

***Beyond Breast Cancer:
Prevention, Diagnosis, and
Treatment of Gynecologic and
Colorectal Cancers***

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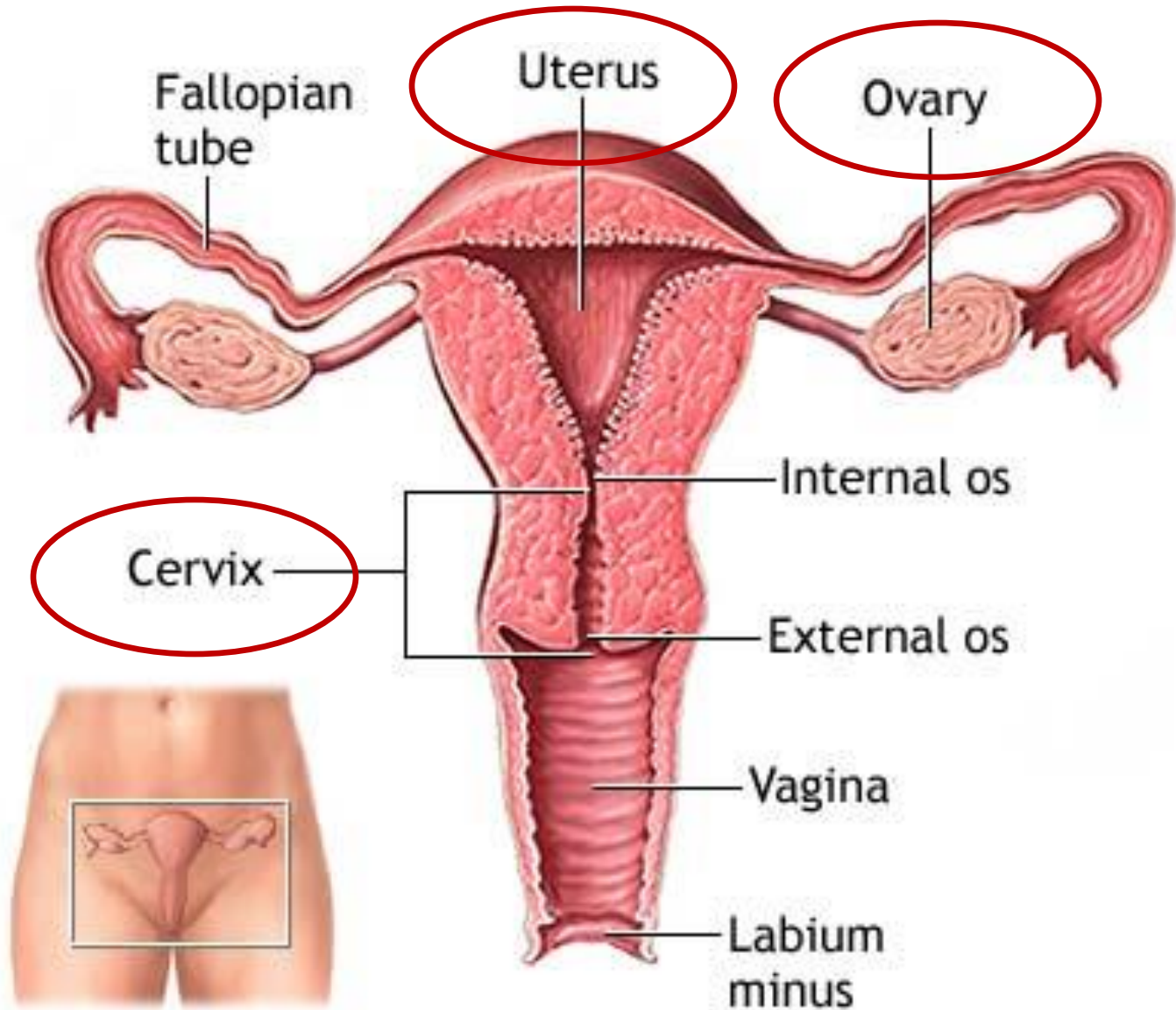
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***Prevention, Detection, and
Treatment of Gynecologic
Malignancies***

Celestine S. Tung, MD, MPH

Gynecologic Anatomy



Gynecologic Cancers in U.S. in 2013

91,700 new cases **28,100 deaths**

Cervix Cancer

- **12,300 new cases** **4,000 deaths**

Uterine Cancer

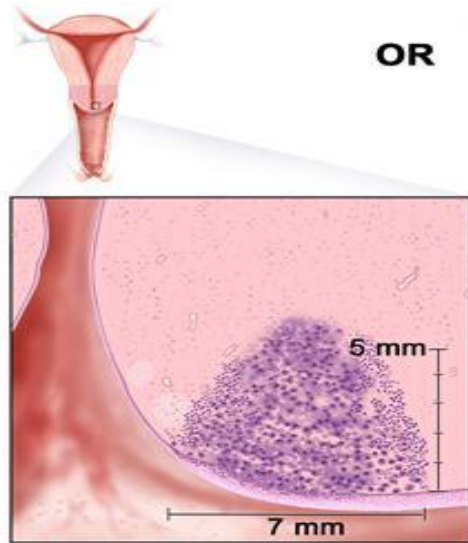
- **49,500 new cases** **8,100 deaths**

Ovarian Cancer

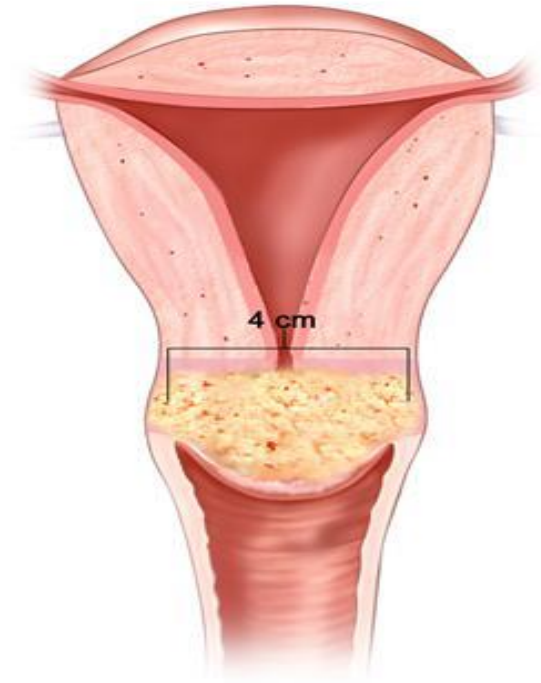
- **22,200 new cases** **14,000 deaths**

