PAP TESTS: Identifying Cervical Cancer

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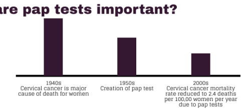
Why are pap tests important?



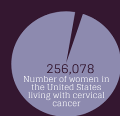
U.S. Department of Health & Human Services. (2013). Cervical Cancer. Retrieved from https://report.nih.gov/nihfactsheets/viewfactsheet.aspx?csid=76

What is a pap test?

-A procedure that collects cells from the cervix, which are then examined under a microscope to identify significant changes that could indicate cancer.

What is cervical cancer?

-Cervical cancer is the invasion of malignant cells into the uterine cervix. It is usually caused by high risk strains of the human papillomavirus (HPV).



National Cancer Institute. (2017a). Cancer stat facts: Cervical cancer. Retrieved from https://seer.cancer.gov/statfacts/html/cervix.html

1 Prevalence

14th

Most common cancer in women

2 Sensitivity and Specificity

The sensitivity of the pap test in detecting cervical cancer has been found to be about 68% with a specificity of about 75%.

	Cervical Cancer Present	Cervical Cancer Not Present
Pap Test +	True positive=68%	False positive=25%
Pap Test -	False negative=32%	True negative=75%

National Cancer Institute. (2017b). Cervical cancer screening (PDQ)-health professional version. Retrieved from https://www.cancer.gov/types/cervical/hp/cervical-screening-pdq#link/_83_toc

Gold Standard for Diagnosis: Colposcopy

-The gold standard for diagnosing cervical cancer is a colposcopy with biopsy, which appropriately identifies the type and severity of cell changes discovered by a pap test.

-A colposcopy is a procedure that examines the cervix more closely than a pap test using a specific solution called acetic acid. The solution is applied to the cervix to identify areas of concern that are then subsequently biopsied for further testing.

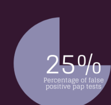
3 Interpretation of Results

Consequences of false positive test results

-Unnecessary invasive follow-up testing
-Possible psychological effects

Consequences of false negative test results

-Missed diagnosis
-Progressive disease
-Avoidable complications
-Preventable deaths



National Cancer Institute. (2017b). Cervical cancer screening (PDQ)-health professional version. Retrieved from https://www.cancer.gov/types/cervical/hp/cervical-screening-pdq#link/_83_toc

4 Pros and Cons of Pap Tests

Pros vs **Cons**

Pros:

-Possible prevention of cervical cancer

-Identification of high risk HPV strains

-Usually fully covered by health insurance

Cons:

-Substantial risk of false positive or false negative result

-Could lead to unnecessary testing and stress

-Variable reliability

$1.0 Billion

Annual medical cost to treat cervical cancer (an expenditure that could be avoided with routine pap tests)

Future Direction in Cervical Cancer Screening

-Research is being done to investigate using acetic acid in place of pap tests to identify cell changes in low-income areas.

5 Summary and Recommendations

Pap tests have significantly improved cervical cancer survival rates through the early detection of potentially cancerous changes. While pap tests serve as a key screening test to reduce mortality in a vulnerable population, there are still significant improvements that should be made to improve its sensitivity and specificity. Recommendations for improving the sensitivity and specificity rates should focus on developing more accurate disease verification techniques to reduce false positives, and more importantly, false negatives. However, the benefits of pap tests in preventing cervical cancer greatly outweigh the risks of a false positive or false negative test result, translating to the continued recommended use of pap tests.

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