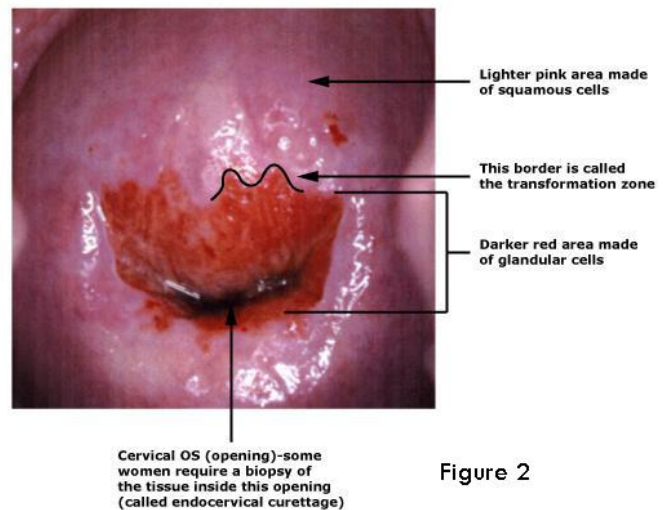
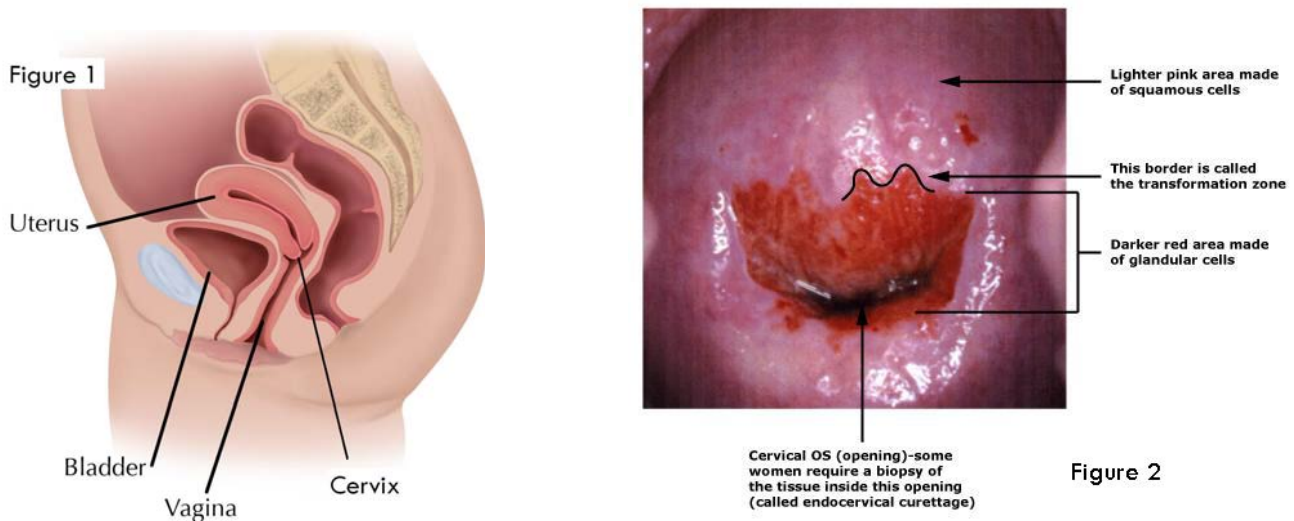


PAP SMEARS- WHY!!!!?, WHEN & HOW OFTEN?

Cervical cancer is essentially a sexually transmitted illness caused by *Human Papilloma Virus (HPV)*. There are over 100 HPV strains and nearly every person who is sexually active will be infected with one or more strains during their lifetime. As with common cold viruses, the body's immune system will clear most of these infections although several years may be required. The chance that an infection will cause an abnormal pap smear increases when the infection is not easily cleared.

Several HPV strains are classified as *high risk* because they carry a greater risk of causing precancerous changes called *dysplasia* in the top layer of the cervix. Left untreated, 2-70% of dysplasias will progress to invasive cancer over 5-20 years although progression may be much more rapid in women with damaged immune systems. It is the intention of the vaccination *Gardasil* to prevent infection with HPV strains 16, 18, 6 & 11. Seventy percent of cervical cancers are caused by 16 & 18 and ninety percent of genital warts are caused by 6 & 11. Since 30% of cervical cancers are not prevented, pap smears remain important after vaccination. Pap smears are one of the few truly effective screening measures in medicine and have moved cervical cancer from being the second most common cause of cancer death in women to thirteenth.

