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## Title

What is the ideal interval for re-testing anti-mullerian hormone (AMH) levels in an infertility population?

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## Objective:

Although not traditionally recommended, repeated tests of ovarian reserve via AMH testing is often performed. After controlling for oocyte age and first AMH level reading, we sought to discern the prognostic ability and treatment outcome of patients who had a repeat AMH level assessed during infertility treatment.

## Materials and Methods:

Patients from July 2007-March 2015 with 2 AMH readings separated by >30 days and obtained 12 months prior to a fresh in vitro fertilization (IVF) cycle start were included. AMH Levels >5 ng/mL were excluded. Basal (day 3) follicle stimulating hormone (FSH), basal antral follicle count (BAFC) and vaginal oocyte retrieval (VOR) count were measured. VOR was modeled by Poisson regression against age and first AMH level. Improvements to the model were assessed by second AMH level using chi-square of ANOVA. Additional improvements of VOR predictions were recomputed based on time intervals between AMH measurement readings.

## Results:

Couples (n=110) underwent 131 fresh IVF cycles. First and second AMH measurements (1.16 ±0.96 ng/mL and 1.22 ±1.00 ng/mL, respectively) were strongly correlated ($R^2$=0.73, $p<0.001$). The improvement from a second AMH was significant if performed ≥78 days after the first AMH measurement (14% of total variability in VOR, $p<0.001$). More frequent testing (<78 days) did not significantly improve ovarian reserve assessment.


**Conclusions:**

Despite modest fluctuations in AMH levels, evaluation of repeat testing of AMH improved prognostic value in predicting a successful VOR. Quarterly AMH level assessment (≤1 per 3 months) may convey additional diagnostic and prognostic benefits for infertile patient seeking infertility treatment therapy.