

# The Missing Link

A Review of DHEA's Impact on Weight Management



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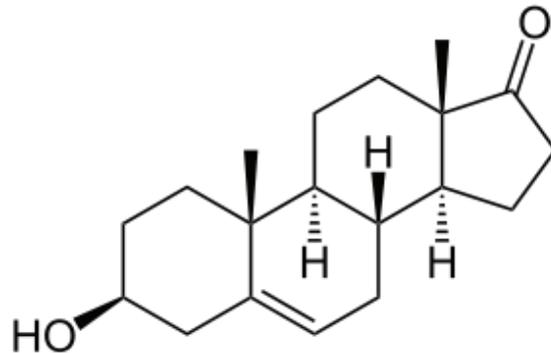


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## What is DHEA?

DHEA (dehydroepiandrosterone) is a "pro-hormone" which can be converted by the body into estrogen, progesterone, cortisone, testosterone and all other sex and steroid hormones. It is known as the "mother" hormone because it is the precursor hormone for many other hormones that maintain and improve health.

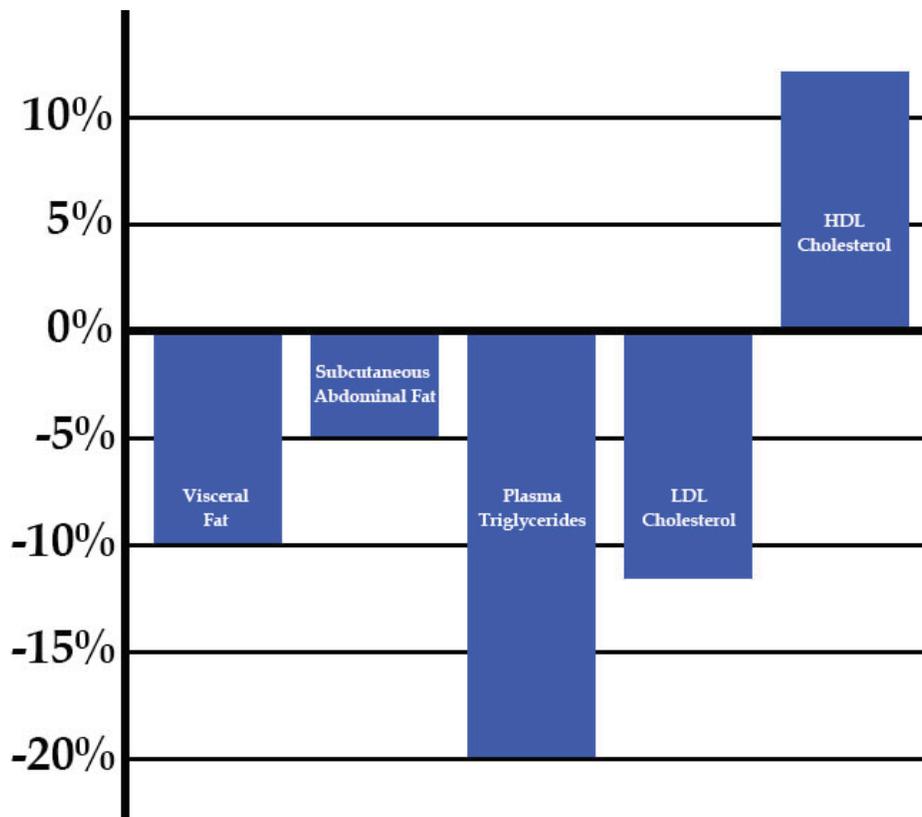


The human body's production of DHEA peaks at age 25, after which levels start to decline. By age 70, DHEA levels are likely to be 75 to 80% lower. In the past few years alone, significant scientific substantiation of DHEA's anti-aging effects has emerged. Its neuroprotective effects are now recognized as being vital in protecting memory and reducing depressive symptoms in older adults. New research has also shown that DHEA may play an important role in weight management.

## Effects of DHEA

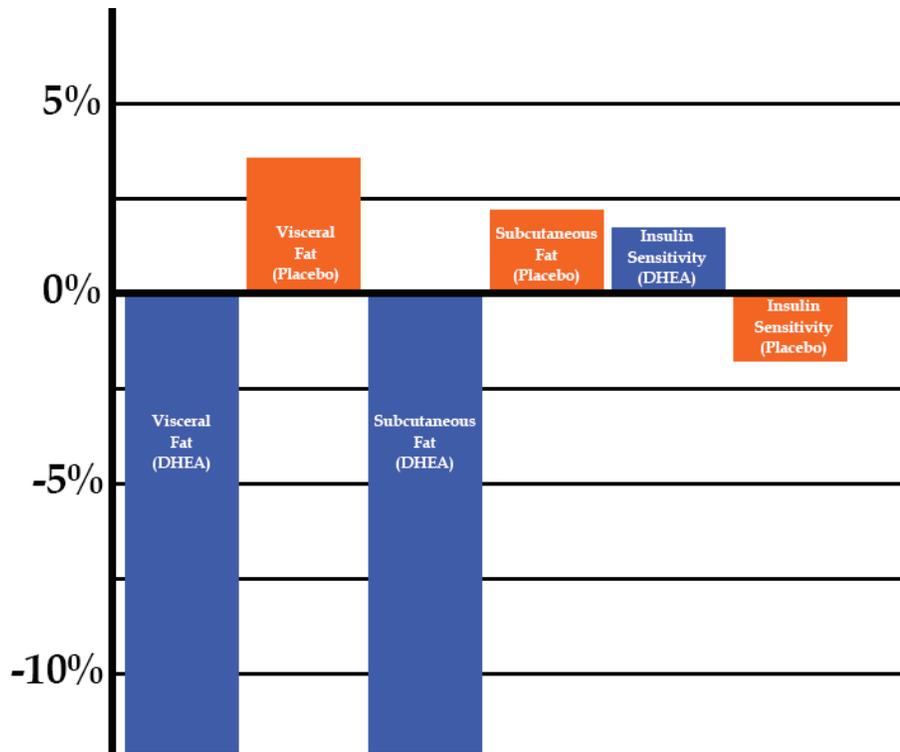
Studies have shown DHEA may lead to:

