ebiom+

Comprehensive endometrial microbiome analysis to support fertility care

MEDICOVER GENETICS

ENDOMETRIAL MICROBIOME AND INFERTILITY

The endometrial microbiome is the community of bacteria present in the uterine lining, plays a crucial role in reproductive health, where the embryo implantation takes place.

ebiom analysis assesses the bacteria in the endometrial flora

The bacteria in the endometrial microbiome can be both beneficial and harmful. Beneficial bacteria create a healthy environment by producing lactic acid, which inhibits the growth of harmful bacteria (also called pathogenic bacteria). A microbiome dominated by Lactobacillus (> 80% lactobacilli) is considered the normal state. However, an imbalance in the endometrial flora, where harmful bacteria grow, can negatively affect fertility care.[1-5]

ebiomCE analysis identifies sexually transmitted pathogenic bacteria

Chronic endometritis (CE) is a persistent inflammation of the endometrial lining mainly caused by sexually transmitted bacteria, and it is often linked to embryo implantation failure and recurrent pregnancy loss.[6] While it may be asymptomatic, it can also present with chronic lower abdominal pain, dyspareunia, abnormal vaginal bleeding, or discharge. Accurate diagnosis of the infection is essential for receiving targeted treatment.

ebiom+ analysis combines ebiom with ebiomCE for a complete diagnostic picture

A comprehensive assessment of the endometrial microbiome identifies normal conditions and dysbiosis (abnormal bacterial colonization). This will help your physician to get the right diagnosis and treatment plan for your fertility journey.

WHO COULD **BENEFIT** FROM THIS TEST?

Talk to your physician about these tests if you experience the following fertility challenges:

- Difficulty in conceiving
- Difficulty getting pregnant despite treatment
- Recurrent miscarriages
- Embryo implantation failure during IVF
- Unexplained infertility

WHY TAKE THE TESTS?

Results will help your physician to:

- Identify both beneficial and harmful bacteria in your endometrial microbiome (including pathogenic bacteria associated with CE)
- Detect imbalances that may be linked to infertility or failed embryo implantation
- Provide personalized treatments with probiotics or antibiotics to improve your fertility
- Improve fertility care

[1]*Haahr et al. 2016, PMID: 26911864;* [2]*Moreno et al. 2016, PMID: 27717732;* [3]*Moreno et al. 2017, PMID: 28602480;* [4]*Moreno et al. 2022, PMID: 34980280;*
[5]*Reschini et al. 2022, PMID: 35589752;* [6]*Park et al. 2016, PMID: 28090456*

OVERVIEW OF THE TEST

ebiom+	**Combines ebiom with ebiomCE for a comprehensive assessment of the endometrial microbiome**
ebiomCE	Identifies sexually transmitted pathogens with high sensitivity to accurately diagnose and choose the right treatment for chronic endometritis Technology: Real-time multiplex polymerase chain reaction (PCR)
ebiom	Assesses the bacteria in the endometrial flora to identify potential imbalances Technology: Next generation sequencing (NGS)

RESULTS AND **INTERPRETATION**

Here's what the findings might indicate:

ebiom+ analysis (includes ebiom and ebiomCE)

HEALTHY MICROBIOME	**DYSBIOSIS**	**STERILE**	**PATHOGENIC BACTERIA PRESENT**
Lactobacillus spp. > 80%, no significant presence of pathogenic bacteria associated with CE	*Lactobacillus* spp. < 80% and other non-pathogenic bacteria	No bacteria detected	*Lactobacillus* spp. < 80% and pathogenic bacteria related to infertility and / or CE
No treatment	Probiotics only, no antibiotics		Consider antibiotics, see below

Evaluate the effectiveness of the treatment at least one week after discontinuing probiotic or antibiotic therapy

Detecting all types of bacteria in the endometrium, including: *Atopobium*, *Bifidobacterium*, *Chlamydia*, *Chryseobacterium*, *Gardnerella*, *Haemophilus*, *Klebsiella*, *Neisseria*, *Staphylococcus*, *Streptococcus*

Pathogenic bacteria associated with CE: *Chlamydia trachomatis*, *Mycoplasma genitalium*, *Mycoplasma hominis*, *Neisseria gonorrhoeae*, *Ureaplasma parvum*, and *Ureaplasma urealyticum*

