



SELENIUM

Summary

Selenium is a mineral needed in small amounts by the body. The body uses selenium to make enzymes and hormones, to detoxify harmful substances and to strengthen the immune system. People with HIV/AIDS (PHAs) appear to have an increased need for selenium.

Why do PHAs use this supplement?

1. To help maintain levels of protective antioxidants in the body

Antioxidants are compounds that protect cells from harmful chemicals. Examples of antioxidants include vitamin C, vitamin E and zinc. In addition to obtaining these antioxidants from food, the body can make antioxidant enzymes. To do this, the body needs B-complex vitamins and minerals such as copper, manganese, zinc and selenium.

PHAs do not appear to produce enough antioxidant enzymes. This probably occurs because the body's demand for antioxidants is high while at the same time a shortage of important nutrients occurs for one or more of the following reasons:

- reduced absorption from the intestine
- loss of appetite (sometimes a side effect of medications)
- diarrhea
- HIV robs the body of selenium to make more viruses
- poor eating habits

Because selenium plays such an important role in the creation of the body's antioxidant enzymes, some PHAs take supplements of this mineral. For further information about antioxidants, please read the CATIE Supplement Sheet on that topic available at: www.catie.ca/supple-e.nsf.

2. To help strengthen the immune system

Selenium supplementation appears to boost the functioning of immune cells, at least in lab experiments. Researchers monitoring the long-term health of PHAs have found that those PHAs who have less-than-normal levels of selenium in their blood are at increased risk of death compared to PHAs with normal levels of selenium. Thus selenium supplementation, in addition to combination anti-HIV therapy, may further delay death.

While we have highlighted the role selenium plays in HIV/AIDS, this mineral may also be useful in helping to keep the brain, cardiovascular system, prostate and thyroid glands healthy.

Available forms and usage

The following foods are good sources of selenium:

- shellfish such as crab and scallops
- fish (snapper, halibut, salmon)



- oats
- Swiss chard
- liver
- kidney

North American wheat, and therefore bread and cereals made from this wheat, are supposed to be good sources of selenium. However, selenium levels in soil may be decreasing.

Selenium supplements are available in two forms:

- organic - selenocysteine, selenium citrate and yeast and kelp rich in selenium
- inorganic - sodium selenite and sodium selenate

The inorganic forms of selenium are probably better absorbed than the organic forms. However, researchers often prefer to use organic forms of selenium because they are less toxic in the short-term than inorganic forms.

The dose commonly used by adult PHAs is usually around 200 micrograms (mcg) daily; higher amounts are not necessary.

Cautions and concerns

Toxicity can occur when daily doses greater than 900 mcg are taken for prolonged periods. Symptoms of toxicity include brittle hair and nails, hair loss and skin lesions. Damage to bones, the liver, heart and other organs can also occur at high doses.

Credits

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Decisions about particular medical treatments should always be made in consultation with a qualified medical practitioner knowledgeable about HIV-related illness and the treatments in question.

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