# PATIENT DECISION-MAKING IN RESPONSE TO ANTI-MÜLLERIAN HORMONE LEVELS

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## INTRODUCTION

Anti-Müllerian hormone (AMH) levels rise from infancy, peak in early adulthood, and decline steadily until around age 50[1,2]. Large population studies have established age-specific reference ranges now used in clinical practice[1,2,3]. However, community-based AMH screening is infrequent. The American College of Obstetricians and Gynecologists (ACOG)[4] advises against routine AMH screening in those without a diagnosis of infertility. This position is based on the notionally limited predictive value for fertility in the general population. In Canada, the Society of Obstetricians and Gynecologists of Canada (SOGC) has not released guidance on this, implying more research is needed.

## OBJECTIVE

To assess whether age and knowledge of AMH levels influence decision-making regarding fertility preservation and assisted reproductive treatments, which are increasingly part of modern family planning.

## MATERIALS & METHODS

**Design**: Retrospective cohort study

**Setting**: Toronto, Canada, Fertility clinic between January 2018 and November 2025

**Sample**: Patients 24-40 years of age presenting for proactive fertility testing (AMH testing using Roche E411 assay or other similar technique)

**Outcomes**:

1. Low AMH group versus average controls.
   *A low AMH was defined as ≤1.12 ng/mL), a threshold commonly utilized following the POSEIDON[5] and Bologna[6] criteria to predict poor ovarian response to assisted reproductive treatment. Average controls were defined as AMH >1.12 ng/mL.*
2. Decision to proceed with fertility treatment between patients with low AMH versus average controls.

**Statistical tests**: Chi-square and t-tests (Stata v12.1)

| AMH ≤1.12 ng/mL (n=162) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | EF | | IVF | | IUI | | Completed treatment | |
| Patient Age (yrs) | *n* | % | *n* | % | *n* | % | *n* | % |
| <35 | *26* | 42.6% | *6* | 9.8% | *1* | 1.6% | *33* | 54.1% |
| 35-37 | *19* | 33.3% | *3* | 5.3% | *4* | 7.0% | *26* | 45.6% |
| 38-40 | *15* | 34.1% | *3* | 6.8% | *5* | 11.4% | *23* | 52.3% |

**Table 1a – Patient treatment decisions by Age and AMH Level (AMH ≤1.2 ng/mL)**

| AMH >1.12 ng/mL (n=411) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | EF | | IVF | | IUI | | Completed treatment | |
| Patient Age (yrs) | *n* | % | *n* | % | *n* | % | *n* | % |
| <35 | *86* | 33.9% | *15* | 5.9% | *3* | 1.2% | *104* | 40.9% |
| 35-37 | *34* | 32.7% | *4* | 3.8% | *6* | 11.5% | *44* | 42.3% |
| 38-40 | *14* | 26.4% | *5* | 9.4% | *3* | 15.1% | *22* | 41.5% |

**Table 1b – Patient treatment decisions by Age and AMH Level (AMH >1.2 ng/mL)**

| Outcomes | | | |
|---|---|---|---|
| AMH level (ng/mL) | Cycle completion (n) | | Completed cycles (%) |
| | Yes | No | |
| ≤1.12 | 82 | 80 | 50.6% |
| >1.12 | 170 | 241 | 41.4% |
| | | | **p = 0.044** |

**Table 2 – Outcomes**

## RESULTS

**Results:** Significant association between AMH ≤1.12 ng/mL and proceeding with fertility treatment (either egg retrieval or intrauterine insemination)

**p = 0.044**

**Analysis**: 573 AMH levels were analyzed

1. Low AMH group versus average controls:
   **AMH ≤1.12 ng/mL:** 162 patients (28.3%)
   **AMH >1.12 ng/mL:** 411 patients (71.7%)
2. Decision to proceed with fertility treatment between patients with low AMH versus average controls:
   **AMH ≤1.12 ng/mL:** 82/162 (50.6%) underwent treatment
   **AMH >1.12 ng/mL:**170/411(41.4%) underwent treatment

Patient treatment decisions and outcomes are summarized in Tables 1 and 2, respectively

## CONCLUSION

**Patients with low AMH (≤1.12 ng/mL) were significantly more likely to pursue fertility treatment than those with average AMH levels, suggesting that low AMH results may motivate proactive reproductive decisions.** Younger patients (<35 years) and those aged 38–40 years were most responsive to counselling and most likely to proceed with treatment. These findings underscore the role of AMH testing not only as a biological predictor of ovarian response but also as an influential factor in patient decision-making and engagement with fertility care. Further research may be warranted to explore community-based strategies for AMH testing and counselling of individuals with diminished ovarian reserve.

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