

Cervical Cancer

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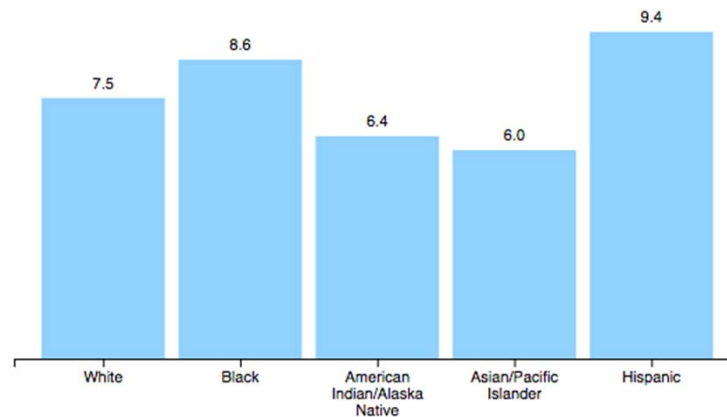
Outline

- Background
- Symptoms
- Stage
- Treatment & Side Effects
- Screening & Prevention

Background

Among Other Cancers...

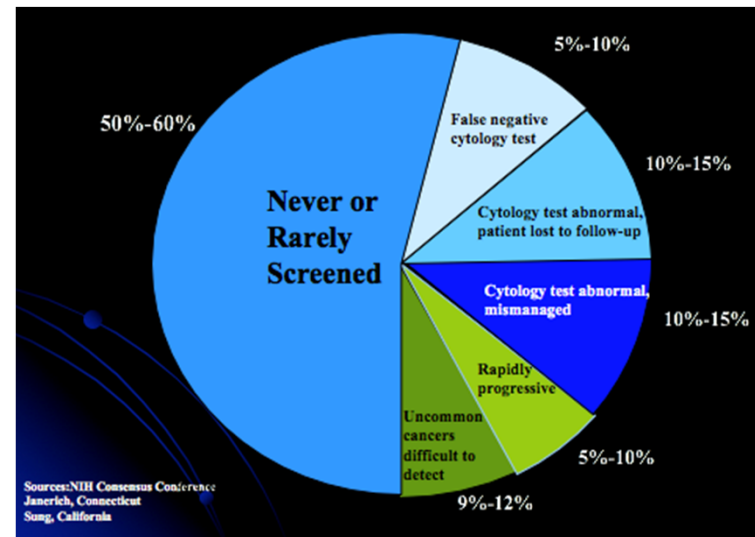
- Estimated 1% of all cancers in 2017 (ACS) in US
- Incidence cut in half between 1975 to 2013 with PAP smears
- Estimated Number of new cases in 2018 (ACS)
 - USA: 13,000 (4,170 deaths)
 - Texas: 1,400 Cases
- Average age:
 - 35-44 years old



