

Dental Radiation Safety and Infection Control Curriculum



Table of Contents

Table of Contents	3
About the Author	4
Curriculum Structure	5
Lesson Structure	5
Lesson One – Purpose and Technique of Dental Radiographs	6
FOCUS: Developing Awareness for X-rays and Their Purpose	7
LEARN: Why X-rays Are Important and Proper Techniques	10
REVIEW: Purpose and Technique of Dental Radiographs	15
Sources	18
Lesson Two – Dental Radiation Safety	19
FOCUS: Focus on Patient Safety	20
LEARN: Radiation Safety Lecture	23
REVIEW: Radiology Safety	28
Sources	31
Lesson Three – Infection Prevention and Control	32
FOCUS: Focus on Infection Prevention	33
LEARN: Infection Prevention and Control	36
REVIEW: Infection Prevention and Control	41
Sources	44

About the Author



Angela McBride has been a dental assistant for over 10 years. She took an unusual path to end up in her career because she started with a bachelor's degree in sport management. When she needed a career change, she chose dentistry because she had always been interested in teeth.

Upon completing an associate degree in specialized technology, Angela worked in a dental office, gaining valuable experience in the clinical and administrative side of the industry. She is a certified dental assistant (CDA) and expanded functions dental assistant (EFDA).

Eventually, Angela put her knowledge to use as an instructor at a CODA-approved dental assisting school. Since then, she has completed an M.A. in adult learning and training and has worked with a high school online education platform to create a four-semester dental assisting course. Angela has always been passionate about passing on her knowledge to those interested in a career in dental assistance.

Lesson One – Purpose and Technique of Dental Radiographs

Lesson Overview

In this lesson, participants will learn the purpose of radiographic images and techniques used to safely expose an image.

Lesson Objectives

After completing this lesson, participants will be able to:

- Describe uses for dental X-rays
- Discuss techniques for managing patients with special medical needs
- Identify techniques for managing patients with special dental needs
- Name techniques for managing pediatric patients

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• <i>Dental Radiology Safety Purpose and Technique</i> worksheet • <i>Dental Radiology Safety and Infection Control Instructor Resource</i>	1. Print/photocopy the <i>Dental Radiology Safety Purpose and Technique</i> worksheet (one per participant).	10 minutes
LEARN	• <i>Purpose and Technique of Dental Radiographs</i> slide presentation • <i>Intro to Radiology Notes Page</i>	1. Prepare the <i>Purpose and Technique of Dental Radiographs</i> slide presentation for viewing. 2. Print/photocopy the <i>Intro to Radiology Notes Page</i> (one per participant).	30-40 minutes
REVIEW	• Dental Radiology Safety and Infection Control Scenario Cards • <i>Dental Radiology Safety and Infection Control Quiz</i> • <i>Dental Radiology Safety and Infection Control Quiz – Answer Key</i>	1. Print the <i>Dental Radiology Safety and Infection Control Quiz</i> (one per participant).	30-60 minutes

Lesson One – The Purpose and Technique of Dental Radiographs

LEARN: Why X-rays Are Important and Proper Techniques

30 – 40 minutes

Purpose:

Participants will receive a thorough introduction to the purpose of dental X-rays and techniques used to expose images safely.

Materials:

- *Purpose and Technique of Dental Radiographs* slide presentation
- *Intro to Radiology Notes* Page

Facilitation Steps:

Share the following information as you show the slide presentation. Give participants the notes page so they may write down information that is important for them to remember.

Slide 1: Introduction slide

Slide 2: Goals and Objectives

The only prerequisite for this lesson is basic dental anatomy. It's helpful to understand the structures of the tooth.

Slide 3: Introduction to Dental Radiographs

X-rays, also known as radiographs, provide your dentist access to the areas within and between your teeth. Because they provide your dentist with a complete view, dental X-rays are crucial to a thorough diagnosis and treatment plan. They help dentists observe the health of your teeth, including the roots, the position of your jaw, and the structure of your facial bones.

X-rays help the dentist identify and treat dental issues before they get worse or more complex.

Slide 4: Why Are X-Rays Useful?

