

7-Keto® LeanGels™

TECHNICAL SUMMARY

7-Keto-DHEA is a natural metabolite of dehydroepiandrosterone (DHEA), which peaks in early adulthood and declines with age.* 7•KETO® has been clinically shown to support healthy fat distribution and assist in the maintenance of a healthy weight when used alongside a healthy diet and exercise regiment.* In addition, 7•KETO® LeanGels™, combines 7•KETO® with Green Tea Extract, Acetyl-L-Carnitine, and Rhodiola Extract to support cellular fat transport.*

Structure formula:

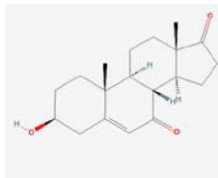


Figure 1: 7-keto DHEA

Chemical Name: 3-acetyl-7-oxo-dehydroepiandrosterone; (9Z,11E)-octadeca-9,11-dienoic acid

Allergen and Additive Disclosure: Not manufactured with wheat, gluten, milk, egg, fish, or shellfish ingredients. Produced in a GMP facility that processes other ingredients containing these allergens.

Delivery Form: Softgel

ROLE AS NUTRIENT/FUNCTION

7-keto-DHEA: Pre-clinical data suggest that 7-keto-DHEA increases thermogenesis through the stimulation of thermogenic enzymes (glycerol-3-phosphate dehydrogenase, malic enzyme) in the liver.* 7-keto DHEA also increases the rate of mitochondrial substrate oxidation, liver catalase activity, and acetyl-CoA oxidase activity.* Furthermore, it can affect thyroid hormone production.*

Conjugated Linoleic Acid (CLA): Experimental data suggest that CLA might reduce body fat deposits by promoting apoptosis in adipose tissue.*

Green Tea Extract (GTE): It is believed that GTE exerts its effects on fat oxidation through the inhibition of catechol O-methyltransferase, an enzyme that degrades noradrenaline.* This reduction in noradrenaline degradation could potentially prolong adrenergic drive and increase lipolysis.* Green tea extract might also reduce fatty acid production by inhibiting fatty acid synthase.*

NATUROKINETICS®

Liberation: 7•KETO® softgels passed a standard disintegration test in water (<60 min.).

Absorption: Similar to DHEA, 7-keto-DHEA is rapidly absorbed and can be detected in plasma in the sulfated form. Plasma level of 7-keto-DHEA sulfate after a 100 mg oral administration of acetyl-7-keto-DHEA (Humanetics Corp.) in healthy male volunteers is shown in Figure 2 ($T_{max}=2.2$ h, $T_{1/2}=2.17$ h).

Distribution: Specific tissue distribution of 7-keto-DHEA sulfate and its ability to cross blood-brain barrier is largely unknown.

Supplement Facts

Serving Size 1 Softgel

	Amount Per Serving	% Daily Value
Calories	5	
Total Fat	0.5 g	< 1%*
7•KETO® (DHEA Acetate-7-one)	100 mg	†
Conjugated Linoleic Acid (CLA) (from Safflower Oil)	400 mg	†
Green Tea Extract (<i>Camellia sinensis</i>) (Leaf)**	75 mg	†
Acetyl-L-Carnitine (from Acetyl-L-Carnitine HCl)	15 mg	†
Rhodiola Extract (<i>Rhodiola rosea</i>) (Root)	10 mg	†

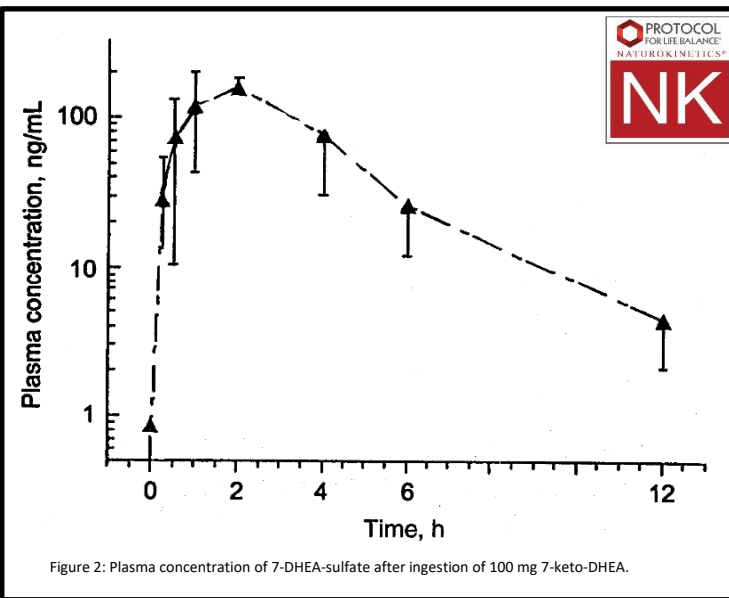
* Percent Daily Values are based on a 2,000 calorie diet.

