

# Know Your Screening Options: Pap Smears, HPV Testing, & What's New in Cervical Health

A warm guide to understanding today's screening options—from Pap smears to HPV testing and FDA-approved self-collection.



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## HEALTH EDUCATION SERIES

# Know Your Screening Options: Pap Smears, HPV Testing, and What's New in Cervical Health

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Cervical cancer is among the most preventable cancers. Decades of data show that early screening leads to greatly improved outcomes.

Screening for cervical cancer is no longer limited to a single method. Today, you have several options, including a convenient at-home test. This article explains the Pap smear, compares it to new testing methods, and explores why mRNA testing is gaining attention.

Take a breath. This is good news.

## Now, let's break down each screening method, starting with the Pap smear.

### The Basics

A Pap smear (short for Papanicolaou test, named after the physician who developed it) is a screening test for cervical cancer and the abnormal cell changes that can lead to it. It has remained a cornerstone of women's healthcare since the mid-20th century — and because of it, cervical cancer rates in the United States have dropped significantly over the past 50 years.

During a Pap smear, a provider uses a speculum to open the vagina and collects cells from the cervix with a brush or spatula. The process takes a few minutes. The sample is sent to a lab, where specialists examine it under a microscope for abnormal cells.

A Pap smear does not specifically test for HPV. It looks at the cells themselves — whether they appear normal, mildly abnormal, or more significantly changed. Finding abnormal cells early is what makes this test so valuable: it catches potential problems long before they become cancer.

### What Pap Smear Results Mean

An abnormal Pap result doesn't mean cancer. Some cells look unusual, so your doctor may want to monitor them. Most of these changes resolve on their own.

Results are typically reported as:

**Normal (Negative):** Your cervical cells look healthy.

**ASC-US (Atypical Squamous Cells of Undetermined Significance):** Minor changes that may need follow-up.

**LSIL (Low-Grade Squamous Intraepithelial Lesion):** Mild abnormalities, often related to HPV.

**HSIL (High-Grade Squamous Intraepithelial Lesion):** More significant changes that need rapid attention.

### When to Start and How Often

CDC: Start Pap tests at age 21. Ages 21–29: test every three years. At 30+, options include co-testing with HPV. ACS: Primary HPV testing starts at 25, repeated every 5 years until 65.

## Part Two: Three Ways to Screen — Cytology, DNA, and mRNA

There are now three types of cervical screening. Knowing the differences helps you discuss options with your provider.

## 1. Cytology — The Traditional Pap Smear

Cytology-based screening, commonly called the Pap smear, assesses the physical appearance of cervical cells. Technicians visually check cells for abnormal changes that could indicate risk. This test does not specifically look for the presence of HPV, but rather detects when cervical cells look irregular.

**Strengths:** Decades of proven track record; widely available; can detect many types of abnormalities.

**Limitations:** Cytology may miss early changes or flag normal cells as abnormal. Results can also vary depending on the lab specialist.

## 2. HPV DNA Testing — Finding the Virus Itself

HPV (Human Papillomavirus) is linked to nearly all cervical cancer. Instead of only finding cell changes, DNA testing looks for the virus itself.

HPV leaves its DNA in cervical cells, which tests can detect. DNA tests are sensitive and catch infections early, even before visible cell changes.

**The current gold standard for primary screening.** The CDC and HRSA (Health Resources and Services Administration) now recommend HPV testing as the preferred approach for average-risk women ages 30–65, either on its own or combined with a Pap smear in what’s called “co-testing.”

**Strengths:** Higher sensitivity than cytology alone — catches infections earlier. Research consistently shows that HPV DNA testing detects precancerous disease at an earlier time point than cytology-based screening.

**HPV infections are common, so DNA tests may pick up harmless, temporary infections.** This can lead to follow-up procedures for those who don’t need them.

## 3. HPV mRNA Testing — The Most Specific Tool We Have

This is where things get really interesting.

mRNA is a molecule that tells cells what to *do*. When HPV is dangerous, it activates E6 and E7 proteins that drive cancerous changes.

HPV mRNA testing doesn’t just ask “Is HPV present?” It asks: “**Is this HPV actively causing harm?**”

mRNA testing looks for transcripts of E6 and E7 proteins, which show active HPV infections that are clinically relevant.

Think of it this way:

- **DNA testing** tells you someone is in the building.
- **mRNA testing** tells you they’re actively causing trouble.

## What makes mRNA testing stand out clinically:

Multiple studies confirm that mRNA testing maintains a sensitivity comparable to DNA testing (meaning it catches the same serious cases) while delivering meaningfully higher **specificity** — it’s better at confirming that a positive result is a true cause for concern.

In studies, mRNA testing had higher specificity than DNA testing for high-grade lesions, while maintaining similar sensitivity. Another study found mRNA triage reduced unnecessary colposcopies without missing important cases.

In plain terms, fewer women go through the stress and cost of unnecessary invasive follow-up procedures, while the women who genuinely need care still get caught.

**The Aptima HPV assay** detects E6/E7 mRNA from 14 high-risk HPV types. It is FDA-approved and used for primary cervical screening.

