

DHEA (Dihydroepiandrosterone)

History

- A natural hormone made primarily by the adrenal gland.
- Levels in humans peak around age 30, then drop by about 90% towards the end of life.
- Promoted as a “wonder drug” to help people stay thin and strong, avoid death from breast cancer and heart disease, improve memory, improve "well-being", and prevent aging.

Most studied use

Adrenal insufficiency (primary or secondary)

Other common uses

Performance enhancement in athletes, depression, "promotion of general well being"

Summary of the evidence

- In patients with documented adrenal insufficiency, DHEA may improve physical and psychological well-being, depression, and sexual function.
- There is little data which is mostly negative for all other purported uses.
- DHEA can have serious androgenic effects on skin including increased sebum production, hair growth, and acne, as well as adverse metabolic effects such as insulin resistance, dyslipidemia, hepatic dysfunction, or high blood pressure.
- High doses or long-term use could increase ones risk of prostate or breast cancer.

Pharmacology

- DHEA is made from cholesterol and is a precursor for testosterone and estrogen. It is sometimes referred to as a "prohormone".
- DHEA levels decrease during illnesses such as lupus, rheumatoid arthritis, and major depressive disorder. Levels are higher in men than in women.

Mechanism of action

- DHEA may boost production of testosterone by increasing the supply of testosterone precursors.

Clinical studies

- In a trial looking at the effects of DHEA vs. placebo, DHEA did not result in increased serum testosterone, did not reduce the estrogenic effect of androstenedione, and did not augment the body's adaptations to resistance training. (Brown 1999)
- In three controlled and several uncontrolled clinical trials, including one large multicenter study comprising nearly 200 patients (Arlt 1999), DHEA has shown promise in improving a wide range of symptoms in patients with primary or secondary adrenal insufficiency.

Adverse effects

- DHEA may cause virilizing effects in women.
- Concern has been raised that long-term use could induce hormone-sensitive malignancies, such as cancer of the prostate and breast.
- DHEA can cause gynecomastia, virilization, and premature epiphyseal fusion.
- Impurities in the preparation or metabolic products from prohormones themselves can cause an individual to test positive for anabolic steroid use.
- DHEA may also cause acne, abdominal pain, hypertension and less favorable lipid profiles (low HDL). There are therefore theoretical risks that DHEA could increase one's risk of stroke or cardiovascular disease.

Contraindications/cautions

- Use with caution in those with liver disease, hypertension, lipid abnormalities, or increased risk or history of prostate or breast cancer.

Important drug/herb interactions

- No interactions with drugs have been reported.

Formulation and dosage

- Most studies have tested 50 mg tablets once per day.

Key DHEA References

1. Arlt, W, Callies, F, van Vlijmen, JC, et al. Dehydroepiandrosterone replacement in women with adrenal insufficiency. *N Engl J Med* 1999; 341:1013
2. Abramowicz M. Dehydroepiandrosterone (DHEA). *Med Lett* 1996;38:91-2.
3. Brown GA, Vukovich MD, Sharp RL., et al. Effect of oral DHEA on serum testosterone and adaptations to resistance training in young men. *J Appl Physiol* 1999;87:2274-83.