The RHS exam is a component of the National Entry Level Dental Assistant (NELDA®) and Certified Dental Assistant™ (CDA®) certification programs.

There are no eligibility requirements to take the RHS exam.

The purpose of the RHS exam is to ensure that individuals meet the minimum national standard for knowledge-based competence in radiation health and safety tasks critical to the health and safety of patients and oral healthcare workers.

The RHS exam is testing on digital radiography only. There have been no conventional, film-based concepts tested on the RHS exam since July 7, 2022.

**NELDA component exams**
Anatomy, Morphology and Physiology (AMP)
**Radiation Health and Safety (RHS)**
Infection Control (ICE®)

**CDA component exams**
Radiation Health and Safety (RHS)
Infection Control (ICE)
General Chairside Assisting (GC)

Effective 01/04/2024
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Exam Outline Overview

Exam Weighting by Domain

I. Purpose and Technique (50%)
II. Radiation Protection (25%)
III. Infection Prevention and Control (25%)

Exam Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Multiple-Choice Questions</td>
<td>75</td>
</tr>
<tr>
<td>Time for Exam (minutes)</td>
<td>60</td>
</tr>
<tr>
<td>Time for Appointment (minutes)</td>
<td>65</td>
</tr>
</tbody>
</table>

The exam is administered in-person and through remote online proctoring. The candidate may choose the method they prefer. Remote proctoring allows candidates to take exams using their own computer while being monitored by webcam and microphone.

DANB uses computer adaptive testing (CAT). Exams are scored based on the difficulty of the questions answered correctly. This method can more accurately pinpoint a candidate’s ability level. Each candidate is presented with the same percentage of questions from each domain. The average candidate will answer around 50% of the questions correctly.
RHS Exam Outline

I: Purpose and Technique (50%)

A. Anatomical landmarks, conditions and materials observed on images, including but not limited to:
   1. apical pathology.
   2. caries.
   3. dental anomalies (e.g., supernumerary teeth).
   4. dental implants.
   5. edentulous arches.
   6. localization of impacted teeth and foreign objects.
   7. periodontal conditions.
   8. sinus areas.
   9. temporomandibular joint.

B. Purpose of dental images
   1. Periapical
   2. Bitewing
   3. Full mouth series
   4. Full mouth survey
   5. Occlusal
   6. Panoramic
   7. Cephalometric
   8. Cone-beam computed tomography (CBCT)

C. Technique to acquire dental images.
   1. Review patient medical and dental histories for contraindications, including medications.
   2. Intraoral techniques
      a. Paralleling
      b. Bisecting angle
   3. Extraoral techniques
      a. Panoramic
      b. Cephalometric
      c. CBCT (cone-beam computed tomography) basics
4. Technique modifications based on anatomical variations and clinical conditions, including but not limited to:
   a. tori.
   b. cleft palate.
   c. shallow palate.
   d. narrow arch.

5. Error correction, including but not limited to:
   a. unexposed, underexposed or overexposed sensor.
   b. sensor placement.
   c. position-indicating or beam alignment device placement.
   d. horizontal angulation / overlapped contacts.
   e. vertical angulation / distorted image.
   f. artifacts and foreign objects.
   g. sensor integrity.

6. Purpose and maintenance of radiographic equipment, including but not limited to:
   a. sensors (e.g., wired or wireless, PSP, CMOS, CCD).
   b. x-ray unit (e.g., control panel, extension arm, tubehead).
   c. computer (e.g., monitor, keyboard, mouse).

7. Patient management techniques (e.g., verbal, non-verbal).

8. Image viewing and mounting
   a. Anatomic landmarks
   b. Anatomic order
   c. Radiopaque vs. radiolucent
   d. Tooth names
   e. Universal Tooth numbers including primary and permanent teeth
   f. Orientation (e.g., anterior/posterior, mesial/distal, maxillary/mandibular, facial/lingual)

9. Legal requirements for maintaining dental images (e.g., HIPAA, retention, transfer).

II: Radiation Protection (25%)

A. Radiation physics
   1. Factors affecting x-ray production (e.g., kVp, mA, exposure time, dose)
   2. Radiation characteristics (e.g., wavelength, frequency, velocity)
   3. Radiation physics (e.g., absorption, penetrating power, travel)
      a. Primary
      b. Scatter (secondary)

B. Radiation biology
   1. Cell and tissue radiation sensitivity
   2. Type of exposure (e.g., acute, cumulative)
   3. Biological effect periods (e.g., latent, recovery)
4. Biological effects (e.g., short- or long-term, genetic, somatic)
5. Units of radiation measurement

C. Radiation protection
1. Oral healthcare provider exposure to radiation
2. Patient exposure to radiation
   a. Maximum permissible dose (MPD)
   b. As Low as Reasonably Achievable (ALARA)
   c. American Dental Association (ADA) and Food and Drug Administration (FDA) guidelines
3. Causes of unnecessary radiation exposure
4. Factors affecting radiation protection, including but not limited to:
   a. filtration.
   b. shielding.
   c. collimation.
   d. position indicating device (PID).
   e. beam alignment device.
5. Patient concerns about exposure to radiation
6. Informed consent or patient refusal of exposure to radiation
7. Protocol for suspected x-ray unit malfunctions

III: Infection Prevention and Control (25%)

A. Standard precautions for equipment and supplies according to ADA, CDC and OSHA, including but not limited to:
   1. breakdown and setup of treatment room.
   2. barriers.
   3. position indicating and beam alignment devices.
   4. clinical contact surfaces.
   5. critical and semi-critical instrument sterilization.

