SAMAA

FERTILIZATION CENTER

A guide to Sperm DNA Fragmentation Testing

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Sperm DNA Fragmentation

Good quality sperm DNA is crucial for successful fertilization and the normal development of embryos. DNA is the most important part of the sperm. It contains the genetic instructions that make a baby look and act like its parents. Sperm DNA can be damaged during sperm production and transport or even while it is stored in the body. This damage is known as DNA fragmentation.

It has been shown that as sperm DNA fragmentation increases, the chance of having an IVF baby decreases. Even low levels of DNA fragmentation can reduce the success rates of IVF. If sperm DNA is badly damaged, success at every fertility checkpoint is severely impaired. Research shows that sperm from fertile men have low levels of DNA fragmentation compared to sperm from infertile men. ICSI is a more successful treatment than IVF if a man has high levels of sperm DNA fragmentation, as by injecting a single sperm directly into the egg there is a better chance of the egg repairing the DNA damage.

DNA fragmentation is usually caused by oxidative stress. Oxidative stress produces free radicals which attack the DNA molecule causing breaks in the DNA strands. It is often associated with underlying medical conditions, or certain lifestyle choices such as:

- Infection or fever
- Varicocele
- Smoking / Alcohol
- Stress
- Poor diet
- Body building supplements
- Medications with adverse sides effects on sperm
- Advanced age (over 45 years)

So, even if your semen analysis is normal, sperm DNA fragmentation may still be impacting your ability to get pregnant. Sperm DNA fragmentation is also linked to recurrent miscarriage as high levels have been shown to double the likelihood of a miscarriage occurring. Hence, whether you have had unsuccessful IVF in the past or are planning fertility treatment in the future, it would be advisable to assess the quality of your sperm DNA.

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