Background

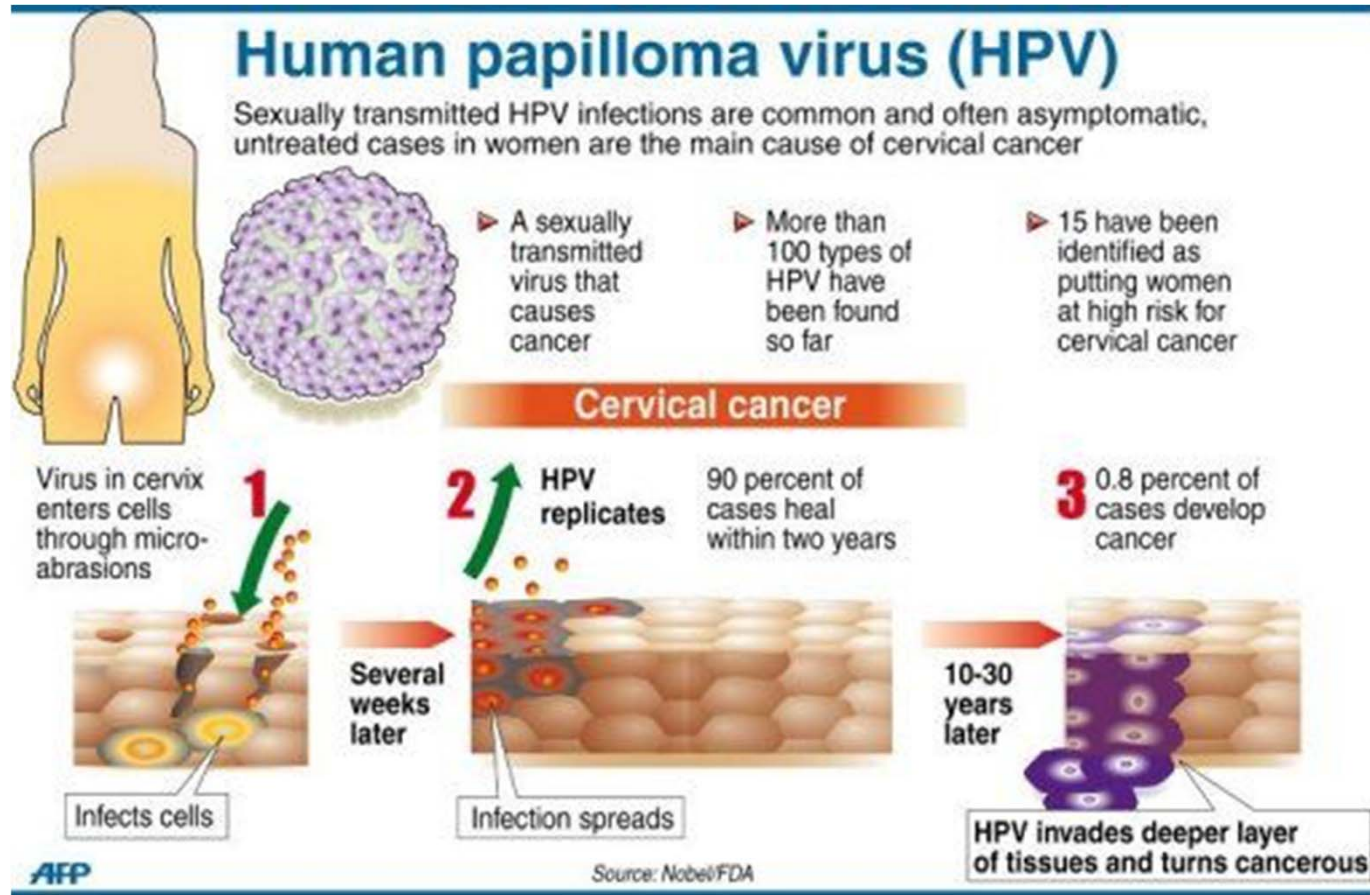
Risk Factors

- **HPV Infection Causes > 99% of cases**
 - Most patients with HPV infections do not get cancer
 - **Inappropriate screening**
- **Sexual Risk Factors:**
 - Early age of first intercourse
 - Many sexual partners
 - History of STD's
- **Immunosuppression**
- **Smoking**



