

Postmenopausal women who smoked are more likely to lose teeth due to periodontal disease

1 March 2013

Postmenopausal women who have smoked are at much higher risk of losing their teeth than women who never smoked, according to a new study published and featured on the cover of the *Journal of the American Dental Association* by researchers at the University at Buffalo.

The study involved 1,106 women who participated in the Buffalo OsteoPerio Study, an offshoot of the Women's Health Initiative, (WHI), the largest clinical trial and observational study ever undertaken in the U.S., involving more than 162,000 women across the nation, including nearly 4,000 in Buffalo.

The UB study is the first to examine comprehensive smoking histories for participants that allowed the researchers to unravel some of the causes behind [tooth loss](#) in [postmenopausal women](#) who smoked.

The study, which appears in the journal's current issue is available at <http://jada.ada.org/content/144/3/252.full>. Smoking has long been associated with tooth loss, but postmenopausal women, in particular, experience more tooth loss than their male counterparts.

"Regardless of having better oral [health practices](#), such as brushing and flossing, and visiting the dentist more frequently, postmenopausal women in general tend to experience more tooth loss than men of the same age," says Xiaodan (pronounced Shee-ao-dan) Mai, a doctoral student in epidemiology in the UB Department of Social and [Preventive Medicine](#) in the School of Public Health and Health Professions. "We were interested in smoking as a variable that might be important."

While fewer adults lose their teeth now than in past decades, tooth loss is associated with poor [health](#)

[outcomes](#), including stroke, cancer, [rheumatoid arthritis](#) and diabetes.

In the UB study, [heavy smokers](#)—defined as those who had at least 26 pack-years of smoking, or the equivalent of having smoked a pack a day for 26 years—were nearly twice as likely to report having experienced tooth loss overall and more than six times as likely to have experienced tooth loss due to periodontal disease, compared to those who never smoked.

Participants provided information to researchers using a detailed questionnaire covering smoking history. Each participant also underwent a comprehensive oral examination and reported to the dental examiners reasons for each tooth lost. In some cases, the patient's dental records also were reviewed.

"We found that heavy smokers had significantly higher odds of experiencing tooth loss due to periodontal disease than those who never smoked," explains Mai. "We also found that the more women smoked, the more likely they experienced tooth loss as a result of periodontal disease."

On the other hand, they found that smoking was a less important factor in tooth loss due to caries. That's an important distinction, says Mai. "Periodontal disease is a chronic, inflammatory condition that may be related to the development of cancer," she explains.

The paper notes that cigarette smoke may accelerate periodontal disease and that other studies suggest that chemicals found in smoke may favor plaque-forming bacteria that could reduce the ability of saliva to be antioxidative. Nicotine also has been shown to reduce bone density and bone mineral factors while estrogen hormones have

been found to be lower among women who smoke. Mai is now interested in pursuing research that could determine whether smokers with periodontal disease are at even greater risk for certain cancers than smokers without periodontal disease.

"Tooth loss due to periodontal disease is a prevalent condition among postmenopausal women that severely impacts their dietary intake, aesthetics, and overall quality of life," says Mai. "Women now have yet another, very tangible reason for quitting smoking."

Provided by University at Buffalo

APA citation: Postmenopausal women who smoked are more likely to lose teeth due to periodontal disease (2013, March 1) retrieved 18 June 2021 from <https://medicalxpress.com/news/2013-03-postmenopausal-women-teeth-due-periodontal.html>

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