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DHEA and Female Fertility Overview with Reference Publications

The data offered here represent a brief and selective review of the published medical literature in regards to dehydroepiandrosterone (DHEA) supplementation of women with diminished ovarian reserve.

*THESE STATEMENTS HAVE NOT BEEN EVALUATED BY THE FOOD AND DRUG ADMINISTRATION. THIS PRODUCT IS NOT INTENDED TO DIAGNOSE, TREAT OR CURE ANY DISEASE.

This review has been prepared by the Center for Human Reproduction (CHR), a leading fertility center in New York City, and is being distributed by Fertility Nutraceuticals, LLC, with permission from CHR.

What is DHEA?: DHEA is a natural hormone, made in the body by every woman and man. DHEA is an intermediate step in a complex process called steroidogenesis, in which cholesterol is converted into male and female sex hormones, testosterone and estradiol. DHEA levels decline significantly as women (and men) get older.

DHEA and infertility: Potential effects of DHEA in women with diminished ovarian reserve and infertility were first suggested by Casson et al¹. DHEA as an effective supplement in female infertility was, however, researched and developed in New York City by researchers at CHR, after an older patient surprised the center's physicians by demonstrating significant increases in egg and embryo production during in vitro fertilization (IVF) cycles, after supplementation with DHEA, initially unbeknownst to the center's physicians²⁻⁷. Today, based on a 2010 survey following CHR's publications, over a quarter of the world's fertility centers utilize DHEA supplementation in women with diminished ovarian reserve⁸. Other investigators have since confirmed the utility of DHEA in female infertility⁹⁻¹², with some reporting improved pregnancy chances, even without the use of IVF^{13,14}.

Androgens and follicle development: Research has shown an association between low androgen levels and diminished ovarian reserve in women of all ages^{15,16}. Recent publications by CHR researchers, moreover, suggest that these androgens, of which DHEA is one, play crucial roles in early development of follicles and eggs¹⁷⁻²¹. A number of studies have shown that DHEA supplementation can restore follicle development in women with diminished ovarian reserve, improving egg quality and increasing pregnancy chances²². Several clinical trials have also shown that such supplementation can improve ovarian reserve markers in women who were previously poor responders to IVF treatment²³⁻²⁷.

Suggested Indications: CHR recommends DHEA supplementation for women with diminished ovarian reserve and/or aging ovaries, who are attempting to improve pregnancy chances with ART*. DHEA supplementation has been suggested to increase oocyte (egg) yields in association with infertility treatments, to improve embryo quality, reduce embryo aneuploidy (chromosomal abnormalities) and reduce miscarriage risks^{*1-7,9,10}. It has also been suggested effective in women with premature ovarian failure^{*11}, though this effect is less well documented.

Thus, DHEA supplementation can be expected effective in female infertility associated with diminished ovarian reserve, premature ovarian aging (also called occult primary ovarian insufficiency) and older female age^{*1-3, 6,7,9-11}. DHEA supplementation can also be expected effective in reducing aneuploidy (chromosomal abnormalities) in embryos⁵ and reducing miscarriage risks^{4*}.

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Adverse Reactions: Since DHEA is a mild male hormone, it may cause side effects that are the consequences of androgenization (higher androgen levels). These include oily skin, acne, hair loss, increasing hirsutism (hair growth) and a deepening of the voice. CHR also reported that women on DHEA may become more assertive, feel more vigorous in daily activities and exhibit better sex drives¹². DHEA supplementation has also been associated with reports of gastro-intestinal complaints and occurrence of hypertension. Side effects usually disappear shortly after cessation of supplementation.

Caution: Although widely considered safe for most people if used at moderate dosages and for limited time, DHEA is not recommended for people with certain conditions. For example, women with estrogen-sensitive medical conditions like endometriosis or polycystic ovarian syndrome (PCOS), or hormonal cancer such as breast, ovarian or uterine cancers should not take DHEA without prior consultation with their physicians. Other contraindications include, but not limited to, liver conditions, lipid abnormalities and mood disorders.

Although DHEA is widely advertised for many alleged benefits, few clinical indications are scientifically well documented. Like many dietary supplements, some DHEA products on the market have also been reported to have significant quality control problems²⁸.

Usages: Dosaging studies of DHEA in association with female infertility have not been performed. However, CHR utilized a schedule of one 25 mg tablet, three times daily (25mg TID), in all of the center's published studies²⁻⁵. Other investigators have followed similar schedules^{7,9-12}. CHR's publications also suggest that supplementation with DHEA, prior to the start of an IVF cycle, should be administered for at least six weeks²⁻⁵.

Research has shown that DHEA's effects improve with length of supplementation, reaching a peak at approximately 4-5 months of supplementation^{*3,12}. CHR physicians supplement eligible patients uninterrupted until conception (confirmed with second normally rising pregnancy test) or termination of treatment for other reasons²⁻⁵.

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