



Primary Care & Chiropractic Center

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DHEA

When the Dietary Supplement Health and Education Act (DSHEA) was passed in 1994, it allowed dietary supplements such as vitamins, herb and botanicals, minerals, amino acids, tissue extract (i.e., tissues or enzymes from organs or glands), and metabolites, concentrates, constituents or extracts to be regulated as a food product rather than a pharmaceutical.¹ As a result, dietary supplements do not need to be proven effective nor safe while at the same time they cannot make claims to cure, treat, nor prevent disease. It is under the guise of the DSHEA that enable potent chemicals like the hormone dehydroepiandrosterone (DHEA) to be marketed as a dietary supplement allowing it to bypass having to prove efficacy.

DHEA is naturally produced by the adrenal glands and is the precursor to androstenedione (commonly known as “andro” in the body building world) and androstenediol which further produce testosterone and the estrogens estrone and estradiol.² While DHEA cannot be labeled nor marketed to make claims to increase strength, increase endurance, enhance energy, or increase muscle mass, all it takes is one “news article” in a muscle or health magazine to mention DHEA can be used for these enhancements. Everyone is looking for the easy solution to improved sport performance or physical appearance. In addition to these ergogenic claims, DHEA has been promoted as being effective for strengthening the immune system, enhancing libido, preventing cancer and cardiovascular disease and as an anti-aging agent.³

Since DHEA is the precursor to androstenedione and androstenediol, many athletes take supplemental DHEA to increase testosterone and therefore muscle mass. However, studies have shown that there is conflicting evidence that any such effects could be elicited by oral DHEA therapy.^{4,5} There is some concern however that it can produce androgen qualities in women.⁶

When taken orally, DHEA is unlikely to have much effect on muscle-building enhancement or sports performance. According to Baechle, et.al., when taken orally only a small portion of DHEA can be converted to testosterone.⁷ In human metabolic pathways, DHEA can also be converted to estrogens as well as the androgens. DHEA has only one tenth the biological activity of testosterone.⁸

What about the side effects? No long term studies have been performed to determine effectiveness or safety. In a study of 50 women, supplemental DHEA of 50-200mg increased serum DHEA as well as serum testosterone. Over 50% of these women experienced acne, 18% increased facial hair, and 8% had increased perspiration. Less common side effects included breast tenderness, weight gain, mood alteration, headache, oily skin and irregular menstruation.⁹

Two studies^{10,11} have shown remarkable increases in serum testosterone in both men and women. However, others as reported above and another as reported in the *Journal of Endocrinology*¹² report testosterone increases in women only. There are concerns that some people have the ability to utilize DHEA for making testosterone better than others. This could explain the inconsistency but

GUACAMOLE

- 2 Avocado
- 1 T dried onion
- Juice of 2 slices of lemon (about 2 tsp.)
- 1 t garlic, minced
- 1 t cumin
- sea salt and pepper to taste
- 1 tomato, chopped, optional

Cut avocado in half. Remove the pit and discard. Using a spoon, scoop all of the "meat" out of the avocado and put in a medium mixing bowl. Mash avocado with a fork. Add a several tablespoons of water as you are mashing it. This makes the guacamole very light and fluffy. Add all spices except tomato; blend until you get the consistency you like (some people like it chunky and other like it creamy). For extra creamy guacamole, you can put everything into a mini chopper or food processor. Fold in tomato. Serve chilled.

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Increases in testosterone may increase ones risk of certain cancers. It is our clinical experience that supplemental DHEA can increase PSA levels in men. It has been documented that high amounts of DHEA can also cause liver cancer in animals.^{13,14} Some doctors prescribe DHEA for those with adrenal insufficiency, impotence, and osteoporosis.¹⁶ Because of the potential for cancer, doctors recommend that those who take DHEA should have their liver enzymes tested regularly. In a six month trial, supplementation with DHEA increased insulin-like growth factor levels at 3 months and decreased high-density lipoprotein (HDL) and apolipoprotein A1 levels at 6 months.¹⁵ Increasing IGF might increase the risk of breast cancer whereas decreasing HDL could increase the risk for heart disease.

In conclusion, there are too many conflicting studies to determine the efficacy of DHEA and there is definitely enough evidence to have concerns for it's safety. Because high doses can inhibit ones own ability to make DHEA¹⁶, one must first determine need for DHEA via blood analysis but this doesn't really answer the question as to "why" there may be low levels of DHEA in an individual. Hormonal imbalances are only an indication of some underlying metabolic imbalance that is occurring. Get tested properly, supplementing based upon your test results and cleaning up lifestyle habits is the best way to balance hormones.

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