

Digital Dental Radiographs (X-Rays)

Information from Publications and Recommendations of the ADA, the FDA and the National Council on Radiation Protection Measurements (NCRPM) adopted by the AAPD

Dental Radiographs are valuable aids in oral health care and are used to diagnose and monitor oral diseases, evaluate trauma, and monitor dentofacial development.

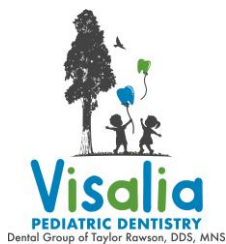
When Should We Get Our Child's First Dental Radiographs? The timing of the initial radiographic examination should not be based upon the patient's age, but upon each child's individual circumstances. Because each patient is unique, the need for dental radiographs can be determined only after consideration of the patient's medical and dental histories, completion of a thorough clinical examination, and assessment of the patient's vulnerability to environmental factors that affect oral health [i.e. the patient's risk for developing cavities]. In the case of trauma, first radiographs might be under the age of 1. In the absence of obvious dental decay or infection, we recommend taking the first radiographs only after all the baby teeth have all erupted into the mouth and the contacts between the teeth can no longer be visualized directly for examination.

What are those Hand-held Radiograph Units used at Visalia Pediatric Dentistry all about?

Hand-held units have numerous advantages, including that they facilitate imaging in young patients, produce much less X-ray scatter and they result in much less radiation exposure than wall mounted units. Studies of these hand-held devices found that radiation exposure is considerably less than for wall-mounted systems, 28.07 times *less* exposure,



to be exact. Our staff is fully trained and certified in those techniques that will minimize radiation dosing. *These studies concluded that the radiation dosing, when using digital hand-held X-ray units was so low, in fact, that they no longer recommend routine use of shielding patients for dental imaging (American College of Radiology and the Image Gently Alliance, the FDA, and the National Council on Radiation Protection and Measurements).*



How Much Radiation Exposure Will My Child Experience with Digital Dental Radiographs?

The National Council on Radiation Protection and Measurements (NCRPM) has indicated that the average individual in the US experiences approximately 6.2 millisieverts (mSv) per year, 3.1 mSv of which is naturally occurring. Two digital dental bitewings will expose your child to approximately 0.0025 mSv.

By way of comparison, the amount of radiation produced when we take 2 bitewings with our hand-held device, is equivalent to the following daily routine exposures to radiation: Simply living on earth; each day of life we are exposed to 0.0085 mSv of naturally occurring radiation (more than 3 times the radiation of that which is produced by 2 bitewings) and to 0.0062 mSv from inhaling air (2.5 times the radiation from 2 bitewings)

The recommendations of the 2021 ADA/FDA guidelines (adopted by the AAPD) are summarized in the chart below. These recommendations are subject to clinical judgment and may not apply to every patient.

Patient Age and Dental Developmental Stage

Adapted from AAPD 2021 Guidelines "Prescribing Dental Radiographs for Infants, Children, Adolescents, and Individuals with Special Health Care Needs"

Type of Encounter	Child with Primary Dentition (Baby teeth only)	Child with Transitional Dentition (Baby teeth and adult teeth)	Adolescent with Permanent Dentition (Adult teeth only)	Adult/Partially Edentulous
New Patient being evaluated for oral diseases (tooth and gum diseases)	Individualized radiographic exam consisting of selected periapical/occlusal views and/or posterior bitewings to visualize between the teeth	Individualized radiographic exam consisting of posterior bitewings with panoramic exam or posterior bitewings and selected periapical images	Individualized radiographic exam consisting of posterior bitewings with panoramic exam or posterior bitewings and selected periapical images. A full series of radiographs is preferred with the patient has clinical evidence of generalized oral disease or a history of extensive dental treatment	
	(Bitewings and PA's)	(Bitewings and PA's)	(Bitewings and PA's)	
Recall Patient with clinical caries or otherwise identified as being at a high risk for developing new caries (cavities)	Posterior bitewing exam at 6-12 month intervals, selected periapical images, as needed			Posterior bitewing exam at 6-18 month intervals
Recall Patient with no clinical caries and at low risk for developing new caries (cavities)	Posterior bitewings at 12-24 month intervals, selected periapical images, as needed		posterior bitewing exam at 18-36 month intervals	Posterior bitewing exam at 24-36 month intervals