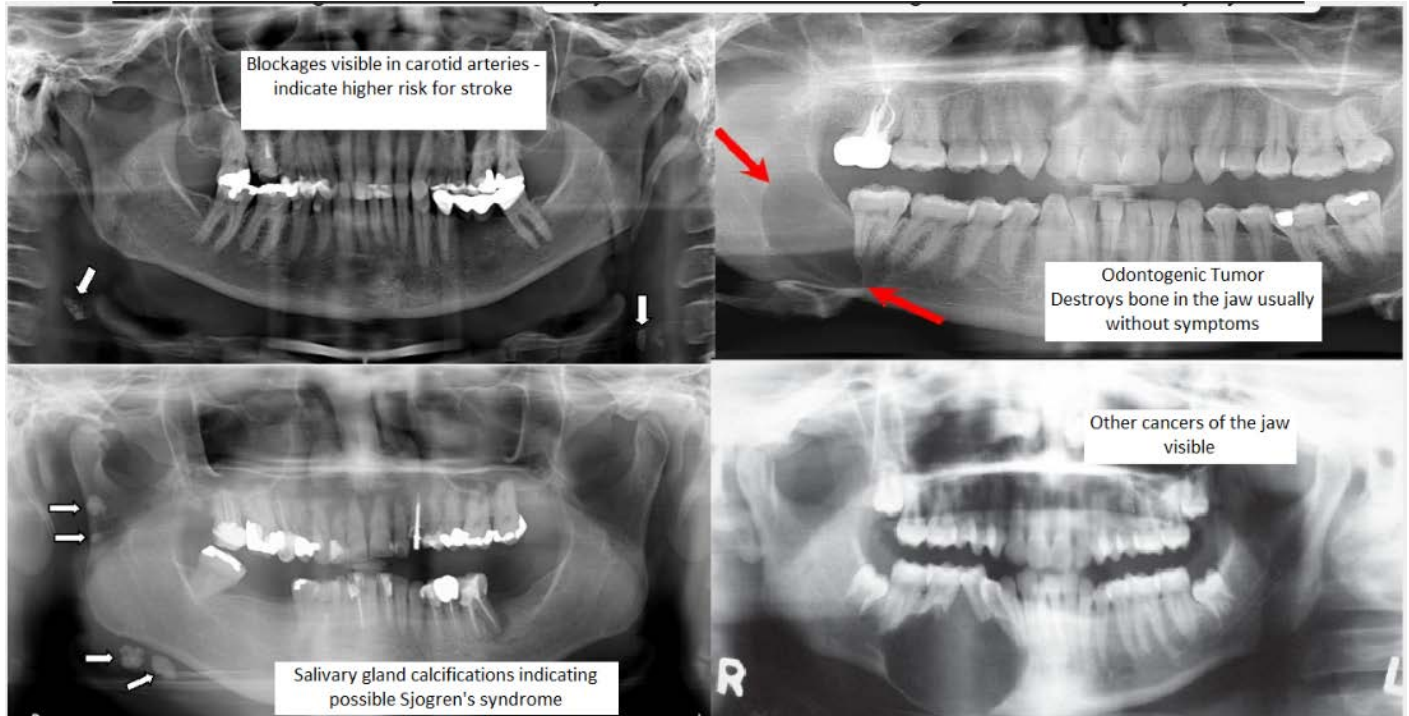


## Texas Star Dental X-ray Protocol - Updated 2023

At Texas Star Dental, we strive to provide the highest quality patient care at every visit. This includes our protocols for diagnostic tools such as dental x-rays. We follow standards set by the American Dental Association as well as the FDA to ensure you have the highest quality imaging, at the appropriate frequencies during your lifetime at our practice. We wanted to share these protocols with you and provide some educational information on why these types of x-rays are important.

