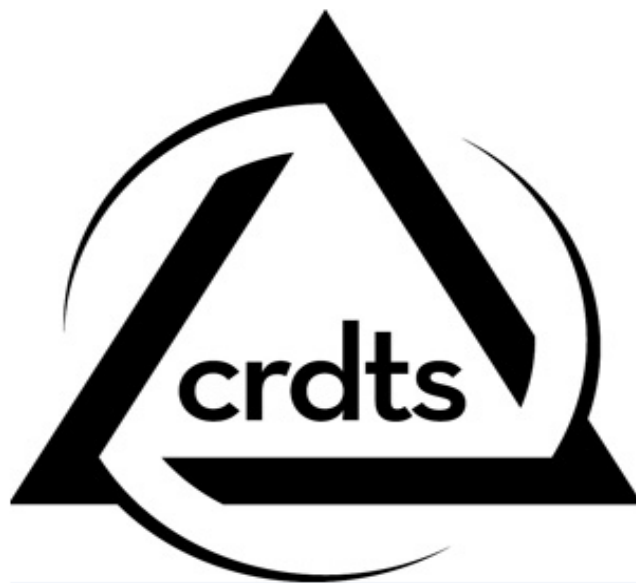


2022

LOCAL ANESTHESIA

EXAMINATION MANUAL



A National Dental and Dental Hygiene Clinical Testing Agency
Central Regional Dental Testing Service, Inc.

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Please read this candidate manual carefully and bring it with you to the examination.

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CRDTS 2022 LOCAL ANESTHESIA EXAMINATION SUPPLEMENT TO CANDIDATE'S MANUAL

Introduction

This manual has been designed to assist candidates in their preparation for the CRDTS Local Anesthesia examination. Outlined below are general directives and information for the conduct of the examination.

Mission Statement: To provide the dental examination community with test construction and administrative standardization of national uniform clinical licensure examinations. All examinations will demonstrate integrity and fairness to assist State Boards with their mission to protect the health, safety, and welfare of the public by assuring that only competent and qualified individuals are allowed to practice.

Purpose: The purpose of this examination is to assess the candidate's professional knowledge, skills, abilities, and judgment (KSAJ's) as applied in the clinical technique of local anesthetic administration and procedures.

CRDTS: The Central Regional Dental Testing Service, Inc. (hereinafter abbreviated CRDTS) is an independent testing agency which develops and administers clinical competency examinations on behalf of its member and participating states. Regional testing agencies, such as CRDTS, do not have the authority to license individuals or to implement policy that goes beyond the laws of its member states. Regional testing agencies should not be confused with state boards of dentistry.

Examiners: Candidates will be evaluated by examiners from the jurisdictions which comprise CRDTS. These examiners may be members of their State Boards or may have been selected by their State Boards to serve as examiners. All examiners are trained and calibrated to CRDTS exam criteria prior to each examination.

Application Information & Requirements

Qualified candidates may apply to take the local anesthesia examination by applying online at www.crdts.org. Once an application is completed online, it is considered a contract with CRDTS. If a candidate fails to fulfill all requirements of the application or is unable to take the exam, the policies below will apply. Additional portions of the application may be uploaded online. Detailed information regarding required documents, fees, test sites, and examination dates/deadlines are outlined on the CRDTS website and in this manual. A fully executed application complete with the appropriate documentation and fee is required to take the examination.

Confirmation of Training to Administer Local Anesthesia: Candidates applying to take the local anesthesia examination must submit proof of training at the time of application verifying appropriate educational and clinical training. For programs with multiple applicants, Program Directors may submit one blanket letter on official letterhead with a list of all eligible students verifying training to administer anesthesia.

Initial Examination/Application Fee: The appropriate examination fee must be paid at the time of application. Applications must be completed online at www.CRDTs.org Payment submitted must be for the exact amount and can be paid online via VISA or Mastercard or by cashier's check or money order with the applicant's CRDTS ID number written in the lower left-hand corner. PERSONAL CHECKS WILL NOT BE ACCEPTED AND WILL BE RETURNED TOGETHER WITH THE APPLICATION TO THE APPLICANT.

