



ebiom+

Comprehensive  
endometrial  
microbiome  
analysis to support  
fertility care



**MEDICOVER**  
GENETICS

# ENDOMETRIAL MICROBIOME AND INFERTILITY

The endometrial microbiome has been linked to cases of unexplained infertility, implantation failure, and recurrent miscarriages. An imbalance in the microbial composition or an infection of the uterine lining may contribute to these issues.<sup>1-4</sup>

## ebiom analysis assesses the bacteria in the endometrial flora

Advances in microbiological diagnostics have reshaped our understanding of the normal flora in the female genital tract. The idea that the lower genital tract, colonised by lactobacilli, is completely separate from a sterile upper genital tract sealed off by the cervix is no longer accurate. The endometrial mucosa is at least temporarily colonised by bacteria. A microbiome dominated by *Lactobacillus* (> 80% lactobacilli) is considered the normal state.<sup>2</sup> Imbalances in the endometrial flora can affect fertility care.<sup>1-3,5</sup>


## ebiomCE analysis identifies sexually transmitted pathogens with high sensitivity

Chronic endometritis (CE) is a persistent inflammation of the endometrial lining, often linked to recurrent implantation failure and recurrent pregnancy loss.<sup>6</sup> 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, dysbiosis (abnormal colonisation), and potential pathogens to recommend personalised treatments and improve fertility care.

## WHO COULD **BENEFIT** FROM THESE TESTS?

- 
- Women who have difficulty conceiving
  - Patients undergoing fertility treatment
  - Patients experiencing embryo implantation failure during IVF
  - Patients who experience recurrent miscarriages
  - Patients with unexplained infertility

## WHY **RECOMMEND** THE TESTS?

Results can help:

- Identify beneficial and harmful bacteria in the endometrial microbiome for precise diagnoses (including pathogenic bacteria associated with CE)
- Detect microbiome imbalances linked to embryo implantation failure and infertility
- Guide targeted use of probiotics or antibiotics for better patient care
- Improve fertility care

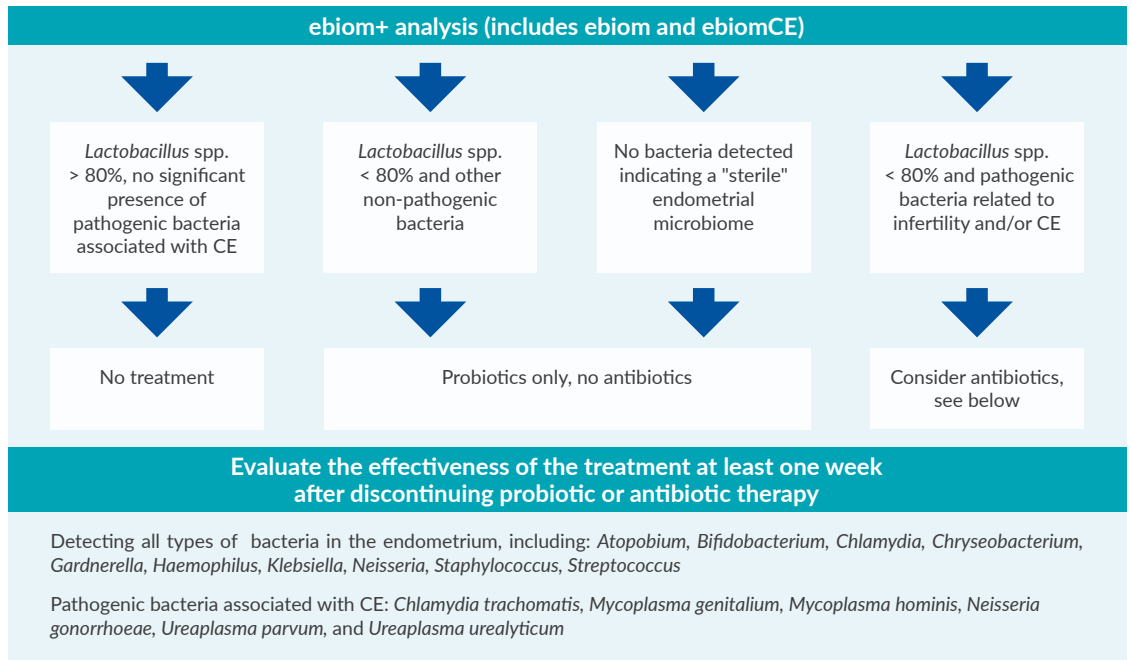
<sup>1</sup>Haahr et al. 2016, PMID: 26911864; <sup>2</sup>Moreno et al. 2016, PMID: 27717732; <sup>3</sup>Moreno et al. 2017, PMID: 28602480; <sup>4</sup>Moreno et al. 2022, PMID: 34980280; <sup>5</sup>Reschini et al. 2022, PMID: 35589752; <sup>6</sup>Park et al. 2016, PMID: 28090456

# OVERVIEW OF THE TESTS

<b>ebiom+</b>	<b>Combines ebiom with ebiomCE for a comprehensive assessment of the endometrial microbiome</b>
<b>ebiomCE</b>	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)
<b>ebiom</b>	Assesses the bacteria in the endometrial flora to identify potential imbalances Technology: Next generation sequencing (NGS)

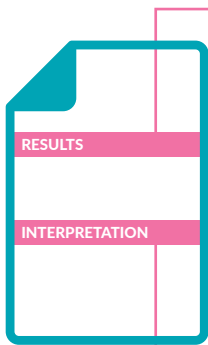
Results are typically available within 10-12 days.