Cervical Cancer

Stage IB1 Cervical Cancer



Stage IB2 Cervical Cancer

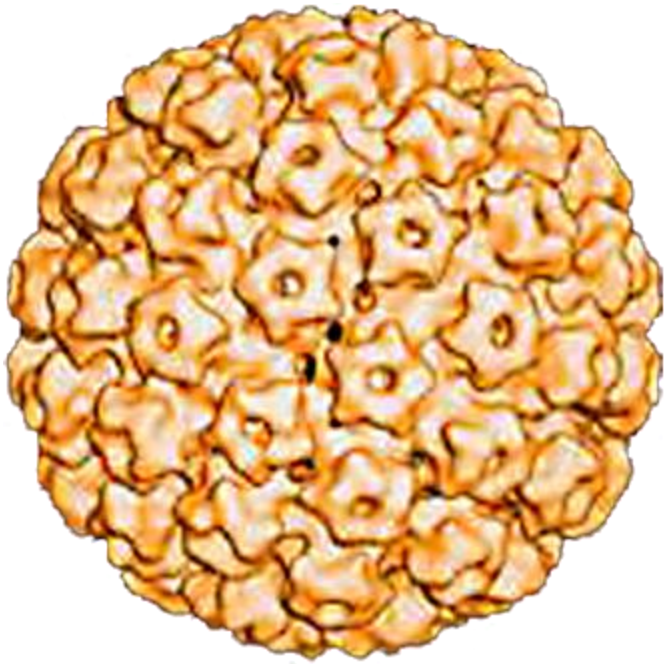


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Cervical Cancer Facts

- **12,000 new cases with 4000 deaths annually in US in 2013**
 - Texas Estimates- 2nd highest overall
 - 1,100 new cases of cervical CA
- **ONLY preventable gyn cancer (pap smears, vaccine)**
- **Cervical precancer and early cervical cancer usually has no symptoms**

Human Papilloma Virus (HPV)



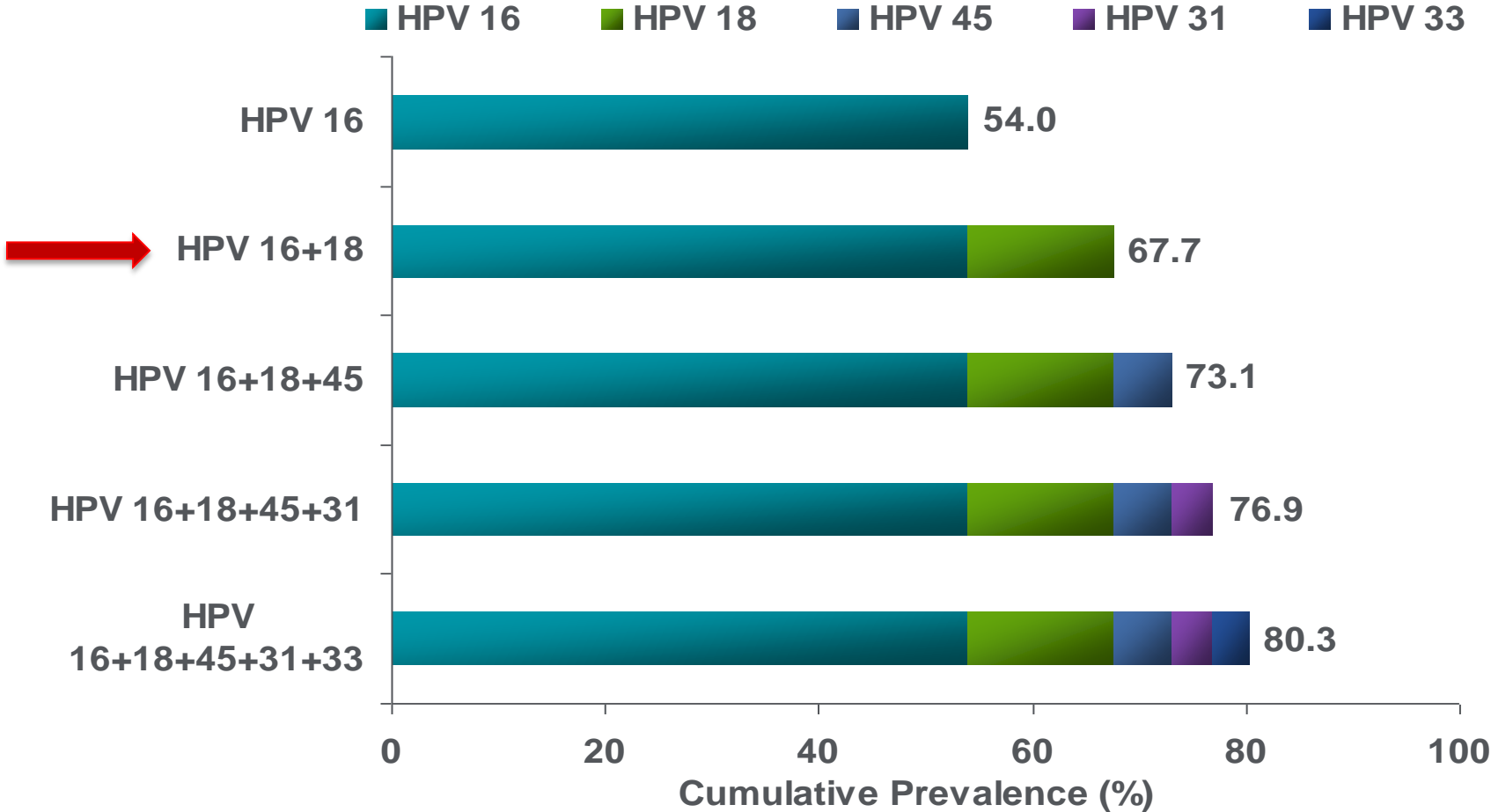
- **Worldwide, the prevalence of HPV in cervical tumors is 99.7%**
- **80% of all sexually active women exposed**
- **Must be present to develop cervical cancer**

