HORMONE SUPPORT

DHEA 25 mg
(dehydroepiandrosterone)

MICRONIZED; SUPPORTS HEALTHY DHEA LEVELS‡

DHEA (dehydroepiandrosterone) is an endogenous steroid hormone that is primarily secreted by the adrenal cortex. **DHEA and its predominant metabolite, DHEA sulfate (DHEAS), are the most abundant circulating steroid hormones in humans.**[1] In various tissues, DHEA is metabolized into androgens and/or estrogens that regulate diverse endocrine and reproductive functions, metabolism, energy balance and mineral assimilation.[2-4] DHEA supplementation also supports emotional well-being, immune function and healthy aging.‡[5-8]

- Restores DHEA to more youthful levels in both men and women‡
- Supports healthy aging‡
- Supports healthy immune cell activity and immune system function‡
- Supports emotional well-being‡
- May promote a healthy ratio of lean muscle to fat mass‡

DHEA concentrations peak at age 20-24 in men and at age 15-19 in women, then decline steadily with age in both sexes.[9,10] This decline coincides with age-related changes in the cardiovascular, reproductive and nervous systems.[1] Multiple randomized controlled trials have demonstrated that DHEA supplementation restores DHEA to more youthful levels and maintains healthy hormone profiles with age in both men and women.[4,10-12]

Clinical evidence also suggests an inverse relationship between emotional stress and circulating DHEA concentrations.[13,14] One study found that DHEAS levels were 23% lower in subjects experiencing work-related stress compared to controls with minimal stress.[14]

Our DHEA provides micronized DHEA. Micronization reduces the size (average diameter) of solid particles. This process is used to increase surface area and dissolution rates, which support absorption and bioavailability.

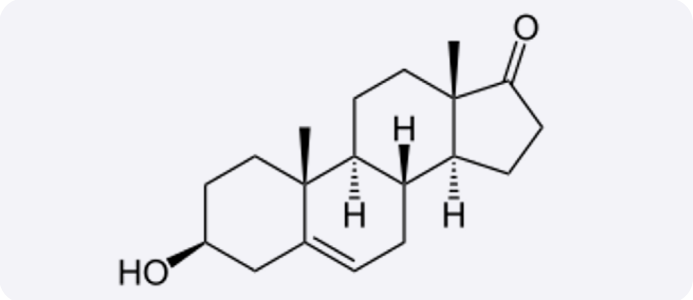

Figure 1. *Structure of DHEA*

WHO IS THIS SUPPLEMENT FOR?‡

- Men and women over 40 with low levels of DHEA(S) or its steroidal metabolites
- Patients wishing to be proactive about healthy aging

‡This statement has not been evaluated by the Food & Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

MECHANISMS OF ACTION‡

Steroid hormone precursor. DHEA is a direct precursor of androstenedione, which may subsequently undergo metabolism to testosterone and/or estrone (Figure 2). The fate of DHEA in the steroid biosynthetic pathway is tissue-specific because the enzymes catalyzing each conversion step are differentially expressed across cell types and organ systems. Genetics, age, sex and other factors contribute to substantial inter-individual variability in steroid synthesis and metabolism.

Hormone-independent effects. Apart from its role as a hormone precursor, DHEA binds directly to various nuclear and membrane receptors that regulate gene expression and signal transduction. In vitro, DHEA modulates peroxisome proliferator activated receptor alpha (PPAR), the N-methyl-d-aspartate (NMDA) and γ-aminobutyric-acid type A ($GABA_A$) receptor, which regulate lipid metabolism, excitatory and inhibitory neurotransmission, respectively.[1]

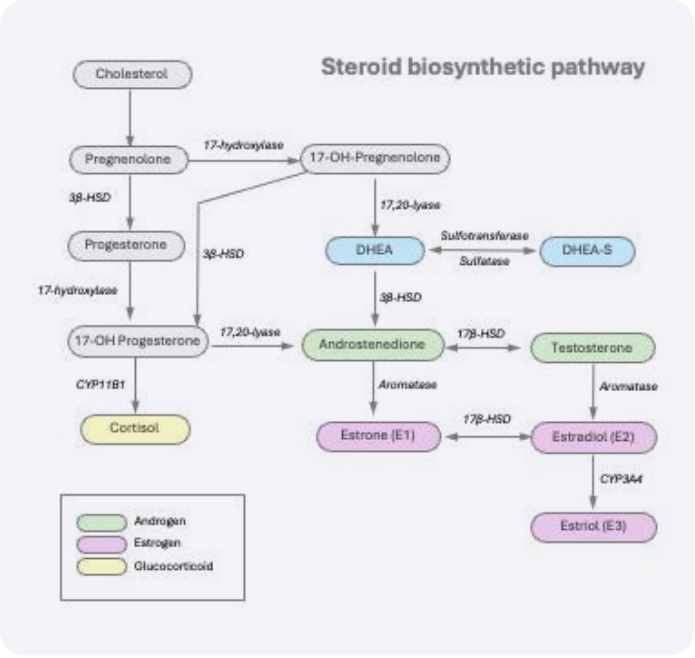

Figure 2. *Steroid hormones are synthesized from cholesterol. DHEA is an important intermediate in the synthesis of androgens (androstenedione and testosterone), estrogens (estrone, estradiol and estriol) and cortisol. The fate of DHEA in this pathway depends on expression of each enzyme, which depends on cell type, individual genetics, age and other factors.*

