



# Dental X-Rays May Be Linked to Benign Brain Tumors

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TUESDAY, April 10 (HealthDay News) -- People who underwent frequent dental X-rays in the past, before radiation doses were lowered, may be at greater risk of a usually benign form of tumor in the lining of the brain, a new study suggests.

The research doesn't definitely link dental X-rays to the tumors, which affect about 1 percent of people. It's also possible that dental X-rays, which are now given at a lower radiation dose, have nothing to do with the tumors.



Still, the study suggests that dental X-rays could be a risk factor for the tumors, called meningiomas, said study author Dr. Elizabeth Claus, a neurosurgeon at Brigham & Women's Hospital in Boston and a professor of epidemiology at Yale University School of Medicine. The findings suggest that patients should talk to their dentists about the possible dangers of X-rays and be aware of national recommendations regarding their use, she said.

"I do not get the feeling that people are aware of those guidelines," she said. "Many people are having them every six months or every year when the American Dental Association is saying once every two to three years." (That's the recommendation for the patient who's never had a cavity or only a small number of fillings and isn't at increased risk for a cavity.)

Meningiomas affect the lining of the brain and the spinal cord. More than 90 percent are classified as benign, not malignant. But in some cases they can grow to the size of a baseball and disrupt the brain's functioning, leading to vision problems, headaches, hearing and memory loss, and seizures.

Neurosurgeons often try to remove them in the most severe cases.

"They cause problems as soon as they achieve a certain size, because there is no room in the skull to accommodate growth. Any growth that is more than a couple centimeters can result in symptoms," explained Dr. Isabelle Germano, director of the Comprehensive Brain Tumor Program at Mount Sinai School of Medicine in New York City.

Radiation is linked to various types of tumors, including meningiomas. In the new study, researchers sought to

determine whether dental X-rays are connected to meningiomas that affect the lining of the brain specifically.

The researchers examined a group of more than 1,400 patients aged 20 to 79 who were treated for the tumors between 2006 and 2011, and compared them to 1,350 similar people who did not develop the tumors. The average age in both groups was about 57.

Those with tumors were more than twice as likely as the others to report having more frequent bitewing X-rays (at any time) and panorex X-rays (especially at a young age).

Bitewing X-rays allow views of the back teeth; patients bite onto a tab during the X-rays. Panorex X-rays show the whole area in and around the mouth from below the nose to the chin.

The design of the study didn't allow the researchers to specify the level of increased risk of a tumor that a person who's had dental X-rays would conceivably face. It does appear, however, that the raised risk would remain low, Claus said.

Overall, more than 92 percent of people in the study reported having had at least one bitewing X-ray.

Dr. Matthew Messina, a Cleveland dentist and spokesman for the American Dental Association, said one weakness of the study is that people's memories about their X-rays are fuzzy. "It's difficult to pin this down," he said, especially without dental records.

Messina added that the amount of radiation in dental X-rays has gone down significantly over the years, thanks to factors such as the improved speed of X-ray film and the advent of digital X-rays.

The study was also observational in nature, meaning it can show an association but not cause-and-effect.

So what should patients do?

Adult patients and parents of child patients should talk to their dentists about X-rays, Germano said. "It's always important to discuss what the X-ray is for and what the advantage is. It's not a good idea to assume that X-rays are a benign procedure," she said.

Messina agreed. "It's always good for patients to talk to their dentists about why they're getting X-rays and what is being done to shield the patient."

Overall, dentists are trying to balance the possible dangers of radiation and the usefulness of X-rays, he said. "We take dental X-rays because we're trying to make sure the person is healthy or trying to diagnose what's wrong with them."

The study appears in the April issue of the journal *Cancer*.

### More information

For more about [brain tumors](#), including meningiomas, visit the U.S. National Library of Medicine.

SOURCES: Elizabeth Claus, M.D., Ph.D., neurosurgeon, Brigham & Women's Hospital, Boston, and professor, epidemiology, Yale University School of Medicine, New Haven, Conn.; Isabelle Germano, M.D., professor, neurosurgery, and director, Comprehensive Brain Tumor Program, Mount Sinai School of Medicine, New York City; Matthew Messina, D.D.S., dentist and spokesman, American Dental Association, Cleveland; April 10, 2012, *Cancer*

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