Background

HPV

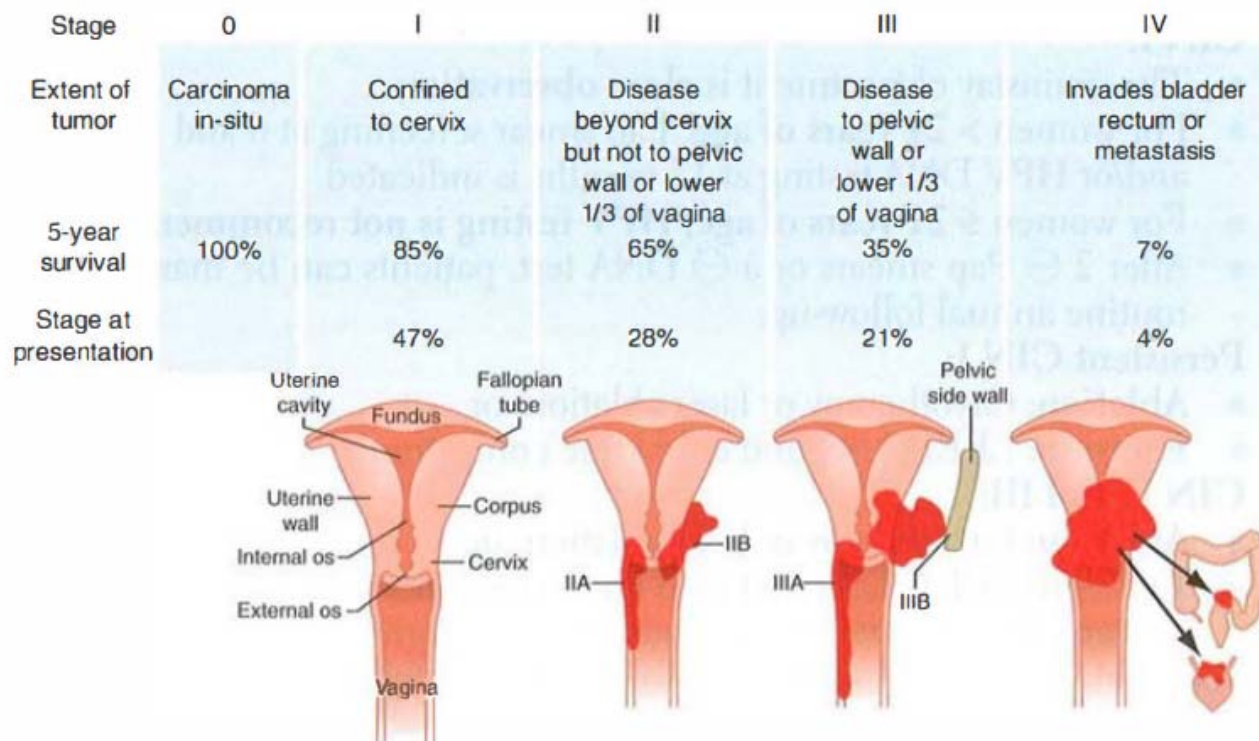


Symptoms

- Abnormal pap smear
- Symptomatic
 - Discharge with odor
 - Bleeding (post coital)
 - Pelvic pain
- Triad of advanced stage cancer
 - Leg swelling
 - Back pain (sciatica)
 - Hydronephrosis

