Dental X-Ray Information

At Whitaker Dental Associates, our goal is to provide you with the best care possible. Every day, we work hard to provide treatment that is exceptional, comprehensive, and based on the latest advances in science and medicine.

Along with using our hands, eyes, and brains, an extremely important part of our diagnostic toolbox involves taking and interpreting dental x-rays. These dental x-rays, otherwise known as "radiographs," are safe, effective, and a necessary part of our examination process**. Radiographs provide information that can help diagnose current problems and prevent new ones from forming**. If you have questions about having dental x-rays taken, you are not alone—but we are here to help you understand the benefits and risks.

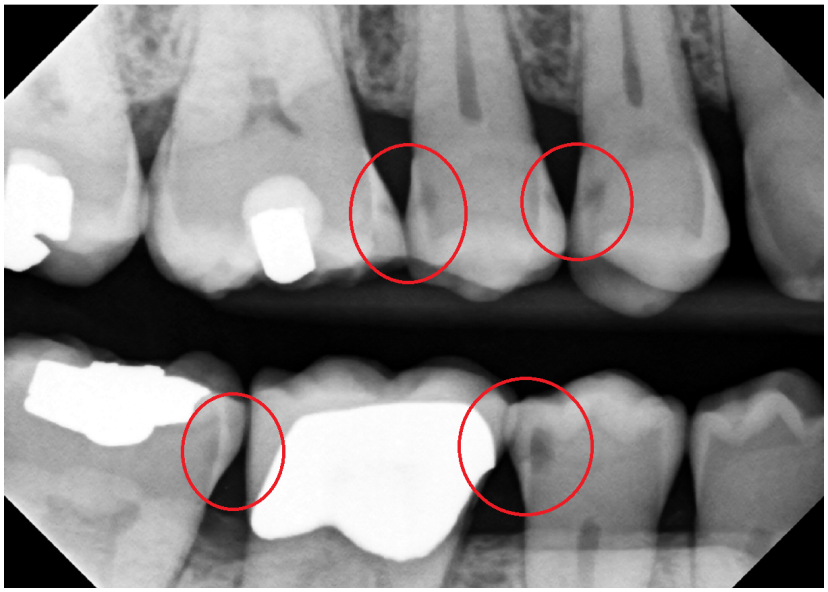
When your dentist and hygienist complete an exam, there are only certain things that their eyes can see. For example, they can see the top of teeth, the front and back sides of teeth, the tongue, and the gums. However, they **can't see in between your teeth, which is a very common area for cavities to form**. They also **can't see the bone that supports your teeth and your jaws**.

Without x-rays, your dental team can't provide you with a complete picture of your oral health, and there are **issues that may not be identified until it is very expensive or too late to fix them**.

<u>Radiograph Types and Examples:</u>

There are **three main types of x-rays** that we routinely take at our dental office. These x-rays are called **"bitewing, "periapical," and "panoramic" images**. At our office, we also have the ability to take **"cone beam" CT images**.

-A **bitewing** x-ray is typically used to diagnose **cavities between teeth** and to assess the health of the **bone around your teeth**. A bitewing image shows the upper and lower teeth at the same time, and also the crest of the bone that supports them.



The **dark areas within the red circles are cavities that are forming between the teeth.**

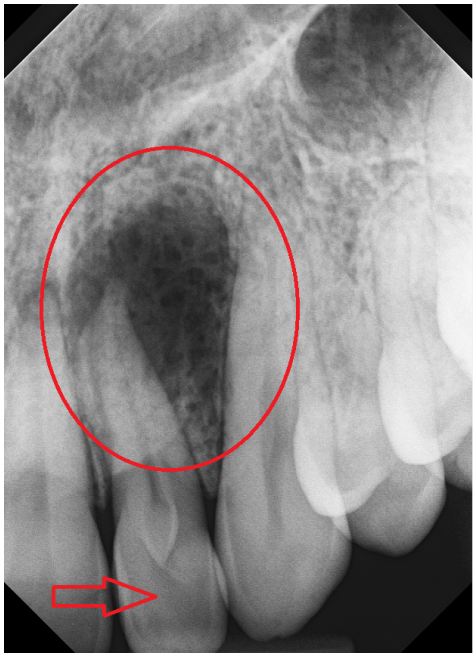
Until they get large, these cavities are often not visible to the naked eye.

However, a bitewing radiograph makes them very easy to identify.

