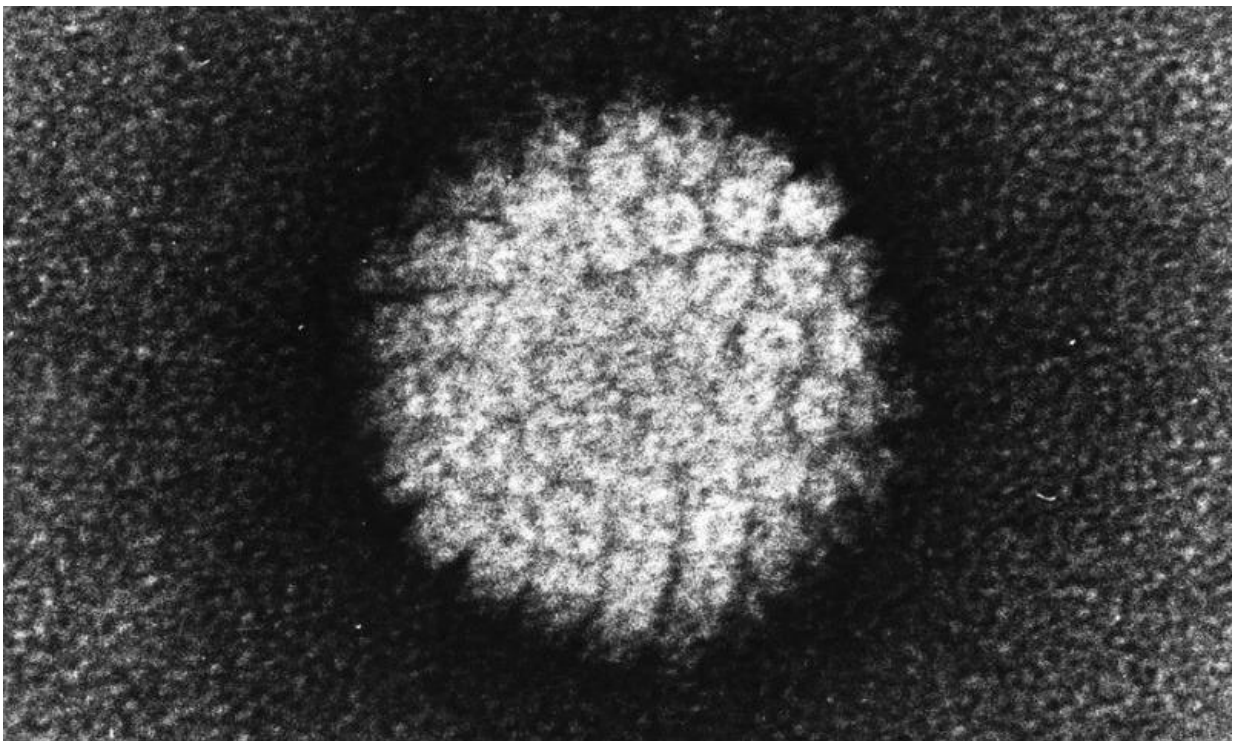


Estimate of the national burden of HPV-positive oropharyngeal head and neck cancers

August 29 2019



Electron micrograph of a negatively stained human papilloma virus (HPV) which occurs in human warts. Credit: public domain

Over the last two decades, there has been a rise in head and neck cancers in the oropharynx, a region in the back of the throat that includes the

tonsils and the base of the tongue. The rise of this type of cancer has been linked to the human papillomavirus (HPV), a very common sexually transmitted disease. Investigators from the Dana-Farber/Brigham and Women's Cancer Center (DFBWCC) have conducted the largest and most comprehensive study to date on the incidence of HPV-positive oropharyngeal head and neck squamous cell carcinoma (OPSCC) in the United States population, finding that 75 percent of oropharynx cancers are related to HPV. They report that the U.S. incidence of HPV-related throat cancer is 4.6 per 100,000 people, peaking in those aged 60-64. Their results are published in *Cancer Epidemiology, Biomarkers and Prevention*.

"Patients with HPV-related oropharynx cancers are now one of the most common patients we see in the DFBWCC Head and Neck Oncology Program," said corresponding author Danielle Margalit, MD, MPH, a radiation oncologist at the Brigham/Dana-Farber. "Through our study, we now have a clearer picture of the extent to which oropharynx [cancer](#) affects Americans. This reinforces just how important it is to educate patients about the HPV vaccine, the importance of quitting smoking as well as safe sex practices—particularly oral sex, which is how we believe oral HPV is mostly contracted."

HPV-positive OPSCC is distinct from HPV-negative OPSCC in its risk factors and in its prognosis. While [risk factors](#) for HPV-negative OPSCC include drinking and smoking, the largest risk factor for HPV-positive OPSCC is having multiple sexual partners, although anyone who is sexually active is at risk of being exposed to HPV. HPV-positive OPSCC tends to be more treatable than HPV-negative OPSCC, and those who have it tend to live longer.

The team, led by first author Brandon Mahal MD, looked at people within the Surveillance, Epidemiology, and End Results (SEER) Head and Neck with HPV Status database, created by the National Cancer

Institute (NCI). This database provides a representative sample of the U.S. population by age and region. The investigators analyzed those with known HPV-positive and known HPV-negative OPSCC, as well as people with OPSCC who had unknown HPV status. They then estimated the incidence of HPV-positive OPSCC for 100,000 people, using software provided by the SEER database. The team also looked at which demographic groups had the highest incidence of HPV-positive OPSCC.

The study found the incidence of HPV-positive OPSCC to be 4.61 cases out of 100,000 people. It was most common in white men under the age of 65, for whom it represents the sixth most common type of cancer. While previous studies have estimated that 70 percent of OPSCC cases were caused by HPV, this study found it to be closer to 75 percent.

The group of OPSCC patients with unknown HPV status in the database provides one limitation to the study, according to the researchers. Also, the data were taken from a 2013-2014 cycle, so the incidence rates might increase or decrease once the database updates.

"From a [public health perspective](#), the best way to address the rise in HPV-positive OPSCC is through preventative measures," said Margalit. "The HPV vaccine targets the type of HPV that causes the majority of OPSCC and is expected to decrease the cases of HPV-positive OPSCC in the future. The vaccine is recommended for children through age 26 and for some older adults as well. OPSCC requires intensive treatment once it develops, and, unfortunately, we're not seeing everyone get the vaccines that could prevent it."

More information: Brandon A Mahal et al, Incidence and Demographic Burden of HPV-associated Oropharyngeal Head and Neck Cancers in the United States, *Cancer Epidemiology Biomarkers & Prevention* (2019). [DOI: 10.1158/1055-9965.EPI-19-0038](https://doi.org/10.1158/1055-9965.EPI-19-0038)

Provided by Brigham and Women's Hospital

Citation: Estimate of the national burden of HPV-positive oropharyngeal head and neck cancers (2019, August 29) retrieved 26 February 2023 from

<https://medicalxpress.com/news/2019-08-national-burden-hpv-positive-oropharyngeal-neck.html>

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