EndomeTRIO

ERA, EMMA and ALICE tests

## Introduction

The endometrium is a tissue lining the interior of the uterus where the embryo implants and resides during pregnancy. Each month, the endometrium prepares for the arrival of an embryo. When this does not occur, menstruation begins.

Variations of the endometrium are one of the leading causes of infertility in women. The endometrium must be both receptive to embryo implantation at the time of transfer and rich in healthy bacteria. Infections with harmful bacteria can cause diseases of the endometrium, such as chronic endometritis, which are associated with poor reproductive outcomes.

Recent studies indicate that the endometrium is a key factor for reproductive success. 20% of infertility is caused by the endometrial factor.

EndomeTRIO is a complete endometrial analysis that includes ERA, EMMA and ALICE tests. In summary:

**ERA** will enable you to perform a personalised embryo transfer, increasing the likelihood of successful implantation and a successful pregnancy

**EMMA** will determine whether the uterine microbial environment is optimal for embryo implantation.

**ALICE** detects pathogenic bacteria, in particular those that cause chronic endometritis

## ERA – Endometrial Receptivity Analysis

Endometrial Receptivity Analysis(ERA) is a diagnostic test that helps evaluate a woman’s endometrial receptivity from a molecular perspective.

The endometrium is receptive when it is ready for embryo implantation to occur. This period of receptivity is called the window of implantation.

Each woman has a unique window. For some women the window is shorter and/or displaced. By knowing your personal window of implantation, you can optimise your chances of pregnancy through a personalised embryo transfer.

## EMMA – Endometrial Microbiome Metagenomic Analysis

The endometrial flora or microbiome is the sum of the microorganisms and their collective genetic material present in the endometrium.

EMMA evaluates your endometrial flora to quantify the presence of good bacteria in the microbiome. EMMA also includes the ALICE test to identify the pathogenic bacteria most commonly associated with chronic endometritis. We are then able to recommend the best probiotic and/or antibiotic treatment to balance your endometrial flora, improving your pregnancy prospects.

## ALICE – Analysis of Infectious Chronic Endometritis

Chronic Endometritis is a persistent inflammation of the endometrial lining caused by the infection of the uterine cavity mainly by bacterial pathogens that cannot be identified using conventional methods.

ALICE detects the bacteria causing chronic endometritis and recommends adequate treatment.

## Technique

EndomeTRIO is performed using a biopsy taken from the endometrium. It is a simple procedure that can be performed in the clinic without sedation. The biopsy is performed in a mock cycle to mimic the conditions for embryo transfer.

The biopsy process serves a dual purpose because it causes a local injury to the endometrium. Hence, it can act as the endometrial scratch at the same time.

Please note patients should not be pregnant when the endometrial biopsy is performed. Therefore patients should not have unprotected intercourse during that cycle. Further, you will be required to have a negative pregnancy test on the day of the endometrial biopsy.

## Who is the EndomeTRIO recommended for?

The EndomeTRIO is recommended for patients experiencing implantation failure with good quality embryos. Similarly, it is recommended for patients with a history of recurrent pregnancy loss. The test is recommended for patients with a seemingly normal uterus, in which no other pathology has been detected.

In order to get pregnant good quality endometrium and a good quality embryo(s) are needed. This is the first investigation to look at the endometrium directly.

## Further reading

EndomeTRIO is an adjunct service and is not recommended for all patients. Please speak to your consultant about whether it might be beneficial for you. Please refer to the regulator’s web page regarding treatment “add-ons” for further information: <https://www.hfea.gov.uk/treatments/explore-all-treatments/treatment-add-ons/>

Igenomix website: <https://www.igenomix.co.uk/our-services/endometrio/>

## References

1. Simon et al. ASRM Oral communication 2019; 112(3): Supp e56–e57
2. Ruiz-Alonso et al., Fertil Steril, 2013; 100(3): 818-24.
3. Moreno et al., AM J Obstet Gynecol, 2016; 215(6):684-703
4. Cicinelli et al. Hum Reprod, 2015; 30(2):323-30.