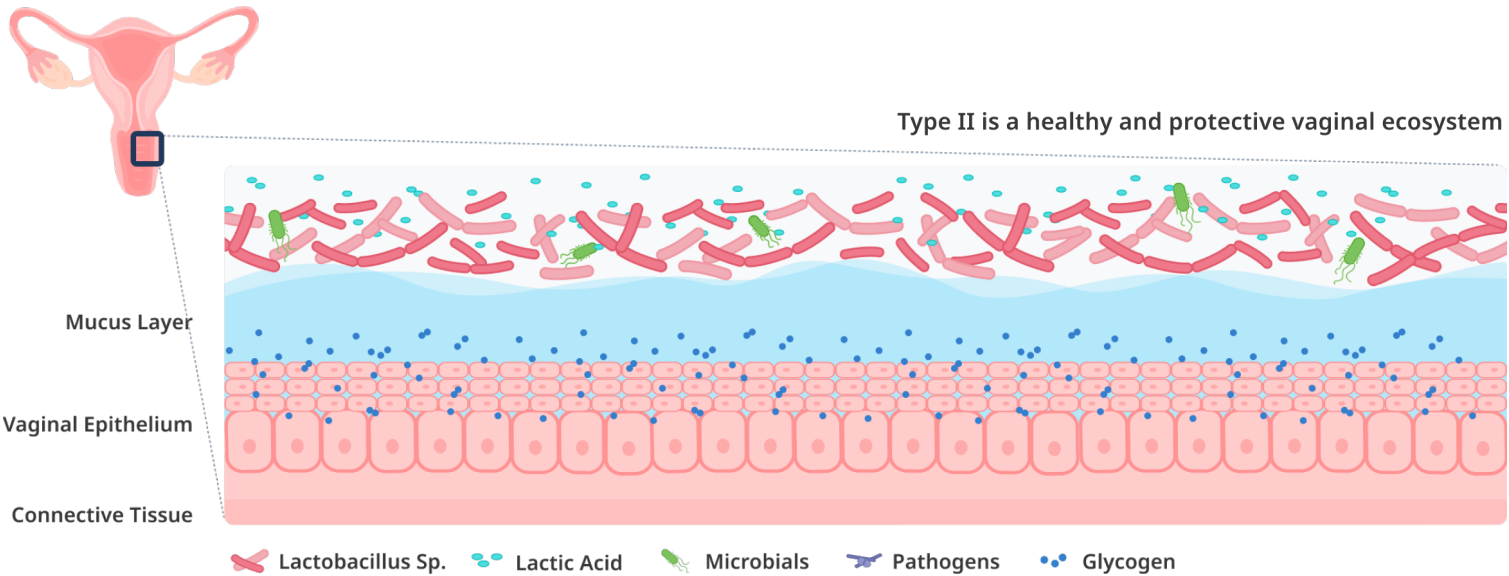


Vaginal Microbiome Report

Menopausal state:

Self-reported symptoms:



Vaginal Microbiome Report

Community State: Type II; Healthy and protective

Vaginal health is suggested based on which Community State Type you fall within. There are 5 Community State Types. Community State Types are determined by which specific Lactobacillus species and non-Lactobacillus species dominate your vaginal microbiome. Changes in Community State Types are seen during menstruation, antibiotic use, intercourse, and throughout hormonal stages. Studies have also shown that healthy women of specific racial backgrounds commonly have more diverse CSTs and do not experience symptoms.

Lactobacillus gasseri dominates community State Type (CST) II. This CST is associated with high lactic acid production, which is protective against pathogenic growth. CST II is not as acidic as CST I, which is dominated by Lactobacillus crispatus; however, it still provides protection and lowers the risk of common vaginal imbalances. Due to the high lactic acid production by Lactobacillus gasseri, pathogens have a hard time surviving in this microbial ecosystem. Those dominated by L. gasseri are less likely to develop bacterial vaginosis, UTIs and have higher protection against STDs. Lactobacillus gasseri often dominates healthy vaginal microbiomes in peri-menopausal women.

Health effects:

- Vaginal health, relatively stable microbiome
- Protective
- Lower risk of urinary tract infections (UTIs), bacterial vaginosis, and sexually transmitted infections (STIs)

Your vaginal microbiome test results indicate that you fall within a dominant lactic acid-producing vaginal ecosystem termed Community State Type II. Lactic acid production is high within CST II, creating an environment where it is less likely that pathogens will take over and cause recurrent health issues such as urinary tract infections or bacterial vaginosis.