Human Papilloma Virus

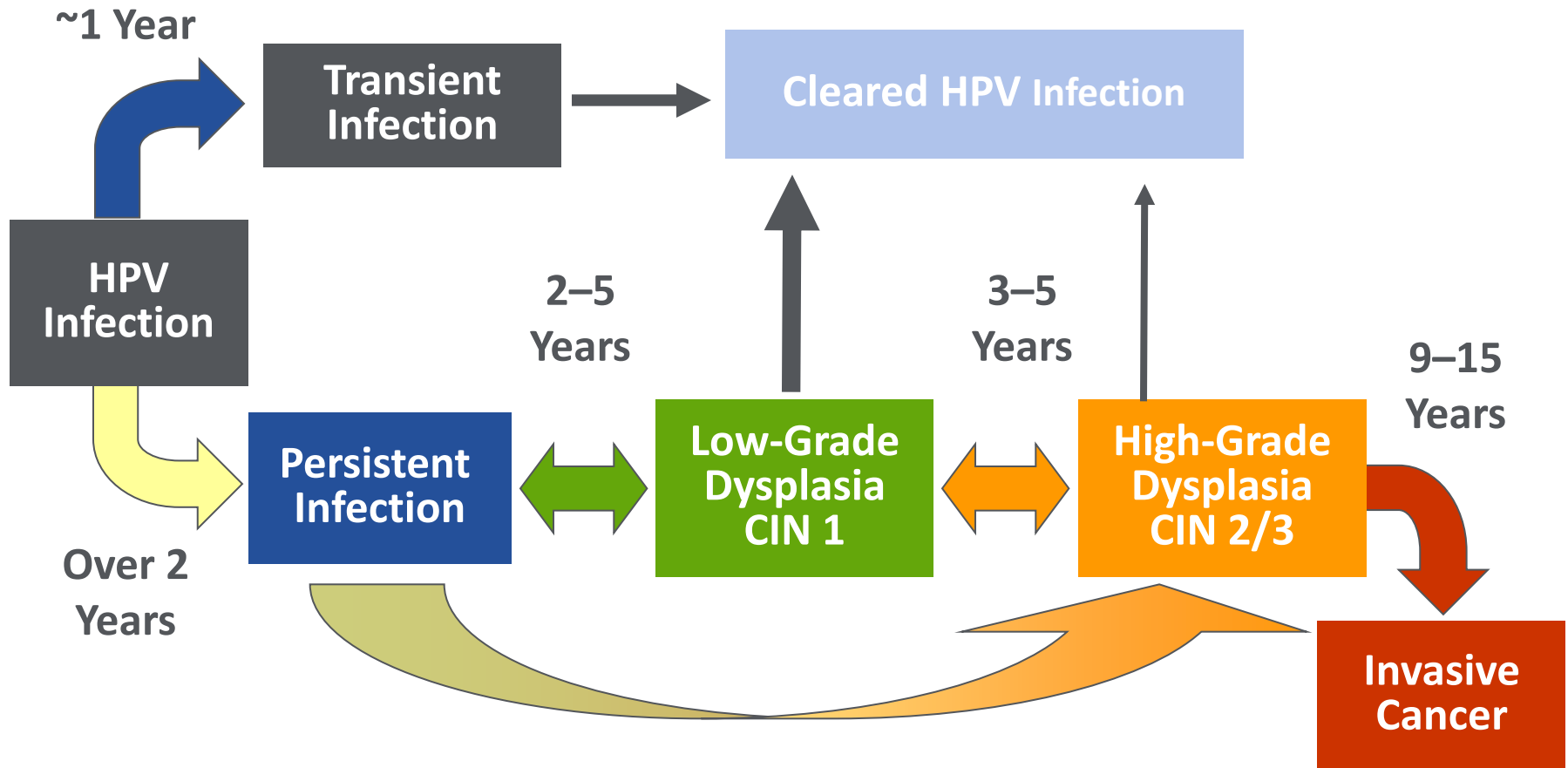
➤ **100 types identified**
30–40 anogenital

- **High-risk: 16, 18, 45, 56**
- **Intermediate Risk: 31, 33, 39, 51, 52, 55, 58, 59, 66 and 68**
- **Low-Risk: 6, 11, 26, 42, 44, 54, 70, and 73**

