

# Oropharyngeal cancer incidence and mortality rising in nearly all 50 states, reports new national study

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Oropharyngeal cancer incidence among men is continuing to rise rapidly in nearly all 50 states and among women living in states in the Midwest and Southeast regions, according to a new study by investigators at The University of Texas Health Science Center at Houston (UTHealth

Houston) School of Public Health in *JAMA Otolaryngology-Head & Neck Surgery*.

In addition, the investigators found that the number of people diagnosed with large tumors as well as the death rate has increased in the last decade.

"Our study is the first to assess comprehensively [oropharyngeal cancer](#) incidence and mortality trends in all 50 states according to demographics as well as tumor characteristics at diagnosis," said Ashish A. Deshmukh, Ph.D., MPH, the study's senior author and associate professor in the Department of Management, Policy and Community Health and the associate director of the Center for Health Services Research at UTHealth School of Public Health.

"Rising oropharyngeal [cancer](#) among men is a documented public health concern. Unfortunately, women in the Midwest and Southeast are also increasingly suffering from this disease," Deshmukh said.

Oropharyngeal cancer occurs in the middle part of the throat just behind the oral cavity. During the last decade, it surpassed [cervical cancer](#) to become the most common cancer caused by human papillomavirus (HPV). Nearly 20,000 oropharyngeal cancer cases are diagnosed among men and women in the United States annually.

"The marked increases in incidence among elderly men and advanced-stage tumors, as well as the concurrent increase in mortality in the last decade, are troubling," said Haluk Damgacioglu, Ph.D., the study's lead author and a postdoctoral fellow at UTHealth School of Public Health.

The investigators used the U.S. Cancer Statistics, National Center for Health Statistics (death certificate data), and the Surveillance, Epidemiology, and End Results Program incidence-based mortality data

file to examine oropharyngeal cancer incidence and mortality by demographics, tumor characteristics at diagnosis, and geography in all 50 U.S. states and the District of Columbia.

The researchers identified 260,182 cases of oropharyngeal cancer and 111,291 deaths between 2001 and 2017. They found oropharyngeal cancer incidence among men increased 2.7% annually with prominent increases among non-Hispanic white men, men aged 65 years and older, and among men living in the Midwest and Southeast regions of the country. The investigators also reported a greater than 2% per year increase in oropharyngeal cancer incidence among women living in the Midwest and Southeast regions.

Among men, oropharyngeal cancer incidence increased in all states with the exception of Alaska and Wyoming. Incidence also did not rise in the District of Columbia. Among the top 15 states with the most noticeable annual increase, eight are located in the Midwest and three in the Southeast. The Midwest states are South Dakota (6%); Kansas (4.7%); Iowa (4%); Ohio (3.7%); Indiana (3.6%); Minnesota (3.5%); Missouri (3.4%); and Nebraska (3.4%). The Southeast states are Kentucky (3.9%), West Virginia (3.8%) and Tennessee (3.8%). For women, a marked rise was also concentrated in these Southeast and Midwest states: Louisiana (3.1%), Kentucky (2.7%), Arkansas (2.6%), Mississippi (2.4%), Maryland (1.2%), and North Carolina (1.3%) in the Southeast; Indiana (2.4%), Ohio (2.2%), Iowa (2.0%), and Missouri (1.3%) in the Midwest.

During 2001-2017, male oropharyngeal cancer cases diagnosed with large tumors rose more than 4% per year. Between 2006-2017, oropharyngeal cancer mortality also increased more than 2% per year among men.

"More than 70% of oropharyngeal cancer cases are caused by HPV, and

more than 90% of HPV-associated oropharyngeal cancers could be potentially prevented if the current generation of adolescents receives the recommended number of HPV vaccine doses," Damgacioglu said.

Previous research led by study coauthor and UTHealth Houston assistant professor Kalyani Sonawane, Ph.D., shows that states in the Midwest and Southeast have some of the lowest HPV vaccination rates in the country, and at least 55% of the parents of unvaccinated adolescents are hesitant to initiate HPV vaccination.

"Overcoming vaccine hesitancy and collective efforts to scale-up HPV vaccination in the Midwest and Southeast is a public health priority, particularly given that more than 50% of all oropharyngeal cancer cases are diagnosed in these two regions," Deshmukh said.

UTHealth Houston coauthors include Yenan Zhu, MS; David R. Lairson, Ph.D.; Bijal A. Balasubramanian, MBBS, Ph.D.; and Ruosha Li, Ph.D. Anna R. Giuliano, Ph.D., of the Moffitt Cancer Center, Tampa, Florida, was also a coauthor.

The study is titled "Oropharyngeal cancer incidence and mortality trends in all 50 states in the US, 2001-2017."

**More information:** "Oropharyngeal cancer incidence and mortality trends in all 50 states in the US, 2001-2017," *JAMA Otolaryngology–Head & Neck Surgery* (2021).

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