# Suppression of human spermatogenesis by testosterone implants – iePellets are the best birth control

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## Abstract

Hormonally induced azoospermia is an effective, reversible form of male contraception; however, some men treated with weekly im testosterone enanthate (TE) injections fail to become azoospermic. As weekly injections cause widely fluctuating and supraphysiological testosterone levels, we tested the hypothesis that more stable, physiological testosterone levels would consistently produce azoospermia. Using a depot testosterone formulation which provides stable, physiological range testosterone levels for up to 6 months, we studied nine men before and after insertion of six 200 mg testosterone implants under the abdominal wall skin and compared the results with 38 men treated in a previous study with weekly im injections of 200 mg TE. Testosterone implants suppressed sperm output to near-azoospermia between the second to fourth postimplant months returning to normal by the sixth postimplant month. The fall in sperm output at the first month was greater after testosterone implants than TE injections (58% vs. 17%, P = 0.011) but similar proportions of men became azoospermic (5/9 vs. 25/38) or severely oligozoospermic (< 1 million/ml; 9/9 vs. 37/38). Plasma testosterone and estradiol levels remained mostly within the eugonadal range after implants but were markedly supraphysiological during TE injections. Both treatments suppressed immunoreactive LH and FSH to undetectable levels by ultrasensitive fluoroimmunoassay. Sex hormone-binding globulin levels were decreased and PRL levels increased by TE injections but neither was changed by testosterone implants. Prostate-specific antigen demonstrated a small rise of marginal significance (P = 0.065) after testosterone implants. Fewer men experienced acne after implants (0/9 vs. 25/38, p = 0.0004). Therefore a depot testosterone preparation with quasi-zero-order release demonstrates higher dose efficiency with similar (but not uniform) efficacy at inducing azoospermia but may cause fewer androgenic side-effects than weekly TE injections.