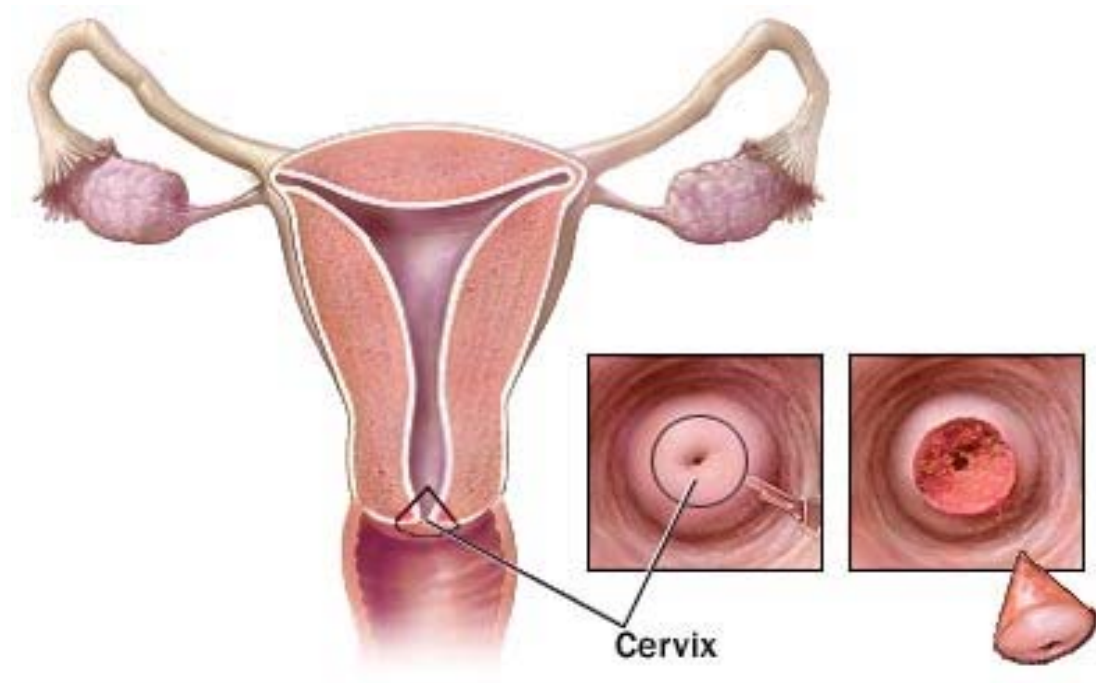
Staging

- Abnormal screening may lead to a biopsy and diagnosis
- **Physical examination and imaging** tests will assign a stage



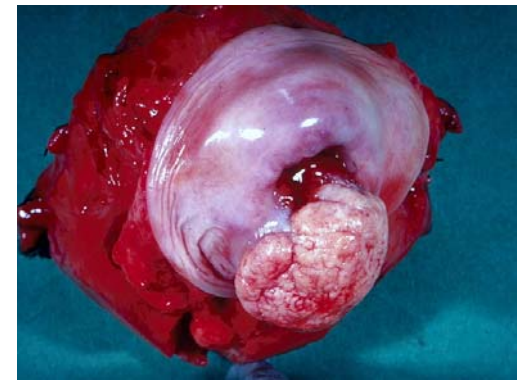
Treatment

- Stage 0 (non-invasive) and some small stage I cancer may be treated with a cold knife biopsy/conization



Treatment

- Some stage I cervical cancers may be treated with a larger surgery (radical hysterectomy) with removal of the cervix, uterus, fallopian tubes, ovaries, and lymph nodes



Treatment

- **Locally advanced** cervical cancer
 - Cancers may have spread to lymph nodes in the pelvis
 - Cancer has not spread far away or to organs outside the pelvis
 - Standard of care:
chemoradiation
 - **Radiation therapy** is combined with weekly chemotherapy to make it more effective
- **Stage IV or metastatic:**
chemotherapy alone

