

In new research from the University at Buffalo and the Roswell Park Cancer Institute, men with a history of chronic periodontitis were found to be at increased risk for tongue cancer, independent of their smoking status. This finding, published in the May 2007 [Archives of Otolaryngology: Head & Neck Surgery](#) <sup>1</sup>, drew news coverage from [The New York Times](#) <sup>2</sup>, [Reuters Health](#) <sup>3</sup>, [HealthDay News](#) <sup>4</sup>, [MedPageToday](#) <sup>5</sup> and other outlets.

The six-year study evaluated 51 non-Hispanic white males with squamous cell carcinoma of the tongue, and compared them with a control group of 54 males without cancer. The cancer "cases" received their diagnosis during the study period (1999 to 2005), and averaged 53 years of age at diagnosis. The study used detectable alveolar bone loss as a cumulative, quantitative measure of periodontal disease history, reflecting preexisting chronic periodontitis well before the participants' cancer diagnosis. An examiner blinded to the patients' cancer status measured the amount of bone loss in both study groups using panoramic radiographs.

After adjusting for smoking status, race, number of teeth, age and other risk factors, the study found that each millimeter of alveolar bone loss increased the risk of tongue cancer more than fivefold. No significant associations were reported for other oral variables measured, including decayed teeth, filled teeth, crowns, root canal treatments and missing teeth.

The study is reportedly the first published evidence of a possible association between history of chronic periodontitis and tongue cancer independent of smoking. However, the authors also acknowledge a range of study limitations, including small sample size, indirect measurement of periodontal disease (via radiograph), and limited or no information on several exposure variables (e.g., alcohol use, smokeless tobacco and diet). The researchers recommend larger, population-based studies to provide independent confirmation and more comprehensive assessments of confounding variables, and to evaluate lifetime tobacco exposure in men, women and subjects of other races.

While previous studies have indicated an association between chronic infection and increased cancer risk, it is not clear whether periodontal disease bacteria might have a direct effect that increases the risk of tongue cancer or whether an indirect effect (inflammation) might be the reason. As reported in a [2001 JADA article](#) <sup>6</sup>, the tongue is still the most common site of oral cancer, comprising up to 30 percent of oral cancers. Each year, over 9,000 new cases of tongue cancer are diagnosed, based on [surveillance research from the American Cancer Society](#) <sup>7</sup>. In addition, over 30,000 cases of oral cancer are diagnosed in the United States annually, and more than 7,000 deaths result from these cancers.

Although the evidence of a possible periodontitis-oral cancer association is only preliminary, the new study underscores the importance of periodontal health and appropriate oral hygiene for all individuals. Periodontitis is a bacterial infection that results in chronic inflammation and loss of tooth-supporting structures. This common condition can be successfully treated and managed. To support oral cancer prevention and improved oral health, dentists are also encouraged to take an active role in oral cancer screening and promoting tobacco cessation.

#### Footnotes

1 Tezal M, Sullivan MA, Reid ME, Marshall JR, Hyland A, Loree T, Lillis C, Hauck L, Wactawski-Wende J, Scannapieco FA. Chronic periodontitis and the risk of tongue cancer. Arch Otolaryngol Head Neck Surg 2007 May; 133(5):450-4. Available at: "<http://archotol.ama-assn.org/cgi/content/short/133/5/450>". Accessed May 22, 2007.

2 Bakalar N. At the dentist's: vicious cycle of gum disease, bone loss and cancer. The New York Times, May 22, 2007. Available at: "[http://www.nytimes.com/2007/05/22/health/22dent.html?\\_r=1&oref=slogin](http://www.nytimes.com/2007/05/22/health/22dent.html?_r=1&oref=slogin)". Accessed May 22, 2007.

3 Chronic gum disease linked to tongue cancer. Reuters Health, May 21, 2007. Available at: "<http://www.reuters.com/article/healthNews/idUSSPI18310720070521>". Accessed May 22, 2007.

4 Gum disease boosts tongue cancer risk in men. HealthDay News, May 22, 2007. Available at: "<http://www.healthcentral.com/newsdetail/408/604797.html>". Accessed May 22, 2007.

5 Groch J. Periodontitis in men linked to risk of tongue cancer. MedPageToday, May 22, 2007. Available at: "<http://www.medpagetoday.com/PrimaryCare/DentalHealth/tb/5723>". Accessed May 22, 2007.