Initial Examination Fee: The Local Anesthesia Examination fee is \$395 and includes application for one attempt at both the written and clinical portion of the examination. Some states require only the written portion or only the clinical portion of the exam. In those cases, applicants pay only the fee for the needed portion. (Written exam = \$120, Clinical exam = \$275)

Retest Examination Fee: Retakes are offered at the site immediately upon completion of the first attempt groups. If candidates are unsuccessful with one or both clinical injections, they must apply and pay the retake fee of \$275 prior to retesting. When retaking the CLINICAL examination, only the unsuccessful injection(s) need(s) to be completed. The retake fee for the WRITTEN portion of this examination is \$120. Candidates are permitted to apply for only one examination at a time and may not submit another application until after the results of the prior examination have been distributed.

Administrative Fee: An administration fee of \$25 is included in the above examination fee. This administrative fee is non-refundable and deducted from all returned application fees. Under certain circumstances, an additional administrative fee may be imposed. In such cases the candidate will be notified accordingly.

Site Fee: The school may charge a site fee/rental fee for use of instruments, clinic facilities, supplies, and disposables. A rental charge or deposit imposed by the testing site must be remitted directly to the school. Candidates taking the examination at a school other than their own are encouraged to visit the site prior to the time of the examination to become familiar with the school. It is the responsibility of the candidate to plan with the school for the provision of instruments and supplies.

Additional administrative, application policies and rules related to the following are in the CRDTS Patient Based Candidate Manual:

- Petition for Review
- Policy for Reexamination and Remediation
- Policy for Testing Candidates with Disabilities

Local Anesthesia Examination Content and Scoring Overview

The local anesthesia examination is a Two-part examination; written and clinical. Candidates may take the written and clinical portion of the examination in any order they prefer (i.e.: there is no requirement to take and/or successfully complete one part of the exam before the other). Candidates must pass both the written and clinical portions of the examination within twelve (12) months after the initial attempt of either part. The examination is an evaluation of specific local anesthesia knowledge and clinical technique, as well as the candidate's compliance with professional standards during the examination. Below is a summary of the specific content, criteria and scoring associated with the examination.

Written LA Examination	Scorable Items x	Points scored per Item =	Max Points
Case Based Questions			
40 case-based, multiple-choice questions	40	1	40
Multiple Choice Questions			
20 multiple choice questions	20	1	20
Beta Test Questions and Cases	varies	0	
TOTAL EXAM POINTS/ MAX SCORE (Each question has only 1 correct answer)			60
Passing score: 75% = 45/60 questions answered correctly			
Time Limit: 2 hours maximum is allowed for the written examination			
Cases, Categories and Topics covered:			
<ul style="list-style-type: none"> - Pre-Anesthetic Patient Assessment - Head, Neck and Oral Anatomy - Pharmacology and Physiology - Delivery Technique - Prevention and Management of Complications 			
The written LA examination is administered by CRDTS' proctors at dental hygiene schools. Candidates take the examination in a classroom using CRDTS' secure tablets.			

Clinical LA Examination	Scoring
The candidate must successfully, safely, and competently administer:	
<ul style="list-style-type: none"> - One (1) posterior superior alveolar (PSA) injection - One (1) inferior alveolar (IA) injection 	
Successful completion of BOTH injections is required to Pass the clinical examination	
The clinical examination is Pass/Fail based on the scoring criteria in this manual	
EXAM SCORE	Pass/Fail

Examination Scoring System

Only State Boards of Dentistry are legally authorized to determine standards of competence for licensure in their respective jurisdictions. However, in developing the local anesthesia examination, CRDTS has recommended a score of '75' to be a demonstration of sufficient competence for the WRITTEN portion of the examination and a score of 'Pass' to be demonstration of sufficient competence for the CLINICAL portion of the examination and participating State Boards of Dentistry have agreed to accept that standard. To achieve "CRDTS Local Anesthesia status," candidates must successfully complete BOTH the written and clinical portions of the Local Anesthesia examination with a score of 75 or more on the WRITTEN examination and a score of 'Pass' on the CLINICAL examination.

