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JOURNAL ARTICLE

Morphometric analysis of spermatozoa in the assessment of human male fertility

D. F. Katz, J. W. Overstreet, S. J. Samuels, P. W. Niswander, T. D. Bloom and E. L. Lewis

A videomicrographic system was developed for measurement of morphometric parameters of human spermatozoa. Contours of the images of spermatozoa on a video monitor are digitized by manually tracing them with the cursor of an electromagnetic digitizer integrated to a microcomputer. The accuracy and precision of the methodology were evaluated. A comparison of human sperm heads in shallow wet preparations and in dried, stained preparations indicated that the latter were smaller in length, width, projected area, and circumference, but that the ratio length/width was not different. An analysis was made of 457 ejaculates from 16 fertile donors. The variation between ejaculates within donors was similar in magnitude to the variation between donors. A study was performed comparing seminal sperm morphometry in single specimens from 30 fertile and 30 infertile men. The sperm head length/width ratio was the parameter that differed the most between these two groups. Moreover, it was the per-ejaculate variability of this parameter, rather than the central tendency, that maximized the difference.

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