Cumulative Prevalence of High-risk HPV Subtypes

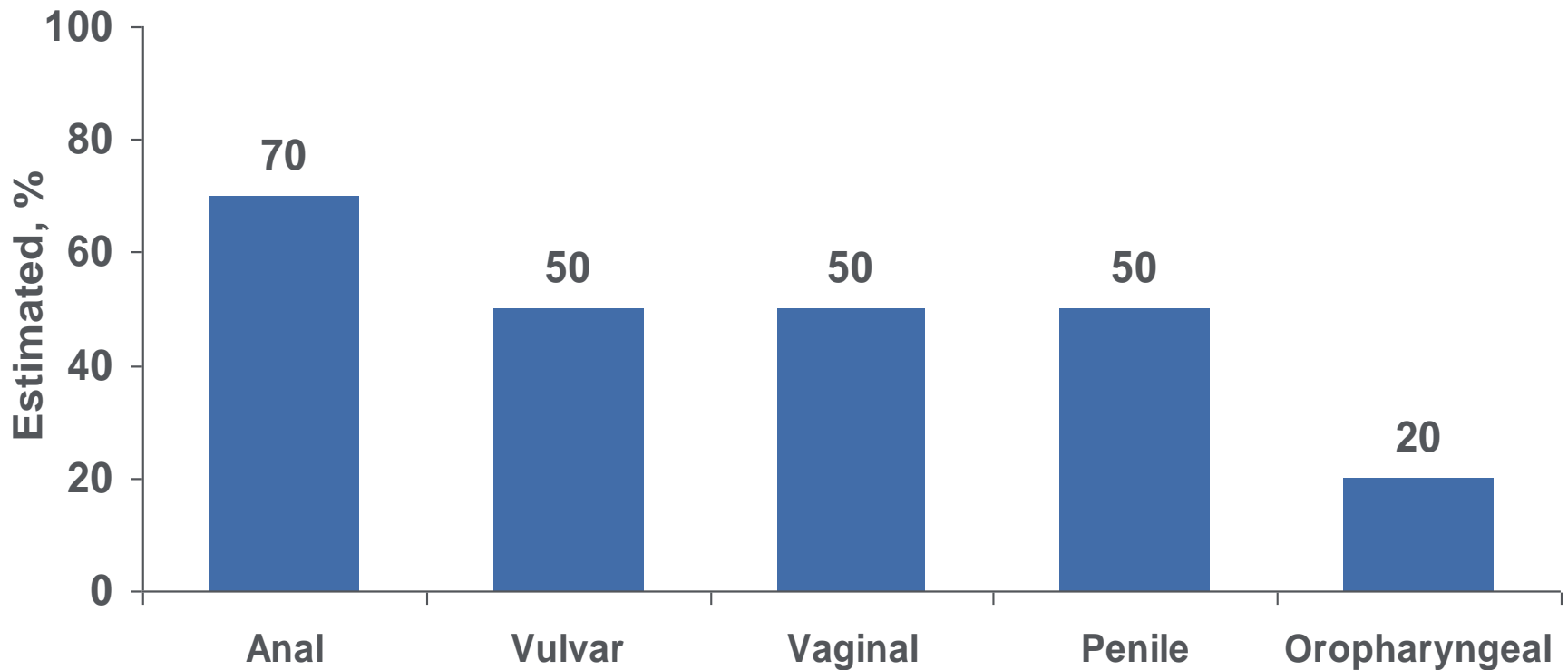


Natural History of High-risk HPV



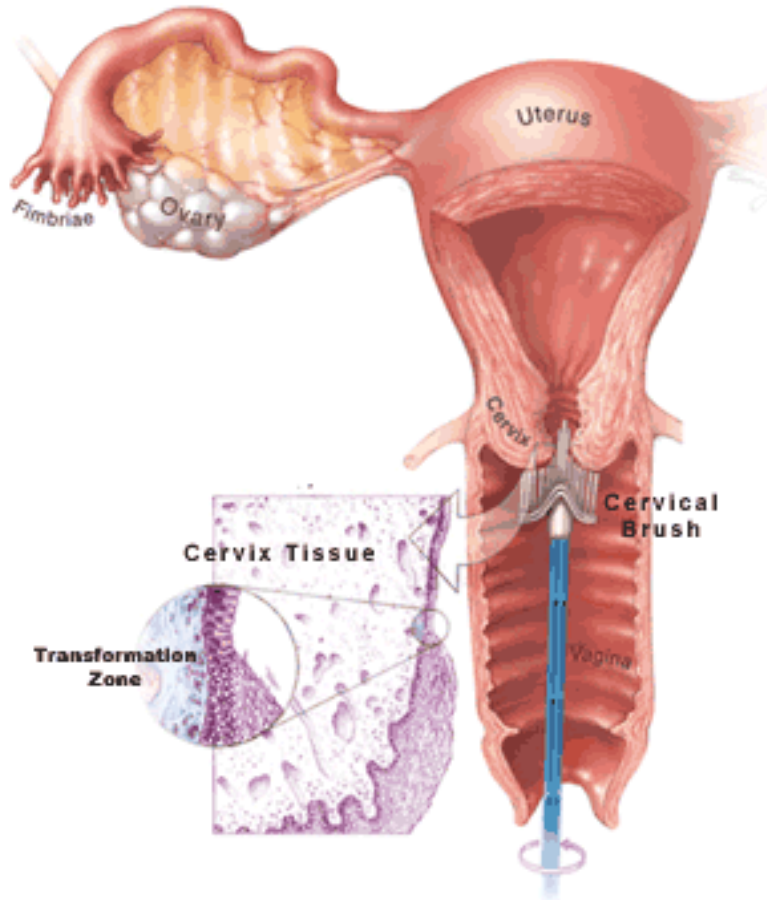
Other Cancer Types Due to HPV

Estimated percentage of cancer cases attributable to HPV



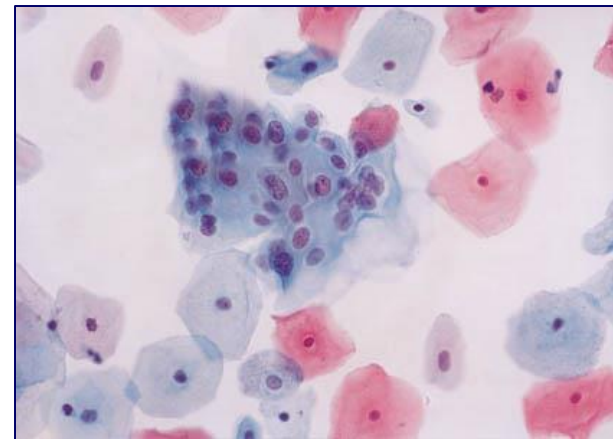
Cervical Cancer Screening

Pap Smear



- Looks for precancer and cancerous cells

- >50% decrease in cervical cancer in developed countries over last 30 yrs



Pelvic Exam ≠ Pap Smear

Doctor may not do pap smear with every pelvic exam

**Although pap smears not recommended every year,
still need pelvic exam every year**

Pap smears starting at age 21 years

Signs and Symptoms of Cervical Cancer

Early cervical cancer has NO symptoms

- **Diagnosed based on pap smears**
- **Pelvic pain or pressure**
- **Irregular vaginal bleeding**
- **Bleeding with intercourse**
- **Pain with intercourse**
- **Abnormal or bloody vaginal discharge**

Risk Factors for Cervical Cancer

- **Early onset of sexual activity**
- **Multiple/high-risk sexual partners**
- **History of sexually transmitted diseases**
- **Smoking**
- **Immunosuppression**
- **Low socioeconomic status/lack of access to medical care**

Treatment Options

- **Early stage – surgery to remove uterus
+/- ovaries +/- pelvic lymph nodes**
 - **Fertility sparing surgery for young women**
 - **Remove cervix but leave uterus and ovaries**
- **Advanced stage – chemotherapy & radiation therapy**

HPV Vaccine

Given to prevent HPV infection before sexual debut

2 vaccine types

- **Cervarix[®] – HPV 16/18**
- **Gardasil[®] – HPV 6/11/16/18**

Primary target: girls & boys 11-12 yrs old, but can be given between 9-26 yrs old

Vaccination Schedule

3 DOSE SCHEDULE

#1: First vaccine dose

#2: Administered 1–2 months after the first dose

#3: Administered 6 months after the first dose (at least 24 weeks after the first dose)

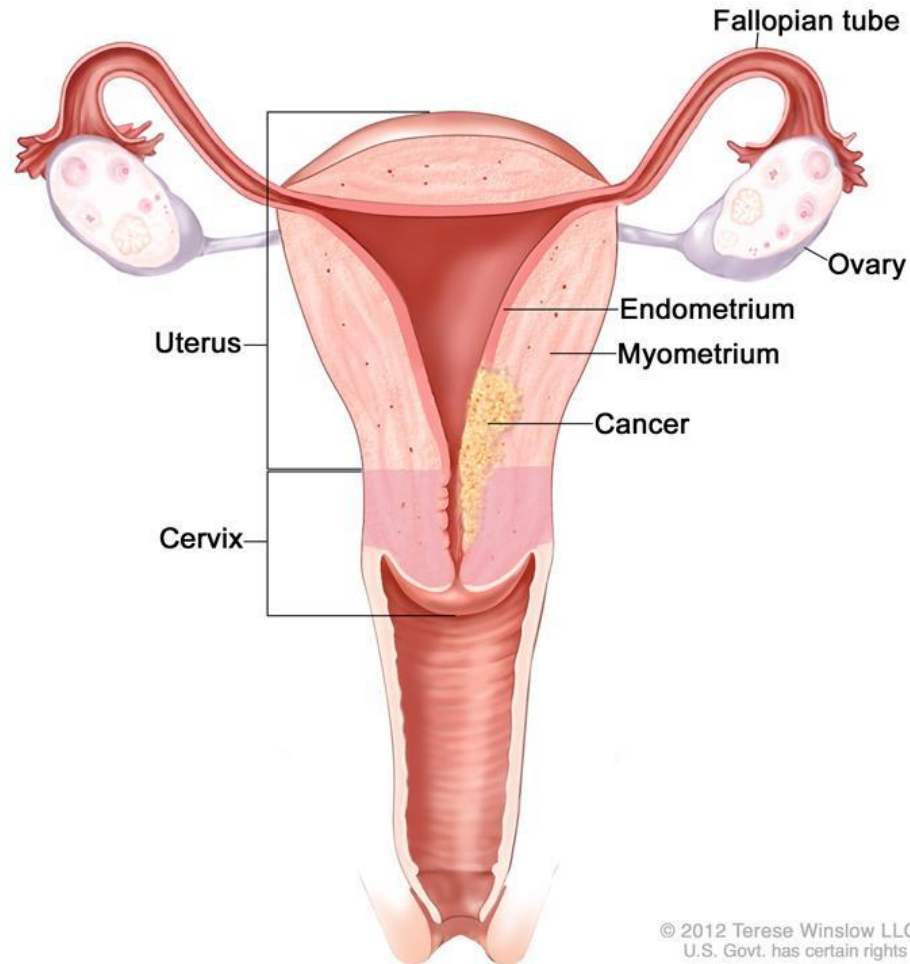


Cervical CA in the Vaccination Era

- **Women must continue to receive screening services because the current vaccines are being given to adolescent girls only**
- **Vaccinated girls should initiate screening when they reach 21**

