

# How to Prevent your Child from Getting Cancer-Causing HPV Later in Life

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- No speaker, planner nor independent reviewer has any relevant financial relationships to disclose.

- Better understanding of the following:
  - Human papilloma virus (HPV)
  - History
  - Prevalence
  - Transmission
  - Prevention
  - Treatment

- Who?
- Where?
- When?
- Why?
- Efficacy

# What is Human Papilloma Virus?

- Commonly referred to as HPV
- Group of extremely common viruses
- Exists worldwide
- Most common sexually transmitted infection

# Human Papilloma Virus (HPV)

- > 200 known types of HPV
  - Approximately 30 can affect the genitals
    - Some cause warts
    - At least 14 are cancer-causing (known as high risk)
  - Can lead to the following cancers:
    - cervical
    - penile
    - anal
    - vulvar
    - oropharyngeal



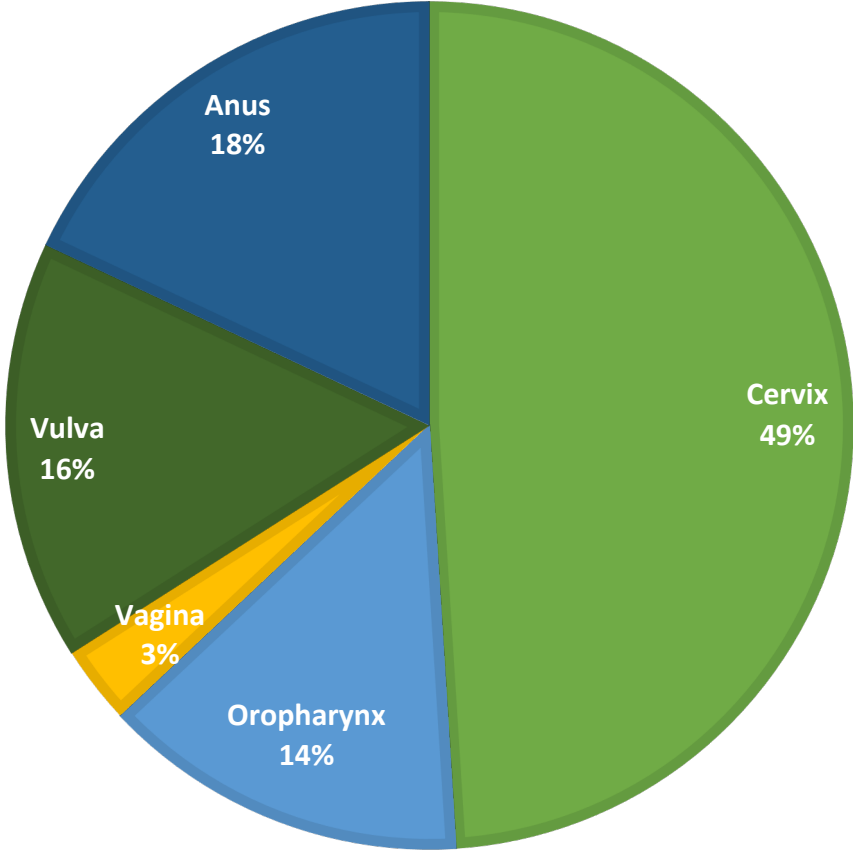
# Number of new cancer cases each year:

42,700 new cases of HPV-associated cancers occur in the United States each year.

