

## 7-Keto DHEA Review & Information

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### 7-Keto DHEA Guide: Lose Fat And Build Muscle!

7-Keto improves lean body mass by reducing cortisol and increasing testosterone-to-cortisol ratios enabling the body to build muscle in a growth promoting environment. It has also been shown to increase your body's ability to burn calories. It is a non-hormonal, non-androgenic derivative of DHEA.

The groundbreaking new micronutrient 7-Keto, a patented compound which, by activating thermogenic enzymes, has been shown to safely "rev up" the basal metabolic rate and thus "burn" calories more rapidly and continually throughout the day, even while resting, as well as inhibit the storage of fat within the

body.

### All About 7-Keto

When we age the ability to control our quality of life becomes an issue for all of us. The application of aging research into the steroid dehydroepiandrosterone (DHEA) has helped our understanding of age induced losses of functional capacity, and has subsequently lead to the discovery of a relatively new compound "7-OXO-DHEA".

7 - Keto as it is more commercially known may have physiological actions that allow us to train well into old age. Recent studies suggest it may also have applications to a youthful, healthy, and physically active population. So the questions beckon; is there evidence to support 7-keto use over a broad spectrum of ages? And if so, how can it affect our physiques? And what lessons can be learned from ageing science to keep us ahead of the dietary supplement market regarding the use of this novel compound?

### The Scientific Facts Behind 7-Keto DHEA

The appliace of science to any functional context, in this case your health, performance and physique goals, are the mark of any good nutritional scientist. But as a scientist you can only base your assumptions on the scientific facts and fortunately for us this month we have plenty to work with; as the discovery of the DHEA metabolite "3b -Acetoxyandrost - 5 - ene-7, 17- dione" was discovered back in the late 1950's1 (and they wonder why we call it 7-Keto...imagine fitting that one on the label).

Because of this we have amassed a large volume of work in this often heavily chemical orientated, and sometimes confusing area of metabolism. In the past, 7-keto's closest relative DHEA gave us the initial and indeed pioneering insights into the potential benefits this class of compound can deliver.

Although considered relatively inert by the mid to late 90's, this view on DHEA was in for a radical change. The National Institute of Aging (web site) issued a public service announcement regarding its safety and warned consumers of its sex steroid associated side effects5. Because of the potential benefits to health, the search for a DHEA-like compound without the associated side effects was on. Although first identified in human urine in 19481 and tissues in 19546 it wasn't until the mid 90's when Dr. Henry Lardy began the excellent research on what he called "Ergosteroids"7.

The nomenclature of the ergosteroid family emerged due to their influences on energy metabolism; indeed this area in particular will form the core of our discussion on 7-keto. After a paper was released showing that DHEA could bring about a thermoginetic effect in rats, it wasn't long before both the nutraceutical and scientific world began the search for an effective and "safe alternative to ephedrine" for fat loss. In essence, a chemical that could confer the positive health benefits of DHEA.

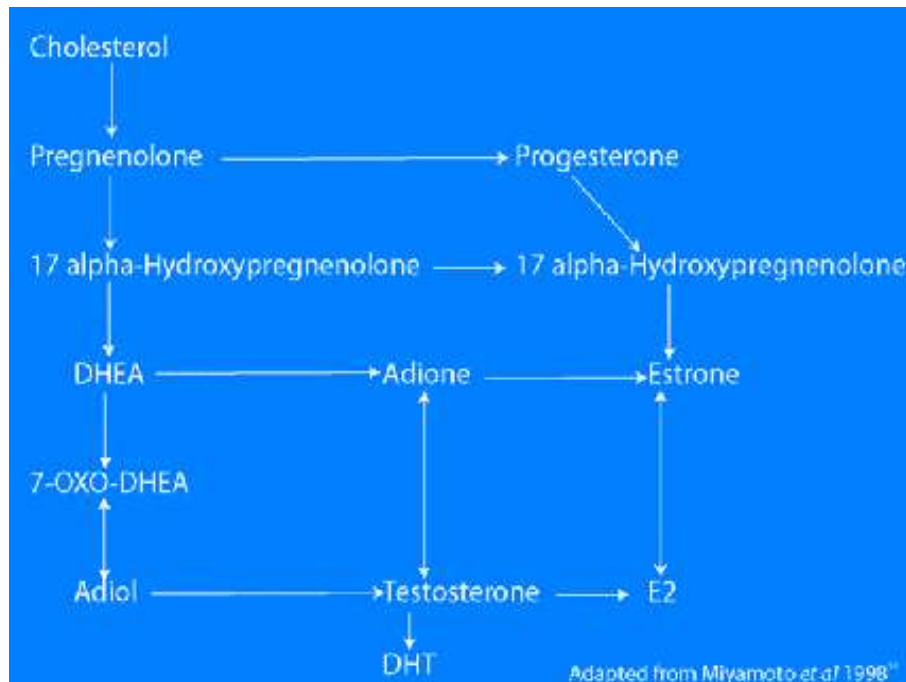


Fig.1 The biosynthetic pathway of 7-keto DHEA.

## Feeding The Machine (Pharmacokinetics & Safety)

DHEA is a steroid produced by the adrenal gland<sup>7</sup> and is the most abundant steroid in human blood<sup>8</sup>. There are always two things you should understand prior to the use of any sport / health supplement.

1. *Safety of the product and the dose range proven to be safe.*
2. *Knowledge of how the supplement is taken up into the tissues and how quick it is excreted, "in-essence it's pharmacokinetic profile".*

7-keto is a highly active derivative of DHEA and is one supplement of which its pharmacokinetic profile is needed if we want to ascertain when peak levels occur in plasma. This information will help prescribe the best possible rational for its time of use, dosage, and safety to optimise body compositional changes.

A series of trials have looked at both the safety and pharmacokinetics of 7-keto. In animal studies, 7-Keto was shown to be safe and in effect non-toxic to levels of 2000mg/kg in rats<sup>9</sup> and 1000mg/kg in monkeys. Toxicity was assessed by full-blood chemistry, blood cell counts and histological examination in 42 different tissues. Again caution must be taken until we see the human data; so what human data does exist? Davidson et al<sup>11</sup> studied a series of doses ranging from 50mg/d (25mg twice daily) for 7 days; 100mg/d (50mg twice daily) for 7 days; and finally 200mg/d (100mg twice for 28 days). Results demonstrated that at all doses, 7-keto in comparison to a placebo presented no substantial impact on clinical blood markers of toxicity and health. This data was supported in further human trials.