

# Abstract

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## Diagnostic value of the total antioxidant capacity (TAC) in human seminal plasma.

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**OBJECTIVE:** To establish cutoff value, sensitivity, specificity and intra- and interobserver variability of total antioxidant capacity (TAC) in seminal plasma from healthy donors (controls) and infertile patients.

**DESIGN:** Seminal plasma from proven fertile donors (n = 55), nonproven fertile donors (n = 45), and infertile patients (n = 42) were examined for TAC level.

**SETTING:** Reproductive research center in a tertiary care hospital.

**PATIENT:** Infertile patients from male infertility clinic of various diagnoses.

**INTERVENTION:** Seminal plasma TAC measurement by a colorimetric assay using the TAC assay kit, receiver operating characteristics curve.

**MAIN OUTCOME MEASURE:** Seminal plasma TAC levels, cutoff value, sensitivity, and specificity.

**RESULT:** Proven fertile donors showed higher TAC values (median and range): 1700 (1440-2290  $\mu\text{M}$ ); compared with the infertile patients: 1310 (1040-1600  $\mu\text{M}$ ). The best cutoff to distinguish between fertile controls and infertile men was 1420  $\mu\text{M}$ . At this threshold, specificity was 64% and sensitivity 76%.

**CONCLUSION:** Total antioxidant capacity of the seminal plasma as measured by the colorimetric assay is a reliable and simple test for the diagnosis and management of male infertility.

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