- Decreases in belly (visceral) fat
- Decreases in subcutaneous fat
- Increases in insulin sensitivity
- Decreases in LDL (bad cholesterol)
- Increases in HDL (good cholesterol)
- Decrease of plasma triglycerides
- Decrease in blood glucose levels
- Reduced waist circumference



Source: DHEA. *Life Extension*, May 2015.

In 2004 a study was published which observed 56 men and women randomly assigned to receive 50mg per day of DHEA or a placebo over 6 months. At the end of the trial, the DHEA group lost a significant amount of both visceral and subcutaneous fat while the placebo group averaged a net gain of both subcutaneous and visceral fat. Evaluations also concluded that the DHEA group achieved a significant increase in insulin sensitivity.<sup>1</sup>



Source: Effect of DHEA. *JAMA*, 292.

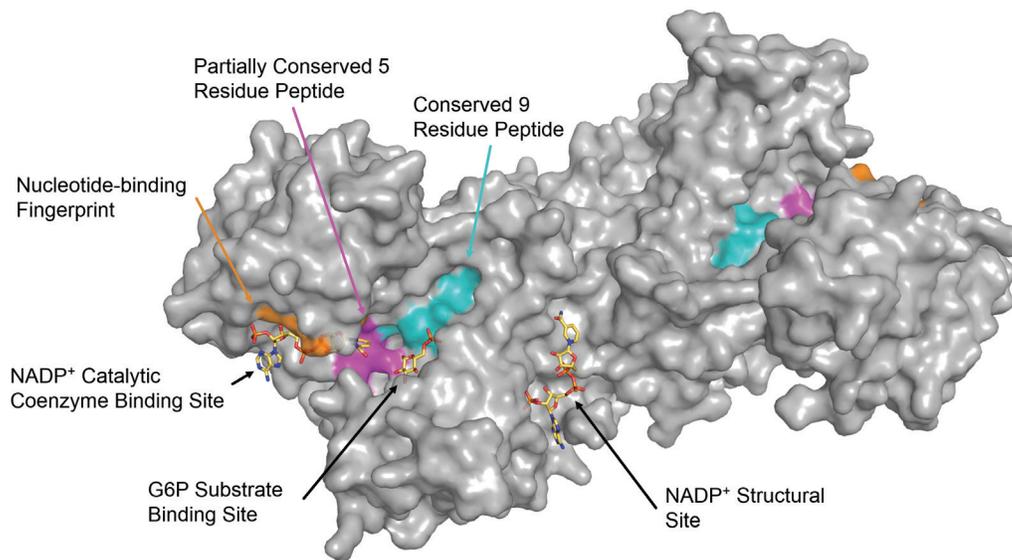
A separate study involving obese postmenopausal women who received DHEA or a placebo for a period of 3 months found that DHEA led to improved waist circumference and obesity parameters including improved blood pressure, decrease in blood glucose, and a reduction in the total metabolic syndrome score.<sup>2</sup>

*"In obese postmenopausal women, the hormone significantly improves plasma biochemical levels and anthropometric characteristics, leading to a better metabolic profile, which highlights the usefulness of this therapy against metabolic syndrome..."*

## Mechanism of Action

One of the ways in which DHEA plays a role in weight management is its ability to block an enzyme essential for the creation of fat known as G6PD (glucose-6-phosphate-dehydrogenase). Blocking this enzyme slows the creation of new fat, forcing the body to use existing fat as fuel.

This mechanism was demonstrated in a 1970 study which found that "G6PD was inhibited 98% by [DHEA]" and that "lipid synthesis was inhibited 44-56%"<sup>4</sup>



Another possible mechanism to explain the effects of DHEA is that DHEA is an activator of peroxisome proliferator-activated receptor  $\alpha$  (PPAR $\alpha$ ).<sup>1</sup> "Activated peroxisome proliferator-activated receptor alpha (PPAR  $\alpha$ ) ... stimulate[s] expression of mitochondrial enzymes involved in fat oxidation and repress[es] activation of enzymes involved in fat synthesis."<sup>5</sup> That means more fat is burned, and less fat is created and stored.

This was illustrated in a 2015 study which measured PPAR $\alpha$  levels in laboratory rodents. The results indicated that DHEA increased PPAR $\alpha$  levels by the same amount as exercise. PPAR $\alpha$  levels were significantly higher in the DHEA-treated and exercise training groups than in the obese control group. "Both DHEA administration and exercise training significantly reduced body weight and epididymal fat mass compared with the obese control group."<sup>5</sup>

## References

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3. Levine, A. (2015). DHEA. *Life Extension*, May 2015.
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5. Horii, N., Sato, K., Mesaki, N., Lemitsu, M. (2015). DHEA Administration Activates Transcription of Muscular Lipid Metabolic Enzymes via PPAR $\alpha$  and PPAR $\delta$  in Obese Rats. *Hormone and Metabolic Research*, Sept. 2015.

\*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, mitigate or prevent any disease.