2. Maintain a Healthy Vaginal Ecosystem

Probiotics contribute to vaginal health by balancing the gut microbiome, stimulating a healthy response within the immune system. Specific strains of probiotics have been found to normalize the vaginal bacteria population by increasing protective local lactic acid and producing antimicrobial compounds that encourage a balanced vaginal microbiome.

Vaginal Microbiome Report

Vaginal Dysbiosis – Lowest risk

Certain CSTs may be associated with Vaginal Dysbiosis that occurs when imbalances within the microbial composition disrupt homeostasis. These imbalances are often associated with high diversity non-Lactobacillus bacteria species. Causes of vaginal dysbiosis can shift a protective vaginal microbiome community state to an increased risk community state. Vaginal dysbiosis symptoms may include discharge, odor, itching, pain during intercourse, and burning associated with urination.

Causes of Vaginal Dysbiosis:

- Vaginal douching
- Topical antifungal
- Smoking
- Spermicide
- Multiple sexual partners
- High stress
- Hormonal changes
- Antibiotics
- Obesity
- Diet associated with increased trans fats, high glycemic load, and low nutrient density

Vaginal Wellness Score

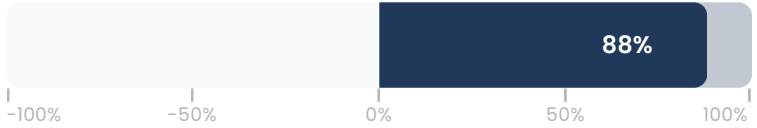
Vaginal Wellness Score: 89/100

The vaginal wellness score is an indicator of overall vaginal health based on your vaginal bacteria sample analysis. Your score takes into account four components:

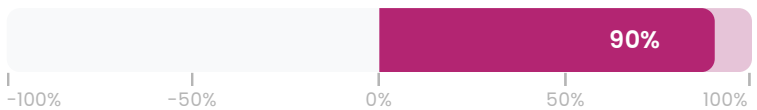
1. Dominance Score
2. Ecosystem Score
3. Pathogen Score
4. Symptoms Score

Each component is weighted based on its influence on your vaginal health. Your Dominance Score and the Ecosystem Score receive positive weights, while the Pathogen Score and Symptom Score receive negative weights. More details on each component are found further below.

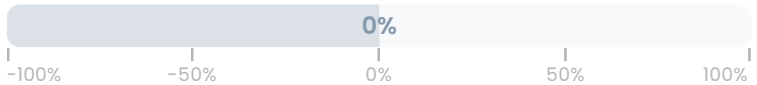
Dominance Score



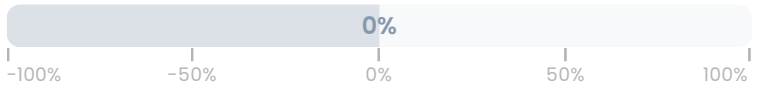
Ecosystem Score



Pathogen Score



Symptom Score



Interpreting Your Wellness Score

If your Wellness Score is in the **high range**, this may indicate that just a few species dominate your vaginal microbiome and that most of these species are beneficial to your health. A higher score suggests that the vaginal microbiome ecosystem is **more protective** and positively contributes to vaginal health. Higher scores tend to be ideal.

A **mid-range score** could indicate that your vaginal microbiome is **deficient in the many protective bacteria**, allowing various other “invasive” bacteria to grow. Any pathogens present or reported symptoms may also shift your wellness score into the middle range. The horizontal bar graphs shown beneath your Wellness Score can help you determine which component may have caused your score to be in this mid-range.

A **lower score** likely indicates that you have only a **small population of protective bacteria** present in your vaginal microbiome and a **wide diversity of species** (no dominant species). Additionally, if you are experiencing several symptoms

Vaginal Wellness Score

and or have pathogenic bacteria present, this could also negatively contribute to your Wellness Score. Using the horizontal bar graphs will help guide you in understanding what may be negatively impacting your microbiome.

If your score is mid-range or lower, acting on our recommended suggestions may help increase your overall wellness score and optimize your vaginal health. Of note, if you have no symptoms but your Wellness Score is not high, it is due to your microbiome's composition. We provide a detailed description of your vaginal microbiome composition in the CST descriptions. Your Vaginal Wellness Score alongside your suggested Community State Type should be used together to understand your overall vaginal health fully.

Components contributing to your Vaginal Wellness Score:

The Wellness Score has multiple components, as described below. The score provides insight into the overall vaginal microbiome health on a relative scale and may help identify whether you could be at added risk of specific outcomes. According to the existing peer-reviewed literature, the value is a weighted sum based on a composite of scores that characterize the health of the vaginal microbiome.