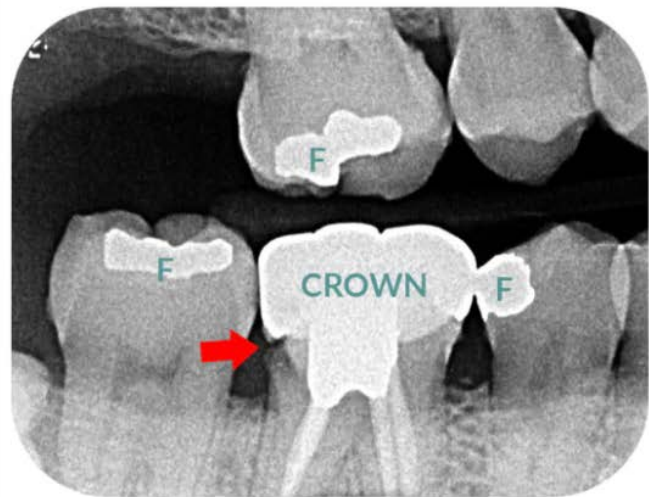
**Panoramic X-rays:** A panoramic x-ray allows us to view your head, neck, and jaw, and how they work together as a whole, which means we can more easily identify cysts, tumors, growths, jaw abnormalities, and cancer. This can help with early detection. They can also help identify the severity of bone loss caused by periodontal disease, help with orthodontic (Braces) and implant treatment, show wisdom teeth position, and show permanent tooth development and position for children who still have baby teeth. Panoramic Images are taken for children ages 6, 12, and 18. For adults over the age of 18, we take these images at your New Patient appointment and then once every 3 years after that.



**Bitewing X-rays:** Bitewing x-rays show us the tops of the teeth and are taken at a specific angle to show us cavities that might be forming in between the teeth. A bitewing shows great detail of the crown (the part of the tooth that sticks out above the gumline), but does not show us the roots. Bitewings are taken on children over the age of 6 (or earlier if we see evidence of cavities on younger patients) and at every adult New Patient exam (as part of the FMX series). For subsequent appointments, we typically take only 4 bitewings of the back teeth and 2 periapical images of the front teeth once per year. We may take additional bitewings if we see evidence of a new cavity or if you let us know at an exam about unexpected tooth pain.



*This decay was not visible during a visual examination, and was only detected when bitewings were taken. Patient did not have any symptoms, but if this had been left untreated, it would have soon become sensitive and possibly painful.*



*This crown has a gap in one of its margins, which means it needs to be replaced to prevent the decay from spreading deeper into the tooth. The white patches marked "F" are metal fillings.*

**Periapical X-rays:** Periapical X-rays show the entire tooth and root of the tooth and the surrounding bone. There are many dental problems that we can ONLY see when we take a periapical x-ray. Our protocol is to take Periapical images of the back teeth at least once every 3 years (to save money, we often combine this with your yearly bitewings and call this series of x-rays a **Full Mouth Series** or **FMX**); however, there are many circumstances when we need to take them more frequently (History of root canal, dental implant, periodontal disease, history of trauma, infection or pain). You can expect to get an FMX (combination of bitewings and Periapical images) at a new patient appointment for adults over the age of 18 and then once every 3 years. You can expect single Periapical x-rays to be taken if we are monitoring something specific like the health of a dental implant, infection, root canal, or other problem area.



*This shows a molar with severe infection surrounding its entire roots; the tooth will need to be extracted.*

