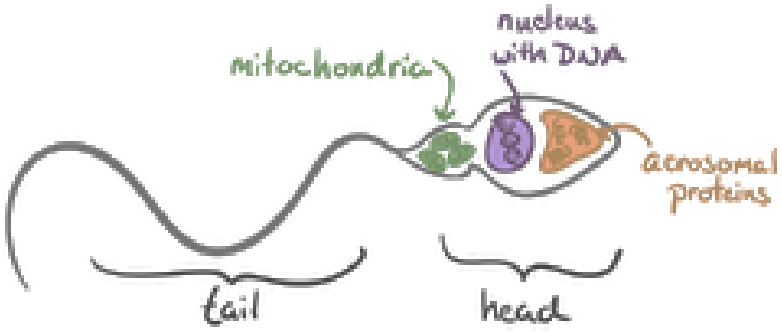
The Hewitt Fertility Centre

Liverpool Women's NHS Foundation Trust

Sperm DNA Damage Testing

What is sperm DNA damage?

Half of the information to make a human is delivered by the sperm to the egg. Sperm production takes place inside the testicles and takes approximately two months to complete. During this time, there is a possibility that the sperm DNA can become damaged. The exact cause of sperm DNA damage is unknown but may be related to lifestyle and genetic factors.



What evidence is available for sperm DNA fragmentation?

A number of studies have indicated that high sperm DNA damage can be associated with infertility issues including disrupted embryo development, poor IVF fertilisation rates and higher rates of pregnancy loss after IVF/ICSI[1]. However, two systematic reviews on sperm DNA damage testing have been completed which resulted in conflicting opinions on the use of the sperm DNA damage test[2,3]. Unfortunately, the evidence available on sperm DNA damage is limited and there is currently no large clinical study available to justify regular use of this test.

What is the sperm DNA fragmentation test?

A test called the COMET assay is used to detect sperm DNA damage. This test involves chemically breaking down the sperm sample to release the DNA and testing it. The COMET assay enables the DNA damage to be measured by examining the number of DNA breaks in the sample.

How is this test performed?

A semen sample is needed to perform the DNA test. The results of the DNA test aim to indicate the fertility potential of the sperm in the semen sample.

When will my results be available?

The sperm DNA damage test will take less than a day to process in the andrology laboratory. The sample is then frozen and sent away for further testing. The results can take up to six weeks to be processed.

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Is sperm DNA damage testing for me?

The genetic integrity of the sperm is essential for normal embryo development. A high level of DNA fragmentation in sperm cells may represent a cause of male infertility that conventional examinations do not test for.

Your doctor or embryologist may recommend you have the sperm DNA damage test if failed fertilisation has occurred and there is no known cause for this outcome. This test offers a possible further explanation for un-explained infertility. The results of a sperm DNA damage test may impact slightly on the management of your treatment but may identify why you are struggling to get pregnant.

How much does the test cost?

Please see our fee schedule or speak to a member of our team to discuss sperm DNA damage test costs.

Costs and funding | The Hewitt Fertility Centre

The Human Fertilisation and Embryology Authority (HFEA) and the test:

Sperm DNA damage testing is an additional investigation that can be added to your treatment. Sperm DNA damage is viewed as an 'add-on' treatment. For more information on treatment add-ons please refer to the HFEA website:

Treatment add-ons with limited evidence | HFEA

Please discuss the current HFEA traffic-light status of sperm DNA damage testing with your fertility specialist.

How to book the test?

If you are a Liverpool patient please call our funding team on: 0151 702 4301/4481.

If you are a Knutsford patient please call 01565 653287

This leaflet can be made available in different formats on request. If you would like to make any suggestions or comments about the content of this leaflet, then please contact the Patient Experience Team on 0151 702 4353 or by email at pals@lwh.nhs.uk

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[1]Simon et al (2010) Clinical significance of sperm DNA damage in assisted reproduction outcome, Human Reproduction, 25, 7, pp1594-1608.
[2]Cissen et al (2016) Measuring sperm DNA fragmentation and clinical outcomes of medically assisted reproduction: A systematic review and meta-analysis, PLoS One, 11, 11, e0165125, pp1-23.
[3]Simon et al (2017) A systematic review and meta-analysis to determine the effect of sperm DNA damage on in vitro fertilisation and intracytoplasmic sperm injection outcome, Asian J Androl, 19, 1, pp80-90.