

**COMPUTER ASSISTED SPERM HEAD MORPHOLOGY
ASSESSMENT AND ITS CORRELATION WITH SPERM DNA
DAMAGE.**

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Introduction and Objectives: Sperm chromatin structure of poor quality may be indicative of male subfertility. Evaluation of sperm chromatin structure is an independent measure of sperm quality that provides good diagnostic and prognostic capabilities. Therefore, it may be considered a reliable predictor of couple's inability to become pregnant. Computer-assisted sperm morphometry analysis has improved the assessment of sperm morphology which may be associated with sperm DNA fragmentation. Our objective was to evaluate the correlation between computerized analyses of sperm head morphology and DNA fragmentation. **Methods:** A total of 21 semen samples of infertile patients were tested. Smears were stained by Diff-Quik and sperm head morphology was analyzed by Sperm Morphology Analyzer (Sperm class analyzer software, Microoptics, Barcelona, Spain) according to the manufacturer's instructions. Sperm DNA damage was analyzed by Comet assay (single cell gel electrophoresis). Morphology was divided according to head size (normal, macro, micro, pin head and phantom head) and head shape (normal, round, thin, paintbrush, narrow base and amorphous head). Sperm DNA fragmentation was classified into mild, moderate and severe according to the tail moment. **Result:** Both micro and amorphous head were positively correlated with severe DNA damage ($r = 0.48$ and 0.48 respectively, $P < 0.001$ and $P < 0.05$) and negatively correlated with mild DNA damage ($r = -0.58$ and -0.49 , $P < 0.001$ and $P < 0.001$ respectively). No significant correlation was found between DNA damage and other head abnormalities. **Conclusions:** Sperm with amorphous and micro head abnormalities have higher DNA fragmentations compared to other forms of sperm head abnormalities. Amorphous and micro head abnormalities are lower in patients with mild DNA damage. Computerized analysis of sperm head shape and size may be indicative of extent of DNA damage.