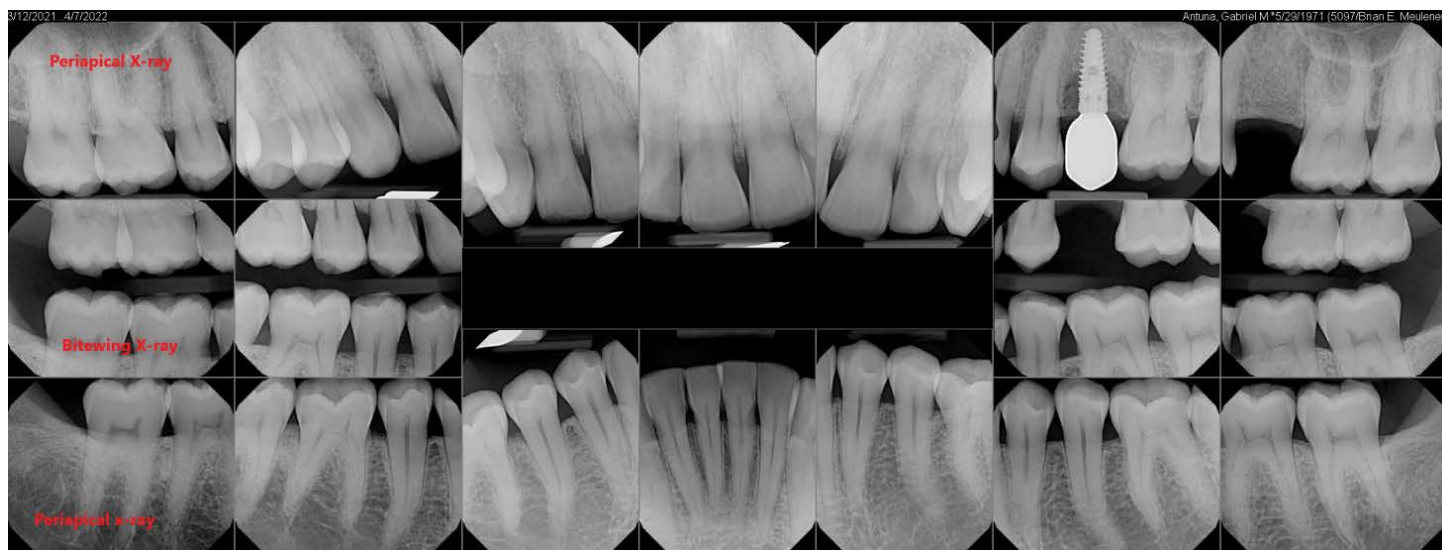


*Both of these teeth have an infection forming in the roots. Neither one was hurting the patient.*



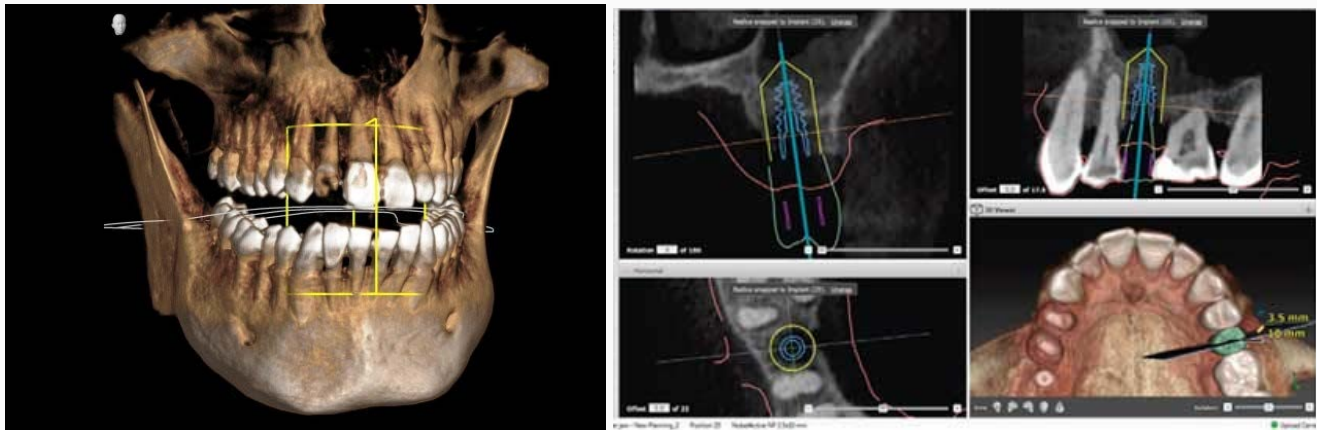
*This implant is failing. Bone loss is only visible on the periapical x-ray and would not be fully visible on any other kind of x-ray.*

**FMX (Full Mouth Series):** An FMX is a combination of bitewings and periapicals that show us ALL of the teeth crowns and roots. The FMX does NOT show us all of the jaw bone, nerve, sinus that we can see with a Panoramic x-ray. We take this series of x-rays at every New Patient appointment for patients over the age of 18 and then once every 3 years after that.





