

## Endometrial Immunoprofiling

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### Background

Infertility affects approximately 10-15% of couples in the UK, requiring them to proceed with assisted reproduction technology (ART). Despite recent advances, one in four attempted IVF cycles results in a baby and only 50% of women under 35 years old achieve a pregnancy after a blastocyst transfer.

Repeated implantation failure (RIF) is determined when transferred embryos fail to implant following several attempts. RIF can occur by chance, or because of underlying problems in the eggs or sperm, or in the embryos or in the lining of the uterus (endometrium) due to what we call reduced endometrial receptivity<sup>1</sup>.

A number of tests have been used to understand why embryos do not implant. At present there is little evidence that these tests provide a clinical benefit. A lack of large randomised, controlled trials means that it is difficult to know when it is appropriate to offer patients certain tests.

### What tests are available?

Endometrial immunoprofiling is a test that has recently been developed. This test is being offered by an immunology research laboratory in Paris, France. As an extrapolation of the Natural Killer cell test, they believe that different biomarkers measured in an endometrial biopsy taken at the time of presumed implantation will indicate whether a patient's immune response is normal, low or high.

### How is the test performed?

Once the decision has been made with your doctor to undertake this test, we will prepare your womb lining with a combination of oestrogen oral tablets and vaginal progesterone pessaries. A blood test for HIV, hepatitis B & C is required (sampled within the last 12 months). An endometrial biopsy is taken by passing a tube through the cervix and drawing off a sample of endometrial tissue using suction. The sample is placed in a tube and sent to France for analysis. The laboratory does an initial analysis on the sample to check there is sufficient tissue taken at the correct time during the menstrual cycle. At this point, payment by the patient directly to the French laboratory is required. The sample is fully analysed and the result is reported in approximately 3 weeks. A suggested management plan to correct any imbalance is also provided. Should you wish to repeat the test, there is a 20% reduction on the laboratory cost.

### Is there any evidence available on this test?

Some studies have suggested that up to 78-81% of women with a lack of implantation will demonstrate an imbalance<sup>2,3</sup>. Importantly, they have also derived treatments to normalise the immune response. According to the same studies, when these treatments were used in women with imbalances, both live birth rate and miscarriage rate were improved<sup>3</sup>. Repeat testing after having any suggested treatments are possible for reassessment. Current randomised controlled trial results for these tests are expected in 2020.

Immunoprofiling is viewed as an 'add-on' treatment as it is not considered routine clinical treatment. For more information on treatment add-ons please refer to the HFEA website:

<https://www.hfea.gov.uk/treatments/explore-all-treatments/treatment-add-ons/>

Please discuss the current HFEA traffic light status for this treatment with your fertility specialist.

## How much does the test cost?

As we must consider this test 'experimental', we cover our costs and do not profit from offering this test.

Viral screen (within 1 year of test)	£175
Medication	Up to £150
Scan	£175
Courier	£100
Analysis (Laboratory based in Paris, France)	€500

**If you are unsure as to whether you should have endometrial immunoprofiling, please contact the Hewitt Fertility Centre to discuss further.**

## References

1. Das M, Holzer HE. Recurrent implantation failure: gamete and embryo factors. *Fertil Steril* 2012;97(5): 1021–7.
2. Lédée N, Petitbarat M et al. The Uterine Immune Profile May Help Women With Repeated Unexplained Embryo Implantation Failure After In Vitro Fertilization. *Am J Reprod Immunol*. 2016 Feb 11; 75(3): 388–401.
3. Lédée N, Prat-Ellenberg L et al. Uterine immune profiling for increasing live birth rate: A one-to-one matched cohort study. *J Reprod Immunol*. 2017 Feb;119:23-30

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](mailto:pals@lwh.nhs.uk)

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