Uterine (Endometrial) Cancer

Stage II Endometrial Cancer



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Uterine Cancer Statistics

- **Fourth most common cancer in US women & most common gynecologic cancer**
- **49,500 new cases estimated for 2013 with 8100 deaths**
- **Lifetime risk approximately 3%**
- **Average age at diagnosis 61 years**

Risk Factors

- **Age**
- **Obesity**
- **Excess unopposed estrogen**
 - **Early menses, late menopause**
- **History of Tamoxifen use**
- **Diabetes/insulin resistance**
- **Family history of uterine, colon, ovarian cancer**

Obesity and Uterine Cancer

- **Accounts for 57% of endometrial cancers in U.S.**
- **Endometrial cancer is most strongly associated cancer with obesity**
- **Fat cells convert androstenedione of adrenal origin to estrone, a weak circulating estrogen.**

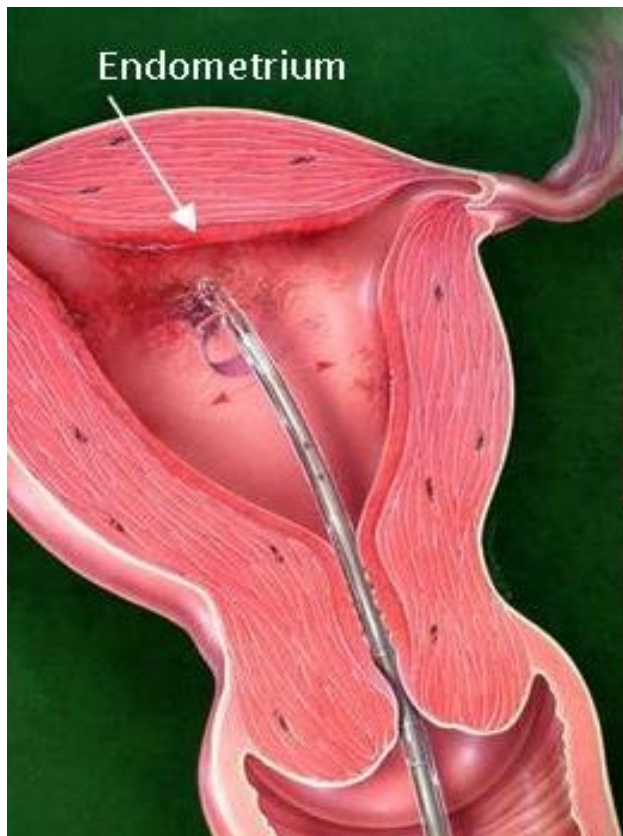
Signs and Symptoms of Uterine Cancer

- Heavy menses
- Irregular menses/bleeding between periods
- Bleeding after menopause
- Pelvic pain or pressure

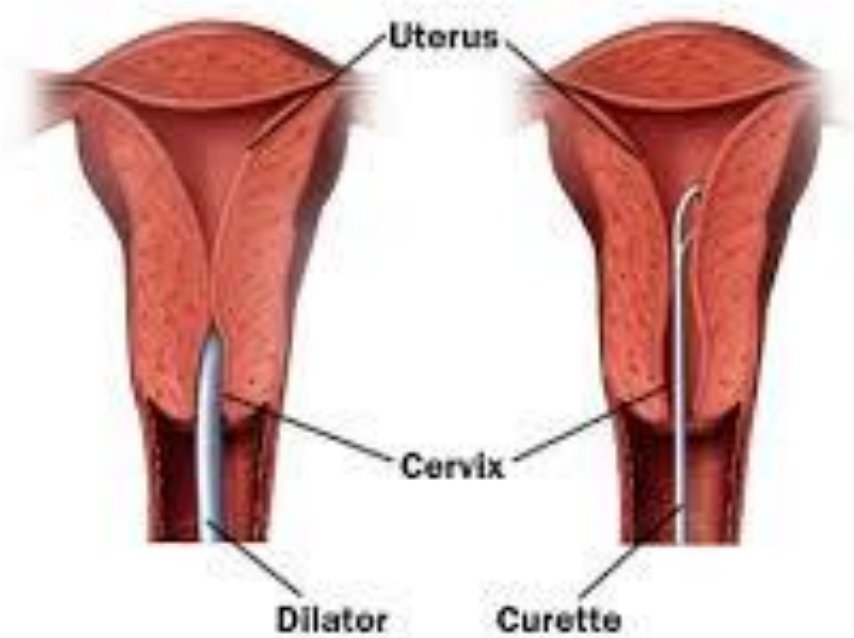
**ALL ABNORMAL BLEEDING NEEDS TO BE
EVALUATED!**

