



# Women's Health Update

by Tori Hudson, ND  
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## Salivary Testosterone Testing in Postmenopausal Women Receiving Testosterone Treatment

Fifty-six women were given either a 300 mcg transdermal testosterone patch or placebo twice weekly for the treatment of hypoactive sexual desire disorder (HSDD) in a double-blind, parallel group, placebo-controlled study. Investigators compared circulating serum levels of total testosterone, free testosterone, and bioavailable testosterone (consisting of free testosterone and albumin-bound testosterone) with salivary levels in postmenopausal women with HSDD. Serum and salivary samples were collected concomitantly at weeks 24 and 52 in the naturally menopausal women and at weeks 12, 24, and 52 in the surgically postmenopausal women. Serum samples were validated by Quest/Nichols Institute and salivary measurements were validated by radioimmunoassay at Aeron Laboratory.

Salivary levels of testosterone measurements did not increase at weeks 12, 24, or 52 after testosterone treatment, while serum levels were increased and, in the physiological range of premenopausal women, after use of the transdermal testosterone patch. Salivary testosterone measurements did not increase with treatment, and did not correlate strongly with serum testosterone measurements. This finding was true of bioavailable testosterone, free testosterone, and total testosterone.

**Comment:** Levels of testosterone are even lower in the saliva than in the plasma. Salivary levels can also vary greatly, depending on how the salivary secretion is stimulated and the method of testing used (radioimmunoassay or ELISA). Other technological challenges exist for both serum and salivary testing in the accuracy of actual measurements of testosterone using radiolabeled testosterone, in cross reactivity of similar sex steroids, and in trying to measure these low levels of testosterone in women, versus the 10-fold higher levels in men.

Flyckt R et al. Comparison of salivary versus serum testosterone levels in postmenopausal women receiving transdermal testosterone supplementation versus placebo. *Menopause*. 2009;16(4):680-688.

## Intravaginal DHEA and Sexual Function in Postmenopausal Women

This prospective, randomized, double-blind placebo-controlled trial evaluated the effect of daily local intravaginal DHEA ovules for 12 weeks in postmenopausal women. The main assessment criteria were sexual dysfunction parameters of libido, arousal, orgasm, and dyspareunia in postmenopausal women who have vaginal atrophy.

Two hundred eighteen postmenopausal women were randomized to receive a daily ovule of either no DHEA, 3.25 mg DHEA, 6.5 mg DHEA, or 13 mg DHEA. The ovules contained Prasterone in a lipophilic base manufactured by Recipharm of Sweden.

At 12 weeks, compared with placebo, the 13 mg ovule improved by 68% in the Abbreviated Sex Function arousal/sensation domain, the arousal/lubrication domain by 39%, orgasm by 75%, and dryness during intercourse by 57%. DHEA also fared better than placebo in the desire domain of Menopause Specific Quality of Life 49% to 23%.

**Comment:** The main thing I can say here is, "Way cool." This study opens the door for new options for sexual dysfunction in women – including the difficult to successfully treat low libido. In a related study by the same authors, serum levels of vaginal DHEA showed no or minimal changes during the study period of up to 12 weeks. All values remained within the normal range of postmenopausal women. (Labrie F, Archer D, Bouchard C, et al. Serum steroid levels during 12-week intravaginal dehydroepiandrosterone administration. *Menopause*. 2009;16[5]:897-906.) This bodes well for safety issues. I will be adding 13 mg of a DHEA suppository to my compounding pharmacy prescriptions.

Labrie F, Archer D, Bouchard C, et al. Effect of intravaginal dehydroepiandrosterone (Prasterone) on libido and sexual dysfunction in postmenopausal women.

## Vaginal Estriol/Progesterone in Postmenopausal Women

The objective of this study was to assess the efficacy and safety of intravaginal estriol and progesterone in postmenopausal women with atrophic vaginitis. Nineteen healthy postmenopausal women with atrophic vaginitis

received a suppository of 1 mg estriol and 30 mg of progesterone. One suppository was inserted vaginally once daily for 2 weeks and 3 times weekly for a total of 6 months. Evaluations included vaginal pH, maturation index, urinalysis, self-reported vaginal dryness, menopausal quality of life, serum estriol and progesterone levels, and endometrial biopsies.

The maturation index, vaginal pH, and vaginal dryness ratings significantly improved at 3 and 6 months compared with baseline. The average maturation index improved from 40 at baseline to 57.5 at 3 months and 55 at 6 months. Vaginal pH also improved from an average pH of 6.0 at baseline to 4.5 at 3 and 6 months. Self-assessment of vaginal dryness improved from an average value of 9.0 to 2.0 at 3 months and 1.0 at 6 months. Seventeen of the 19 women were sexually active, and all 17 reported improvement in vaginal dryness during sexual activity. The average values also improved for both libido and urinary frequency, two other issues related to vulvovaginal atrophy. None of the women reported mastalgia, urinary tract infections, or nausea. One woman had vaginal spotting during the first 2 weeks of suppositories. Endometrial biopsy at 6 months showed an inactive endometrium. No hyperplasia or cancer was seen in any of the participants. Serum estriol concentrations were similar to baseline at week 2 and months 3 and 6, suggesting minimal systemic absorption. Serum progesterone levels did significantly increased from enrollment but did not continue to increase during the maintenance period of three times weekly.

**Comment:** This pilot study is not really a surprise to those of us accustomed to using vaginal estriol in postmenopausal vulvovaginal atrophy. Most practitioners do not add progesterone to their compounded estrogen vaginal suppositories, because it is generally agreed that 2 to 3 times weekly long-term vaginal estrogen (whether estriol, estradiol, or conjugated equine estrogens) is considered safe for the endometrium. However, there may be cases where this current study will have clinical meaning and provide guidance for patient care. It is always important for practitioners to remember that improving vaginal health, and particularly vaginal dryness and dyspareunia, is the first step in improving libido.

Chollet J, Carter G, Meyn L, et al. Efficacy and safety of vaginal estriol and progesterone in postmenopausal women with atrophic vaginitis. *Menopause* 2009;16(5):978-983.

Dr. Tori Hudson graduated from the National College of Naturopathic Medicine (NCNM) in 1984 and has served the college in many capacities over the last 25 years. She is currently a clinical professor at NCNM and Bastyr University, has been in practice for 25 years, is the medical director of the clinic A Woman's Time in Portland, OR, and director of research and development for Vitanica, a supplement company for women. She is also a nationally recognized author, speaker, educator, researcher, and clinician.



## Institute of Women's Health & Integrative Medicine

**Program Director: Tori Hudson, N.D.**

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