TREATMENT RECOMMENDATIONS

PROBIOTIC TREATMENT

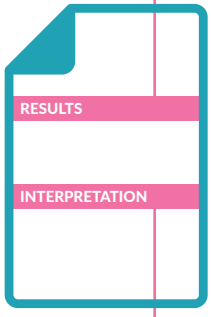
Certain beneficial bacteria, especially *Lactobacillus crispatus* and *Lactobacillus gasseri*, play a key role in maintaining a healthy vaginal environment and supporting fertility. Other important strains include *Lactobacillus jensenii* and *Lactobacillus rhamnosus*. These probiotics help protect against harmful bacteria by producing natural substances like hydrogen peroxide (H_2O_2), adding an extra layer of defense alongside your immune system. If your test shows an imbalance in your microbiome, supplements containing these beneficial strains (*L. crispatus*, *L. rhamnosus*, *L. acidophilus*, *L. gasseri*, and *L. fermentum*) can help restore balance.

ANTIBIOTIC TREATMENT

If harmful bacteria are detected, antibiotics may be recommended based on established guidelines. For bacteria linked to conditions like bacterial vaginosis, treatments often include clindamycin or metronidazole. If intracellular pathogens such as *Chlamydia*, *Mycoplasma*, or *Ureaplasma* are found, your physician may prescribe doxycycline to target these specific

HOW DOES THE **REPORT** LOOK LIKE?

The report will detail the bacterial composition of your endometrial microbiome. Here's an example of what you might see:



EVALUATION OF LACTOBACILLUS

Percentage of *Lactobacillus*, e.g., 50% *Lactobacillus* spp.
Probiotic supplementation may be recommended.

EVALUATION OF OTHER BACTERIA

Percentage of other bacteria, e.g., 5% *Prevotella* spp.
Currently, there are no known benefits or drawbacks associated with *Prevotella* spp. in fertility treatment.

EVALUATION OF POTENTIAL PATHOGENIC BACTERIA

Percentage of pathogenic bacteria, e.g., 45% *Gardnerella* spp.
Any treatment should adhere to established guidelines.

Summary of results and recommendations. In this case: treatment with metronidazole and clindamycin would be suggested according to guidelines for bacterial vaginosis.

FREQUENTLY ASKED **QUESTIONS**

1 CAN I TAKE THE TESTS WHILE UNDERGOING FERTILITY TREATMENTS?
Yes, assessing your microbiome status during fertility treatments could be beneficial depending on your physician's approach.

2 ARE THE TESTS PAINFUL OR RISKY?
The tests are minimally invasive, similar to a Pap smear, and most patients experience mild discomfort with little to no risks involved.

3 HOW LONG WILL IT TAKE TO GET MY RESULTS?
Results are typically available within 10-12 days, and your physician will schedule a follow-up appointment to discuss them.

4 HOW CAN THE RESULTS HELP ME?
Whether you're already undergoing treatment or just beginning to explore your fertility health, the test results can help guide next steps. Your physician might recommend probiotics, or antibiotics to support a healthier endometrial environment.

5 WHAT HAPPENS IF MY RESULTS SHOW AN IMBALANCE?
If an imbalance is detected, your physician may suggest treatment options, such as probiotics or antibiotics, to restore a healthy microbiome.

6 WILL I NEED TO RETEST MY MICROBIOME?
Your physician may recommend retesting after treatment to check if your microbiome has returned to a healthy balance.

BENEFITS OF THE TESTS

SAFE
Minimally invasive with little to no risk

EASY
Endometrial swab collected by healthcare professional

INFORMATIVE
Composition of endometrial microbiome

ACTIONABLE
Guideline-based treatment recommendations

HOW TO **ORDER**?

Visit a physician to choose the right test for you

Arrange sample collection at your gynecologist (accepted sample: endometrial swabs)

The sample(s) is sent to **Medicover Genetics**

Analysis is performed in our accredited laboratory in Germany

Discuss the medical report with your physician

MORE **QUESTIONS**?

If you have additional questions or concerns, please contact us at **info.genetics@medicover.com**

MEDICOVER GENETICS

Medicover Genetics GmbH
www.medicover-genetics.com

INTL-EBIOM+-PAT-V03