Background
Androgen production decreases with age and more acutely after (premenopausal) oophorectomy. Declining androgen levels may be associated with decreased bone mass, sexual dysfunction, fatigue, diminished sense of well-being, loss of pubic hair, reduced muscle mass, decreased libido and sexual activity, satisfaction, pleasure, orgasm and reduced dyspareunia.

Therapeutic Benefits of Testosterone Replacement
1. ART can increase sexual function in menopausal women (effect may be delayed several weeks).
2. In women who have recently undergone oophorectomy, ART plus ERT improves libido more than ERT alone.
3. ART improves well being and energy.
4. ART increases bone mass (no change in fracture rate).
5. ART improves hot flashes unresponsive to HRT alone.
6. ART reduces breast pain related to HRT.
7. Estrogen given with androgen reduces atherogenic triglycerides.

Adverse Effects
Dose related virilizing adverse effects (acne, hirsutism and voice changes) are rare with physiologic doses of androgens. Estrogen androgen replacement reduces the beneficial effect in increased HDL caused by estrogen alone. The net effect on cardiovascular disease is unknown. Concern about masculinization causes most of the hesitation of ART even though such changes are infrequent and, for the most part, readily reversible.

Hirsutism is more likely to occur in women with dark hair/dark skin and rarely affects blonde women who have fair skin.

Indications
1. Women with vasomotor symptoms inadequately relieved by estrogen only HRT.
2. Women who have undergone surgical menopause.
3. HRT users who have or are at the highest risk for osteoporosis.
4. HRT users with unsatisfactory sexual function not explained by psychosocial circumstances. (Note: All anti-depressants, especially SSRIs, can decrease sexual function, particularly orgasm or anorgasmia).
5. Women who have elevated triglycerides (especially in diabetic and obese patients) preceding HRT and/or caused by HRT.
Monitoring
Baseline lipids, if baseline HDL is low, relative contraindicative to ART.
Then annually
Measuring androgen levels not indicated.

Dose
After one month, taper up or down (e.g., q.o.d.) to minimally effective dose.

Alternative
Bupropion sustained release effective in improving libido in non-depressed women J. sex marital T her 2001; 27:303-316

Testosterone Propionate 1% to 2% in petrolatum
¼ teaspoon applied to skin (usually vulva) 1 - 7 times/week. Systemic absorption and therapeutic effect increased testosterone levels have been shown. Dose must be titrated to lowest effective dose to minimize virilizing side effects (voice deepening, clitoral enlargement) which has been observed in approximately 25%.

Estratest (0.625/5 h.s. 1mg CEE/1.25 mg methyl testosterone)
$199.00/year
Estratest (1.25 mg CEE/2.5 mg methyl testosterone)
$248.00/year

Costs (Per Year)
Premarin 0.625 mg $ 11.00
Premarin 1.25 mg $ 14.00

References
J Rep Med 1997; 42:394-404