

Freiburg Medical Laboratory ME LLC, P.O.Box 3068, Dubai



Sperm DNA Fragmentation

General:

The evaluation of sperm characteristics is the first step in male partner examination. The clinical diagnosis and management of male infertility is usually based on conventional semen parameters. Though conventional semen analysis is a mandatory test when counselling an infertile couple, it lacks information about DNA integrity and it is not always sufficient in the assessment of sperm function and male infertility. Moreover, it does not assess the outcome in terms of fertility or of a healthy conceptus.

It has been reported that male infertility is associated with poor sperm DNA integrity, and a high percentage of endogenous DNA nicks in ejaculated sperm has been correlated with reduced fertility. The integrity of nuclear DNA of spermatozoa is an indicator of cell health and there is an increasing awareness of its importance in assisted reproduction and particularly in intracytoplasmic sperm injection (ICSI) cycles.

ICSI is an in vitro fertilization (IVF) method that bypasses mechanisms of natural selection and overcomes factors which otherwise could hinder fertilization. During ICSI, a spermatozoon is immobilized, aspirated by means of the injecting pipette and it is injected into the cytoplasm of a metaphase II (MII) oocyte, in a position distant from the first polar body. ICSI can be applied either with ejaculated spermatozoa or with spermatozoa of epididymal origin, with testicular spermatozoa or even with spermatozoa retrieved from post-ejaculatory urine, in cases of retrograde ejaculation.

The selection of the spermatozoon to be injected into the oocyte is based on the gross morphology and motility. However, sperm morphology and motility do not always go together with DNA integrity. Consequently, in ICSI, there is always the risk of inadvertently using spermatozoa with damaged DNA. In cases of semen of poor quality, the risk is probably higher, as it has been reported that semen of poor quality has an increased proportion of spermatozoa with DNA fragmentation. The percentage of spermatozoa with nuclear DNA fragmentation, referred to as the DNA fragmentation index (DFI), has been associated with fertilization failure or possible damage to the foetus.

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- Indication: idiopathic sterility, teratozoospermia, OAT syndroms, varikocele, undescended testes, missed fertilization, insufficient fertilization despite normal semen parameters, contact with toxic allergents.
 - Material: 1 ml Semen
 - TAT: 2-3 days, FML
 - Method: Tunel (The Tunel method is considered the most promising tools for Sperm DNA Fragmentation, this method can measure both single and double strand breaks)

Units: %

Ref.- range: 15%

For complete list of laboratory test offered at Freiburg Medical Laboratory, please visit http://www.fml-dubai.com/parameter-listings/

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