

Frequent dental X-rays linked to most common brain tumor

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People who received frequent dental x-rays in the past have an increased risk of developing the most commonly diagnosed primary brain tumor in the United States. That is the finding of a study published early online in *Cancer*, a peer-reviewed journal of the American Cancer Society. Although dental x-rays are necessary in many cases, these findings suggest that moderate use of this form of imaging may be of benefit to some patients.

Ionizing radiation is the primary environmental risk factor for developing meningioma, which is the most frequently diagnosed [primary brain tumor](#) in the United States. [Dental](#) x-rays are the most common artificial source of exposure to [ionizing radiation](#) for individuals living in this country.

To examine the link between dental x-rays and the risk of developing meningioma, Elizabeth Claus, MD, PhD, of the Yale University School of Medicine in New Haven and Brigham and Women's Hospital in Boston, and her colleagues studied information from 1,433 patients who were diagnosed with the disease between the ages of ages 20 and 79 years and were residents of the states of Connecticut, Massachusetts, North Carolina, the [San Francisco Bay Area](#), and eight counties in Houston, Texas, between May 1, 2006 and April 28, 2011. The investigators also studied information from a control group of 1,350 individuals who had similar characteristics but who had not been diagnosed with a meningioma.

Over a lifetime, patients with meningioma were more than twice as likely as controls to report having ever had a bitewing exam, which uses an x-ray film held in place by a tab between the teeth. Individuals who reported receiving bitewing exams on a yearly or more frequent basis were 1.4 to 1.9 times as likely to develop meningioma as controls. (Risks differed depending on the age at which the exams were done).

An increased risk of meningioma was also linked with panorex exams (which are taken outside of the mouth and show all of the teeth on one film) taken at a young age or on a yearly or more frequent basis. Individuals who reported receiving these exams when they were younger than 10 years old had a 4.9 times [increased risk](#) of developing meningioma. Those who reported receiving them on a yearly or more frequent basis were 2.7 to 3.0 times (depending on age) as likely to develop meningioma as controls.

The researchers noted that today's dental patients are exposed to lower doses of radiation than in the past. Nonetheless, "the study presents an ideal opportunity in public health to increase awareness regarding the optimal use of dental x-rays, which unlike many [risk factors](#) is modifiable," said Dr. Claus. "Specifically, the American Dental Association's guidelines for healthy persons suggest that children receive 1 x-ray every 1-2 years, teens receive 1 x-ray every 1.5-3 years, and adults receive 1 x-ray every 2-3 years. Widespread dissemination of this information allows for increased dialogue between patients and their health care providers," she added. A 2006 statement by the American Dental Association highlights the need for dentists to examine the risks and benefits of dental x-rays and confirms that there is little evidence to support the use of dental x-rays of all teeth in patients who do not experience any symptoms.

More information: "Dental X-rays and Risk of Meningioma."
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