

## Selenium Dose Safety Considerations



You might notice a selenium safety warning on some supplements you have been prescribed. Please do not be alarmed; this is a TGA (government) requirement on supplement labels containing selenium to ensure the general public does not self-prescribe large doses.

The safety warning will read.

*Contains selenium, which is toxic in high doses; a daily dose of 150 µg for adults from supplements should not be exceeded.*

**The facts and the research state that up to 400mcg per day is safe for adults.**

The Recommended Dietary Allowance (RDA) of selenium to maintain optimal levels for men and women is 55 mcg per day. Repletion dose is recommended 150-400mcg per day, with the upper safe level of 400ug per day recommended (2).

## Role Of Selenium In The Body

Selenium is a trace mineral, meaning the body only needs a small amount. It is found naturally in foods or as a supplement. Selenium is an essential component of various enzymes and proteins, called selenoproteins, that help to make DNA and protect against cell damage and infections; these proteins are also involved in reproduction and the metabolism of thyroid hormones. Most selenium in the body is stored in muscle tissue, although the thyroid gland holds the highest concentration of selenium due to various selenoproteins that assist with thyroid function. Selenium also supports a healthy immune system and helps with DNA synthesis and repair, hence plays a critical role in fertility and reproductive health.

## Signs Of Selenium Deficiency

Selenium deficiency can manifest in several symptoms, including:

- Weakness and fatigue
- Muscle weakness
- Hair loss and brittle nails
- Skin disorders, such as dermatitis
- Impaired immune function and increased susceptibility to infections
- Thyroid dysfunction - leading to symptoms like weight gain, cold intolerance, and fatigue
- Reproductive and fertility issues
- Cognitive impairment and mood disturbances
- Selenium deficiency is also associated with male infertility

## Genes and Selenium

Foods that provide selenium include Brazil nuts, seafood (such as fish and shellfish), meats (like beef, pork, and poultry), eggs, and grains (such as wheat and rice). Brazil nuts are the richest source, while seafood and organ meats also contain significant amounts. The selenium content in foods can vary depending on soil levels. It's advisable to refer to food composition databases or labels for specific information on selenium content.

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## Recommended Amounts

**RDA:** The Recommended Dietary Allowance (RDA) for adult men and women 19+ years of age is 55 micrograms daily. Pregnant and lactating women need about 60 and 70 micrograms daily, respectively.

**UL:** The Tolerable Upper Intake Level (UL) for selenium for all adults 19+ years of age and pregnant and lactating women is 400 micrograms daily; a UL is the maximum daily intake unlikely to cause harmful effects on health.

## Did You Know?

- Selenium and iodine have a synergistic relationship that is especially important for a healthy thyroid. Iodine is a component of thyroid hormone, and selenium as a selenoprotein helps to convert the thyroid hormone into its active form. Both minerals are needed by the thyroid in adequate amounts; too much of one can contribute to a deficiency of the other.
- Selenium supplements are promoted to offer several benefits, including boosting immune function, improving hair and nail health, and supporting a healthy thyroid. They are sometimes combined with other antioxidant vitamins, such as vitamin E or C. These supplements usually contain between 100-400 micrograms of selenium per dose (the Tolerable Upper Intake Level is 400 micrograms).

## References

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