

Research

Subcutaneous estrogen replacement therapy.

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Journal of Reproductive Medicine March, 2004; 49(3):139-142.
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Subcutaneous estrogen replacement involves placement of estradiol pellets in the subcutaneous area of the lower abdomen or buttocks. Physiologic levels of estradiol are obtained, and follicle stimulating hormone levels are suppressed, similar to values found during premenopause. Insertion is a minor office procedure, with the usual starting dose of 25 mg of estradiol placed; it provides climacteric symptom relief and osteoporosis protection as well as the many other benefits of estrogen replacement. Supplementation with testosterone pellets can be performed, if indicated, at the same time. Patients with an intact uterus require progesterone therapy to protect the endometrium, as do patients using other forms of estrogen replacement. Return of climacteric symptoms, combined with serum levels, can be used to determine the timing of redosing, which is about every 6 months for most patients.

25 mg oestradiol implants--the dosage of first choice for subcutaneous oestrogen replacement therapy?

**Owen EJ, Siddle NC, McGarrigle HT, Pugh MA.
British Journal of Ob/Gyn, 1992, Aug.99(8):671-5.**

Department of Obstetrics and Gynaecology, University College and Middlesex Hospitals, London, UK.

Ten of the 12 women had excellent symptom relief, associated with oestradiol concentrations in the follicular range for between 28 and 35 weeks. The ratio of circulating oestrogen metabolites remained physiological, despite the oestradiol concentrations being substantially higher on treatment. CONCLUSIONS: We suggest that 25 mg pellets should be used as the initial dose for subcutaneous oestrogen treatment, and a combination of

return of symptoms and weeks since insertion used to judge the timing of reimplantation.

Pharmacokinetics and pharmacodynamics of 25-mg estradiol implants in postmenopausal Mexican women. Menopause 2001 September, (5):353

del Carmen Cravioto M, Larrea F, Delgado NE, Escobar AR, Diaz-Sanchez V, Dominguez J, de Leon RP.

Serum concentrations of E2 obtained after implantation were fairly constant...and were associated with significant symptom relief. A physiological, premenopausal E2:E1 ratio was achieved. No significant metabolic changes occurred. Side effects were estrogenic in nature and no removal of implant was required. CONCLUSIONS: Subcutaneous implantation of 25 mg estradiol results in physiological, premenopausal estrogen concentrations in most women and is associated with considerable symptom relief without inducing significant adverse metabolic effects.

Continuation of hormone replacement therapy after hysterectomy.

Domoney C, Studd JW, Mocroft A. Climacteric. 2003 Mar;6(1):58-66.

A high HRT continuation rate of between 95% (women having had their hysterectomy less than 5 years ago) and 84% (women 10 or more years from their operation) can be achieved in the long term. Considering the high proportion having implant therapy, the use of testosterone as well as estradiol replacement may be a major factor in the greater adherence to HRT of this group.

Five-year changes in bone density, and their relationship to plasma estradiol and pretreatment bone density, in an older population of postmenopausal women using long-term estradiol implants.

Vashisht A, Studd JW. Gynecol Endocrinol. 2003 Dec;17(6):463-70.

The aim of this study was to observe whether bone mineral density (BMD) improves over 5 years in older women using estradiol implants 60.9 years (range 59.7-63.2 years). Each woman had a pretreatment bone scan and then received 6-monthly subcutaneous 50 mg estradiol implants. All changes at the hip and spine were statistically significant improvements from baseline in the estradiol-treated group. After 5 years of treatment, the estradiol-treated group had significantly improved bone mineral densities compared with the untreated group. Thus estrogen is seen to have the effect of improving bone density in older women over 5 years of treatment

Androgen replacement therapy: present and future.

Gooren LJ, Bunck MC Drugs. 2004;64(17):1861-91.

Natural testosterone is viewed as the best androgen for substitution in hypogonadal men. The reason behind the selection is that testosterone can be converted to DHT and E2, thus developing the full spectrum of testosterone activities in long-term substitution....Subcutaneous testosterone implants provide the patient, depending on the dose of implants, with normal plasma testosterone for 3-6 months....Administration of testosterone to young individuals has almost no adverse effects.

Obstet Gynecol. 1987 Nov;70(5):749-54. Metabolic and hormonal effects of 25-mg and 50-mg 17 beta-estradiol implants in surgically menopausal women.

Notelovitz M, Johnston M, Smith S, Kitchens C.

" Subcutaneous estradiol pellets can effectively maintain the bone mineral content of surgically menopausal women without inducing adverse cardiovascular side effects."

Am J Obstet Gynecol. 1980 Nov 15;138(6):714-9.

Subdermal estradiol pellets following hysterectomy and oophorectomy. Effect upon serum estrone, estradiol, luteinizing hormone, follicle-stimulating hormone, corticosteroid binding globulin-binding capacity, testosterone-estradiol binding globulin-binding capacity, lipids, and hot flushes.

Lobo RA, March CM, Goebelsmann U, Krauss RM, Mishell DR Jr.

Subdermal estradiol were inserted immediately after hysterectomy and oophorectomy in 22 menstruating women, ages 29 to 50 years. ...High-density lipoprotein-cholesterol increased significantly, low-density lipoprotein-cholesterol, total cholesterol, and triglycerides were unaffected, except for a rise in triglycerides in three older women with diabetes mellitus and hypertension. There were no complaints of severe hot flushes. Women who had vasomotor symptoms had mild or moderate flushes that occurred at 5 or 6 months after replacements of the pellets. Thus, E2 pellets are an effective form of parenteral estrogen replacement therapy and offer both practical and theoretical advantages over other forms of estrogen.

Int J Gynaecol Obstet. 1982 Oct;20(5):387-99. Endocrine and clinical effects of estradiol and testosterone pellets used in long-term replacement therapy.

Kapetanakis E, Dmowski WP, Auletta F, Scommegna A.

" Ten women with estrogen deficiency symptoms because of premature menopause, gonadal dysgenesis, or surgical menopause received subcutaneous implants consisting of 25-75 mg estradiol with or without 75 mg testosterone. Clinically, all patients had symptomatic improvement within 24-48 hours."

Transdermal testosterone treatment in women with impaired sexual function after oophorectomy

Shifren JL, et al.

New England Journal of Medicine, Sept. 7, 2000; 343(10):682-8
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BACKGROUND: The ovaries provide approximately half the circulating testosterone in premenopausal women. After bilateral oophorectomy, many women report impaired sexual functioning despite estrogen replacement. We evaluated the effects of transdermal testosterone in women who had impaired sexual function after surgically induced menopause

RESULTS: ...higher testosterone dose resulted in further increases in scores for frequency of sexual activity and pleasure-orgasm in the Brief index of Sexual Functioning for Women (P=0.03 for both comparisons with placebo). At the higher dose the percentages of women who had sexual fantasies, masturbated, or engaged in sexual intercourse at least once a week increased two to three times from base line. The positive-well-being, depressed-mood, and composite scores of the Psychological General Well-Being Index also improved at the higher dose compared to placebo.

CONCLUSIONS: In women who have undergone oophorectomy and hysterectomy, transdermal testosterone improves sexual function and psychological well-being.

Note: This article is not about pellet implants specifically, but supports the benefit of higher levels of testosterone in certain women, which are easily and conveniently achieved with pellet implant therapy