

Dehydroepiandrosterone (DHEA)

DR.STEPHEN HUDSON FRCS

Victoria Fertility Centre: 207 – 4400 Chatterton Way: Victoria, B.C. V8X 5J2

Dehydroepiandrosterone, or DHEA, is a natural steroid hormone, a chemical cousin of testosterone and estrogen. It is made from cholesterol by the adrenal glands, which sit atop each kidney. For the first few years of life, the adrenals make very little DHEA. Around age six or seven, they begin churning it out. Production peaks in the mid-20s, when DHEA is the most abundant hormone in circulation. From one's early '30s on, there's a steady decline in DHEA production, so the average 75-year-old has only 20% of the DHEA in circulation that he or she had 50 years earlier. At all ages, men tend to have higher DHEA levels than women.

By definition, hormones are chemical messengers made in a gland or tissue that start, stop, or otherwise orchestrate activity in some other issue. That makes DHEA a hormone in name only, since no one knows exactly what it does in the body.

More recently DHEA has been used for IVF treatments in women who are known to have limited ovarian reserve. Studies are currently underway in New York to determine whether or not DHEA truly has a role in improving pregnancy rates in such women. Studies published in July 2009 from New York do suggest that it may be of benefit. It would appear that if such women take DHEA for anywhere from 1 – 4 months before doing IVF – their ovaries produce more and better quality eggs, and this is translating in to better pregnancy rates.

However – it should be emphasized that these results are preliminary only – and as yet there are no long term studies on the safety of DHEA in this setting.

At this point in time we are not really sure what the role of DHEA in the body is. As mentioned above, we know it is a hormone related to both estrogen and

testosterone. It may have a variety of effects in the body – including a positive effect on the FSH receptors in the ovary. It is also thought that DHEA may have an anti inflammatory effect – which may also be of some benefit to implantation and pregnancy rates in IVF.

Potential benefits of DHEA on Fertility

1. Increase in egg and embryo counts and quality following IVF
2. Speeds up time to pregnancy – both spontaneous and by assisted reproductive technologies (treatment)
3. Reduces miscarriage rates in women with a history of recurrent miscarriages and also in women receiving fertility treatments.

Other potential positive effects from taking DHEA

1. Improved feeling of well being
2. Improvement in physical strength
3. Improved memory
4. Improved libido (sex drive)

Risks/Side effects

- DHEA may elevate male hormone levels. This may cause either hair loss or unwanted facial hair growth in some patients.
- Other unwanted side effects may include acne, deepening of the voice (which may not be reversible), menstrual irregularities, irritability and restlessness.
- Headaches. If headaches occur – it is suggested that you stop the DHEA until the headaches resolve – and then start taking it again at 25 mg once daily for a week, increasing slowly to the recommended dosage over the next 2 weeks. However if the

headaches recur – the dosage should be reduced or the medication stopped completely until you have had a discussion with Dr.Hudson

- As a precursor of sex steroids there may also be a potential effect on hormone sensitive cancers – and women with a history of breast or endometrial cancer should not take DHEA.
- There have been some reported instances where people who take large doses of DHEA notice irregular heartbeats and palpitations. If this occurs, the DHEA should be stopped right away.
- Serious side effects such as blood clots are extremely uncommon at the doses used for reproductive indications – though are possible. This risk would certainly be felt to be less than the risk of blood clots related to Birth Control Pill use or even pregnancy – however, has to be considered.
- DHEA may have an effect on liver function and lipid (cholesterol) levels. However the impact from taking it for a few months only would be expected to be low.

The suggested dosage is

25 mg of Micronized DHEA taken 3 X daily (i.e. 75 mg per day). It should be discontinued at the time of a positive pregnancy test. i.e. it should not be taken if you are pregnant.

DHEA is available in Canada by prescription only.

References:

Effects of DHEA on oocyte and embryo yields, embryo grade and cell number in IVF. Barad and Gleicher. Human Reproduction. Vol 12, No.11 pp 2845 – 2849,2006

An analysis of the effects of exogenous androgen administration on Fertility in different age groups and with different Adjunctive treatments. Edward Ryan et al. University of Toronto. Poster presentation CFAS Vancouver 2010

DHEA supplementation augments ovarian stimulation in poor responders: a case series. Casson et al. Human Reproduction. 2000.15:2129 – 2132

DHEA and DHEAS levels are associated with more favourable cognitive function in women. Davis et al Journal of Clinical Endocrinology and metabolism 2008; 93:801-8)

Informed Consent to take DHEA

I have read and understand the information about DHEA given me by Dr.Hudson.

I understand that there is evidence that taking DHEA may have positive effects on my fertility based on the research available.

I have chosen to take DHEA based on the information that has been given me. I am also aware of the potential risks related to this product. I understand these risks and have had opportunity to discuss these with the staff at VFC.

Date: _____

Name: _____ Signature: _____