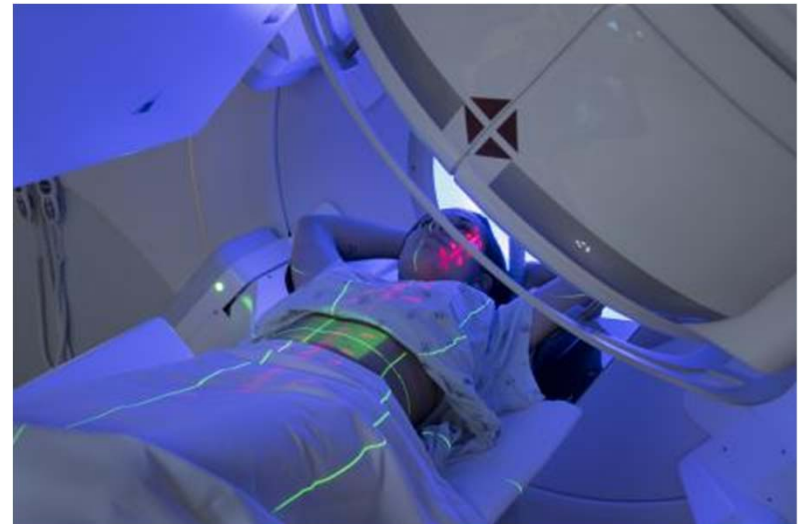


Treatment

Radiation

Radiation is given in 2 phases–

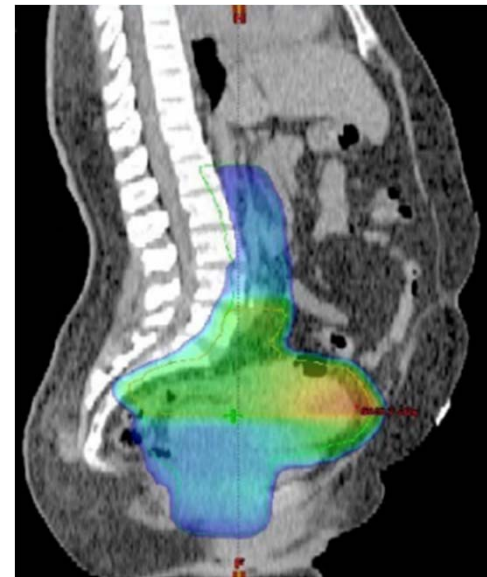
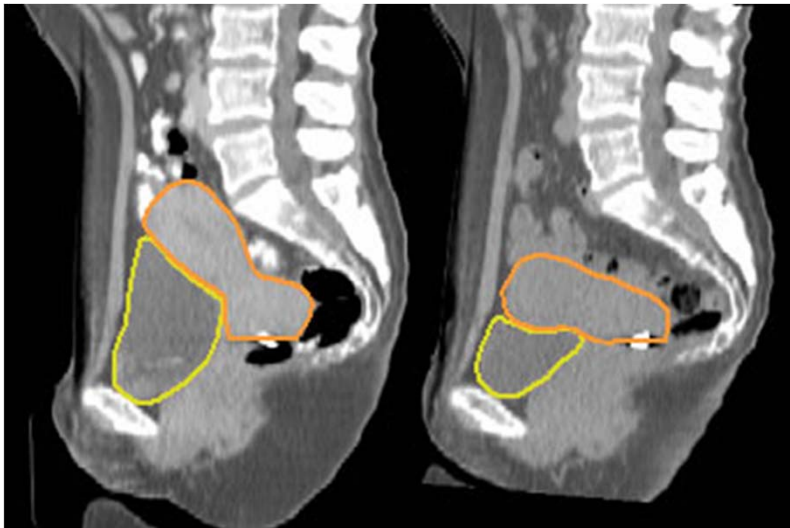
- External beam radiation
- Internal radiation (brachytherapy)



Treatment

External Radiation

- CT scan is needed to plan the radiation.
- Radiation Oncologist will “map” or draw the areas that will be targeted with radiation, taking into account internal motion
- Oncologist and **medical physics** team work together to make a plan
- Normal tissues are also drawn to be avoided



