

# Sex and Gender Differences

## HUMAN PAPILLOMA VIRUS INFECTION



### Human Papillomavirus infection or **HPV**

is a group of >200 related viruses and is the most common sexually transmitted infection (**STI**) in the United States.

### Risk Factors

#### FEMALE

- Increased # of pregnancies
- Can contract from both male and female partners
- 54%** in US are vaccinated



#### ALL

- Genetics
- Tobacco use
- Younger age at first sexual encounter
- Greater # of sexual partners
- Presence of other **STIs**
- Absence of vaccination against **HPV**
- Anal sex increases risk of anal cancer
- Oral sex increases risk of oropharyngeal cancer

#### MALE

- Being uncircumcised
- Inconsistent condom use
- Higher alcohol intake
- Higher incidence in men who have sex with men
- 49%** in US are vaccinated

### Prevalence

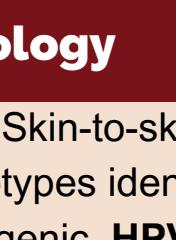
- HPV** is the most common **STI** in the U.S.
- More than 80% of people will contract **HPV** by 45
- Higher prevalence in females** due to vulnerable cervical cells
- Barrier contraception (e.g. female and male condoms, dental dam) and **HPV** vaccination (ages 9-45) can help prevent infection

1 in 3 men (ages 15+) carry **HPV** worldwide  
42% of men become infected between 14-59

### Clinical Presentation and Diagnostics

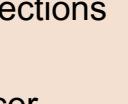
#### FEMALE

- Cervical cancer
- Vulvar cancer
- Vaginal cancer
- All people with a cervix require screening**
- Recommended: **first pap at 21 years old**
- HPV** testing
- FDA-approved at-home cervical screening test



#### ALL

- Generally asymptomatic
- May present as:
  - External warts
  - Genital and non-genital warts
  - Other cutaneous infections
  - Anal cancer
  - Oropharyngeal cancer
  - Recurrent respiratory papillomatosis in newborns
- Anal pap smears or anoscopy are sometimes performed "off label"
- Commercially available oral **HPV** testing**



#### MALE

- Oropharyngeal cancer:
  - Most common **HPV**-related cancer in men
  - 3x more likely than in women**
- Penile cancer
- 2x more likely than **HPV**-negative men to develop prostate cancer
- No male specific screening guidelines



### Pathophysiology

- Transmission: Skin-to-skin, genital, fomites
- 200 **HPV** genotypes identified
  - 12 carcinogenic, **HPV-16** and **HPV-18**
  - Low-risk strains - genital warts
- High affinity for cervical transformation zone
- Pathology
  - Cervical intraepithelial neoplasia
  - Penile intraepithelial neoplasia
- HPV** can be **transmitted vertically** from mother to newborn
- 80-90% of **HPV** infections will spontaneously resolve
  - The remaining 10-20% need continued screening



transformation zone

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Definitions & Disclaimers

References

