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Review

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Testosterone and prostate cancer: an historical perspective on a modern myth

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Abstract

Objectives: To review the historical origins and current evidence for the belief that testosterone (T) causes prostate cancer (pCA) growth.

Methods: Review of the historical literature regarding T administration and pCA, as well as more recent studies investigating the relationship of T and pCA.

Results: In 1941 Huggins and Hodges reported that marked reductions in T by castration or estrogen treatment caused metastatic pCA to regress, and administration of exogenous T caused pCA to grow. Remarkably, this latter conclusion was based on results from only one patient. Multiple subsequent reports revealed no pCA progression with T administration, and some men even experienced subjective improvement, such as resolution of bone pain. More recent data have shown no apparent increase in pCA rates in clinical trials of T supplementation in normal men or men at increased risk for pCA, no relationship of pCA risk with serum T levels in multiple longitudinal studies, and no reduced risk of pCA in men with low T. The apparent paradox in which castration causes pCA to regress yet higher T fails to cause pCA to grow is resolved by a saturation model, in which maximal stimulation of pCA is reached at relatively low levels of T.

Conclusions: This historical perspective reveals that there is not now-nor has there ever been-a scientific basis for the belief that T causes pCA to grow. Discarding this modern myth will allow exploration of alternative hypotheses regarding the relationship of T and pCA that may be clinically and scientifically rewarding.

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Comment in

Testosterone and prostate health: debunking myths demands evidence, caution, and good clinical judgment.

Morales A.

Eur Urol. 2006 Nov;50(5):895-7. doi: 10.1016/j.eururo.2006.06.033. Epub 2006 Jul 10.

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