Treatment

External Radiation

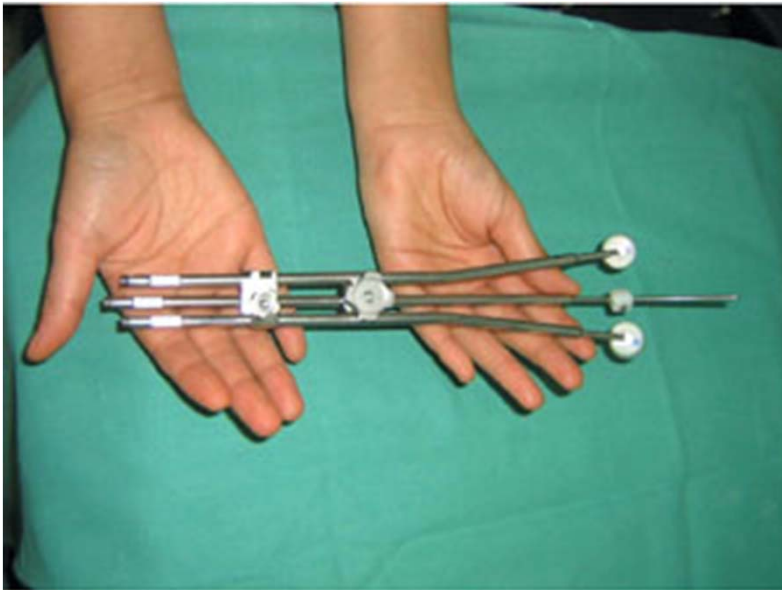
- Treatment is given **daily**, about 15 minutes each, for 5 weeks most commonly
- Daily treatments do not “burn” & are not painful
- Side effects can happen slowly over several weeks



Treatment

Internal Radiation (Brachytherapy)

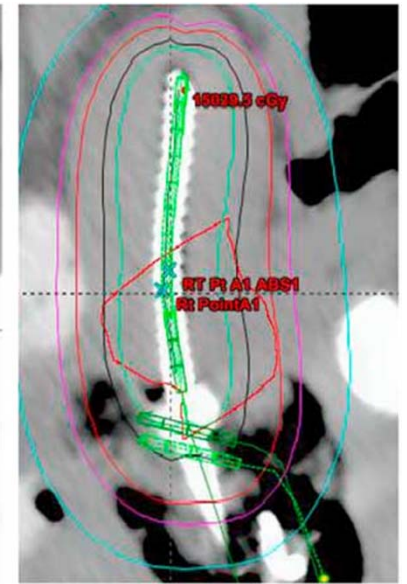
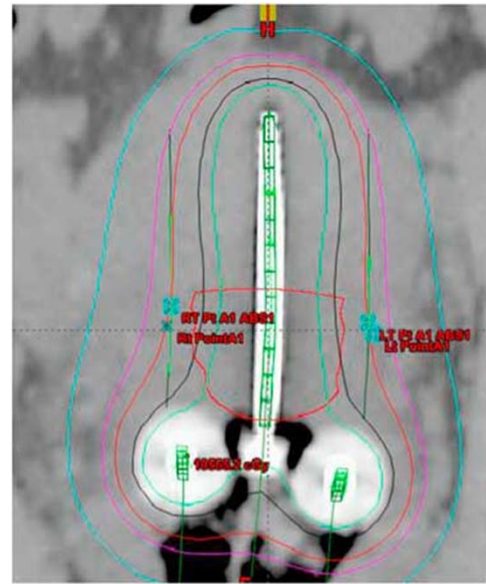
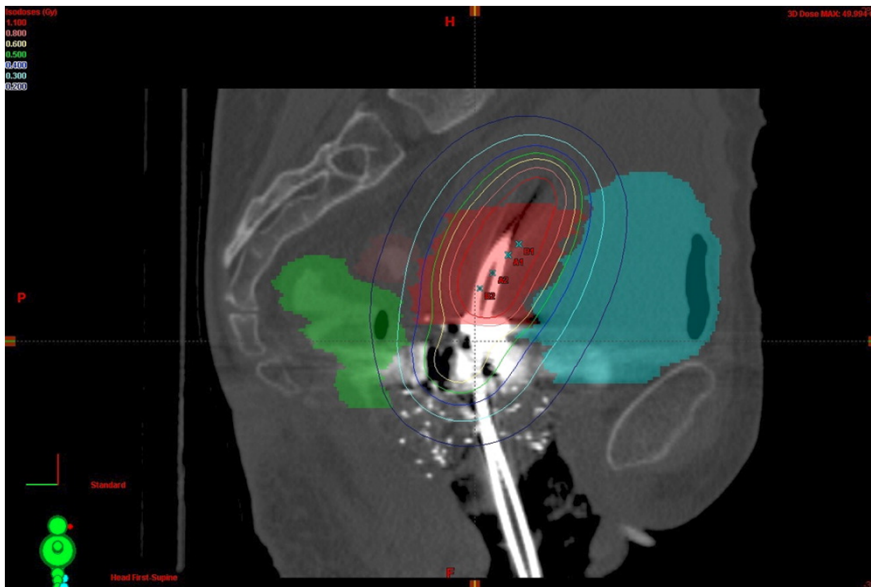
- Second phase of radiation
- Consists of 5 - 6 treatments that are done **twice a week**
- Instruments, **tandem and ovoids**, are placed inside the vagina next to the tumor