**CBCT (3D x-rays):** 3D x-rays are on their way to becoming a standard of care in dental diagnosis. It has enabled us to visualize and diagnose dental diseases in ways 2D x-rays cannot. A CT machine works by acquiring a series of 'sliced' images that are reconstructed to form a complete model of the mouth and skull. Using these slices, diagnosticians can easily pinpoint and evaluate areas of concern. Scans provide a more comprehensive view of the teeth, jaw, and surrounding structures, thereby allowing a higher level of accuracy to identify, analyze, and diagnose sinus and nasal cavity issues, TMJ disorders, tooth or jaw fractures, nerve pathways, and other lesions. Aside from its diagnostic benefits, CT scans also allow for better treatment planning. Implants can be planned in ideal positions with amazing accuracy to ensure no internal structures are jeopardized. Complex reconstructive cases can be visualized more clearly and allow for precise surgical planning. CT scans are only taken when we need a 3D image of a tooth, when planning for implant surgery, or during evaluation of certain root canal procedures. They are not routinely taken during exams unless there is a specific need.

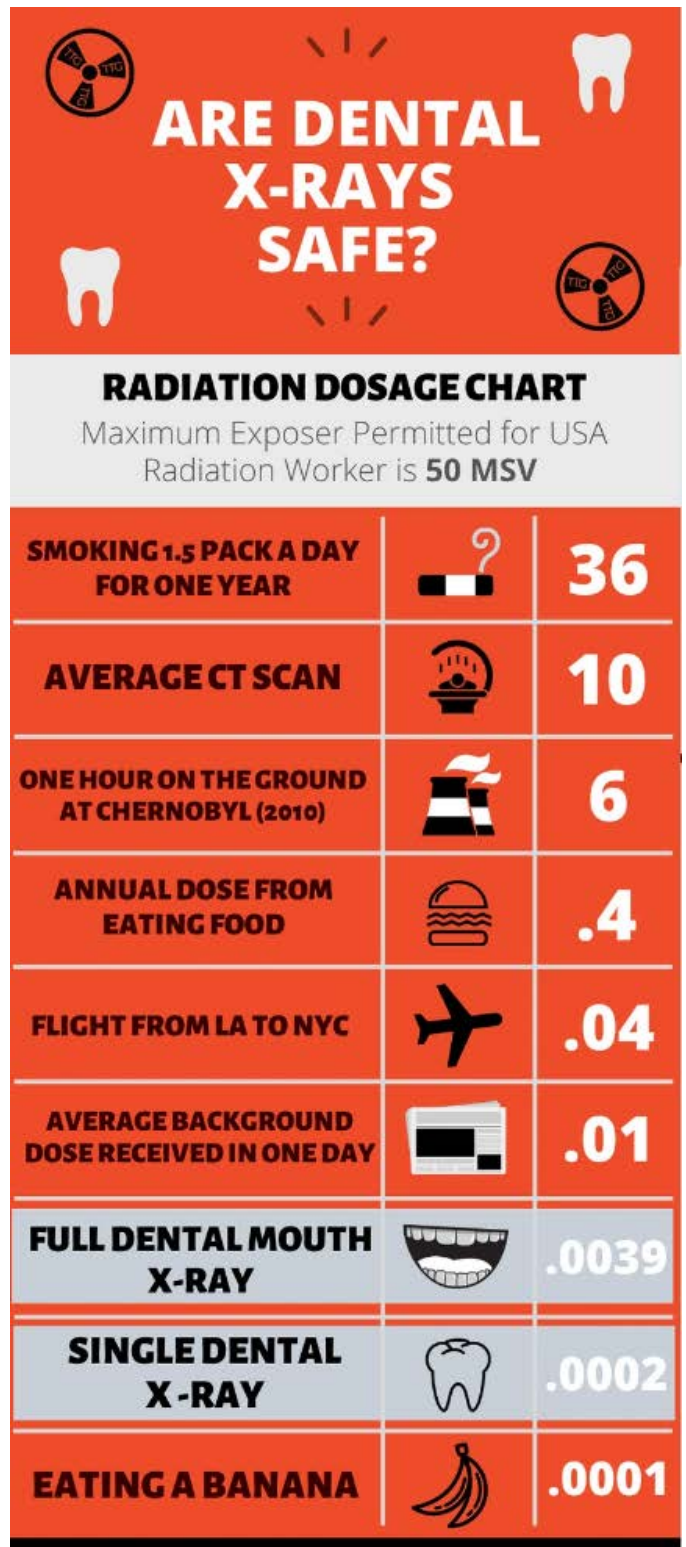


**What about Radiation?** We are exposed to radiation through a variety of sources that we come into contact with every day such as sunlight, the earth's soil and certain foods. Even air travel is a source of radiation. While exposure to radiation isn't desirable, THE SMALL AMOUNTS THAT YOU ARE EXPOSED TO IN DIGITAL DENTAL X-RAYS ARE NOT A CAUSE FOR CONCERN.

Compared to traditional x-rays, Digital X-rays emit 85% less radiation. Also please note that, at Texas Star Dental, our digital x-ray machines are regularly inspected and certified to ensure that they emit only the absolute lowest dosage.

A digital dental x-ray exposes a patient to 4 micro sieverts (a standard measurement unit used to measure radiation). In contrast, your normal every-day environmental exposure is 10 micro sieverts and an airplane flight could provide an exposure level of 40 micro sieverts. See the chart for additional exposures.

\*\*These radiation dose records included those for both handheld and wall-mounted X-ray units for film and digital imaging. The results demonstrated statistically significant differences in their doses; those for the NOMAD handheld device showed an average monthly dose of 0.28 mSv compared with 7.86 mSv for wall-mounted units.