RESEARCH HIGHLIGHTS‡

- In a small study of 10 men (age range 58–69) presenting with the PADAM symptoms complex (reduction of libido, decline in muscular mass and strength, apathy, arthralgia and ostalgia) and low baseline androgen levels, supplementation with DHEA (25 mg/day) for 1 year significantly increased DHEA, DHEAS, androstenedione, total and free testosterone, DHT, progesterone, 17-hydroxyprogesterone, estrone, estradiol, GH, IGF-1 and beta-endorphin from baseline, while FSH, LH and SHBG significantly decreased. A progressive improvement in mood, fatigue and joint discomfort was detected using Kupperman scores.[10]
- In a prospective case study in 20 postmenopausal women, DHEA supplementation (25 mg/day) significantly increased serum DHEA and DHEAS. Estrone, estradiol, progesterone, androstenedione, testosterone and dihydrotestosterone also increased, while LH and FSH decreased.[11]
- In a randomized controlled trial of 24 middle-aged, hypercholesterolemic men (age 53-55) DHEA (25 mg/d) significantly increased flow-mediated dilation (FMD) of brachial artery.[7] FMD refers to the nitric oxide-mediated widening of the artery in response to increased blood flow.
- In a study of 27 women aged 65-90 years with cognitive decline, DHEA (25 mg/day) for 6 months increased cognitive scores and maintained ADL (activities of daily living) score, which decreased in the control group.[15]
- In a randomized controlled trial of 20 healthy postmenopausal women with low serum DHEAS concentrations, supplementation with DHEA (25 mg/day) for 12 months significantly improved insulin sensitivity (M index +29.55%) and lipids (HDL-c +11.61%, LDL-c -11.07%, triglycerides -19.60%) while no changes were observed in the placebo group.[8]
- In a randomized, double-blind, parallel trial of 13 healthy postmenopausal women, DHEA (25 mg/d) for 6 months restored circulating DHEA levels to the premenopausal range.[4]
- In a study of 20 postmenopausal women, DHEA (25 mg/day) for 12 months restored DHEA and DHEAS levels to those of younger women. With DHEA supplementation, all adrenal androgens and progestins significantly increased in response to ACTH, while the cortisol response decreased.[12]

POTENTIAL INTERACTIONS

Estrogens and antiestrogens. DHEA may increase estrogen levels.[16,17] This could have additive effects when combined with pharmaceutical estrogens. Increased estrogen may also antagonize the therapeutic effects of estrogen receptor antagonists, selective estrogen receptor modulators (SERMs) and aromatase inhibitors.

Testosterone. DHEA may increase androgen levels in both men and postmenopausal women.[10,11] Theoretically, this could modify the effects, adverse effects and risk profile of exogenous testosterone.

To check whether a medication may have clinically significant interactions with [nutrients and] ingredients based on doses commonly used in dietary supplements, visit our **Drug-Nutrient Interaction Checker.**

Supplement Facts

1 capsule daily, with a meal.

Each (size 1) vegetarian capsule contains:

DHEA (dehydroepiandrosterone, $C_{19}H_{28}O_2$) (micronized)	25 mg

Other ingredients: hypoallergenic plant fiber, vegetarian capsule (cellulose, water), rice hulls, ascorbyl palmitate

NOT FOR USE BY INDIVIDUALS UNDER THE AGE OF 18 YEARS. DO NOT USE IF PREGNANT OR NURSING. Consult a physician or licensed qualified healthcare professional before using this product if you have, or have a family history of, breast cancer, prostate cancer, prostate enlargement, heart disease, low "good" cholesterol (HDL), or if you are using any other dietary supplement, prescription drug, or over-the-counter drug. Do not exceed recommended serving. Exceeding recommended serving may cause serious adverse health effects. Possible side effects include acne, hair loss, hair growth on the face (in women), aggressiveness, irritability, and increased levels of estrogen. Discontinue use and call a physician or licensed qualified healthcare professional immediately if you experience rapid heartbeat, dizziness, blurred vision, or other similar symptoms. KEEP OUT OF REACH OF CHILDREN. To report any adverse event call 1-800-332-1088.

CAUTION ATHLETES: DHEA is classified as a prohibited substance by certain sports organizations, as well as the World Anti-Doping Association (WADA).Please consult the rules of your specific organization to determine if DHEA is prohibited.

Hormone Support NON GMO V VEG

DHEA 25 mg (micronized)	Quantity	Order Code
	180	DH21
	60	DH26

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‡This statement has not been evaluated by the Food & Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

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