ATTENTION

Although the research on which this statement was based is out of date, the position/recommendations contained in this policy were reaffirmed by the ACPM Board of Regents on 1/31/2005 until the evidence can be reevaluated. For the latest evidence review and recommendations, visit U.S. Preventive Services Task Force

Cervical Cancer Screening:
American College of Preventive Medicine
Practice Policy Statement

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Burden of suffering
It is estimated that approximately 15,000 women will be diagnosed with invasive carcinoma of the cervix and 4,800 women will die from this disease in 1995. (1) Rates for carcinoma in situ peak between the ages of 20 and 30, and the incidence of invasive cervical cancer increases with age. (2) Twenty-five percent of all invasive cervical cancers occur in women over age 65. Any woman who has been sexually active is at risk for cervical cancer. (3) Additional risk factors include early onset of sexual intercourse, (4,5) history of multiple sexual partners, (5) history of sexually transmitted disease (especially HPV (6) and HIV(7)), smoking, (8) and never having been screened. (9)

Description of preventive measure
The Papanicolaou (Pap) smear is used to screen for cervical cancer to detect lesions when they are still highly curable. (10) The lead time from the development of precancerous lesions to invasive cancer is estimated at 8-9 years.(2) The American College of Obstetricians and Gynecologists (ACOG) recommends obtaining cellular samples from both the endocervical canal (using an endocervical brush) and from the portio, which includes the entire transformation zone.(11) Use of both an endocervical brush and a spatula has
been shown to collect a better sample of cells than either a spatula alone, or a spatula used in combination with a cotton-tipped swab.\(^{(12)}\)

**Evidence of effectiveness**
A recent meta-analysis reports that the ranges for sensitivity and specificity of a single screening Pap test for detecting cervical intraepithelial neoplasia (CIN) grades I and II are from 14\% to 99\% and from 24\% to 96\%, respectively.\(^{(13)}\) The wide range of reported sensitivity can be attributed to differences in screening technique (insufficient sampling of cells, inadequate slide preparation, laboratory accuracy and reporting)\(^{(14)}\) and differences in the manner in which the investigators define sensitivity.\(^{(13)}\) False-negative tests may allow a lesion to progress to more advanced disease before it is detected, whereas false-positive tests can lead to anxiety and unnecessary tests.\(^{(3,14)}\) No randomized controlled trials to test the effectiveness of Pap smears for prevention of cervical cancer have been conducted; it is unlikely that such trials will ever be conducted because of ethical considerations.\(^{(3,15)}\) However, case-control studies have clearly demonstrated that women with invasive cervical cancer were less likely to have been screened compared to controls,\(^{(3,14)}\) and decreased mortality and incidence of invasive cervical cancer have been described in populations following implementation of Pap screening.\(^{(16)}\)

**Public policy considerations**
Two major issues with important public policy considerations are cost and patient compliance. Estimates from mathematical models indicate that regular triennial screening would achieve 91\%-96\% of the benefit of annual screening, while greatly reducing the cost, potential harms, and inconvenience.\(^{(14)}\) Increasing the screening interval from one to three years would reduce the total number of smears obtained (on the 77+ million American women at risk) by two thirds.\(^{(3)}\) The recommendation of many current guidelines that three initial annual screens be performed has been shown by mathematical modeling to have substantial cost, with little benefit.\(^{(14)}\) Advocates of annual testing, however, have concerns about patient compliance; women may receive Pap tests at a frequency lower than guidelines, and a three-year interval is more difficult to track than a one-year interval. Results from a mathematical model, however, show that even if women are not screened precisely every three years, screening at four years retains 99\% of the effectiveness of the three-year interval.\(^{(14)}\)

For women over age 65 with a history of regular screening and negative smears, continued screening produces diminishing yields and increasing costs.\(^{(17)}\) Screening is more cost-effective, however, for women over age 65 with a history of inadequate screening.\(^{(3,17)}\) Similarly, efforts to expand screening to
women who have not undergone regular Pap testing (and who are often at increased risk for cervical cancer) may offer a more dramatic public health benefit than adjusting screening protocols for women who are already undergoing regular testing.

**Recommendations of other groups**

The American Academy of Family Physicians (AAFP)(2) and the U.S. Preventive Services Task Force (USPSTF)(3) recommend that Pap screening be instituted with the onset of sexual activity, or at age 18 if the sexual history is unreliable. The American College of Obstetricians and Gynecologists, American Cancer Society (ACS), and National Cancer Institute (NCI) suggest that screening begin with the onset of sexual activity or at 18 years of age, whichever occurs first. (2,18) Most major authorities recommend that after three normal annual smears, screening frequency may be decreased at the discretion of the physician and patient. The Canadian Task Force on the Periodic Health Examination (CanTF) requires only two normal smears before decreasing the frequency. (19) The American College of Physicians (ACP)(20) and Canadian Task Force on the Periodic Health Examination recommend screening every three years for most women; in women at increased risk for cervical cancer they recommend screening more frequently. (19)

The USPSTF recommends ending screening at age 65 provided there is documentation of regular screening with consistently normal smears within the previous nine years. The Canadian Task Force states that screening may be stopped at age 69. (19) The ACP recommends cessation of screening at age 65, or at age 75 if not screened in the 10 years before age 66. (20)

The USPSTF also specifies in its recommendations that specimens should be submitted to laboratories with adequate quality control measures and that thorough follow up of test results be ensured.

**Rationale statement**

The key controversies surrounding cervical cancer screening include the number of initial annual screens, the screening interval, and when screening may be discontinued. The International Agency for Research on Cancer Working Group reported in its evaluation of cervical cancer screening programs that women who had two or more initial negative smears had a greater relative protection against invasive cervical cancer than women who had one initial smear. (21) Retrospective studies (15,21,22) have found that obtaining Pap smears three years apart is as effective as annual screening for detecting cervical cancer in its early stages (non-invasive or stage I). Mathematical modeling estimates suggest that screening past age 65 is
inefficient and may be discontinued in women who have a history of regular negative smears.(17)

**Recommendations of the American College of Preventive Medicine (ACPM)**

Screening for cervical cancer by regular Pap tests should be performed in all women who are or have been sexually active, and should be instituted after a woman first engages in sexual intercourse. If the sexual history is unknown or considered unreliable, screening should begin at age 18. At least two initial screening tests should be performed one year apart. For women who have had at least two normal annual smears, the screening interval may then be lengthened at the discretion of the patient and physician after considering the presence of risk factors, but should not exceed three years. Screening may be discontinued at age 65 if the following criteria are met: the woman has been regularly screened, has had two satisfactory smears, and has had no abnormal smears within the previous nine years. For all women over age 65 who have not been previously screened, three normal annual smears should be documented prior to discontinuation of screening. Clinicians should use proper techniques in collecting specimens, should submit them to qualified cytopathologic laboratories for analysis, and should provide appropriate follow up on test results.

**REFERENCES**


From the Preventive Medicine Residency Program, University of Colorado Health Sciences Center, Denver, Colorado.

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Adult Immunizations

Childhood Immunization

Screening Asymptomatic Women for Ovarian Cancer

Screening for Prostate Cancer

Screening for Skin Cancer

Screening Mammography for Breast Cancer

Skin Protection from Ultraviolet Light Exposure

Strengthening Motor Vehicle Occupant Protection Laws

Tobacco-Cessation Patient Counseling