## RESULTS AND INTERPRETATION



# WHAT ARE THE POSSIBLE OUTCOMES OF THE TESTS?

The report provides information about the bacterial composition of the endometrial microbiome. Here's an example:



## EVALUATION OF LACTOBACILLUS

Percentage of Lactobacillus, e.g., 50% *Lactobacillus* spp.  
The administration of probiotics should be considered.

## EVALUATION OF OTHER BACTERIA

Percentage of other bacteria, e.g., 5% *Prevotella* spp.  
To date, no advantages or disadvantages have been described for *Prevotella* spp. in connection with fertility treatment.

## EVALUATION OF POTENTIAL PATHOGENIC BACTERIA

Percentage of pathogenic bacteria, e.g., 45% *Gardnerella* spp.  
Any potential treatment should follow guideline recommendations.

Summary of the results and recommendations.

In this case: treatment with metronidazole and clindamycin would be based on the guidelines for bacterial vaginosis.

# TREATMENT RECOMMENDATIONS

## PROBIOTIC TREATMENT

The most important lactobacilli for maintaining a healthy vaginal flora and supporting fertility are *Lactobacillus crispatus* and *Lactobacillus gasseri*, followed by *Lactobacillus jensenii* and *Lactobacillus rhamnosus*. These bacteria contribute to the body's defence against pathogenic microorganisms through various mechanisms, including the production of H<sub>2</sub>O<sub>2</sub>, providing an additional layer of protection alongside the immune system.

To support the natural flora of the female genital tract, supplements containing *L. crispatus*, *L. rhamnosus*, *L. acidophilus*, *L. gasseri*, and *L. fermentum* have been found effective in patients experiencing dysbiosis. Source: S2k Guideline on Bacterial Vaginosis, AWMF Registry Number 015-028.

## ANTIBIOTIC TREATMENT

Since susceptibility testing can't be performed using traditional methods (antibiogram) due to technical reasons, treatment recommendations follow established guidelines. For instance, bacterial species identified in relation to bacterial vaginosis can be treated with clindamycin or metronidazole, according to the S2k Guideline on Bacterial Vaginosis. If intracellular pathogens like *Chlamydia*, *Mycoplasma*, or *Ureaplasma* are detected, doxycycline is recommended.

COMPREHENSIVE  
ENDOMETRIAL  
MICROBIOME  
ASSESSMENT

CLINICALLY  
VALIDATED  
INSIGHTS

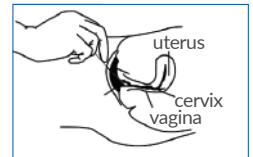
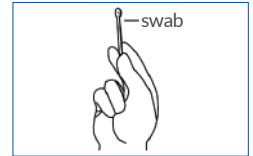
ACTIONABLE  
REPORTS

CERTIFIED  
GERMAN  
LABORATORY

## HOW TO COLLECT THE SAMPLE?

Endometrial swabs should be collected without contamination from vaginal flora:

- 1 Disinfect the external cervical orifice with a suitable disinfectant, then wipe it with a second sterile swab soaked in sterile saline (not included) to remove disinfectant residue and prevent contamination of the sample. Do not swab this area.
- 2 Discard the disposable transfer pipette; it is not required for taking endometrial swabs.
- 3 Remove the sterile swab from the packaging carefully. Do not touch the tip or place the swab down.
- 4 Ensure the swab does not come into contact with the transport fluid before sampling.
- 5 Insert the white swab tip through the endocervical canal up to the uterine fundus, avoiding contact with vaginal flora and minimizing contact with cervical flora.
- 6 Rotate gently for 15–30 seconds to collect the sample.
- 7 Remove the swab carefully without contact with surrounding areas.
- 8 Open the transport tube and insert the swab with the white tip pointing downward. Handle the tube and cap carefully to avoid contamination.
- 9 Break the swab handle at the marked breakpoint, avoiding splashing.
- 10 Close the tube securely and attach the patient identification label.
- 11 Ensure the test order form is fully completed, including the patient's signature. Only use the online fillable order form or a printed requisition from the ordering portal for accuracy and faster processing.



The swab collection process for both ebiom and ebiomCE analysis is identical. However, when ordering ebiom+, two swabs must be submitted to ensure precise and reliable analysis. All test results will be included in the final report.

## HOW TO ORDER?



Recommend ebiom+ to your patient & order sample collection kit



Collect the sample(s) using the endometrial swabs provided by **Medicover Genetics**



Send the sample(s) to **Medicover Genetics**



The sample(s) will be analysed at **Medicover Genetics** laboratories



Results will be sent to you

## MORE QUESTIONS?

If you have additional questions or concerns, please contact us at [info.genetics@medicover.com](mailto:info.genetics@medicover.com)



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