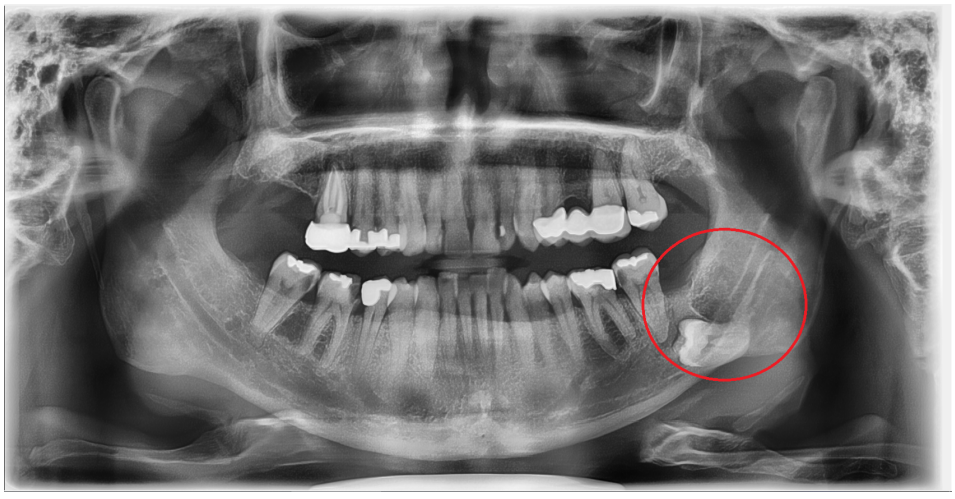
An area of severe bone loss is present within the red circle.

As this **area is below the gums, it is very difficult or impossible to judge the extent of the bone loss without bitewing x-rays.**

-**Periapical** images are used to assess the **health of tooth roots** and to look for **infections deep in the bone**. These images focus on a few teeth at a time.

	The **dark area within the circle** is a **very large infection present within the bone**. The associated **tooth** (marked with an arrow) was in need of a **root canal**. The **infection began in the tooth and spread to the bone. A root canal will treat both infections.**

-**Panoramic** images provide a view of **all of your oral hard tissues**, including **both jaws and all of the teeth**. These radiographs can be used to **detect changes with growth and development, identify changes in bone, and also to identify suspicious areas such as cysts or tumors** that are forming.

	In this panoramic image, we identified a **dark area with a lightly-colored border above an impacted wisdom tooth**. This could **possibly be a cyst,** and the patient was **referred to an oral surgeon for a biopsy.**

-**Cone beam CT** images are **three-dimensional**. They can be used to **evaluate areas for implant** placement and to thoroughly explore **changes to the teeth and bone**.

Safety Measures:

There have been many improvements in dental x-ray techniques over the years. At our office, we implement the latest advances in technology to provide **safe, high-quality images with a low radiation dose and health risk.**

-**Your dentist tailors your x-ray frequency to your specific needs**. In general, the American Dental Association recommends **bitewing radiographs at 1-3 year intervals**, depending on **your personal risk of developing cavities**. Other factors that go into this decision include your current oral health status, your age and health history, and your history of cavities or gum disease.

-The **digital x-rays** we use have a **lower dose of radiation than the film x-rays of the past**.

-We use a **lead apron with a thyroid shield** to thoroughly **protect your organs**.

-Our **digital x-ray receptors are very fast**, which means that you have **less time to be exposed to radiation**.

-Our x-ray system has **aluminum filtration**. This filtration **removes low energy x-rays** that don't help with image quality.

-We use **special x-ray alignment devices** to **reduce our chance of needing to retake an x-ray**.

Comparisons:

You may be surprised to know that **dental x-rays have a very low dose of radiation, even when compared to everyday living activities**. Here are some comparisons to help put this into perspective.

-During an **average day of living**, a person experiences a radiation dose of about **9 microSieverts.**

-During a typical **round-trip flight**, a person encounters a radiation dose of **40-50 microSieverts**.

-**Four bitewing x-rays**, which we typically take during your periodic exams at 1-3 year intervals, have a dose **of 5-6 microSieverts**. This is **around 60% of your normal daily radiation dose**.

-A **panoramic image**, which provides a wealth of information about all of your oral hard tissues, has a dose of approximately **15 microSieverts**. This is **less than the radiation dose from two days of normal living.**

-A **full mouth series of x-rays**, which shows us all of your teeth, roots, and surrounding bone, generally consists of **18 separate images**. This full set of x-rays has a dose of around **35 microSieverts**.

-**Dental x-rays do not usually even come close to having the same amount of radiation as medical x-rays**. A **medical (not dental) CT scan of a person's head**, for example, tends to have **around 2,000 microSieverts** of radiation. A **mammogram** has around **400 microSieverts** of radiation.

Ultimately, your dental team will not ask for x-rays unless they believe the x-rays will provide additional information that will help them treat you as safely as possible. We are thankful that you have entrusted us with your dental health, and we promise to work diligently to give you the best treatment. Please do not hesitate to come to us with any question or concerns you have about dental x-rays.