



# HPV Testing

## Improving Cancer Outcome

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The etiology of cervical cancer has now been firmly linked to oncogenic strains of human papillomaviruses (HPV). This group of small papovaviruses has more than 100 subtypes, 40 of which are seen in humans. Subtypes HPV 16 and 18 are linked to cervical carcinogenesis.

### More about HPV

HPV is a common, asymptomatic, sexually transmitted, viral infection. Since the vast majority of patients will spontaneously clear the infection, it is only those rare women with persistent infection who are at increased risk for cervical cancer. Persistent infection after age 30 is most significant.

While most persistent HPV infections do not progress to cancer, the cancers that do occur are invariably associated with the presence of high-risk oncogenic HPVs.

### Is current screening effective?

The current recommendations for cervical cancer screening are based on the use of the Pap smear. Women with abnormal smears are referred for colposcopy.

Although effective, this approach is still limited by several disadvantages. The specificity of the conventional Pap smear is 50%, resulting in possible false negatives. This means that many women sent for colposcopy don't actually have dysplasia. Colposcopy is costly for the system.

This problem is typically overcome by annual testing or, in some provinces, by a switch to liquid-based cytology, which has somewhat better specificity, albeit at a higher cost.

It is important to note, however, that most women with cervical cancer have not had an adequate screening history.

### Julie's case



Julie, 23, is a G0 woman who presents with an Internet printout on human papillomavirus (HPV).

She is requesting HPV testing, as she heard genital HPV infection is the cause of cervical cancer.

**How would you counsel her?**

### Quick Points

An analysis of cervical cancer reveals the presence of HPV 16 or 18 in > 85% of cervical carcinogenesis.

HPV clears spontaneously in > 98% of cases within a year.

Random testing suggests as many as 40% of sexually active women will have evidence of HPV infection at some point.

Table 1

## Current cervical cancer screening recommendations

1. Strict adherence to the present guidelines for annual cervical cytology in all women
2. Office-based initiatives to help identify women who have not had a recent Pap smear and encourage them to come forward for screening. (Patient compliance is known to improve when physicians take the time to inquire about cervical screening)
3. Honest discussion with patients about smoking cessation
4. Continued awareness about HPV testing for
  - triage of ASCUS Pap
  - primary screening
5. Preparedness to change one's screening approach as further evidence becomes available



Figure 1. Digene's Cervical Sampler™, also known as the DNA Collective Device, is used by clinicians to collect cervical samples for lab testing with the hc2 high-risk HPV DNA test or CT/GC DNA tests. Specimens are transported in a tube that contains specimen transport medium.

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As well, women over 30 with a negative HPV test and one partner have a low risk of developing cervical cancer in the near future.

## A new approach

In an effort to improve screening efficacy, research efforts are now focusing on the possible incorporation of HPV DNA testing (Figure 1).

One approach is using the presence or absence of HPV to triage those women over 30 with a "minor" abnormality on a Pap smear, thereby, reducing the number of cases referred for costly colposcopy.

This consideration has been addressed by the ASCUS/LSIL Triage Study (ALTS), which randomized women with a first atypical squamous cells of undetermined significance (ASCUS) Pap smear to:

- HPV testing,
- repeat Pap or
- immediate colposcopy.

Results confirmed the HPV testing approach was just as effective at detecting high-grade abnormalities or cancers as immediate colposcopy. Repeat Pap alone (the current strategy) was effective, but associated

with a time delay in the detection of these abnormalities.

To date, this HPV testing approach has the most evidence-based promise, although it has not yet been incorporated into provincial screening programs.

A second option would be to do HPV testing along with Pap cytology in the primary setting.

The Cervical Cancer Screening Trial (CCaST), a Canadian trial that randomizes women over 30 to management based on Pap cytology or HPV testing, is currently addressing this question. Results will be available in 2006.

## What's the key message?

At present, HPV testing by family doctors is not yet recommended. In the future, use of HPV status in conjunction with cytology may allow for lengthening of the screening interval for some women and fewer colposcopies for others. Active research is ongoing.

Table 1 lists the current recommendations for family physicians with regard to cervical cancer screening. **Dx**

References available—contact *The Canadian Journal of Diagnosis* at [diagnosis@sta.ca](mailto:diagnosis@sta.ca).