Treatment

Internal Radiation (Brachytherapy)

- Delivers a “boost” dose of radiation right next to the tumor



Radiation Side Effects

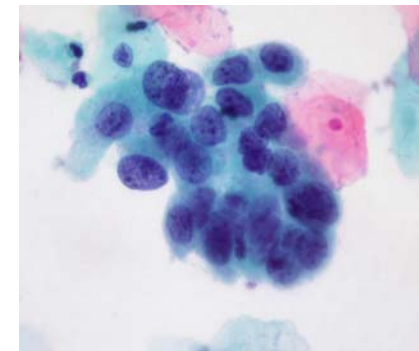
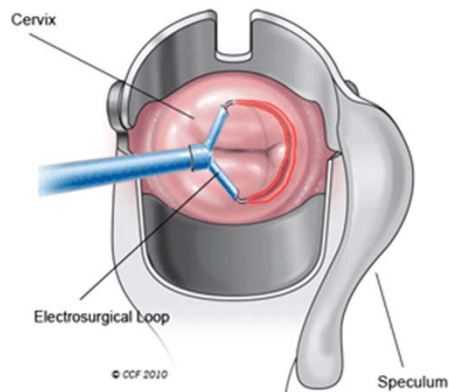
External Radiation Side Effects

- **Short term:** Occur slowly after ~ 2 weeks of treatment; **temporary**
 - Loose stools or diarrhea
 - Burning with urination or urinary frequency, similar to a urinary tract infection
 - Fatigue
 - May include nausea/vomiting
- **Long term Risks:** May occur months to years after radiation
 - Infertility, Menopause
 - Fistula formation
 - Rectal ulcer
 - Urethral stricture
 - Vaginal stenosis (vaginal dilator)
 - Secondary malignancy risk

