


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

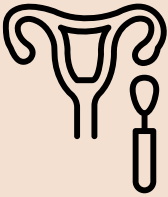


FEMALE	ALL	MALE
<ul style="list-style-type: none">Increased # of pregnanciesCan contract from both male and female partners54% in US are vaccinated 	<ul style="list-style-type: none">GeneticsTobacco useYounger age at first sexual encounterGreater # of sexual partnersPresence of other STIsAbsence of vaccination against HPVAnal sex increases risk of anal cancerOral sex increases risk of oropharyngeal cancer	<ul style="list-style-type: none">Being uncircumcisedInconsistent condom useHigher alcohol intakeHigher incidence in men who have sex with men49% 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

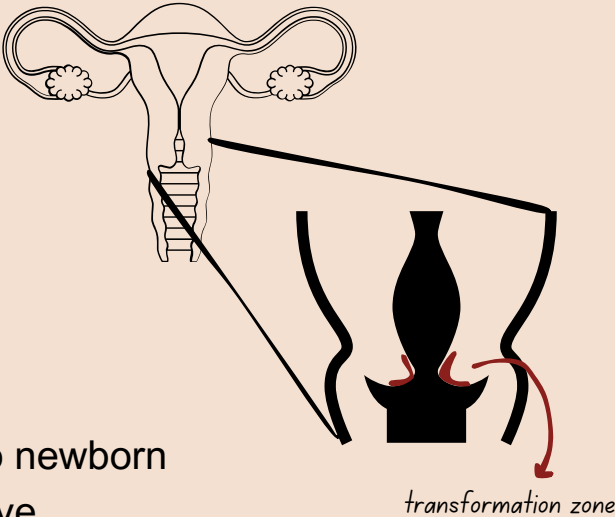
1 in 3 men (ages 15+) carry HPV worldwide
42% of men become infected between 14-59

Clinical Presentation and Diagnostics

FEMALE	ALL	MALE
<ul style="list-style-type: none">Cervical cancerVulvar cancerVaginal cancerAll people with a cervix require screeningRecommended: first pap at 21 years oldHPV testingFDA-approved at-home cervical screening test 	<ul style="list-style-type: none">Generally asymptomaticMay present as:<ul style="list-style-type: none">External wartsGenital and non-genital wartsOther cutaneous infectionsAnal cancerOropharyngeal cancerRecurrent respiratory papillomatosis in newbornsAnal pap smears or anoscopy are sometimes performed “off label”Commercially available oral HPV testing 	<ul style="list-style-type: none">Oropharyngeal cancer:<ul style="list-style-type: none">Most common HPV-related cancer in men3x more likely than in womenPenile cancer2x more likely than HPV-negative men to develop prostate cancerNo 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



Treatment

- No current treatment available for HPV infection
- Warts treatment: excision, laser, cryotherapy, or topical keratolytic agents
- Cancer treatment: excision, surgery, chemotherapy, and/or radiation