† Daily Value not established.

Other ingredients: Softgel Capsule (bovine gelatin, glycerin, water, carob), Beeswax, Soy Lecithin and Sunflower Oil.

- **Weight Management***
- **DHEA Metabolite**

SUGGESTED USAGE: Take 1 softgel 2 times daily with food.

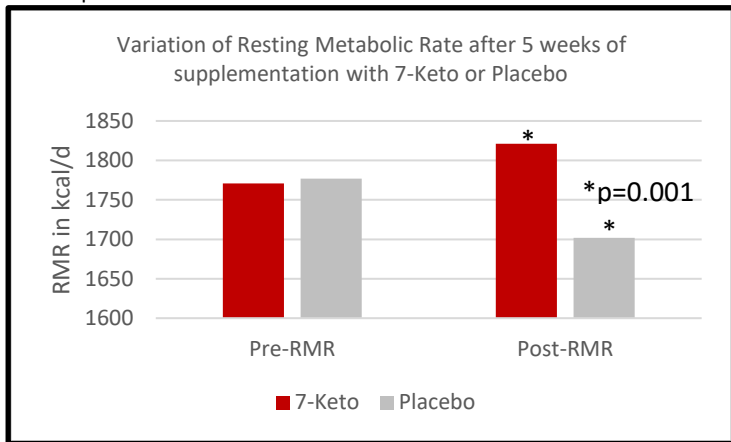


Metabolism: 7-keto-DHEA is consumed in its acetylated form. After consumption, it is rapidly deacetylated, sulfated and appears in plasma in sulfated form (see absorption). Further metabolism of 7-keto-DHEA sulfate is not clear, but it is different from DHEA and does not result in formation of androgenic or estrogenic hormones.

Elimination: 7-keto-DHEA is at least partially eliminated in urine.

CLINICAL VALIDATION

- There is growing evidence supporting the hypothesis that individuals with a low resting metabolic rate (RMR) may be predisposed to weight gain. RMR represents 60% of total energy expenditure; therefore small increases in RMR may result in considerable energy consumption over time. A randomized, double-blind, placebo-controlled study was performed on 40 healthy adults ($25 \leq \text{BMI} \leq 40$) testing 7-keto-DHEA (7•KETO®, Humanetics Corp.) *versus* placebo over a 5-week period. During the study period subjects received a total dose of 200 mg/day of 7-keto-DHEA or placebo. In this study, the administration of 7•KETO® reversed the decrease in RMR normally associated with dieting.* 7•KETO® increased RMR above basal levels and may therefore benefit individuals with impaired energy expenditure.*



- In a double-blind, placebo-controlled study of 30 adults with a mean BMI of $31.9 \pm 6.2 \text{ kg/m}^2$ comparing 7-oxo-DHEA 100 mg twice daily *versus* placebo over 8 weeks, subjects receiving 7-keto-DHEA lost significantly more weight than the placebo group (-2.88 kg vs. -0.97 kg; $P = 0.01$; $n=23$).^{*} They also achieved a significantly higher reduction in body fat than the placebo group (-1.8% vs. -0.57%; $P = 0.02$).^{*}

SAFETY INFORMATION

Tolerability: In a 5-week clinical study some subjects reported nausea and vertigo after taking 7-keto-DHEA, however there was no significant difference with the placebo group in terms of number of adverse event reported.

Contraindications: None known

INTERACTIONS

Drug Interactions: 7-keto-DHEA could theoretically interact with thyroid hormone replacement. If you are taking thyroid medications, consult your healthcare practitioner before using this product.

Supplement Interactions: Some evidence suggests that CLA might increase vitamin A (retinol) storage in liver and breast tissues.

Interaction with Lab Tests: in obese patients, 7-keto-DHEA may increase T_3 levels.

STORAGE

Store in cool, dry, and dark environment in original sealed container. Protect from extended exposure to moisture, heat, and direct light.