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JOURNAL ARTICLE

# Longitudinal study of semen quality of unexposed workers. Sperm motility characteristics

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As part of a longitudinal study of human semen characteristics of unexposed workers, sperm motility measurements were made using computer-assisted sperm analysis. Motility analyses were conducted on monthly samples from 46 men for 9 months. Measurements of curvilinear velocity, straight-line velocity (VSL), linearity, amplitude of lateral head displacement (ALH), and beat-cross frequency were collected in eight microscope fields for each semen sample. The variability within a sample, between samples from the same individual (between monthly samples), and between individuals were calculated using a nested analysis of variance. For all sperm motility measurements, at least 90% of the variation was observed between cells within a semen sample. For all variables, the component of variation between subjects was the smallest percentage (ranging from 1.3% for ALH to 4.0% for VSL). When sample means were used in the nested analysis of variation, at least 75% of the variation was observed between samples from the same individual. These results will be useful in power calculations for future studies.

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