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## On The COVER

A Hormone  
Supplementation  
Primer

By Norman Orentreich



Looking back over thousands of years of man's efforts to extend life, we see that all we have accomplished is to square the curve of mortality; more of us live longer on average because of eradication of diseases that kill us prematurely, not because of an overall increase in potential years. If we are to find ways of extending those potential years beyond their current limit, there must be more basic aging research, which has been for so long of interest only to gerontologic purists.

Improving any particular parameter of aging does not usually change anything except that parameter; it is just one measure of age that can be influenced by many factors. It is very important to be familiar with what influences each parameter if using it as a measure of age.

Some 40 years ago the radioimmunoassay for dehydroepiandrosterone (DHEA) became available. Next to cholesterol, DHEA is the most abundant steroid in the body. DHEA itself is fat soluble and is mostly only found in fat depots. Dehydroepiandrosterone sulfate (DHEA/S) is water soluble and found in the blood. We wanted to see if any given individual followed the cross-sectional curve rate of reduced blood levels of DHEA/S, in which DHEA/S decreases steadily with age. Our study found that for an individual, the level is quite variable with age, but for most there was an invariable decline.

For six months, Samuel S.C. Yen studied a group of volunteers who received either 50 mg of DHEA or a placebo daily by mouth. One important finding was that very little changed in the metabolites of the men who received DHEA, while there was a definite change in women—that is, testosterone, dihydrotestosterone, and androstenediol were increased, and androgen binding globulin was decreased.

One speculation put forth to me (by N.P. Durr of our staff) is that, a) because, at least cross-sectionally, blood levels in females track reproductive capacity so well; and, b) because local application dramatically increases sebaceous gland activity, DHEA/S might therefore be a pheromone or pheromone producer. A person's enzymatic ability to convert DHEA is very individual, with quite variable and perhaps unknown consequences. This is why I believe strongly that individuals taking DHEA/S should be monitored carefully for their hormone levels and, in men, hematocrit, lipid fractions, PSA, and free-PSA levels should be monitored.

If oral DHEA supplementation requires, as I believe, physician monitoring and relevant periodic laboratory tests, then testosterone therapy demands rigorous endocrine monitoring, including PSA levels. Topical testosterone will produce distinctly elevated blood levels of testosterone and dihydrotestosterone, decreased levels of SHBG, elevated estradiol levels, and decreased FSH/LH. Depending on genetic predisposition, the cutaneous effects of such therapy are more beard and body hair growth, more scalp hair loss, acne, and a ruddier and probably thicker skin. Proscar is a wise concurrent therapy to control the negative DHT-dependent skin and prostate effects.

Hormone replacement therapy probably holds the best hope for (impacting) the process of aging.

Testosterone therapy for women is more selective and delicate, in order to avoid any excessive changes in blood levels of testosterone, its metabolites, and other relevant parameters. Very careful application of testosterone will restore pubic hair. For those women who desire it, similar topical testosterone therapy can be used to restore axillary hair growth. In all these therapies, periodic endocrine tests are appropriate to assure absorption is not excessively elevating blood levels of either testosterone or DHT, or lowering SHBG, any of which might lead to hair loss, hirsutism, or acne in the genetically susceptible individual.

These side effects to taking testosterone are relatively small, and known. New as it is for therapeutic uses, the long-range effects of chronic DHEA treatment are as yet largely unknown. And so the question is asked: How safe is taking DHEA?

For women, how does it effect breast cancer prevalence? Bulbrook showed many years ago that women with breast cancer have much lower levels of urinary DHEA/S. There have been some studies that administration of DHEA to animal models prone to breast cancer reduces the incidence of breast cancer.

What about the health of the prostate in men given DHEA/S? We did a study on the Dunning rat with a transplantable prostate tumor. The untreated tumor grows while the DHEA-treated tumor is suppressed. Good news for the rats, but not necessarily for human males. Possibly all men taking DHEA should also take Proscar, a 5 alpha-reductase blocker, which is currently being studied by itself in 19,000 men to see if it prevents prostate cancer. [For more on maintaining prostate health, as well as a comparison of Proscar with natural supplements, see Saw Palmetto Reborn.]

Today, so many men and women are taking DHEA over the counter that if there is a resultant change in the incidence of prostatic cancer or breast cancer, we may soon see it. Prostatic cancer mortality has been falling over the years, as a result of the attention it has received as well as better treatments; breast cancer mortality may be reduced as well. If a substantial increase or decrease in the incidence of these cancers is noted, unsupervised DHEA ingestion might be either the problem, or the designated therapy.

(Adapted from a presentation made by Dr. Norman Orentreich at the First Annual Symposium on Aging Skin, in San Diego, Calif., February 21-23, 1997, and published in the *Journal of Geriatric Dermatology*.)

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