

## Evaluation of the effects of 1,3-dinitrobenzene on sperm motility of hamster using computer assisted semen analysis (casa)

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### Abstract.

The number of chemicals in the workplace and general environment is increasing each year. Some of these compounds are male reproductive toxicants. 1,3-Dinitrobenzene (mDNB) is an industrial chemical in wide use that affect male germ cell development and fertility. The present study was carried out to evaluate the effects of mDNB on sperm motility of hamster and the results were correlated with fertility. Adult male hamsters were gavaged with 3 doses of mDNB (1.5 mg mDNB daily for 4 weeks, 1.5 mg m DNB/1 day/week for 4 weeks and 1.0mg mDNB/3days/week for 4 weeks) dissolved in 60% polyethylene glycol (PEG) and the control animals received only PEG. Computer Assisted Semen Analysis (CASA) was used to analyse the sperm motility parameters, curvilinear velocity (VCL) and straight line velocity (VSL) of distal corpus and distal cauda sperm. In vitro fertilisation was carried out only for 1.5 mg mDNB daily dosed group to determine the sperm fertilising capacity. There was a significant reduction in sperm velocity parameters at weeks 3 and 4 after treatment that correlated with the decline in sperm fertility. It was suggested that sperm velocity parameters can be used to determine the effect of a toxic insult on the sperm function.