



Dehydroepiandrosterone (DHEA)

Common Indications:

- Anti-aging
- Anti-cancer
- Bone effects
- Cardiovascular health; may improve NO production
- Hormonal and metabolic balance, including insulin resistance
- Immune imbalances
- Improving cognitive function
- Libido improvement
- Neurological conditions including mood disorders like depression

General Comments:

Dehydroepiandrosterone (DHEA) is a key pro-hormone as it is the precursor to estrogen, testosterone and progesterone, as well as 50 other hormones in the body. When measuring it in the blood, DHEA rises and falls in quick bursts so this is not the ideal lab test. It is much more reliable to test for its sulphated ester, DHEA-Sulfate. It behaves very differently in men versus women but does a lot of overlap in its utility. It a key anabolic repair element and also key in regulation of glucose and lipids. As a hormone it has broad array of influence in the body. It is neuroprotective and tends to calm the brain and stabilize mood. It enhances sex drive via its androgen influence. Supports immune function and improves energy.

Caution in use with men needs to be observed as simply taking this element in the face of normal DHEA-sulfate levels will tend to generate excessive estrogen in men thus driving potential prostate issues. Women given DHEA on the other hand will tend to turn it into testosterone more efficiently than men. DHEA levels tend to decline over time, especially after menopause in women.^{1,2} Women make most of their DHEA from the adrenal glands whereas men have a more balanced production from adrenals and testicles.

Benefits & Mechanism of Action:

Anti-Aging:

- Anabolic support as precursor to estrogen and testosterone as well as 50 other hormones.

- Stimulates production of insulin growth factor-1 (IGF-1), which in youth is beneficial but over the age of 45 may be problematic so caution in excessive use. Balance is key.
- Low DHEAS levels in the elderly is associated with greater occurrence of chronic degenerative disorders.²

Bone Effects:

- Most research shows a positive correlation between bone mineral density and serum DHEA-S levels in humans, particularly in postmenopausal women.³ The androgenic and estrogenic effects of DHEA may play a role in bone metabolism.⁴ In aging adults, DHEA supplementation (alone or co-administered with vitamin D and calcium) has been shown to increase BMD.⁵

Cardiovascular:

- DHEA-S levels are decreased in men with congestive heart failure (CHF), in proportion to its severity, possibly due to the effects of oxidative stress on electron transport required for DHEA synthesis.⁶ Also, population research suggests that low levels of DHEA and DHEA-S are associated with an increased risk of coronary heart disease in elderly men.⁷
- Research suggests that DHEA supplementation may have beneficial effects on microvascular circulation and cardiovascular risk. Supplemental DHEA seems to inhibit synthesis of thromboxane A2 in platelets, decrease augmentation index, increase serum levels of insulin-like growth factor 1 (IGF-1), and increase levels of cyclic guanosine monophosphate (GMP) and nitric oxide synthesis.^{8,9} DHEA supplementation also appears to reduce plasminogen activator inhibitor type 1 (PAI-1) and tissue plasminogen activator (tPA) antigen.

Hormonal Effects:

- Researchers speculate that DHEA might have similar therapeutic benefits to estrogen-progestin hormone replacement therapy. In a low-estrogen environment such as menopause, DHEA has estrogenic effects. Some of the effects in postmenopausal women are similar to HRT including increasing estradiol, estrone, osteocalcin, growth hormone, and insulin-like growth factor 1 (IGF-1); however, unlike HRT, DHEA also increases androstenedione and testosterone.^{10,11} Conversion to estrogen doesn't seem to be necessary for its estrogenic activity.

Improving Cognition:

- In the brain, DHEA is concentrated in the limbic regions and may function as an excitatory neuroregulator, antagonizing gamma-aminobutyric acid (GABA) transmission.

Dose: Women: 5 to 25mg/day Men: 25 to 50mg/day

- Doses of 100mg daily are sometimes used for elderly individuals or those with excessively low DHEA levels.
- DHEA levels can be easily checked using a salivary or blood test but should always be measured as DHEA-Sulfate as this is a more stable compound. DHEA itself goes through

wide swings in the course of a day.

Cautions and Side Effects:

- There is no known toxicity when using DHEA as a dietary supplement. However, testing of DHEA levels in patients is recommended before supplementation.
- The most common side effects from too much DHEA include: acne, hirsutism, mood changes such as irritability and aggressiveness, insomnia, fatigue and low energy.
- Use with caution in pregnancy and lactation.

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General Comments

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Anti-Aging

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Bone Effects

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Cardiovascular

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Hormonal Effects

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