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Early diagnosis of premalignant lesions of the uterine cervix empowers today's women to prevent cervical cancer and to lead productive lives free of disease, to increase their life span and to have freedom in reproductive health so that child bearing can be planned over a period of time and not be subjected to curtailment secondary to the dreaded diagnosis of cancer.

The cervix is the opening to the uterus through which sperm enter for conception, menstrual blood passes and infants exit in childbirth. As such it has a rich blood and lymphatic supply so it is very susceptible to disease, especially cancer. Cancer of the cervix is a particularly devastating illness that in its early stages is without symptoms and then announces itself with unusual bleeding and discharge. The spread is slow- to the uterus itself, the sides of the vagina and pelvis, into the rectum and bladder and a slow agonizing death by spread to the ureters and up to the kidneys where the cause of death is usually kidney failure.

After years of study, Papanicolaou, originally from Athens, then an American citizen and teacher at Cornell, developed the smear that bears his name that became widely accepted in 1962 as a screen for precancerous and cancer of the cervix. At the time of the pelvic exam a plastic or wooden spatula would be used to painlessly scrape the cervix to obtain cells that would be sent to the laboratory where trained cytologists would analyze the cells and reach a conclusion: normal or different stages of premalignancy (dysplasias) or micro invasive or invasive carcinoma. This has become the standard of care for almost half a century and when coupled with routine gynecology exams for the reason of obtaining birth control pills, most modern western women equate an annual exam with the pap smear. Today cancer of the cervix is ALMOST a disease of history and only (when compared to lung and colorectal cancer) 10,000 women a year succumb to this disease—mostly in women who have received no care.

Early on it was thought that cancer of the cervix was a venereal disease as it was virtually nonexistent in virgins and very much increased in the promiscuous and in women who began sexual relations at an early age. Now it is accepted that the culprit is the Human Papilloma Virus (HPV)—present in almost anyone who has ever had intercourse and is responsible for 96% of cancers of the cervix and for most venereal warts. When a pap smear is returned abnormal because of abnormal cells with viral DNA or with premalignant or malignant changes, the next step is to see where the abnormality came from. Remember the pap was merely a scrape of the cervix—so now the physician needs to see where on the cervix the abnormality came in order to treat it. Colposcopy is the diagnostic medium of choice where a microscope on a tripod is used to visualize the cervix; the mucus is cleansed with a dilute vinegar solution. Areas that look white or raised or have a mosaic pattern of cells or abnormal blood vessels will be painlessly biopsied. Depending upon the laboratory finding the choices might be: repeat Pap smear in six months; destroying of the abnormal cells by freezing, excision or laser and if early malignant, simple hysterectomy. More malignant lesions need to be treated either with radiation or with radical hysterectomy that removes the pelvic lymph nodes. The early premalignant lesions frequently go away with time but it is impossible to predict which

patients will be lucky enough to have that happen so screening is universal so as not to allow the capriciousness of nature to prevail.

Now for the good news: For years people have been of the belief that many cancers were caused by viruses and, if so, why not a vaccine to prevent them similar to the prevention of chicken pox, measles, etc.? That vaccine now exists and is made from the protein capsule of the virus, not the virus itself. It is recommended to be administered by the female child's primary care physician or pediatrician or gynecologist at time zero, then again after two months and after six months between the ages of nine and twenty six. It is virtually without side effects (barring an allergic reaction) and will prevent 96% of cervical cancers and venereal warts. The cost is not cheap but is more economical than the previously mentioned colposcopy. It will soon be recommended for boys also since it is obvious that this is transmitted sexually. The decision to be vaccinated is a deeply personal one and to accept and agree to vaccination should not be considered an invitation to promiscuity. Condoms still need to be used to prevent other sexually transmitted disease such as gonorrhea, Chlamydia and syphilis. In any event all options should be discussed with a health care professional well versed in cervical disease prevention and treatment.