Liqiud - based cytology

What causes cervical cancer?

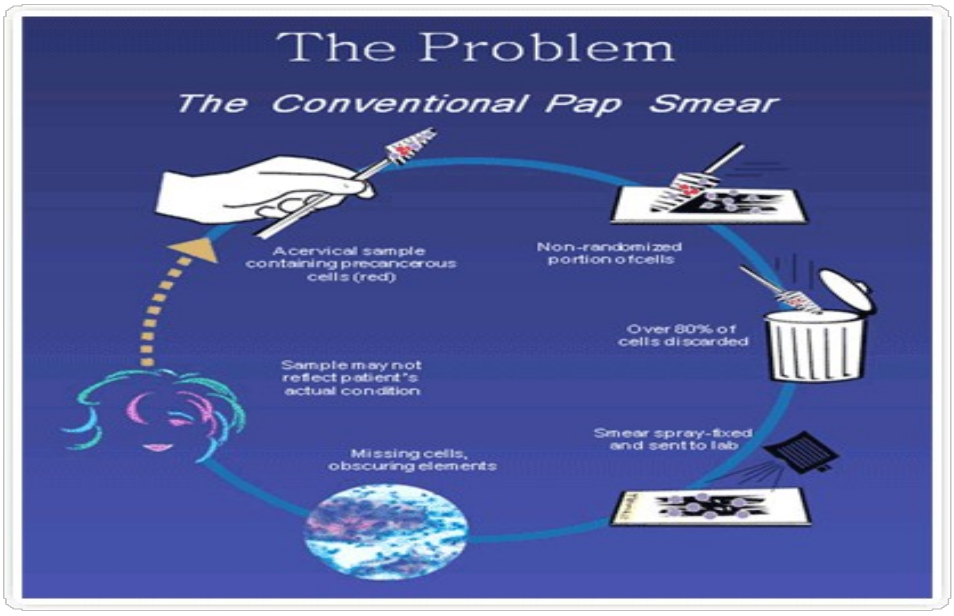
Nearly all cases of cervical cancer are caused by infection with oncogenic, or high-risk, types of human papillomavirus, or HPV. There are about 12 high-risk HPV types. Infections with these sexually transmitted viruses also cause most anal cancers; many vaginal, vulvar, and penile cancers; and some oropharyngeal cancers.

Although HPV infection is very common, most infections will be suppressed by the immune system within 1 to 2 years without causing cancer. These transient infections may cause temporary changes in cervical cells. If a cervical infection with a high-risk HPV type persists, the cellular changes can eventually develop into more severe precancerous lesions. If precancerous lesions are not treated, they can progress to cancer. It can take 10 years or more for a persistent infection with a high-risk HPV type to develop into cancer.

What is Pap smear test?

Cervical cancer screening is an essential part of a woman's routine health care. It is a way to detect abnormal cervical cells, including precancerous cervical lesions, as well as early cervical cancers. Both precancerous lesions and early cervical cancers can be treated very successfully. Routine cervical screening has been shown to greatly reduce both the number of new cervical cancers diagnosed each year and deaths from the disease.

Cervical cancer screening includes two types of screening tests: cytology-based screening, known as the Pap test or Pap smear, and HPV testing. The main purpose of screening with the Pap test is to detect abnormal cells that may develop into cancer if left untreated. The Pap test can also find noncancerous conditions, such as infections and inflammation. It can also find cancer cells. In regularly screened populations, however, the Pap test identifies most abnormal cells before they become cancer.



A new generation Pap smear test is the Liquid - based cytology.

Liquid-based cytology is a method of preparing samples for examination in cytopathology. The sample is collected, normally by a small brush, in the same way as for a conventional smear test, but rather than the smear being transferred directly to a microscope slide, the sample is deposited into a small bottle of preservative liquid. At the laboratory the liquid is treated to remove other elements such as mucus before a layer of cells is placed on a slide. The technique allows more accurate results. For example in The UK screening programmes changed their cervical screening method from the Pap test to liquid-based cytology in 2008.

Advantages of LBC

- Immediate fixation with enhanced nuclear and cytoplasmic detail
- All material collected is available for microscopic evaluation
- A representative sample is prepared for cytological evaluation but multiple samples can be prepared as necessary
- Clearer background so that epithelial cells of interest are less likely to be obscured
- A thin layer of dispersed cells are spread over a fixed area so that the area to be screened is small and the preparation takes less time to screen than a conventional smear
- Unsatisfactory rate decreased
- LBC samples is suitable for other tests e.g. HPV testing
- LBC slides are suitable for automated analysis

Why and when co-testing HPV and LBC is needed?

Co-testing with an HPV test and LBC, as recommended by current guidelines, can determine whether cervical cells are infected with a high-risk type of HPV and identify abnormal changes in cervical cells.
Remember, co-testing is currently recommended for women aged 30 to 65 years.

What does the test result mean?

HPV test results and LBC results go hand-in-hand when determining a woman's risk for cervical cancer.

Co-testing Results	**What Results Might Mean**	**Recommended Follow Up**
HPV test negative, LBC test normal	Cervical cancer risk is low at the present time.	Repeat co-testing in 1 or 2 years;
HPV test positive, LBC test normal	Cervical cells are infected with a high-risk type of HPV, but no abnormalities found in cervical cells.	Option 1: Repeat co-testing in 12 months; Option 2: Test for presence of HPV-16 or HPV-18 - If HPV-16 and/or HPV-18 present, colposcopy recommended - If HPV-16 and/or HPV-18 not present, repeat co-testing in 12 months.
HPV test negative, LBC test result unclear (ASCUS)	No HPV infection; changes in cervical cells may be the result of infection, inflammation, or hormonal changes and are likely to clear up without treatment.	Repeat LBC in 3-6 months, after treatment.
HPV test positive, LBC test result unclear (ASCUS)	Cervical cells are infected with a high-risk type of HPV. The infection is the likely cause of abnormalities in your cervical cells.	Colposcopy to examine cervical cells under magnification.
HPV test negative, LBC test abnormal (low-grade changes)	No HPV infection; cause of abnormal cervical cells unknown	Option 1: Repeat co-testing in 6 months; Option 2: Colposcopy to examine cervical cells under magnification.
HPV test positive, LBC test abnormal (low-grade changes/high-grade changes)	Cervical cells are infected with a high-risk type of HPV, which is the likely cause of abnormal cell growth.	Colposcopy to examine cervical cells under magnification, biopsy and treatment of precancerous growths, if present.