Endometrial Sampling

Endometrial biopsy



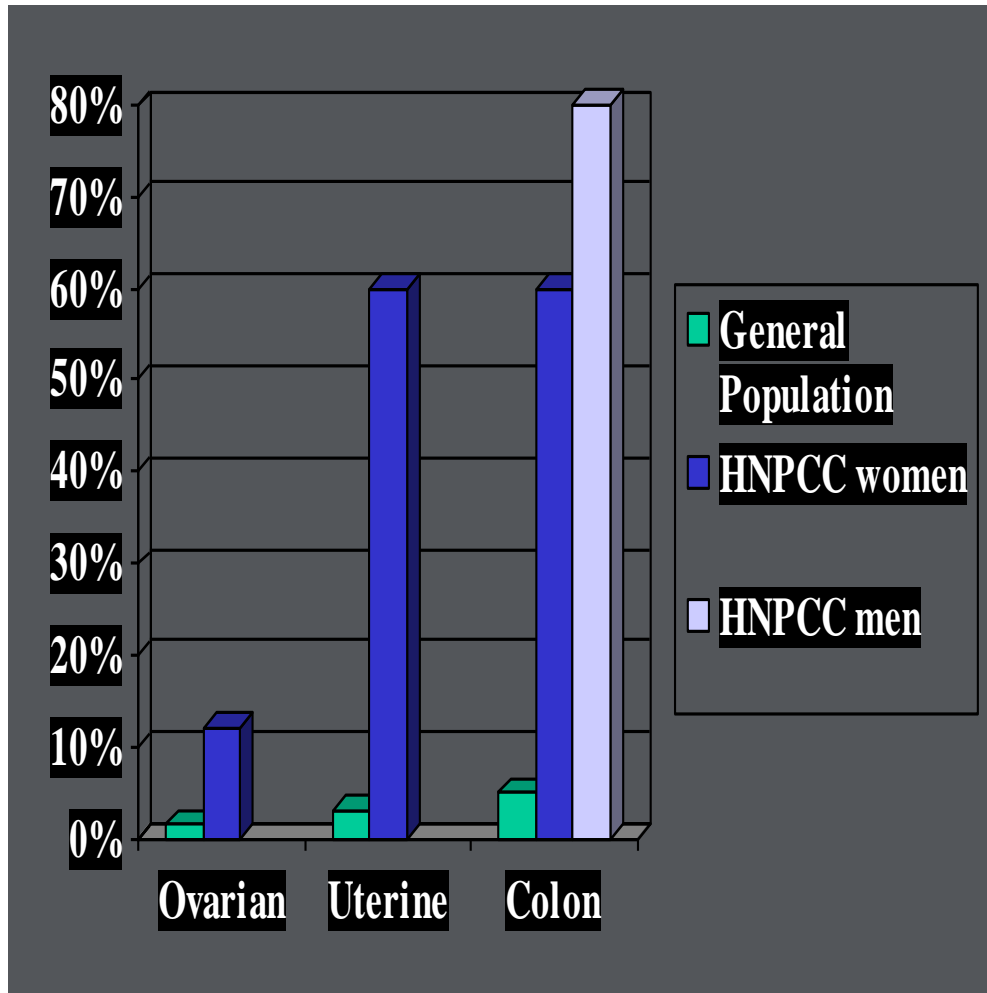
Dilation and curettage



Screening for Uterine Cancer

- **Not indicated in asymptomatic women**
- **Most cases detected early due to symptoms (abnormal uterine bleeding)**
- **No inexpensive, accurate, noninvasive screening test exists**

Lynch Syndrome (HNPCC)



- 5% of uterine cancers are hereditary

- Women with HNPCC have 40-60% lifetime risk for endometrial and colon cancers

- Early onset colon, endometrial, ovarian, bladder cancers

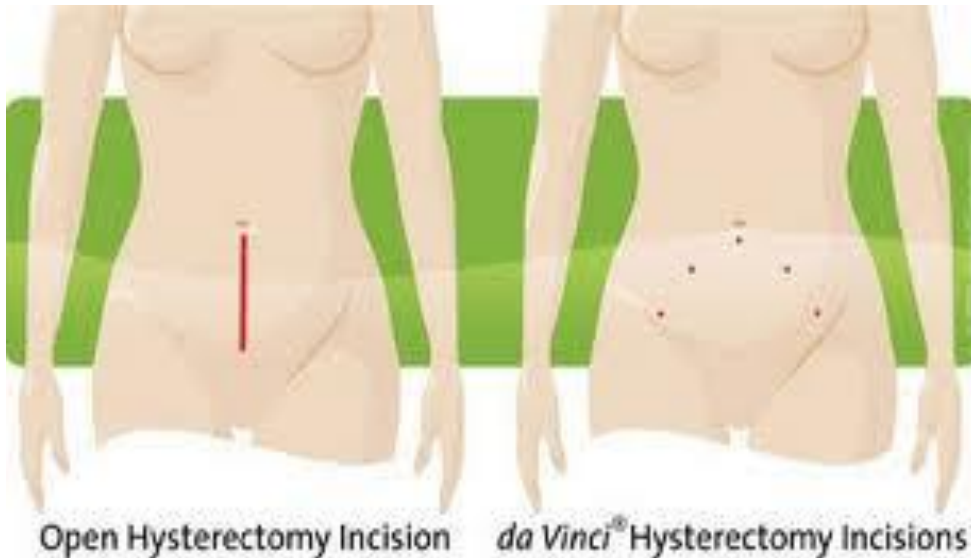
- Routine screening tests

- Prophylactic surgery

Treatment Options

Surgery

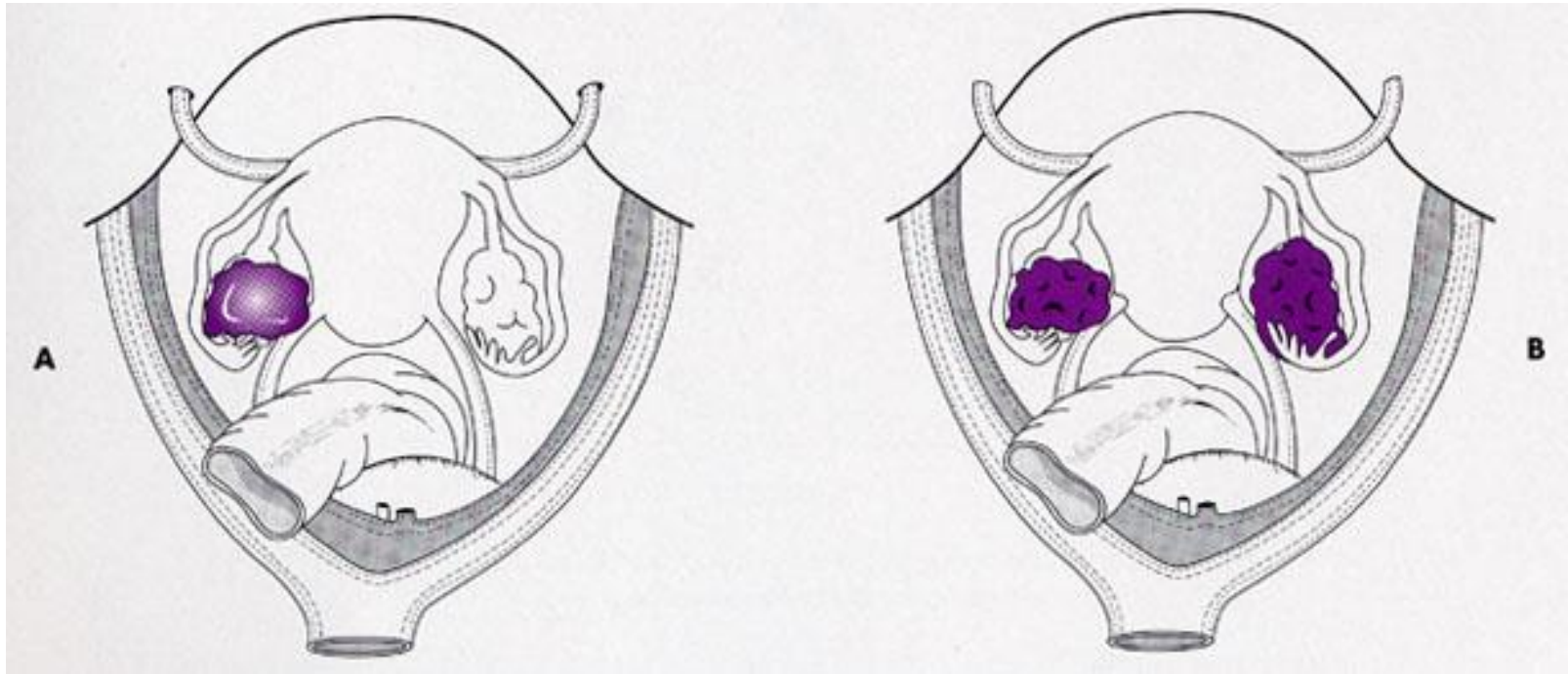
- +/- chemotherapy
- +/- radiation therapy
- +/- hormonal therapy





