

LESSON 16. DENTAL RADIOGRAPHY

☞ *Read the text carefully. Pay attention to words in the bold print.*

X-ray images, also called **dental radiographs**, are among the most **valuable tools** a dentist has for keeping patient's mouth and teeth healthy. X-rays show areas of decay that may not be **visible** during a visual examination. They are also able to find decay that is developing **underneath** an existing filling and find cracks or other damage in an existing filling. X-rays may **reveal** problems in the root canal, such as infection or death of the nerve and are necessary in planning, preparing and placing tooth implants, orthodontic treatments, dentures or other dental work. X-rays are divided into two main categories: intraoral, which means that the X-ray film is inside the mouth; and extraoral, which means that the film is outside the mouth.

Intraoral X-rays are more common radiographs. They give a high level of detail that's why they are used to find caries, look at the tooth roots, check the health of the **bony** area surrounding the tooth, see the status of developing teeth, and **otherwise** monitor good tooth health. There are various types of intraoral X-rays:

- **Bite-wing X-rays** highlight the crowns of the teeth.
- **Periapical X-rays** highlight the entire tooth from the crown down **past** the end of the root to the part of the jaw where the tooth is **anchored**.
- **Full-mouth radiographic survey** or FMX. This means that every tooth, from crown to root to supporting structures, will be X-rayed using both bitewing and periapical radiographs.
- **Occlusal X-rays** are larger and **highlight** tooth development and placement.
- **Digital radiographs** are one of the newest X-ray techniques. With digital radiographs, film is replaced with a flat electronic **pad** or **sensor**. The image is electronically sent **directly** to a computer where the image appears on the **screen**. The image can then be stored on the computer or printed out or can be digitally compared to **previous** radiographs.

Extraoral X-rays show teeth, but their main focus is on the jaw or **skull**. Extraoral radiographs are used for monitoring growth and development, looking at the status of impacted teeth, examining the relationships between teeth and jaws and examining the temporomandibular joint or other bones of the face.

- **Panoramic radiographs** show the entire mouth area – all teeth on both upper and lower jaws – on a single X-ray.
- **Tomograms** are a special type of radiograph in which the dentist can **focus** on one **particular layer**, or **slice**, of anatomy while blurring out all other layers. This allows dentists to see structures that may be difficult to see with standard X-rays.

- **Cephalometric projections** are X-rays taken of the entire side of the head. They are used to look at the entire face to determine the best way to get the teeth aligned in the right way for that particular person, according to the size of their teeth and jaws.
- **Sialography** is a way of visualizing the **salivary glands** on a radiograph.
- **Computed tomography**, or CT scanning, usually is performed in a hospital and creates a three-dimensional image of the interior structures. It is used to identify problems in the bones of the face, such as tumors or fractures.

■ Glossary

anchor – zakorzeniony	tool – narzędzie
bony – kostny	to reveal – ujawniać
directly – bezpośrednio	salivary gland – gruczoł ślinowy
to focus – skupiać się	screen – ekran
to highlight – podświetlić	sensor – czujnik
image – obraz	skull – czaszka
layer – warstwa	slice – plaster, kawałek
otherwise – skądinąd, w inny sposób	underneath – pod, pod spodem
pad – panel	valuable – cenny
particular – określony, szczególny	visible – widoczny
past – (tutaj) za	X-ray – prześwietlenie rentgenowskie
previous – poprzedni	

☞ *Decide if the following statements are true or false.*


7. Dental radiography is a tool which is helpful in finding hidden tooth decay.
8. Intraoral X-rays provide a very detailed picture.
9. Digital radiograph creates one of a kind image which can't be compared with any other images.
10. Extraoral radiography focuses on the interior of the tooth.
11. Tomogram blurs the areas of an image which shows infected parts of the tooth.

☞ *Match patient's questions with dentist's answers.*


- A. Can I refuse X-rays and be treated without them?
- B. Can't my dental office use one large extraoral panoramic radiograph instead of several of the smaller intraoral radiographs?
- C. Should dental X-rays be taken during pregnancy?
- D. How often should children have dental X-rays?

E. Why do you use a lead apron?

1. It is important that we do everything that we can to reduce the amount of radiation when a patient has dental X-rays taken. The lead in the lead apron with the lead thyroid collar actually prevents the radiation from reaching the reproductive and blood forming organs and thyroid tissues. So it's crucial that you have it on during the X-rays.
2. No. It cannot be used as a substitute for a complete series of intraoral radiographs. It gives an overall view of the teeth and jaws; however it does not show as much detail as the intraoral radiograph.
3. The decision to order radiography when woman is expecting a child is a personal one. Because of the relatively low dose, it is not expected that there will be any harm to the fetus.
4. No. Treatment without the necessary radiographs is considered negligence. If a patient refuses to have necessary dental X-rays taken, then the dentist must refuse to provide patient care.
5. There is no set time interval between X-ray exposures. The radiographic exam should be based on the needs of the individual child. For example, children with decay will need X-rays more frequently than children without decay.

 *Fill in the missing terms to complete the definitions connected to dental radiography.*

1. – these are the pieces of protective apparel used in medical facilities to protect workers and patients from unnecessary radiation exposure from diagnostic radiology.
2. – it is a type of X-rays that show the upper and lower back teeth and how the teeth touch each other in a single view.
3. – a diagnostic imaging procedure that uses a combination of X-rays and computer technology to produce cross-sectional 3D images (called slices).
4. – called also FMX; a visual image of the entire oral cavity produced by radiography. They are repeated often in order to track a patient's oral history.
5. – commonly known as radiographers, perform X-rays on parts of the human body to help diagnose various medical ailments.

 *Match verbs with nouns to form common connotations (sometimes more than one choice is possible).*

take	get	do	look
put	give	make	prevent