# New Cancer Cases

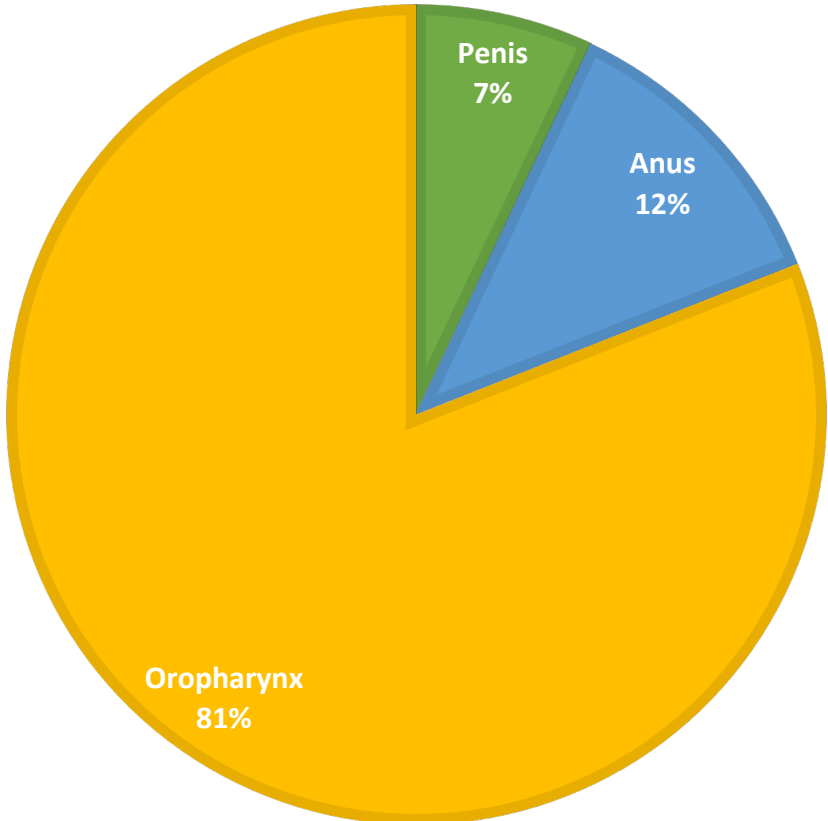
### FEMALES (25,400)

■ Cervix ■ Oropharynx ■ Vagina ■ Vulva ■ Anus



### MALES (19,900)

■ Penis ■ Anus ■ Oropharynx





- Most HPV infections will resolve spontaneously
  - 90% of HPV infections will resolve in two years
  - Latency?
- Some may progress and may lead to cancer

- Peak prevalence is age 15-25 years old
- Usually within 10 years of sexual debut
- 80% of people will have HPV by age 50

- Skin-to-skin contact

## VACCINE:

- Who gets it?
- When do they get it?
- Where do they get it?

- Routine screenings
  - Pap/HPV screening
- Appropriate follow-ups for abnormal findings
  - Repeat pap/HPV
  - Colposcopy
  - Cryotherapy
  - LEEP
  - More extensive excisional surgery
- Treatment of warts
  - Freezing
  - Acid application
  - Laser
  - Topical medications