## Comparing the Three Methods: A Quick Reference

|                        | Cytology (Pap Smear)     | HPV DNA Testing               | HPV mRNA Testing                                |
|------------------------|--------------------------|-------------------------------|-------------------------------------------------|
| What it detects        | Abnormal cell appearance | HPV genetic material          | Active HPV oncogene expression                  |
| Sensitivity            | Moderate                 | High                          | High                                            |
| Specificity            | Moderate–High            | Moderate                      | Higher                                          |
| False positive rate    | Moderate                 | Higher                        | Lower                                           |
| Best for               | All ages 21+             | Ages 30–65, primary screening | Triage; identifying clinically active infection |
| Requires clinic visit? | Yes                      | Yes (unless self-collection)  | Yes (unless self-collection)                    |

## Part Three: Self-Testing — Screening from Home Is Now a Reality

**You can now screen for cervical cancer at home.**

In May 2025, the FDA approved the **Teal Wand**, the first at-home vaginal sample self-collection device for cervical screening in the U.S. Earlier, two in-clinic self-collection options gained approval.

### How Self-Collection Works

You collect your own vaginal sample with a swab, place it in a container, and mail it to a lab for HPV testing. Results and recommendations are shared with you virtually.

## The Clinical Evidence

The Teal Wand's FDA approval was based on the SELF-CERV study, which showed self-collection matched clinician-collected sample accuracy for high-risk HPV and cervical precancer.

Over 94% preferred self-collection to exams, and 86% said it made them more likely to keep up with screenings.

## Why This Matters — Especially for Our Community

About 1 in 4 U.S. women are behind on cervical screening. Barriers include cost, access, discomfort, cultural hesitancy, lack of childcare, work schedules, and not having easy options.

Self-collection isn't a replacement; if results are positive, followup is needed. But it lowers the first barrier for many.

As the HRSA's chief medical officer put it when announcing the updated guidelines: "The addition of self-collection really empowers women to make this choice for themselves."

## Part Four: Why mRNA Self-Testing Represents the Most Promising Path Forward

Bringing together everything we've covered: why does the combination of **mRNA testing + self-collection** represent such a significant step forward?

### 1. It Catches What Actually Matters

By detecting E6/E7 oncogene expression rather than simply the presence of HPV DNA, mRNA testing focuses on infections that are actively progressing—not the transient ones that will clear on their own. This means the women who need care are identified more precisely, and women who don't need intervention are spared unnecessary procedures.

### 2. It Dramatically Reduces Unnecessary Follow-Up

False positives from DNA testing lead to colposcopies — in-office procedures that can be uncomfortable, anxiety-inducing, and costly. The higher specificity of mRNA testing means fewer of those procedures for women who didn't truly need them. Studies show that mRNA-based triage can reduce colposcopy referral rates by more than a third while preserving the same sensitivity.

### 3. It Can Be Done Without a Clinical Visit

The barrier of the pelvic exam — which keeps many women from screening at all — disappears with self-collection. Combine that with mRNA testing's superior specificity, and you have a tool that not only finds cancer earlier but reaches more of the women who need it most.

### 4. It Supports More Equitable Access

For women in underserved communities in the U.S., and for communities across West Africa where access to gynecological care may be limited, a highly accurate test that requires only a self-collected vaginal swab — shipped to a lab — has the potential to be transformative. Cervical cancer is the most common cancer in women in 25 countries, the majority of which are in sub-Saharan Africa. A shift toward self-collected, highly specific mRNA screening could save hundreds of thousands of lives.

## 5. Women Prefer It

This isn't a small point. When screening is comfortable, accessible, and private, women actually do it. And consistent, timely screening is what saves lives.

## What You Should Do Right Now

Wherever you are in your screening journey, here's a simple action plan:

**If you are 21–29:** Talk to your healthcare provider about getting a Pap smear every three years. HPV testing alone is generally not recommended for this age group, as transient infections are common and may not need follow-up.

**If you are 30–65:** Ask your provider about HPV primary testing every five years. Co-testing (Pap + HPV) is also an option every five years. If you've been putting off your appointment, ask about in-clinic self-collection options, or look into the Teal Wand at-home option at [getteal.com](https://getteal.com) (prescription required; insurance coverage expands starting January 2027).

**If you're not sure when you last had a screening,** call your doctor's office and ask. It's that simple.

**If cost or access is a barrier:** Community health centers, Planned Parenthood, and local health departments often offer low-cost or no-cost cervical cancer screening. You can also visit [findahealthcenter.hrsa.gov](https://findahealthcenter.hrsa.gov) to locate a federally qualified health center near you.

## The Bottom Line

Cervical cancer is largely preventable. That's not a platitude — it's what the science says, and it's why screening matters so much. Whether through a traditional Pap smear, an HPV DNA test, or the increasingly promising mRNA-based tests, staying current on your screening is one of the most powerful things you can do for your long-term health.

And now, with FDA-approved home collection options available and insurance coverage expanding, there has never been a better time — or a lower barrier — to get it done.

**Your health is worth it. And so are you.**

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*Sources: U.S. Centers for Disease Control and Prevention (CDC); American Cancer Society (ACS) 2025 Cervical Cancer Screening Guideline Update; Health Resources and Services Administration (HRSA); National Cancer Institute (NCI); U.S. Food and Drug Administration (FDA); SELF-CERV Study (JAMA Network Open, 2025); World Health Organization (WHO); Frontiers in Cellular and Infection Microbiology (Zhang et al., 2024); Journal of Clinical Microbiology; MLO Online – The Role of Messenger RNA Testing in the Screening for Cervical Cancer.*

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