The *cervix* is the lower part of the uterus (Figure 1). It looks and functions much like the neck of a balloon allowing entry of sperm into the uterus and exiting of menstrual flow from the uterus. It is the part that must dilate from one tenth to four inches during childbirth.



An area on the face of the cervix, the *transformation zone* (figure 2), is especially prone to developing dysplasia. This zone is the point where *glandular cells* lining the cervical canal meet the *squamous cells* covering the cervix and vagina. Pap smears simply involve swabbing the transformation zone with a plastic spatula and the canal with a plastic brush. The purpose of pap smears is not to detect cancer but to identify women with possible dysplasia allowing treatment years before it can progress to cancer. Treatment ranges from superficial tissue destruction with freezing of the transformation zone to removal of the affected areas of the transformation zone with a shallow *cone* (Figure 3).

While the transformation zone is the most common area for dysplasia, glandular cells within the cervical canal and squamous cells on the outer part of the cervix and anywhere within the vaginal tube may develop dysplasia. This means that the vagina should be carefully examined during annual physicals even in a woman whose cervix was removed with hysterectomy.

Because the transformation zone is usually easy to visualize, possible dysplasia in this area can be evaluated with a simple office procedure called *colposcopy*. This involves examination and small biopsies of the transformation zone using a magnifying scope. However, evaluation of dysplasia within the canal requires surgical removal of a deep cone shaped part of the cervix and cervical canal (Figure 3). This may cause scarring of the canal and may interfere either with becoming pregnant or with cervical dilatation during labor.

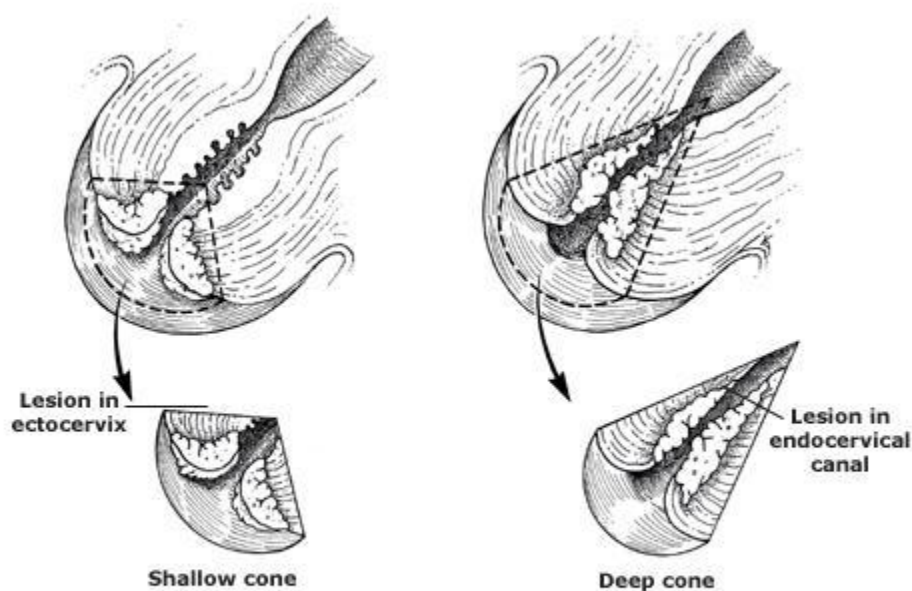


FIGURE 3

While adolescents have the greatest frequency of HPV infections their immune systems are especially adept at clearing both HPV infections and dysplasias without treatment. With this understanding, adolescent pap smears are not recommended until the young woman has been sexually active for three years. We prefer to observe adolescent dysplasia with more frequent exams instead of using destructive therapies although treatment is indicated if either reliable follow-up is uncertain or the dysplasia does not resolve.

High risk HPV infection can now be detected but this test is recommended only in women older than thirty and in women with uncertain dysplasia called *ASCUS*. Women older than thirty may now have the combined pap smear/HPV screen. If her pap smear is normal and HPV is negative she may decrease screening from every year to every three years provided her immune system is intact.

Pap smears are not required in certain groups. Women who have had their cervix removed with hysterectomy no longer need pap smears provided all pap smears prior to surgery were normal. Those with a history of dysplasia, especially if *high grade*, should continue annual pap smears along with thorough visual exam of the vaginal tube. Women older than 65 to 70 years with no history of dysplasia may discontinue screening unless they become sexually active with a new partner.

While we understand that women dread having pap smears, death from cervical cancer is a tremendous tragedy that is completely preventable. We encourage all women to take control of their health and add certainty to their lives with this simple screening test.

Article by Keith Merritt, MD