TEST

Endocervical gram stain

An endocervical gram stain examines a cervical swab for bacteria and inflammation under a microscope.

WHAT IT MEASURES
Bacteria and white blood cells from the cervical canal

SAMPLE
Endocervical swab

FASTING NEEDED?
No

HOW LONG IT TAKES
About 5 to 10 minutes

RESULTS IN
Same day to two days, depending on laboratory

USED FOR
Supporting diagnosis of cervicitis or gonorrhea

MAIN LIMITATION
Frequently misses gonorrhea; molecular testing is more reliable

Overview

An endocervical gram stain examines material collected from the endocervix, the inner part of the cervix between the vagina and uterus.

The sample is spread onto a glass slide and treated with coloured stains. A laboratory professional examines it under a microscope to look for white blood cells and bacteria. The stain helps classify bacteria by their shape and as "gram-positive" or "gram-negative."

White blood cells may indicate inflammation. Gram-negative bacteria arranged in pairs inside white blood cells can suggest gonorrhea.

However, an endocervical gram stain cannot reliably confirm or rule out gonorrhea. Nucleic acid amplification testing, or NAAT, is generally more accurate. NAAT detects genetic material from bacteria such as Neisseria gonorrhoeae and Chlamydia trachomatis .

Why the test is ordered

The test may be ordered when there are signs of cervicitis, or inflammation of the cervix. These may include unusual vaginal discharge, bleeding after sex, bleeding between periods, pelvic discomfort, or a cervix that bleeds easily during an examination.

It can provide rapid preliminary information about inflammation or bacteria while other results are pending. It is used less often than in the past because microscopy misses many gonorrhea infections in cervical samples. If gonorrhea or chlamydia is possible, NAAT is usually preferred.

An endocervical gram stain is different from a vaginal gram stain used to assess bacterial vaginosis. The samples are collected from different locations and interpreted differently.

Who should have the test

An endocervical gram stain may be considered if you have symptoms or examination findings suggesting cervicitis and microscopy is available. It may form part of a broader evaluation for sexually transmitted infections.

It is not usually preferred for routine gonorrhea or chlamydia screening in people without symptoms. Depending on the infection and sites of sexual exposure, NAAT may be performed on urine or vaginal, cervical, throat, or rectal samples.

Culture may be needed if antibiotic resistance is a concern because it allows the laboratory to test which antibiotics like amoxicillin or doxycycline stop the bacteria from growing.

How to prepare

You do not need to fast. You can usually eat, drink coffee, and take your regular medicines.

Tell the clinic if you:

These factors can affect collection or make the slide harder to interpret.

Follow the clinic's instructions about sex or products placed in the vagina before the test. Do not stop prescribed medicine unless the clinician who prescribed it tells you to do so.

You may empty your bladder beforehand for comfort, but this is not required for the gram stain.

- Are pregnant or might be pregnant
- Are having your period
- Recently used antibiotics

- Use vaginal creams, medicines, lubricants, or douches

What happens during the test

You will usually undress from the waist down and lie on an examination table with a sheet or gown provided.

A clinician gently inserts a speculum into the vagina to hold the vaginal walls apart and see the cervix. A small swab is passed just inside the cervical opening and rotated to collect cells, mucus, and bacteria. The swab is then rolled onto a glass slide or sent to the laboratory in a collection container.

Collecting the swab takes a few seconds. The complete examination usually takes about 5 to 10 minutes.

Understanding your results

The report may describe white blood cells, the shapes and types of bacteria seen, and whether bacteria are inside or outside cells. There is no universal numerical reference range.

Many white blood cells may support the presence of inflammation, but they do not identify its cause. Cervical inflammation can result from infectious or non-infectious conditions.

Gram-negative diplococci are gram-negative bacteria that appear in pairs. Finding them inside white blood cells may suggest gonorrhea, but an endocervical finding usually requires confirmation with NAAT or culture.

A negative result means the laboratory did not see relevant organisms or clear microscopic evidence of inflammation in that sample. It does not reliably exclude gonorrhea, chlamydia, or another infection.

Interpretation also depends on symptoms, examination findings, pregnancy status, recent medicines or treatment, collection quality, and other test results.

What affects the results

Factors that may make a slide difficult to interpret include:

Pregnancy may make the cervix more likely to bleed during sampling, although a swab can generally still be collected when clinically appropriate. Age and hormonal changes may also affect cervical mucus and cell appearance.

- Sampling location: A swab that does not reach the endocervical canal may miss infected material.
- Too little material: A small or mucus-heavy sample may not contain enough cells or bacteria.
- Vaginal contamination: Normal vaginal bacteria can complicate interpretation.
- Blood: Menstrual or contact bleeding may obscure cells and bacteria.
- Recent antibiotics: Treatment may reduce visible bacteria without proving the infection has cleared.
- Vaginal products: Medicines, douches, creams, and some lubricants may alter or obscure the sample.
- Timing and handling: Delayed slide preparation or poor staining can reduce microscopy quality.

Accuracy and limitations

The main limitation is that an endocervical gram stain often misses gonorrhea. Bacteria may be too few to see or may not be collected by the swab. A negative slide therefore cannot confidently rule out infection.

The test can also appear to suggest gonorrhea when it is not present. Other bacteria, debris, or staining artefacts may resemble gram-negative diplococci, and cervical samples can contain a mixture of organisms.

NAAT is usually more reliable for detecting gonorrhea and chlamydia. Culture is preferred when antibiotic-resistance testing is needed, although it requires careful sample handling and may also miss infections.

A gram stain may provide quick supporting information, but it should not usually be used alone to diagnose or exclude infection from an endocervical sample.

Risks and complications

You may feel pressure from the speculum and brief cramping, pinching, or discomfort when the swab touches the cervix. Light spotting can occur, especially if the cervix is inflamed or sensitive.

Some people feel dizzy or faint during a pelvic examination. Serious complications from collecting an endocervical swab are uncommon.

What happens next

The result is considered alongside your symptoms, examination, and NAAT or culture results. Testing for other sexually transmitted infections may also be offered.

A negative gram stain may still be followed by NAAT if infection remains possible. Do not assume negative microscopy rules out gonorrhea or chlamydia.

Check your complete results and discuss whether you need treatment, repeat testing, or partner notification. If treatment is prescribed, follow the instructions and complete it as directed.

Seek prompt medical care if you develop fever, worsening lower abdominal or pelvic pain, vomiting, or feel significantly unwell. If you are pregnant, pelvic pain or bleeding should be assessed promptly. Severe pain, heavy bleeding, fainting, confusion, or difficulty staying awake requires urgent or emergency care.

Common questions

Can I drink coffee before an endocervical gram stain?

Yes. Fasting is not needed, so coffee and normal meals do not affect the stain.

Can I have sex before the test?

Sex may introduce semen, lubricant, or vaginal bacteria that affect the sample. Follow the clinic's instructions about avoiding sex beforehand.

Can the test be done during my period?

It may be possible, but blood can obscure the slide. Contact the clinic if your period begins before the appointment.

Can I exercise beforehand?

Yes. Exercise does not directly affect the test.

Does the swab hurt?

It may cause brief pressure, pinching, or cramping. Tell the clinician if you have pain or need the examination to pause.

Can I have this test while pregnant?

An endocervical sample can generally be collected during pregnancy when needed. Tell the clinician if you are or might be pregnant.

Sources

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