Dominance Score

If a vaginal microbiome consists of a relatively few species making up a majority of the population, we define that as having "high dominance", (aka low diversity) For example, the abundance of protective vaginal bacteria species will leave little room for various bacteria species' to grow. If a vaginal microbiome consists of a large variety of small evenly distributed species, we define it as having "low dominance" (aka high diversity). Diversity can be an indicator of overall vaginal health where low levels of bacteria diversity are associated with a protective state, and high levels of diversity are related to vaginal imbalances.

Ecosystem Score

The ecosystem score is based on the proportion of beneficial bacteria that you have in your vaginal microbiome. In the general (premenopausal) population, the vaginal microbiome tends to be dominated by the *Lactobacillus* genus. Therefore, the relative amount of *Lactobacillus* in the vaginal microbiome is taken into account in this score. Additionally, certain species of *Lactobacillus* are incredibly protective against risk of disease or adverse outcomes. *Lactobacillus crispatus* in particular, and to a lesser extent *Lactobacillus gasseri* and *Lactobacillus jensenii* can create an acidic environment that prevents the invasion of other microbes. *Lactobacillus iners* are the least protective and can potentially coexist with other harmful organisms. So, the abundance of these *Lactobacillus* species are ranked as follows for the Ecosystem Score: *L. crispatus* › *L. Gasseri* › *L. jensenii* › *L. iners*

Vaginal Wellness Score

Pathogen Score

Pathogens are microorganisms that can contribute to the progression of specific negative outcomes. Pathogens negatively impact your overall vaginal health and reduce your total wellness score (even if your dominance score and ecosystem score are high). We calculate the abundance of three primary pathogens for this score; *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, and *Mycoplasma genitalium*. As detection of these pathogens in your sample could indicate an infection, it is advisable to seek your medical provider about follow-up testing and treatments.

Symptom Score

The symptoms that you reported on your intake questionnaire are included in your Wellness Score. Symptoms contribute negatively to your overall vaginal health and will reduce your total wellness score (even if your dominance score and ecosystem score are high). Be sure to complete your Health Profile for an accurate symptom score. Most importantly, if you are experiencing symptoms affecting your everyday life, we recommend that you seek your medical provider.

Sample Composition

Bacteria Count: 114,537

Your sample bacteria count reveals the unique abundance of particular types of bacteria tested for within your vaginal microbiome. The quantity and types of commensal, opportunistic pathogens, pathobiont, and pathogenic bacteria contribute to your Community State Type and vaginal health.

This bar chart demonstrates the categorical composition of your vaginal microbiome.



Bacteria Classifications:

- Lactobacillus crispatus (22)
- Lactobacillus gasseri (111,295)
- Lactobacillus iners (867)
- Lactobacillus jensenii (137)
- Lactobacillus Spp. (1,999)
- Commensals (215)
- Pathobionts (2)
- Pathogens (0)

Sample Composition: 26 Bacteria Species Sequenced

The Sample Composition Table is where you will find a detailed breakdown of your vaginal microbiome test results. Within this table, species, type, description, and bacterial abundance are presented based on your unique vaginal microbiome. Here you can find out which bacteria are dominating your vaginal ecosystem, their effects on the vaginal ecosystem, and any concerning pathogenic bacteria inhibiting vaginal health.

#	Species	Type	Description	My level
1	Lactobacillus gasseri	Commensal	Lactobacillus gasseri is a protective vaginal Lactobacillus species that helps create an acidic environment and bacteriocins which are protective against pathogenic growth, specifically Bacterial Vaginosis associated pathogenic growth.	97.1695%

