

DENTAL RADIATION HEALTH AND SAFETY

Study Guide



RADIATION PROTECTION & INFECTION CONTROL PT II & III

2024-2025

Welcome

Welcome to the Dental Radiology (RHS) Exam Study Guide! This guide is designed to help you confidently prepare for the Radiation Protection & Infection Control Component of the Radiation Health and Safety (RHS) exam—a big step toward becoming a certified or licensed dental radiographer.

Our goal is to provide you with the key tools, knowledge, and support to help you feel prepared and ready. Let's get started!

Guide Highlights

1

Aligns with RHS exam outline

This study guide is designed to align with DANB's RHS Radiation Protection and Infection & Prevention Control each is 25% of the total exam.

2

Focused Study Content

You'll find what questions to focus on and tips to help answer exam questions.

3

Created by Licensed Dental Radiographers

This guide was put together by experienced dental radiographers to help you connect concepts to practical situations on the RHS exam.



Contents

- A. **Radiation Biology & Safety**
- B. **X-Ray Protection Tips**
- C. **Infection Prevention and Control**



GET READY TO PASS YOUR EXAM

As you get ready for your RHS exam, keep in mind that success comes from dedication, steady effort, and a solid study plan. Stay focused, take it one step at a time, and you've got this!

About the RHS Exam

The RHS Dental Radiology exam is an important step toward becoming a Registered, Licensed, or Certified Dental Radiology Technician in many states. This exam tests your knowledge of essential dental radiology principles and practices. It's a big milestone on your journey, and with the right preparation, you'll be ready to succeed!

What is a dental radiographer

A dental radiographer is a professional in the dental field who focuses on capturing, analyzing, and ensuring the quality of dental X-rays and other imaging techniques. Their role is important in helping dentists diagnose and treat patients effectively. Think of them as the behind-the-scenes experts who make sure dental teams have the clearest and safest images to work with!

Mastering dental radiography isn't just about passing the RHS exam—it's a key skill that makes you a valuable part of the dental team. With this certification, you'll be in high demand, opening doors to opportunities in general dentistry, orthodontics, oral surgery, and more.

[**CHECK OUT OUR BLOG**](#)



Radiation Biology & Safety

“Why it matters” —radiation biology and safety! In this section, you’ll learn how radiation affects the body, what dose levels mean, and the best ways to protect both your patients and yourself.

This isn’t just textbook stuff—it’s real-life knowledge that helps you practice safely and responsibly every day. Let’s break it down and keep safety front and center!



Radiation Biology & Safety

What You Need To Know

Ionization: Main source of biological damage

Dose Units:

- **Roentgen (R):** Exposure
- **Rad:** Absorbed dose
- **Rem:** Occupational exposure

Types of Exposure:

- **Acute:** Short-term, high dose
- **Chronic:** Long-term, low dose (most concerning in dentistry)

Radiosensitivity (Most to Least Sensitive):

1. Reproductive & blood cells
2. Skin and glands
3. Muscle, nerves, mature bone

Know the Key Terms

- **Ionization** = cell damage
- **Roentgen (R)** = exposure
- **Rad** = absorbed dose
- **Rem** = occupational risk

Understand Exposure Types

- **Acute** = one-time, high dose
- **Chronic** = repeated, low dose (common in dentistry)

Radiation Biology & Safety

Key Take Away

This section explains how radiation affects the body and why it's important to limit exposure in dental settings:

Ionization is what causes damage to body cells when exposed to X-rays.

Dose units help measure how much radiation is used:

- Roentgen (R) = amount of exposure in the air
- Rad = how much the body absorbs
- Rem = risk to workers over time

Types of exposure:

- Acute = high dose all at once (less common in dental)
- Chronic = low dose over time (more common in dental work and the biggest concern)

Radiosensitivity shows which body parts are more affected by radiation:

- Most sensitive: Reproductive and blood cells
- Least sensitive: Muscle and bone

Understanding this helps dental workers follow safety rules to protect both patients and themselves from long-term radiation effects.

X-Ray Protection

Let's talk protection—because safety is always in style! This section covers all the must-know strategies for minimizing radiation exposure, from lead aprons to proper positioning and equipment settings.

Whether you're behind the camera or in the chair, knowing how to protect both the patient and the operator is a key part of being confident and prepared.



X-Ray Protection

What You Need To Know

Patient:

- Use digital sensors
- 2.5 mm aluminum filter
- Collimator (ideally rectangular) 2.75 diameter
- Lead aprons + thyroid collars
- Correct exposure technique(Parellel)

Operator:

- Stand 6 ft.
- Stand behind a shielded walls
- Stand away at 90–135° from beam

Patient Safety

Focus on using fast film or digital sensors, aluminum filters, collimators, and lead aprons to minimize radiation exposure.

Operator Safety

Emphasize standing at a safe distance, using shielded walls, and maintaining the correct angle from the beam.



X-Ray Protection

Key Take Away

These protection tips help keep patients and dental workers safe during X-ray procedures:

- For patients, using digital sensors, filters, collimators, and lead aprons helps reduce how much radiation they receive.
- For operators, standing back 6 feet at an 90–135° angle, using barriers or lead, and wearing a film badge helps limit their exposure over time.

Following these tips helps prevent unnecessary radiation and keeps both the patient and the dental team safe.

Dental Radiography Infection Control

Let's keep it clean—literally! This section explores infection control and all the ways you can help prevent the spread of germs during radiographic procedures.

From disinfecting equipment to using barriers and proper PPE, you'll learn the essentials that keep both patients and operators safe.



Dental Radiography Infection Control

Key Take Away

Know What Prevents Cross-Contamination

- Gloves + barriers = protect equipment and hands
- Cup for films = keeps hands clean and avoids passing germs
- Remove gloves before touching clean surfaces or lead apron

Think in Steps Picture the process: glove up → take X-rays → handle films carefully → de-glove before touching anything clean.