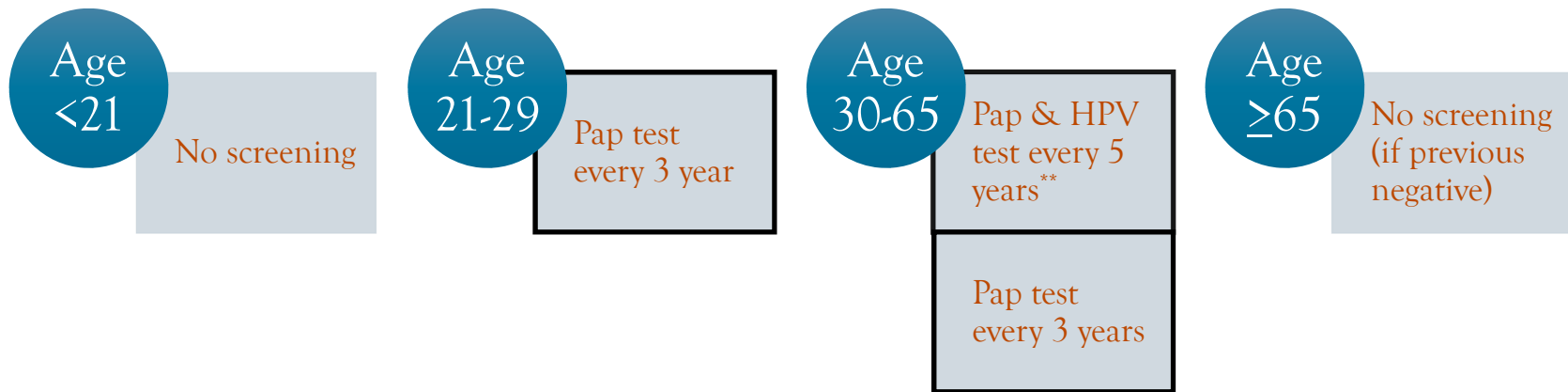
Screening & Vaccination

Two Parts Pap Smear & HPV Testing

- Women aged 21 to 65 years old
- Should be done even if an HPV vaccine has been given
- Plastic instrument used to collect a **few cells** and mucus from cervix
 - **Pap Test:** Cells are examined under the **microscope** to see if they look “normal”
 - **HPV Test:** Cells are tested for the HPV virus
 - Either or both test may be done based on age and prior results



Screening & Vaccination



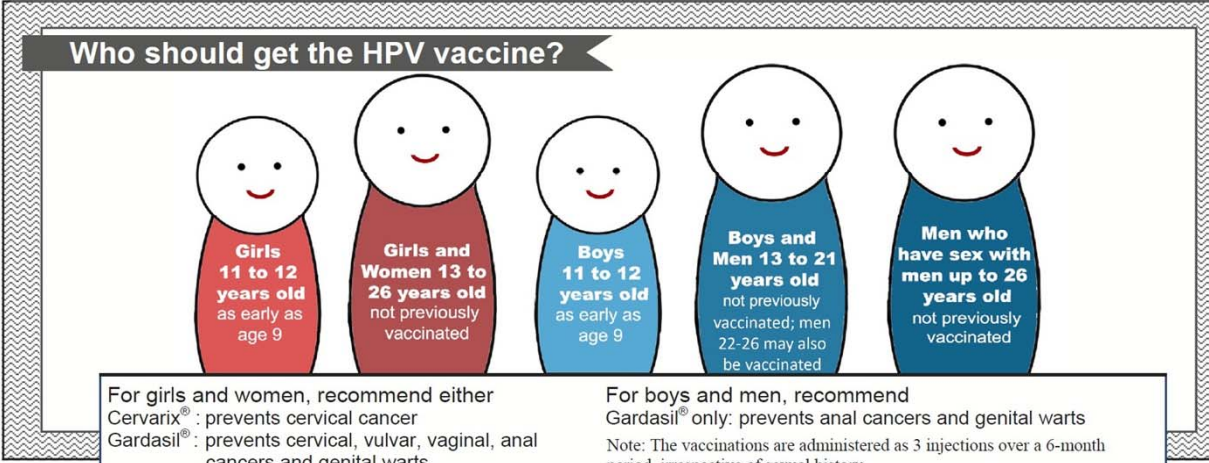
Screening & Vaccination

- Vaccination is cancer prevention

ACIP
recommendations

The Advisory Committee on Immunization Practices: Human Papillomavirus Vaccine

Who should get the HPV vaccine?



Girls 11 to 12 years old as early as age 9

Girls and Women 13 to 26 years old not previously vaccinated

Boys 11 to 12 years old as early as age 9

Boys and Men 13 to 21 years old not previously vaccinated; men 22-26 may also be vaccinated

Men who have sex with men up to 26 years old not previously vaccinated

For girls and women, recommend either Cervarix[®]: prevents cervical cancer
Gardasil[®]: prevents cervical, vulvar, vaginal, anal cancers and genital warts

For boys and men, recommend Gardasil[®] only: prevents anal cancers and genital warts
Note: The vaccinations are administered as 3 injections over a 6-month period, irrespective of sexual history.