Protective Factors

- **Decrease circulating estrogen levels**
 - **Weight loss/Exercise**
- **Combined estrogen/progesterone hormone therapy**
- **Use of birth control pills**



Ovarian Cancer



Estimated New Cases*

			Males	Females			
Prostate	238,590	28%			Breast	232,340	29%
Lung & bronchus	118,080	14%			Lung & bronchus	110,110	14%
Colorectum	73,680	9%			Colorectum	69,140	9%
Urinary bladder	54,610	6%			Uterine corpus	49,560	6%
Melanoma of the skin	45,060	5%			Thyroid	45,310	6%
Kidney & renal pelvis	40,430	5%			Non-Hodgkin lymphoma	32,140	4%
Non-Hodgkin lymphoma	37,600	4%			Melanoma of the skin	31,630	4%
Oral cavity & pharynx	29,620	3%			Kidney & renal pelvis	24,720	3%
Leukemia	27,880	3%			Pancreas	22,480	3%
Pancreas	22,740	3%			Ovary	22,240	3%
All Sites	854,790	100%	All Sites	805,500	100%		

Estimated Deaths

			Males	Females			
Lung & bronchus	87,260	28%			Lung & bronchus	72,220	26%
Prostate	29,720	10%			Breast	39,620	14%
Colorectum	26,300	9%			Colorectum	24,530	9%
Pancreas	19,480	6%			Pancreas	18,980	7%
Liver & intrahepatic bile duct	14,890	5%			Ovary	14,030	5%
Leukemia	13,660	4%			Leukemia	10,060	4%
Esophagus	12,220	4%			Non-Hodgkin lymphoma	8,430	3%
Urinary bladder	10,820	4%			Uterine corpus	8,190	3%
Non-Hodgkin lymphoma	10,590	3%			Liver & intrahepatic bile duct	6,780	2%
Kidney & renal pelvis	8,780	3%			Brain & other nervous system	6,150	2%
All Sites	306,920	100%	All Sites	273,430	100%		

Ovarian Cancer Facts



- Burden of disease is greater in developed countries
- Incidence increases with age (mean age 60 yrs)
- Average lifetime risk of 1-2%
- Almost 75% of cases present with advanced stage III / IV disease

Signs & Symptoms of Ovarian Cancer

- Abdominal distention
- Bloating
- Abdominal/pelvic pain
- Nausea /vomiting
- Change in bowel habits
- Difficulty eating or feeling full faster
- Frequent or difficulty urinating

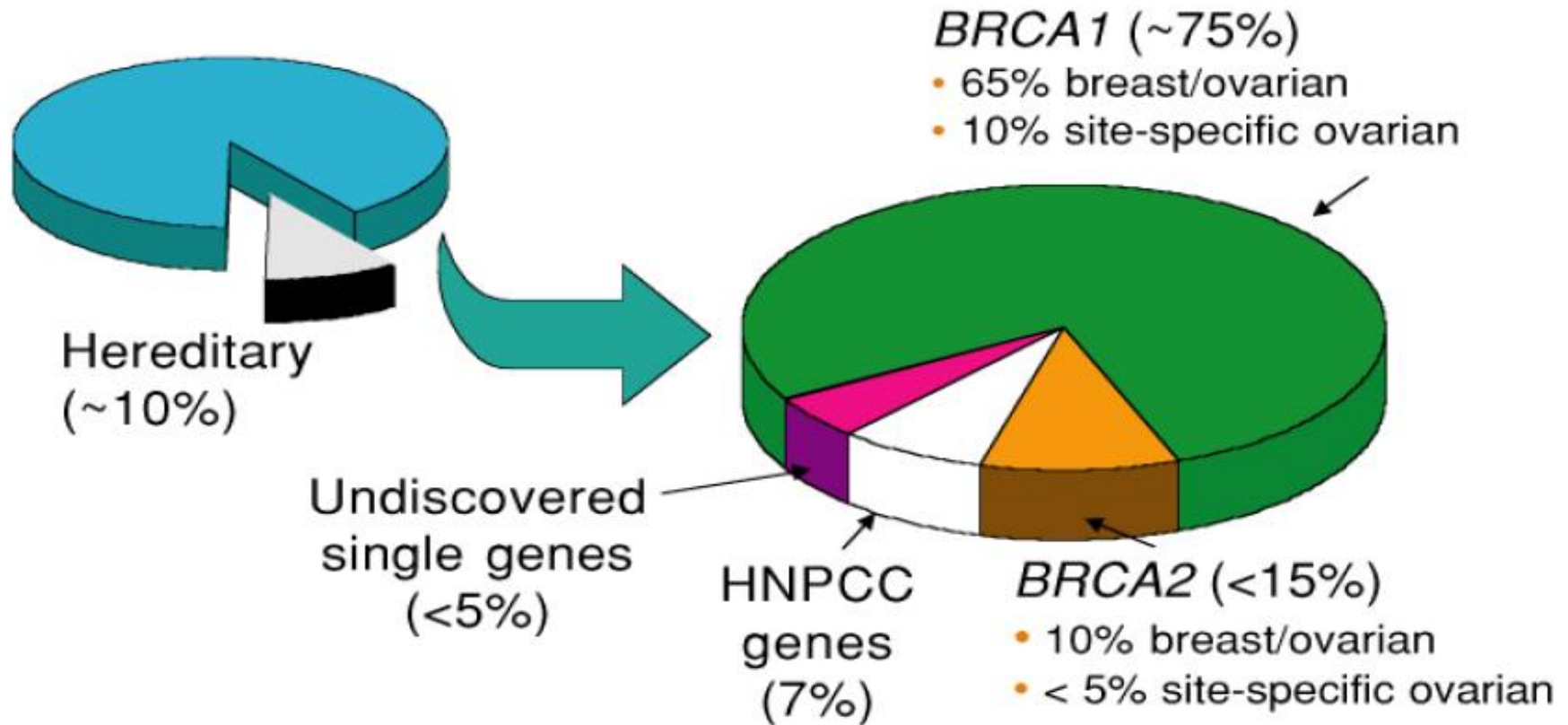
Risk Factors

- Age
- Family history of breast or ovarian cancer
- BRCA mutation
- Lynch syndrome
- Never pregnant or given birth
- Infertility (NOT medications given for infertility)

