipid hydroperoxides. This represents the anti-oxidant role of selenium. It has now been shown that selenium has many other roles in the body, especially with respect to thyroid function. [1] Selenium is an integral part of at least 13 other proteins, including an enzyme, type 1 iodothyronine-5-deriodinase.

Selenium acts as an enzyme and catalyses the conversion of Thyroxine (T4) to the more biologically active iodothyronine (T3). In selenium deficiency, T4 builds up and T3 decreases, with a subsequent decrease in efficiency of thyroid function.

Selenium supplementation can assist in many conditions. Acne is often related to low RBC glutathione peroxidase and may respond to supplementation. [2]

Selenium again promotes glutathione peroxidase, which protects against alcohol induced liver damage. [3]

Low selenium levels correlated with an increased risk of atherosclerosis and myocardial infarction. The correlation

may be due to selenium's effect on polyunsaturated fatty acid levels. Patients with low selenium levels had co-existing low polyunsaturated fatty acids in serum, which was an independent risk factor. [4]

The increase risk of atherosclerosis in selenium deficient patients may be due to its anti-oxidant effect or increased LDL cholesterol levels. Supplementation of selenium reduces platelet aggregation indirectly by increasing prostacyclin production. Glutathione peroxidase prevents lipid hydroperoxides interfering with the production of prostacyclin, which is possibly the body's most effective inhibitor of platelet aggregation. [5] Low serum levels of selenium may affect blood pressure. [7]

Asthma patients in New Zealand have been found to have low serum selenium.

Selenium is a beneficial nutrient in the prevention of cataracts because glutathione peroxidase is an important anti-oxidant in the lens.

Coeliac children are found to have increased sensitivity to oxidative stress and decreased activity of the selenium containing anti-oxidant, glutathione peroxidase. Here the necessity of supplementing selenium is raised. [6]

Selenium deficiency may impair male reproductive function; many different selenium proteins have been identified in the testes. Severe selenium deficiency in rats led to a 60% reduction in testes weight, and is also well known to produce infertility in farm animals. [8]

Selenium is often deficient in western diets and the US Academy of Sciences recommends an intake of 50-200 mcg/day. It is estimated the average selenium intake in Australia is only 75 mcg/day and New Zealand is as low as 37 mcg/day.

## Contraindications

When using higher levels of selenium, regular bi-monthly blood levels testing glutathione peroxidase must be maintained.

## Complementary Considerations

**Formula 33SE Forte** should be considered as it contains Selenium at the level of 150 mcg per tablet, while also providing many of the other known anti-oxidant substances. Individual anti-oxidant formulas may also be considered such as **C-Plus** tablets or powders, **Betabeet**, **Zinc Plus**, **Selenosol** and **Vitamin E Complex**. Herbal/plant based anti-oxidants to consider are **Gingkoseng**.

## **References**

1. Florence T.M. & Setright R.T. 1994. *The Handbook of Preventative Medicine*. Kingsclear Books.
2. Michaelsson. G. & Edquist. L. 1984. Erythrocyte glutathione peroxidase activity in acne vulgaris and the effect of selenium & vitamin E treatment. *Acta Derm Venereol (Stockh)* 64(1): 9-14.
3. Tanner E.R. et al. 1986. Depressed selenium and vitamin E levels in an alcoholic population. Possible relationship to hepatic injury through increased lipid peroxidation. *Dig Dis Sci* 31:1307-12.
4. Miettinen T.A. et al. 1983. Serum Selenium concentration related to myocardial infarction and fatty acid content in serum lipids. *Br Med J* 287:517-19.
5. Schiavon R. et al. 1984. Selenium enhances prostacyclin production by cultured epithelial cells. *Thrombosis Res* 34:389.
6. Boda M. et al. 1989. Selenium levels in erythrocytes of children with coeliac disease. *Orv Hetil* 130(39):2087-90.
7. Salanen J.T. et al. 1988. Blood pressure, dietary fats, and anti oxidants. *Am J Clin Nutr* 48:1226-32.
8. Schrauzer G.N. 1988. Benefits of natural selenium *Anabolism* 7(4):5.