Many types of dental X-rays help the dentist create a picture of a patient's oral health. The most used dental X-rays include bitewings, periapical, and panoramic radiographs. Each one

provides different information about the mouth. For example, bitewings are taken to locate signs of decay between posterior teeth.

Periapical X-rays help focus on a specific tooth or area, while a panoramic X-ray provides the entire mouth in one image.

Slide 5: How Often Are X-rays Needed?

The condition of everyone's teeth differs. Some people who have just been diagnosed with gum or dental disease may require X-rays every six months, whereas others who are not receiving ongoing dental care may only require an X-ray every few years. Your dentist may suggest a panoramic X-ray to evaluate your oral health if you're a new patient and haven't had one recently.

Slide 6: Patients With Physical Disabilities

Techniques for radiographic examinations frequently need to be changed to accommodate patients with special needs. You must be ready to adapt your methods to the unique requirements of each patient.

A physical disability may affect a person's mobility, hearing, or vision. Every dental office must make every effort to ensure that your office meets the needs of such patients. A family member or caretaker frequently goes to the dentist with a person who has a physical handicap. You might ask them to help you with the patient's physical requirements or communication. You should know typical limitations and the adjustments required to help patients with such issues.

Vision Impairment

Lesson One – Purpose and Technique of Dental Radiographs

REVIEW: Purpose and Technique of Dental Radiographs

30-60 minutes

Purpose:

Participants will apply the knowledge learned in the lecture. They will problem-solve a series of special needs by role-play, using simulated radiographic exposures.

Materials:

- Dental Radiation Safety and Infection Control Scenario Cards
- *Purpose and Techniques of Dental Radiographs Quiz*
- *Purpose and Techniques of Dental Radiographs Quiz – Answer Key*

Facilitation Steps:

1. Using their notes, have participants review the purpose and techniques of dental radiographs.
2. Divide the class into five small groups. Give each group one of the scenario cards for radiology techniques.

Potential scenarios include:

- Pediatric radiographic techniques
- Radiographic techniques for special needs patients
- Radiographic techniques for specific oral conditions
- Radiographic techniques for aging patients, patients of childbearing age, and more

3. Have each small group read through the scenario. They should choose one person from the group to be the dental assistant and one to be the patient.

Explain to the groups that they will role-play the scenario for the whole class.

4. Each group should act out the scenario for the entire class. After each role-play, a group discussion can be facilitated to answer the questions regarding that scenario.
5. Depending on how much class time you have available, you could work through five scenarios per day for an entire week for a total of 25 scenarios.

Please note that in each of the three lessons focusing on dental radiation safety, scenario cards are used in the review section of the lesson.

For planning purposes, decide which scenarios you wish to use with each lesson.

6. When participants are finished with the scenarios, instruct them to complete the quiz.
7. Have participants self-check their answers as you share from the answer key.

Name: _____ Date: _____

Purpose and Technique of Dental Radiographs Quiz

Select the best answer to the following multiple-choice questions:

1. Radiographs give your dentist access to which of the following?
 - a. Areas within and between your teeth
 - b. The root structures
 - c. The position of your jaw
 - d. All the above
2. A physical disability may affect a person's:
 - a. Mobility, hearing, and vision
 - b. Mobility and hearing
 - c. Mobility and vision
 - d. Vision and hearing
3. _____ may be helpful if intraoral images become challenging to capture on a patient with developmental disabilities.
 - a. Rescheduling the appointment
 - b. Postponing X-rays until the next appointment
 - c. Mild sedation
 - d. Retaking the X-ray until a good one comes out
4. Which of the following statements is correct?
 - a. Edentulous patients do not require radiographs because they do not have teeth
 - b. Start in the posterior for a patient with a hypersensitive gagging reflex
 - c. There are no adjustments needed for taking an X-ray on an endodontic patient
 - d. Use a cotton roll to replace any missing teeth in an edentulous patient
5. Radiographs are useful in pediatric dentistry for which of the following reasons?
 - a. Monitoring conditions of the teeth and bones
 - b. Detecting changes related to caries and trauma
 - c. Evaluating growth and development
 - d. All the above