General Screening & Prevention

- No good screening tool so screening not recommended currently
- Pap smear is NOT a screening test for ovarian cancer
- Prevention
 - Use of birth control pills for >5 year
 - Getting tubes tied or ovaries removed
 - Having given birth
 - Breast feeding

Causes of Hereditary Susceptibility to Ovarian Cancer



ASCO®

Hereditary Breast-Ovarian Cancer Syndrome (HBOC)

- Incidence
 - General – 1:500-1000
 - Ashkenazi Jewish population – 1:40
- BRCA1 – 35-45% risk of ovarian cancer
- BRCA2 – 15-25% risk of ovarian cancer
- BRCA 1 & 2 – 65-75% risk of breast cancer



OP-ED CONTRIBUTOR

My Medical Choice

By ANGELINA JOLIE

Published: May 14, 2013 |  1712 Comments

BRCA Cancer Screening

- **Family/personal history of breast cancer < 50 yo**
- **Family/personal history of ovarian cancer**
- **Male breast cancer**

- **CA125 with pelvic ultrasound between 30-35 yo**

- **Clinical breast exam 2X/yr with annual mammogram and breast MRI at age 25**

BRCA Cancer Prevention

- **Remove ovaries by 40 years old or upon completion of childbearing → reduces risk of ovarian cancer by 85-90% & breast cancer by 40-70%**
- **Prophylactic mastectomy decreases risk by 90-95%**

How Do I Know If I Have Ovarian Cancer?

- Annual well-woman exam
- Know your family history
- Listen to your body and talk with your doctor
 - Imaging studies
 - Abnormal CA125S

Treatment

- **If abnormality is suspicious for ovarian cancer, seek treatment with a cancer specialist**
- **“Tumor reductive” surgery**
- **Chemotherapy**

Take-home Points

- Annual well-woman and pelvic exams (even after menopause and hysterectomy)
 - Pelvic exams ≠ pap smears
- Know your risk factors
- Listen to your body and talk to your doctor

Take-home Points

- **Abnormal bleeding, especially any bleeding after menopause, needs to be evaluated**
- **Pap smears screen only for cervical cancer and NOT for any other gyn cancers**

***Prevention, Detection, and
Treatment of Colon Cancer***

H. Chami Amaratunge, MD

Colorectal Cancer Facts

- **Colorectal cancer affects men and women of all racial and ethnic groups**
- **In the United States CRC is the third most common type of cancer women and men**
- **In the United States CRC is the second leading cause of cancer related death**

The Silent Disease

- **Colorectal cancer is known as a "silent" disease, because many people do not develop symptoms.**
- **If colorectal cancer is found and treated at an early stage, before symptoms develop, the opportunity to cure is 80% or better.**
- **Most colon cancers start as non cancerous growths called polyps.**
- **If the polyps are removed, then the cancer may be prevented.**

What are the Symptoms?

- **Fatigue which could be related to anemia (low red blood cell count)**
- **Blood in the stool**
- **Change in bowel movements**
- **Unexplained weight loss**

Risk Factors of Colon Cancer

- **Age: strongest risk factor**
- Family history of colon cancer
- Familial polyposis syndrome
- Personal history of colon polyps/cancer
- African American
- Inflammatory bowel disease

Possible Risk Factors

- High fat diet
- High in red meat diet
- Radiation exposure
- Diabetes
- Cigarette smoking
- Heavy alcohol use

The Importance of Screening

- **There is good evidence that screening reduces colorectal cancer mortality.**
- **Screening can also find colorectal cancer early. This gives you a greater chance that treatment will be most effective and lead to a cure.**

The Role of Diet

There are no definitive guidelines regarding diet for prevention of colon cancer.

Medical experts often recommend:

- Diet low in animal fats and high in fruits, vegetables, and whole grains to reduce the risk of other chronic diseases, such as coronary artery disease and diabetes.**
- This diet also may reduce the risk of colorectal cancer.**

Some Factors That Could Reduce the Risk

- Research is being carried out to examine the role of aspirin, calcium, vitamin D, and selenium in preventing colorectal cancer.
- Some studies suggest that people may reduce their risk of developing colorectal cancer by:
 - Increasing physical activity
 - limiting alcohol consumption, and
 - avoiding tobacco

Screening is Most Effective

Overall, the most effective way to reduce your risk of colorectal cancer is by having colorectal cancer screening tests beginning at age 50.

Average risk: no family history or known risk factors

Screening vs. Surveillance

Screening: looking for a disease when a patient does not have symptoms.

Screening involves one or more tests performed to identify whether a person with no symptoms has a disease or condition that may lead to colon or rectal cancer.

Surveillance: involves testing people who have previously had colon polyps or colorectal cancer more frequent tests are recommended.

Screening Tests for Colon Cancer

Tests that find polyps and cancer

- Colonoscopy and flexible sigmoidoscopy
- CT colonography or barium enema

Tests that find cancer

- FOBT
- FIT
- Stool DNA

Of note: newest modality: CT colonography and fecal DNA

Guidelines for Screening

Medical societies have developed guidelines for screening strategies:

- **US Preventive Services Task Force (USPSTF)**
- **The Joint Multi-Society Guideline (AGA, ACS, ASGE, ACR)**

Key differences amongst the two societies is that USPSTF feels that there is insufficient evidence to endorse the newer modalities: CT colonography and fecal DNA test.

Recommendations for Screening Average-Risk Patients

Beginning at age 50, both men and women at *average risk* for developing colorectal cancer should use one of the screening tests below:

- **Colonoscopy every 10 years**
- **Double-contrast barium enema every 5 years***
- **CT colonography (virtual colonoscopy) every 5 years***
- **Fecal occult blood test (FOBT) every year***
- **Fecal immunochemical test (FIT) every year***
- **Stool DNA test (sDNA)***
- ***above positive will need colonoscopy**

Prevention of Colon Cancer

Preventing colorectal cancer (and not just finding it early) should be a major reason for getting tested.

Finding and removing polyps keeps some people from getting colorectal cancer.

High-risk Patients

Family history of colon cancer

- Starting at age 40 or 10 years before the age of diagnosis

Family history polyposis syndrome (FAP, HNPCC); young age of diagnosis:

- Genetic testing
- May start screening as early as age 10.
- May need colon removed

Personal history of Inflammatory bowel disease: ulcerative colitis, Crohn's disease.

- Colonoscopy every 1-2 years after 8-10 years of disease

Future Screenings

Once screening colonoscopy or baseline colonoscopy done, if polyps are discovered will need surveillance colonoscopy 3-5 years

If normal (no polyps found):

- **Repeat colonoscopy is 10 years.**
- **Does not require annual fecal testing**

Treatment of Colon Cancer

- **Surgical resection: local disease**
- **Surgery/chemotherapy: locally advanced disease**
- **Chemotherapy: distant spread. Surgery for palliation of obstruction**

Key Take-away

Screening and prevention is key

- **Colonoscopy is the gold standard for screening and removal of polyps.**
- **Colonoscopy is covered as health maintenance in most commercially available insurance.**