B. Standard precautions for patients and operators according to ADA, CDC and OSHA, including but not limited to:
   1. hand hygiene.
   2. Personal Protective Equipment (PPE) (e.g., selection, donning, doffing).
   3. cross contamination.
RHS Exam Suggested References

DANB exam committees use the following textbooks and reference materials to develop this exam. This list does not include all available study materials; these are the resources that exam committees have determined provide the most up-to-date information needed to meet a determined level of competence on this exam. Any one reference will likely not include all the study material required to pass the exam. Please note that previous editions of the resources below may be used for study purposes if the previous version was published within the past 5 years.

This list is intended to help prepare for this exam. It is not an endorsement of the publications. You should prepare for the RHS exam using as many different study materials as possible.

Suggested References

Additional/Optional Study Resources
  - Guidelines for Infection Control in Dental Health-Care Settings — 2003 (MMWR, Vol. 52, RR 17). www.cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm
  - Bloodborne Pathogens Standard (1910.1030)
  - An Introduction to Basic Concepts in Dental Radiography (Course #715)
  - DANB RHS Review
  - DANB RHS Practice Test
  - DANB ICE Review
  - DANB ICE Practice Test
The following is a list of acronyms that may appear on the exam.

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AAPD</td>
<td>American Academy of Pediatric Dentistry</td>
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<tr>
<td>ADA</td>
<td>American Dental Association</td>
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<tr>
<td>ALARA</td>
<td>as low as reasonably achievable</td>
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<tr>
<td>CBCT</td>
<td>cone beam computed tomography</td>
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<tr>
<td>CCD</td>
<td>charge-coupled device</td>
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<tr>
<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
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<tr>
<td>CMOS</td>
<td>complementary metal oxide semiconductor</td>
</tr>
<tr>
<td>CT</td>
<td>computed tomography</td>
</tr>
<tr>
<td>DNA</td>
<td>deoxyribonucleic acid</td>
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<tr>
<td>EPA</td>
<td>Environmental Protection Agency</td>
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<tr>
<td>FDA</td>
<td>Food and Drug Administration</td>
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<td>FMX</td>
<td>full mouth x-ray</td>
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<tr>
<td>Gy</td>
<td>gray</td>
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<tr>
<td>HIPAA</td>
<td>Health Insurance Portability and Accountability Act</td>
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<tr>
<td>HIV</td>
<td>human immunodeficiency virus</td>
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<tr>
<td>IQ</td>
<td>intelligence quotient</td>
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<tr>
<td>kVp</td>
<td>kilovoltage peak</td>
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<tr>
<td>mA</td>
<td>milliamperes</td>
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<tr>
<td>MPD</td>
<td>maximum permissible dose</td>
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<tr>
<td>MRI</td>
<td>magnetic resonance imaging</td>
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<tr>
<td>mSv</td>
<td>millisievert</td>
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<tr>
<td>OPIM</td>
<td>other potentially infectious materials</td>
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<td>OSAP</td>
<td>Organization for Safety, Asepsis and Prevention</td>
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<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
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<td>OSL</td>
<td>optically stimulated luminescence</td>
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<td>PID</td>
<td>position indicating device</td>
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<td>PPE</td>
<td>personal protective equipment</td>
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<td>PSP</td>
<td>phosphor storage plate</td>
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<td>SDS</td>
<td>safety data sheet</td>
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<tr>
<td>SLOB</td>
<td>same lingual, opposite buccal</td>
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<td>TB</td>
<td>Tuberculosis</td>
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<tr>
<td>TMJ</td>
<td>temporomandibular joint</td>
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</table>
Exam Development and Maintenance

How exams are developed
DANB exams are developed using this exam outline, which is annually reviewed by subject matter experts. The outline is developed using a content validation study, which includes a job analysis survey where practicing DANB certificants and certificate holders are asked how often tasks are performed and how critical competent performance of tasks is to the health and safety of the public and oral healthcare worker. This study is conducted every five to seven years to ensure the outline is consistent with current clinical practices. DANB’s Board of Directors approves all updates to DANB exam outlines.

How the passing standard is determined
The exam passing standard is evaluated and a Standard Setting Study is conducted the year following a Content Validation Study. DANB uses a modified Angoff standard setting method and convenes a panel of subject matter experts to evaluate and make judgements about the difficulty of the exam items and the criticality of the content of the exam items. Modified Angoff standard setting methods are commonly used to set the passing standards for certification exams. DANB’s Board of Directors approves all changes to DANB exam passing standards.

How exams are scored
In a criterion-referenced examination, a candidate must obtain a score equal to, or higher than, the passing score to pass the test. A minimum passing scaled score of 400 must be obtained to pass the exam with scores ranging from 100 to 900 points. Exam results are reported as a “scaled score” which is neither a “number correct” nor a “percent correct” score. Performance on the exam is not compared to the performance of others taking the exam.

Receiving your exam results
You will be notified by email within 1-3 business days after your exam that your exam results are available in your online DANB account.

State Regulations
Each state’s dental board implements regulations and establishes rules for delegating legally allowable duties to dental assistants. Passing one or more of the DANB component exams or earning DANB certification only conveys authority to perform these duties in those states that recognize these exams or this certification as meeting state dental assisting requirements. This information is available at www.danb.org.