Watch for Safety Keywords Questions may include “contamination,” “cross-infection,” or “clean technique”—choose the option that prevents germ spread.

Remember It's About Patient and Staff Safety Infection control is just as important as radiation safety during procedures.

Infection Control Guidelines

What are semicritical instruments?

Semicritical instruments include mouth mirrors, beam alignment devices, and sensors, which contact mucous membranes and saliva.

What are noncritical instruments?

Noncritical instruments include the x-ray tube head, which contacts intact skin.

How should noncritical instruments be handled?

They should be cleaned and disinfected with a hospital-grade intermediate-level disinfectant, and a disposable barrier should be placed when possible.



Infection Control During Image Exposure

During dental X-ray exposure, proper infection control prevents contamination and ensures patient and operator safety.

The National Dental Radiology Exam will test your knowledge of key practices, such as handling X-ray equipment avoiding cross-contamination, and using protective barriers.

Understanding these steps will help you confidently answer exam questions and apply safe techniques in a clinical setting.

Infection Control During Image Exposure

What You Need To Know

After each exposure, dry the (PSP) Phosphor Plates or sensor with a paper towel to remove excess saliva.

Place the dried PSP Phosphor Plates in a disposable container or a black transfer box away from the x-ray source.

(PSP) Phosphor Plates are placed in the transfer box only after contaminated barriers have been removed

(PSP) Phosphor Plates are placed in the scanner with non gloved hands



Infection Control AFTER Image Exposure



Dispose of Contaminated Items

Dispose of all contaminated items according to local and state regulations.

Place positioning devices in a designated area for contaminated equipment.

Place Positioning Devices



Wash Hands

Wash hands thoroughly after glove removal.

Remove the lead apron after washing hands.

Remove Lead Apron



Handling PSP Phosphor Plates

Carry PSP Plates to the scanner in a cup

Transport cup to a clean covered surface.

Use Barrier Covered Surface



Don Gloves

Don gloves before handling PSP plates and removing plates from the barrier envelope to drop them into the scanner box.

Dispose of the used barrier and remove gloves. Place the PSP plates into the scanner with clean, ungloved hands.

Dispose Barrier



Clean and Disinfect

Dismiss the patient and disinfect the treatment area with appropriate disinfectants.

Sample Exam Questions

1. When should gloves be worn during the radiography process?

- A. Only when developing radiographs
- B. Only when handling film receptors
- C. When exposing radiographs and handling contaminated receptors
- D. Gloves are not necessary for radiography

2. A periapical radiograph shows the apices of the teeth cut off at the bottom of the image. What is the most likely cause of this error?

- A. Incorrect horizontal angulation
- B. Sensor placed too high in the mouth
- C. Vertical angulation too steep
- D. Cone cut

3. On which type of radiograph is the mental foramen most commonly visible?

- A. Maxillary Central Periapical
- B. Mandibular Premolar Periapical
- C. Mandibular Molar Bitewing
- D. Maxillary Premolar Bitewing

4. You notice overlapping of the teeth on a bitewing radiograph. What positioning error most likely caused this?

- A. Excessive vertical angulation
- B. Film placed backward
- C. Incorrect horizontal angulation
- D. PID too close to the sensor

5. What should be done with semi critical items between patients if they are heat tolerant?

- A. Wiped with a dry cloth
- B. Rinsed with warm water
- C. Cleaned and heat-sterilized
- D. Sprayed with disinfectant and reused

Answer Key

1. C - When exposing radiographs and handling contaminated receptors
2. B - Mandibular Premolar Periapical
3. C - Cleaned and heat sterilized
4. C - Incorrect horizontal angulation
5. C - Cleaned and heat-sterilized



Additional Resources

Need More Support?



REVIEW MATERIALS

Prepare for the DANB Radiology exam with our self-paced, affordable review course materials, featuring instructor support, practice test and interactive activities.

PRACTICE TEST

Test your knowledge for the DANB Radiology exam with our self-paced, affordable practice test featuring 300+ questions.

DENTAL RADIOGRAPHY PROGRAM

Become a certified dental radiologist with our online program, offering flexible learning paths for beginners and experienced professionals, completed in weeks.

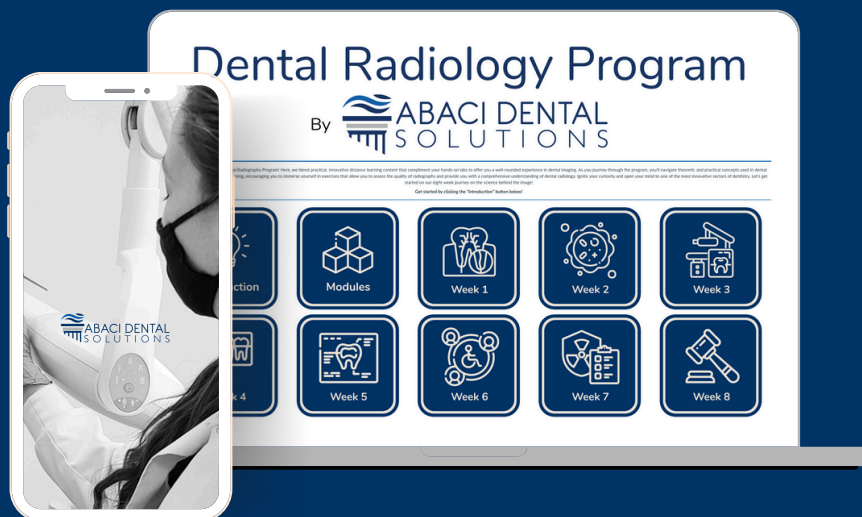
BLOG

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