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Key Inforbits

- Cervical cancer
- Risk Factors for cervical cancer
- Don't forget your annual Pap smear
- How do I protect myself?
- Gardasil®
- What are the treatment options?
- Hypersensitivity to Gardasil® rare
- On the Horizon: Cervarix™

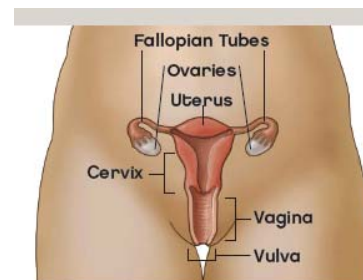


January Is Cervical Cancer Awareness Month!



Cervical Cancer

Cervical cancer is the 2nd most common cancer in women worldwide.¹ It occurs most commonly in women over the age of 30. In 2008 in the United States, it is predicted that there will be 11,070 new cases diagnosed and 3,870 women will die from cervical cancer, which is at a slightly decreasing rate from 2004.² In most cases, the cancer is slow-growing and asymptomatic. Human papilloma virus (HPV) is the main cause for cervical cancer. At least 50% of sexually active people will have HPV at some point in their lives. There are many types of HPV strains, but HPV-16 and HPV-18 are considered the high-risk types and around two-thirds of all cervical cancers are caused by these strains.¹



1. Cancer.gov [homepage on the internet] National Cancer Institute; [cited 2008 December 8] Available from: <http://www.cancer.gov/cancertopics/types/cervical>
2. CDC.gov [homepage on the Internet] Atlanta: Centers for Disease Control and Prevention; [updated 2008 December, cited 2008 December 8.] Available from: <http://www.cdc.gov/cancer/cervical/>

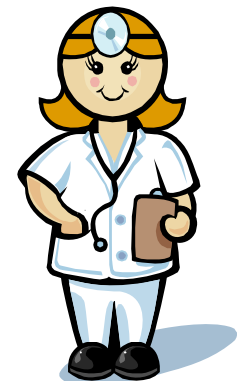
Risk Factors for Cervical Cancer^{1,2}

1. **HUMAN PAPILLOMA VIRUS:** This is the main cause for cervical cancer.
2. **SMOKING:** Women who smoke are twice as likely to develop cervical cancer as nonsmokers. Smoking can damage the cells of the cervix and can contribute to cervical cancer.

3. **HIV INFECTION:** Cervical cancer may develop more quickly in patients with HIV due to immunosuppression.
4. **ORAL CONTRACEPTIVES:** The risk of cervical cancer is doubled in women who have taken oral contraceptives for longer than 5 years. The good news is that the risk returns to normal 10 years after the oral contraceptives are stopped.
5. **MULTIPLE PREGNANCIES:** It is not known why this is a risk factor, but women who have had multiple full-term pregnancies are at a higher risk.
6. **MULTIPLE SEXUAL PARTNERS:** This can increase your risk for contracting HPV, a major contributing cause of cervical cancer.
 1. Cancer.gov [homepage on the internet] National Cancer Institute; [cited 2008 December 8] Available from: <http://www.cancer.gov/cancertopics/types/cervical>
 2. Cancer.org [homepage on the internet] American Cancer Society; [updated 2008 March, cited 2008 December 8] Available from: http://www.cancer.org/docroot/CRI/content/CRI_2_4_1X_What_is_cervical_cancer_8.asp

Don't Forget Your Annual Pap Smear!¹

Two tests can help prevent or find cervical cancer early: the Papanicolaou test (or Pap smear) and the HPV test. The Pap smear looks for precancerous cells in the cervix that could develop into cervical cancer if not treated. The HPV test looks for the virus that can cause the cells of the cervix to become cancerous and can determine if a high risk type of HPV is present. It is very important to get yearly Pap smears, because 6 out of 10 cervical cancers occur in women who have never had a Pap smear or who have not been tested in the past 5 years.



So, when should women start getting screened?

- Pap smear: All women should get **annual** Pap smears starting at the **age of 21** or **within 3 years of the first time of sexual intercourse** (whichever event happens first).
 - HPV test: Every 3 years in women age 30 years and older, or any age of woman as a follow-up test for those who have had an abnormal Pap smear.
1. CDC.gov [homepage on the Internet] Atlanta: Centers for Disease Control and Prevention; [updated 2008 December, cited 2008 December 8.] Available from: <http://www.cdc.gov/cancer/cervical/>

How Do I Protect Myself?...

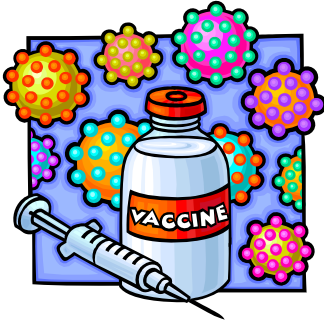
- Get the HPV vaccine...the HPV vaccine protects against the viruses that cause 70% of cervical cancers
- Use condoms during sexual intercourse...while HPV can occur in both male and female genital areas protected by condoms, condom use is associated with a lower rate of cervical cancer.¹
- Limit your number of sexual partners...you are more likely to get HPV if you start having sex at an early age or if you have multiple sexual partners.¹
- Regularly scheduled Pap smears...this test can determine cervical precancers as well as screen for cervical cancer.¹
- Quit Smoking...the exact link between smoking and cervical cancer is unknown, but smoking increases the risk of precancerous changes and cervical cancer.²



1. CDC.gov [homepage on the Internet] Atlanta: Centers for Disease Control and Prevention; [updated 2008 December, cited 2008 December 8.] Available from: <http://www.cdc.gov/cancer/knowledge/>
2. Mayo Clinic.com [Home page]. Mayo Foundation for Medical Education and Research. Updated July 1, 2008. <http://www.mayoclinic.com/health/cervical-cancer/DS0016> "Cervical Cancer" Accessed 12/08/08.