#	Species	Type	Description	My level
2	Lactobacillus iners	Probiotic	Lactobacillus iners is the least protective vaginal Lactobacillus species which can co-occur with dysbiosis associated bacteria, Bacterial vaginosis and vaginal inflammation.	0.7570%
3	Lactobacillus kefirifaciens	Probiotic	In general, when Lactobacillus species make up the majority of the vaginal microbiome, the resulting acidic environment makes it difficult for pathogenic growth.	0.5431%
4	Lactobacillus delbrueckii	Probiotic	In general, when Lactobacillus species make up the majority of the vaginal microbiome, the resulting acidic environment makes it difficult for pathogenic growth.	0.5011%
5	Lactobacillus roridantium	Probiotic	In general, when Lactobacillus species make up the majority of the vaginal microbiome, the resulting acidic environment makes it difficult for pathogenic growth.	0.4854%
6	Lactobacillus jensenii	Commensal	Lactobacillus jensenii is a protective Lactobacillus species that helps provide an acidic environment to inhibit pathogenic growth (specifically Candida albicans, Prevotella bivia and Gardnerella vaginalis) as well as antimicrobial bacteriocins.	0.1196%
7	Lactobacillus acetotolerans	Probiotic	In general, when Lactobacillus species make up the majority of the vaginal microbiome, the resulting acidic environment makes it difficult for pathogenic growth.	0.0838%
8	Alloscardovia omnicolens	Commensal	Alloscardovia omnicolens is a bacteria that has been associated with Aerobic vaginitis	0.0733%
9	Lactobacillus johnsonii	Commensal	In general, when Lactobacillus species make up the majority of the vaginal microbiome, the resulting acidic environment makes it difficult for pathogenic growth.	0.0533%
10	Prevotella timonensis	Commensal	Prevotella timonensis is a commensal opportunistic pathogen that is considered a inflammation inducing bacteria.	0.0515%

#	Species	Type	Description	My level
11	Lactobacillus se- langorensis	Commensal	In general, when Lactobacillus species make up the majority of the vaginal microbiome, the resulting acidic environment- makes it difficult for pathogenic growth.	0.0341%
12	Prevotella bivia	Commensal	Prevotella bivia is commonly found in the vaginal flora. P. brivia can contribute to the formation of biofilms by Gardnerella vaginalis and Peptostreptococcus anaerobius. This bacteria produces proinflammatory cytokines that can damage the epithelial cells within the vaginal tract and contains sub- species that are resistant to common antibiotics used for vaginal imbalances.	0.0314%
13	Lactobacillus pasteurii	Probiotic	In general, when Lactobacillus species make up the majority of the vaginal microbiome, the resulting acidic environment- makes it difficult for pathogenic growth.	0.0271%
14	Streptococcus anginosus	Commensal	Streptococcus anginosus is a commensal bacteria that can be associated with aerobic vaginitis.	0.0236%
15	Lactobacillus crispatus	Commensal	Lactobacillus crispatus is the most protective vaginal Lacto- bacillus bacteria, creating both lactic acid, which maintains a protective acidic pH, and hydrogen peroxide, which is an antiseptic agent. This influential bacteria is the most effective at inhibiting pathogenic growth-specifically HPV.	0.0192%
16	Lactobacillus gigeriorum	Commensal	In general, when Lactobacillus species make up the majority of the vaginal microbiome, the resulting acidic environment- makes it difficult for pathogenic growth.	0.0070%
17	Lactobacillus amyolyticus	Commensal	In general, when Lactobacillus species make up the majority of the vaginal microbiome, the resulting acidic environment- makes it difficult for pathogenic growth.	0.0035%
18	Lactobacillus ro- gosae	Probiotic	In general, when Lactobacillus species make up the majority of the vaginal microbiome, the resulting acidic environment- makes it difficult for pathogenic growth.	0.0035%

#	Species	Type	Description	My level
19	Dialister microaerophilus	Commensal	Dialister is a bacteria found in normal vaginal flora. This bacteria is also associated with BV when found in abundance.	0.0026%
20	Prevotella buccalis	Commensal	Prevotella buccalis is a bacteria that has been associated with bacterial vaginosis.	0.0026%
21	Bacteroides fragilis	Pathobiont	Bacteroides fragilis has a high association with BV (symptoms such as thin gray/white discharge and unpleasant odor), dysbiosis and gynecological infections.	0.0017%
22	Lactobacillus apis	Probiotic	In general, when Lactobacillus species make up the majority of the vaginal microbiome, the resulting acidic environment makes it difficult for pathogenic growth.	0.0017%
23	Mageeibacillus indolicus	Commensal	BVAB3 is a common bacteria associated with Bacterial vaginosis and increased vaginal inflammation.	0.0017%
24	Lactobacillus kalixensis	Commensal	In general, when Lactobacillus species make up the majority of the vaginal microbiome, the resulting acidic environment makes it difficult for pathogenic growth.	0.0009%
25	Lactobacillus hamsteri	Probiotic	In general, when Lactobacillus species make up the majority of the vaginal microbiome, the resulting acidic environment makes it difficult for pathogenic growth.	0.0009%
26	Eggerthella lenta	Commensal	Eggerthella species can be found in normal vaginal flora. When overgrown with Gardnerella vaginalis and Atopobium vaginae there is an increased risk for BV.	0.0009%