



Androgen levels in adult females: changes with age, menopause and oophorectomy.

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This paper has been recently published by the Journal of Clinical Endocrinology and Metabolism (2005 : electronic publication prior to print Apr 12) and provides for the first time normal values for androgen levels in women aged 18 to 75 years by decade of age. The first author, Dr Sonia Davison, has undertaken this research as part of her PhD at Monash University. The conduct of this study has been financially supported by a philanthropic grant from Sue Ismiel and daughters to the Jean Hailes Foundation and by the National Health and Medical Research Council of Australia grant numbers 219279 and 284484. This research was also conducted with the support of Roy Morgan Research and Mayne Health Dorevitch Pathology, Melbourne, Australia.

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ABSTRACT

Changes in androgen levels across the adult female life span and the effects of natural menopause and oophorectomy have not been clearly established. This cross-sectional study of 1423 randomly recruited community based women aged 18 to 75 yr, explores the effects of age, natural and surgical menopause on androgen levels in healthy women.

We report serum levels by age of total testosterone (T), calculated free T, dehydroepiandrosterone-sulfate (DHEAS), and androstenedione in a reference group of women. Women in the reference group had no usage of exogenous steroids; no history of tubal ligation, hysterectomy or bilateral oophorectomy; no hyperprolactinemia, or polycystic ovarian syndrome. In the reference group (n = 595) total T, calculated free T, DHEAS and androstenedione declined steeply by decade (P < 0.001), with the greatest decline seen in the earlier decades.

Examination of androgen levels by year in women aged 45 to 54 yr showed no effect of menopausal status on androgen levels. In women \geq 55 yr, those who reported bilateral oophorectomy and were not on exogenous steroids had significantly lower total and free T levels than reference group women.

We report that serum androgen levels decline steeply in the early reproductive years, do not vary as a consequence of natural menopause, and that the postmenopausal ovary appears to be an ongoing site of testosterone production.