

Testosterone effects on the breast: implications for testosterone therapy for women. - Somboonporn W - *Endocr Rev* - 01-JUN-2004; 25(3): 374-88 (From NIH/NLM MEDLINE)

Abstract:

Androgens have important physiological effects in women. Postmenopausal androgen replacement, most commonly as testosterone therapy, is becoming increasingly widespread. This is despite the lack of clear guidelines regarding the diagnosis of androgen insufficiency, optimal therapeutic doses, and long-term safety data. With respect to the breast specifically, there is the potential for exogenous testosterone to exert either androgenic or indirect estrogenic actions, with the latter potentially increasing breast cancer risk. In experimental studies, androgens exhibit growth-inhibitory and apoptotic effects in some, but not all, breast cancer cell lines. Differing effects between cell lines appear to be due primarily to variations in concentrations of specific coregulatory proteins at the receptor level. In rodent breast cancer models, androgen action is antiproliferative and proapoptotic, and is mediated via the androgen receptor, despite the potential for testosterone and dehydroepiandrosterone to be aromatized to estrogen. The results from studies in rhesus monkeys suggest that testosterone may serve as a natural endogenous protector of the breast and limit mitogenic and cancer-promoting effects of estrogen on mammary epithelium. Epidemiological studies have significant methodological limitations and provide inconclusive results. The strongest data for exogenous testosterone therapy comes from primate studies. Based on such simulations, inclusion of testosterone in postmenopausal estrogen-progestin regimens has the potential to ameliorate the stimulating effects of combined estrogen-progestin on the breast. Research addressing this is warranted; however, the number of women that would be required for an adequately powered randomized controlled trial renders such a study unlikely.

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Major Subjects:

- Androgens / * deficiency
- Apoptosis / * drug effects
- Breast / * drug effects

- Breast Neoplasms / * metabolism / prevention & control
- Hormone Replacement Therapy / * methods
- Testosterone / * metabolism / * therapeutic use

Additional Subjects:

- Animals
- Cell Line, Tumor
- Cell Proliferation / drug effects
- Disease Models, Animal
- Epidemiologic Studies
- Estrogen Receptor Modulators / pharmacology
- Estrogens / adverse effects
- Female
- Humans
- Prospective Studies
- Risk Factors

Chemical Compound Name:

(Androgens); (Estrogen Receptor Modulators); (Estrogens); 58-22-0(Testosterone)

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