Gardasil® (Human Papilloma Virus Vaccine)

Gardasil® is a new vaccine that can prevent against 4 types of HPV virus.^{1,2} Two of the types (HPV-16, HPV-18) cause 70% of cervical cancers and the other two types (HPV-6, HPV-11) cause 90% of genital warts.¹ It is a 3-dose series given over 6 months.^{1,2} It is important that women still continue to receive yearly pap smears, because 30% of cervical cancers are not prevented by the vaccine.¹



- **Who should get the vaccine?**¹
 - Recommended in females **age 11 and 12**, but it can be given to girls as young as 9.
 - It is also recommended in females **age 13-26** who have not been vaccinated or who have not completed the series.
- **What are the side effects?**^{1,2}
 - Injection site pain, swelling, bruising, and redness
 - Nausea, vomiting, fever, headache, and fainting
 - \$375 for the 3 dose series

1. CDC.gov [homepage on the Internet] Atlanta: Centers for Disease Control and Prevention; [updated 2008 December, cited 2008 December 8.] Available from: <http://www.cdc.gov/std/hpv/default.htm>
2. Gardasil [package insert]. Whitehouse Station, NJ: Merck & Co., Inc. 2008. http://www.merck.com/product/usa/pi_circulars/g/gardasil/gardasil_pi.pdf. Accessed December 8, 2008.

What are the treatment options?...

Once diagnosed, treatment of cervical cancer depends on the stage of the cancer, other diseases a patient may have, and the patient's own preferences about treatment. Noninvasive cancer is confined to the outer layer of the cervix. Treatment of noninvasive disease is as simple as removing the affected area of cells. In most cases, no other treatment is required. For invasive cancer, areas deeper than the outermost layer of the cervix are affected. In this case more extensive treatment is required.¹ The treatment options include surgery, radiation, and chemotherapy. There are different stages of cancer based on its severity. The stages range from stage 0 which is early, noninvasive cancer to stage IV where the cancer has spread to nearby organs.¹ Each case is treated individually based on patient preferences and the stage of the cancer.¹



1. Mayo Clinic.com[Home page]. Mayo Foundation for Medical Education and Research. Updated July 1, 2008. <http://www.mayoclinic.com/health/cervical-cancer/DS00167> "Cervical Cancer" Accessed 12/08/08.

From the Medical Literature

Hypersensitivity Reactions to Gardasil® are Rare

There have been many concerns over the safety of Gardasil® since its approval in 2006. A recent study was published in the *British Medical Journal* that was done by the Royal Children's



Hospital in Australia to see if there was an increased incidence of true hypersensitivity reactions with the human papilloma virus vaccine. In 2007 380,000 doses of Gardasil® were given to schoolgirls, of which 35 girls had a suspected hypersensitivity reaction. In this trial, 25 out of these 35 girls agreed to skin-prick and injection testing to confirm their reaction. The authors found that only 3 of the girls had a probable hypersensitivity (anaphylaxis, positive skin test, or subsequent reaction upon rechallenge). This study concluded that true hypersensitivity reactions

to the Gardasil[®] vaccine are uncommon and that most girls with an initial reaction tolerate subsequent doses.

Kang LW, Crawford N, Tang MLK, Buttery J, Royle J, Gold M, et al. Hypersensitivity reactions to human papilloma virus vaccine in Australian schoolgirls: retrospective cohort study. *BMJ*. 2008;337:a2642

On the Horizon... Research is underway for a new HPV vaccine, **Cervarix[™]**, developed by GlaxoSmithKline. This vaccine targets HPV types 16 and 18, the two types associated with 70% of cervical cancers.¹ Cervarix[™] is currently in a phase III trial, and FDA approval is expected in early 2009. Recent data from this unpublished trial have shown that it can provide antibodies against these two types of HPV for up to 6.4 years (Gardasil[®] protects for up to 5 years, based on length of studies), which is the longest duration to date reported against HPV-type 16 and 18.²



1. Cancer.gov [homepage on the internet] National Cancer Institute; [cited 2008 December 8] Available from: <http://www.cancer.gov/cancertopics/types/cervical>
2. Gsk.com (May 14,2008). Cervarix provides longest duration of sustained neutralizing antibodies reported for any vaccine against HPV 16 and 18 to date. Press Release. Accessed 2008 December 8. Available from: http://www.gsk.com/media/pressreleases/2008/2008_pressrelease_10043.htm

For more information on cervical cancer, look at these resources

- Center for Disease Control: www.cdc.gov/cancer/cervical
- National Cancer Institute: <http://www.cancer.gov/cancertopics/types/cervical>
- American Cancer Society:
http://www.cancer.org/docroot/CRI/content/CRI_2_4_1X_What_is_cervical_cancer_8.asp
- WomensHealth.gov: <http://www.4woman.gov/faq/cervical-cancer.cfm>
- MedLine Plus: <http://www.nlm.nih.gov/medlineplus/ency/article/000893.htm>



The last “dose” ...

To be yourself in a world that is constantly trying to make you into something else is the greatest accomplishment.

... Ralph Waldo Emerson (1803 - 1882)

HAPPY NEW YEAR

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