# Penile Warts



# Vulvar Warts



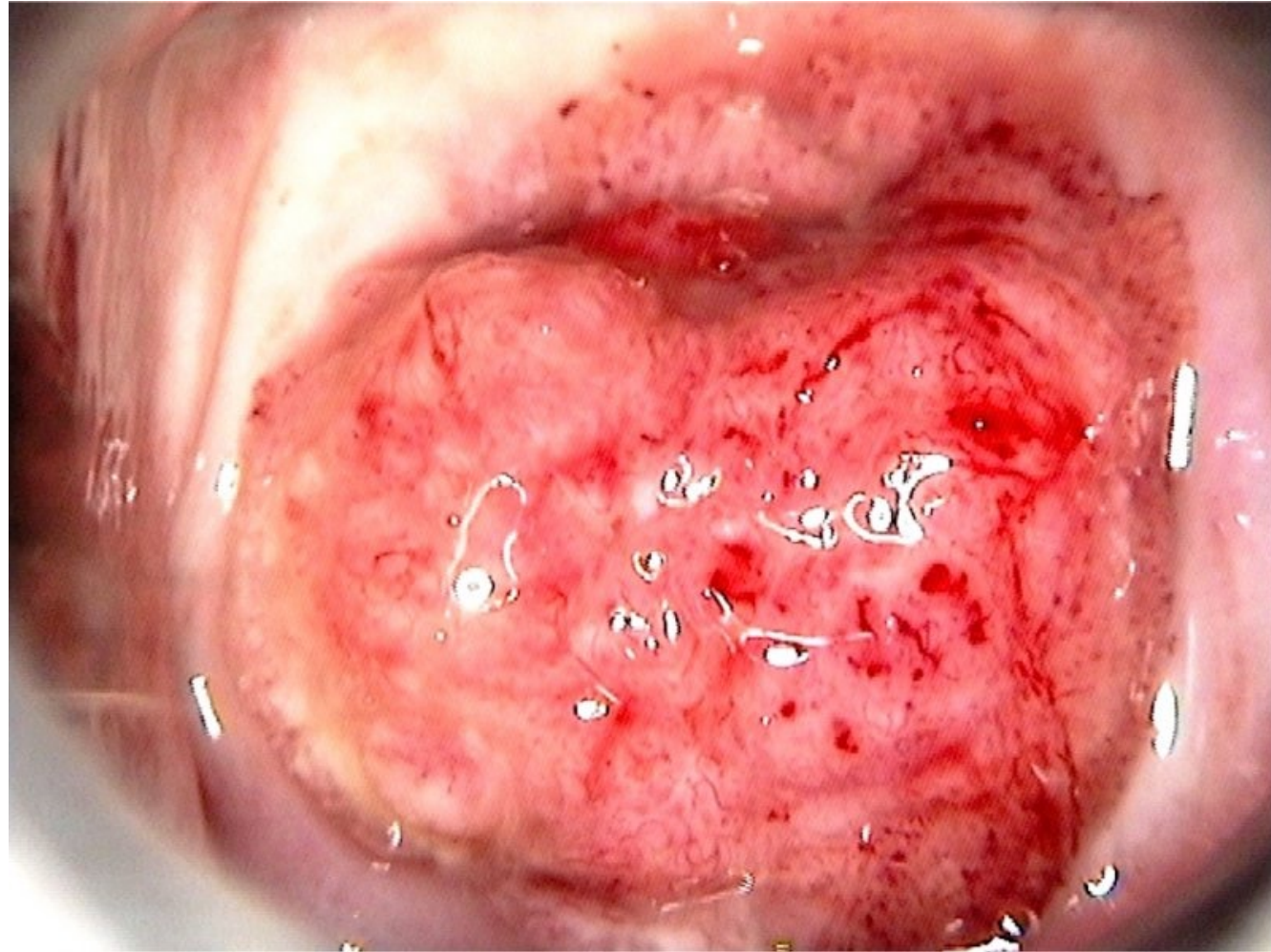
# Perianal Warts





- 4th most common cancer in females
- Breast, lung, and colorectal are more common
- Virtually all cases of cervical cancer are from HPV
  - 50% are from type 16
  - 20% are from type 18

# Cervical cancer



- 90% are caused by HPV type 16 and 18.
- Females have higher incidence than males.

- Non-HPV causes
  - Tobacco and alcohol
- Majority of these cancers are now HPV related

# Oropharyngeal Cancer



Source: UpToDate [1], Smith KA, Baxwood EJ, Churney JH. Site-Specific  
of Oropharyngeal Cancer. JAMA. 2019;321(10):1000-1008.  
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- 2006 Gardasil 4
  - 6,11,16, and 18
- 2009 Cervarix
  - 16 and 18
- 2014 Gardasil 9
  - 6, 11 16, 18, 31, 33, 45, 52 and 58

- Gardasil 9
  - 6, 11 16, 18, 31, 33, 45, 52 and 58
- Available in US
- Is it safe?
  - US Vaccine Safety System
- Males and females 9-45 years old

- Available to males and females ages 9-45
- Ideal age: male and female at ages 11-12
- Off-label use



# Where?

- Pediatric offices
- Public health office/county health department
- Family medicine office/primary care office
- Women's health providers
- BCH, of course!

# When to get it?

- Ideal to administer vaccine before onset of sexual activity
- Usually given between 11-13 years old
- <15yo needs 2 doses
  - Initial dose
  - 2<sup>nd</sup> dose: between 6-12 months
- >15yo needs 3 doses
  - Initial dose
  - 2<sup>nd</sup> dose: 2 months
  - 3<sup>rd</sup> dose: 6 months

- Protection against virus:
  - How? Antibody response to HPV types 1 month after series completed in 98% of people vaccinated.
  - HPV vaccines are highly immunogenic.
- Effective:
  - Almost 100% effective in reducing HPV strands in vaccine.
  - 86% effective to reduce cancer.
  - 71% effective to reduce incidence of genital warts.

- The World Health Organization
  - [https://www.who.int/news-room/fact-sheets/detail/human-papillomavirus-\(hpv\)-and-cervical-cancer](https://www.who.int/news-room/fact-sheets/detail/human-papillomavirus-(hpv)-and-cervical-cancer)
- The Center for Disease Control
  - <https://www.cdc.gov/hpv/index.html>
- Gardasil 9
  - <https://www.gardasil9.com/>
- The American Academy of Pediatrics
  - [www.aap.org](http://www.aap.org)

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