

SEMEN ANALYSIS FROM ENDOCRINE ANGLE

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Semen analysis is the primary and most accessible investigation in the assessment of male fertility potential. It provides essential information regarding sperm concentration, motility, morphology, volume, and other seminal parameters, forming the basis for diagnosing male factor infertility. Standardized guidelines, particularly those outlined by the World Health Organization (WHO), ensure consistency and reliability in semen evaluation. A comprehensive semen analysis assesses macroscopic features such as volume, viscosity, and pH, alongside microscopic parameters including sperm count, progressive motility, morphology, and vitality. Abnormal findings—such as oligozoospermia, asthenozoospermia, teratozoospermia, or azoospermia— can indicate underlying reproductive dysfunction and guide further evaluation. Despite its clinical utility, semen analysis has inherent limitations. Variability between samples, influence of abstinence period, and laboratory techniques may affect results, necessitating at least two analyses for accurate interpretation. Moreover, normal semen parameters do not always guarantee fertility, and abnormal findings do not invariably predict infertility. Recent advancements have expanded the scope of semen analysis to include sperm DNA fragmentation, oxidative stress markers, and advanced imaging techniques, offering deeper insights into sperm function and fertilizing potential. These adjunct tests may be particularly valuable in cases of unexplained infertility or recurrent pregnancy loss. In conclusion, semen analysis remains an indispensable, cost-effective, and informative tool in male infertility workup. When interpreted in conjunction with clinical history and other diagnostic modalities, it plays a crucial role in identifying causes, guiding management, and improving reproductive outcomes.

Keywords: Semen analysis, Male infertility, Sperm parameters

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