**At Texas Star Dental, we use the handheld lower dose machines as well as digital x-rays to provide our patients with THE LOWEST RADIATION DOSE POSSIBLE.**

**Dental Insurance and X-rays:** Insurance companies vary widely on how often they will cover x-rays. For example, for an FMX (Full Mouth Series), some plans cover them every 3 years, while others only cover them every 5 years. Oftentimes, an FMX will “share frequencies” with a Panoramic image, meaning that they will only pay for one or the other (not both) if you have them taken within a certain time frame. We have no control over what your individual plan covers or doesn’t cover. Some higher quality dental plans pay for more, while others have much less coverage. We will always do our best to maximize your benefits so you have the lowest out of pocket expense possible, but this does not mean you will never have to pay out of pocket for these necessary images.

We do not base our x-ray protocols on what your insurance frequencies are. That would be considered negligent and unethical. It would mean every patient received different care based on the quality of their insurance plan. Instead, we base our protocols on what you need based on your unique history and conditions. We stand by our protocols because they are how we can ensure you are getting the most appropriate care, monitoring your unique dental conditions.

If you still have questions about your dental x-rays or want to know exactly what to expect out of pocket at each visit, please reach out to us at 281-251-8181.

<b>Children (under 18)</b>	<b>Exam Type</b>	<b>Diagnostic X-rays</b>
	New patients	4 Bitewings, 2 Periapicals ages 6+ Panoramic image over age 6
	Recall patients	4 Bitewings, 2 Periapicals taken once/year, Panoramic images taken at ages 6, 12, 18 Additional images taken, if needed
<b>Adults (18+)</b>		
	New Patients	FMX (full mouth series), Panoramic image
	Recall patients	4 Bitewings and 6 periapical images once per year FMX when due (once every 3 years) Panoramic image when due (once every 3 years) Additional images taken, if needed
	Emergency Visits (adults and children)	At least 1 bitewing, 1 periapical image, additional x-rays may be requested, depending on the type of problem a patient is experiencing.

Resources:

American Dental Association:

<https://www.ada.org/resources/practice/practice-management/radiographic-imaging>

FDA:

<https://www.fda.gov/radiation-emitting-products/medical-x-ray-imaging/selection-patients-dental-radiographic-examinations>



---

**TEXAS STAR**

---

**D E N T A L**