

Estrogen Overview: Functions, Sources and Health Outcomes

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INTRODUCTION

Estrogen is a vital hormone primarily associated with the female reproductive system, but it plays significant roles in both men and women. Understanding estrogen involves exploring its functions, sources and the impact it has on health.

DESCRIPTION

What is estrogen?

Estrogen is a group of hormones that includes estradiol, estrone and estriol. While often considered a female hormone, it is produced in both sexes, albeit in different quantities. In women, estrogen is predominantly produced in the ovaries, with smaller amounts coming from the adrenal glands and fat tissue. In men, the testes produce a small amount of estrogen, which is essential for regulating various bodily functions.

Functions of estrogen

Reproductive health: In women, estrogen is crucial for the regulation of the menstrual cycle. It helps in the development of secondary sexual characteristics, such as breast development and the widening of hips during puberty. Estrogen also plays a vital role in preparing the uterus for pregnancy and maintaining a healthy pregnancy.

Bone health: Estrogen is instrumental in maintaining bone density. It helps regulate the balance between bone resorption and formation. A decrease in estrogen levels, particularly during menopause, can lead to a significant increase in bone loss, resulting in conditions such as osteoporosis.

Cardiovascular health: This hormone contributes to cardiovascular health by promoting healthy cholesterol levels. It helps increase HDL (good cholesterol) and lower LDL (bad cholesterol), which can reduce the risk of heart disease.

Mood regulation: Estrogen influences neurotransmitters in the brain, including serotonin, which can affect mood and emotional well-being. Fluctuations in estrogen levels may

contribute to mood swings, anxiety and depression, especially during the menstrual cycle or menopause.

Skin health: Estrogen has a positive effect on skin health. It promotes collagen production, enhancing skin elasticity and moisture. As estrogen levels decline with age, many experience changes in skin texture and an increase in wrinkles.

Sources of estrogen

Estrogen can be obtained from various sources. In addition to the body's natural production, there are dietary sources and synthetic options available:

Dietary sources: Certain foods contain phytoestrogens, which are plant-based compounds that can mimic estrogen in the body. These include soy products, flaxseeds, sesame seeds and whole grains. Incorporating these foods into the diet may help maintain balanced estrogen levels.

Synthetic estrogens: Hormone Replacement Therapy (HRT) often includes synthetic forms of estrogen. This treatment is commonly prescribed to alleviate symptoms associated with menopause, such as hot flashes and vaginal dryness. It can also help prevent osteoporosis in postmenopausal women.

Environmental sources: Xenoestrogens are synthetic compounds found in some plastics, pesticides and personal care products. These can disrupt hormonal balance in the body and have been linked to various health issues. Reducing exposure to these substances can be beneficial for hormonal health.

Health implications of estrogen

While estrogen is essential for various bodily functions, an imbalance can lead to health concerns. Both excess and deficiency of estrogen have implications for health.

Estrogen dominance: This condition occurs when there is too much estrogen relative to progesterone in the body. It can lead to symptoms such as bloating, weight gain, mood swings and heavy menstrual bleeding. Long-term estrogen dominance has been linked to an increased risk of certain cancers, including breast and endometrial cancer.

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Low estrogen levels: Insufficient estrogen can cause symptoms such as hot flashes, night sweats, vaginal dryness and mood changes. It can also lead to bone loss and increase the risk of osteoporosis. Low estrogen levels are common during menopause but can also occur due to certain medical conditions or treatments.

Hormonal disorders: Conditions such as Polycystic Ovary Syndrome (PCOS) and endometriosis can disrupt estrogen levels, leading to various symptoms and health challenges. Managing these conditions often requires a comprehensive approach that may include lifestyle changes, medication or hormone therapy.

CONCLUSION

Estrogen is a crucial hormone that influences numerous aspects of health, from reproductive functions to bone density and mood regulation. Understanding its roles and sources can empower individuals to make informed choices regarding their health. Whether through diet, lifestyle changes or medical treatments, maintaining a healthy balance of estrogen is essential for overall well-being. Awareness of the potential effects of both excess and deficiency can help guide decisions and promote a healthier life.