

Mouse model of transgender men finds active testosterone worsens IVF outcomes

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Active testosterone therapy for transgender men may negatively impact IVF outcomes, suggests a mouse study being presented Monday at ENDO 2022, the Endocrine Society's annual meeting in Atlanta, Ga.

The study found [female mice](#) currently receiving testosterone had fewer and less developed eggs retrieved. In contrast, discontinuing [testosterone](#)

[therapy](#) in mice led to similar egg retrieval rates compared to the [control group](#).

Historically, there has been limited information on the impact of gender-affirming hormone treatment on reproductive capacity. Amanda Schwartz, M.D., [reproductive endocrinology](#) and infertility fellow at the University of Michigan in Ann Arbor, Mich., and colleagues originally hypothesized that testosterone (T) treatment would not have an impact on IVF outcomes.

To create the [mouse model](#), 38 female mice were implanted with silastic tubing with either 10 mg T enanthate in ethanol (n=20) or ethanol alone (n=18) at 10 weeks of age. The mice were divided into four groups: current T implant, current sham implant, T cessation and control cessation.

The team monitored T levels and reproductive cycles. Mice with the testosterone and sham implants underwent ovarian stimulation 12 weeks post-implantation. Implants were removed after 12 weeks for the testosterone cessation and control cessation groups, and mice underwent ovarian stimulation 2 weeks later.

Mice with current T treatment had fewer oocytes, or [egg cells](#), retrieved (17 vs. 36), compared with the current sham implant group. The mice undergoing active testosterone therapy also had fewer mature oocytes (13 vs. 28.1), and 2-cell embryos (12.78 vs. 26.9) retrieved than the current sham implant group. There was no significant difference in maturity or fertilization rate. Females who had 2-cell embryos transferred from current T implant mice were less likely to have a [live birth](#) than those with transfers from current sham implant mice (25% vs. 80%).

Conversely, the T cessation group and control showed no significant

difference between total oocytes, mature oocytes or 2-cell embryos retrieved.

"These results demonstrate reversibility of the detrimental impact of testosterone on IVF outcomes and support a period of testosterone discontinuation prior to pursuing fertility preservation," Schwartz said. However, further research is needed to fully understand the impact of testosterone on human reproductive potential.

The Endocrine Society's [Clinical Practice Guidelines](#) currently recommend fertility preservation counseling for all individuals seeking gender-affirming care.

More information: Schwartz will present at the Society's ENDO 2022 reproductive health news conference at 9 AM Eastern on Monday, June 13.

Provided by The Endocrine Society

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