

Sex and Gender Differences

HUMAN PAPILLOMA VIRUS INFECTION



Human Papilloma Virus (HPV) is a group of over 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 pregnancies 54% of females in the US are vaccinated against HPV Women who have sex with women can contract HPV from male or female partners 	<ul style="list-style-type: none"> Genetics Tobacco use Younger age at first sexual encounter Greater # of sexual partners Presence of other STIs Absence of vaccination against HPV Anal sex Oral sex 	<ul style="list-style-type: none"> Being uncircumcised Inconsistent condom use Higher alcohol intake 49% of males in the US are vaccinated against HPV Higher incidence in men who have sex with men
<ul style="list-style-type: none"> Higher prevalence in females due to vulnerable cervical cells at the transformation zone 80% of cases occur in countries with limited health resources 	<ul style="list-style-type: none"> Over 80% of people will contract HPV by 45 Cause of <ul style="list-style-type: none"> 5% of cancers worldwide 70% of oropharyngeal cancers 4th highest # of cancer related deaths in the US 3rd highest # of cancer deaths worldwide 	<ul style="list-style-type: none"> 1 in 3 men (ages 15+) worldwide carry the HPV virus <ul style="list-style-type: none"> 1 in 5 carry high risk types 64% of men who have sex with men have HPV 42% of men become infected between the ages of 14-59
<ul style="list-style-type: none"> Female Condom 	<ul style="list-style-type: none"> Barrier Contraception Dental Dams Vaccination: Approved for ages 9-45 	<ul style="list-style-type: none"> Male Condom
<ul style="list-style-type: none"> Vulvar cancer Vaginal cancer Cervical cancer 	<ul style="list-style-type: none"> Generally asymptomatic May present as: <ul style="list-style-type: none"> Genital and non-genital warts Other cutaneous infections Anal cancer Oropharyngeal cancer Recurrent respiratory papillomatosis in newborns 	<ul style="list-style-type: none"> Penile cancer Oropharyngeal cancer: Most common HPV-related cancer <ul style="list-style-type: none"> 3x more likely than women to develop oropharyngeal cancer 2x more likely than HPV-negative men to have prostate cancer
<ul style="list-style-type: none"> Cervical intraepithelial neoplasia High affinity for cervical transformation zone HPV 16 and 18 are the cause of 99% of cervical cancer HPV can be transmitted vertically from mother to newborn 80-90% of HPV infections will spontaneously resolve <ul style="list-style-type: none"> The remaining 10-20% need continued screening 	<ul style="list-style-type: none"> Transmission: Skin-to-skin, genital, fomites 200 HPV genotypes identified <ul style="list-style-type: none"> 12 are carcinogenic, high risk strains (hrHPV) 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59 Low risk strains cause genital warts hrHPV produce E6 &E7 proteins which destroy tumor suppressor proteins (p53 and RB) Transformation to from HPV infection to cancer takes 10-20 years in the non-immunocompromised 	<ul style="list-style-type: none"> Penile intraepithelial neoplasia
<ul style="list-style-type: none"> All people with a cervix require screening Recommended: first pap at 21 years old HPV testing <ul style="list-style-type: none"> Co-testing: Both pap smear & HPV testing Reflex testing: Pap smear only if HPV positive FDA-approved at-home cervical screening test 	<ul style="list-style-type: none"> There is commercially available oral HPV testing No approved screening tests yet for oropharyngeal or anal cancer <ul style="list-style-type: none"> Anal pap smears or anoscopy are sometimes performed “off label” 	<ul style="list-style-type: none"> No screening approved specifically for individuals with a penis
<ul style="list-style-type: none"> For cervical cancer: <ul style="list-style-type: none"> Cervical LEEP procedure for carcinoma-in-situ of cervix Radical hysterectomy for higher stage cancer of cervix Radiation therapy Survival rates for HPV-related cancers: <ul style="list-style-type: none"> 64% survive cervical cancer 53% survive vaginal squamous cell cancer 66% survive vulvar cancer 	<ul style="list-style-type: none"> No current treatment available for HPV infection 90% of cases resolve within 2 years Wart treatment: excision, laser, cryotherapy, topical keratolytic agents Cancer treatment: surgery, chemotherapy, and/or radiation Survival rates for HPV-related cancers: <ul style="list-style-type: none"> 51% survive oropharyngeal cancer 66% survive anal cancer 56% survive rectal cancer 	<ul style="list-style-type: none"> Survival rates for HPV- related penile cancer: <ul style="list-style-type: none"> 80% survive if localized 50% survive if local spread 9% survive if distant spread

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Definitions & Disclaimers

References