Scoring for the written examination is described in the scoring chart listed previously.

Scoring for the clinical examination utilizes a Pass/Fail criterion-based grading system to differentiate between acceptable and unacceptable performance. Criteria have been established for each of the two required injections. CRDTS on-site proctors and three off-site examiners independently evaluate each injection and apply the criteria in assessing performance. Any scorable item that is confirmed as a Critically Deficient (DEF) error by CRDTS proctors or by at least two independent examiners will result in failure of the Local Anesthesia Examination even if all other rated criteria and scorable items are successfully completed.

Retake Policy

Candidates who are unsuccessful on their first attempt of the written exam can retake at the same site on the next day after paying the retest fee, PROVIDING the site can accommodate a retest schedule. Unsuccessful candidates are encouraged to study the areas of deficiency, provided in their critique, prior to attempting the exam again.

Candidates who are unsuccessful on their first attempt of the clinical injections can retake at the same site after paying the retest fee. Only the injection(s) that were unsuccessful need to be retaken. If a candidate chooses not to retake on site, both injections need to be retaken at a subsequent clinical exam site.

Satisfactory Performance and Critically Deficient Errors

Satisfactory (SAT): Techniques that are of acceptable to ideal quality, demonstrating competence in clinical judgment, knowledge, and skill, to include slight deviations from ideal which will not lead to injury or jeopardize overall patient safety.

Critically deficient errors (DEF): Any actions or techniques that could lead to patient injury and/or may jeopardize the overall safety of the patient. Such an error demonstrates unacceptable skill, knowledge, or judgment of the local anesthetic procedure.

Professional Conduct

Dishonesty Clause: Candidates failed for dishonesty shall be denied reexamination for one full year from the time of the infraction. Additionally, all State Boards will be notified of the situation. In some states, candidates failed for dishonesty may be permanently ineligible for licensure. Therefore, candidates should address these matters with the state(s) where they desire licensure prior to retaking the examination.

As a participant in an examination to assess professional competency, each candidate is expected to maintain professional standards. The candidate's conduct and treatment standards will be observed during the examination and failure to maintain appropriate conduct and/or standards may result in dismissal from the exam.

Each candidate will be expected to conduct himself/herself in an ethical, professional manner and maintain a professional appearance at all times. Candidates are prohibited from using any study or reference materials during the examination. Any substantiated evidence of dishonesty, such as collusion, use of unauthorized assistance or intentional misrepresentation during registration, pre-examination or during the examination shall automatically result in dismissal from and failure of the entire examination and forfeiture of all examination fees for the current examination.

Some examples of unprofessional conduct that would result in failure of the examination:

- Falsification or intentional misrepresentation of application requirements.
- Cheating (Candidate will be dismissed immediately).
- Any candidate demonstrating complete disregard for the oral structures, welfare of the patient and/or complete lack of skill and dexterity to perform the required procedures.
- Misappropriation or thievery of equipment during the examination.
- Alteration of examination records.
- Using unauthorized equipment at any time during the examination process.
- Failure to follow time limits and/or complete the examination within the assigned time.
- Administering anesthetics without proper authorization and/or supervision.
- Receiving assistance from another practitioner including but not limited to; another candidate, patient, hygienist, dentist, faculty, University/School representative(s), etc.
- Failure to recognize or respond to systemic conditions that potentially jeopardize the health of the patient and/or total disregard for patient welfare, comfort, and safety.
- Unprofessional, rude, abusive, uncooperative, or disruptive behavior to other candidates, patients and/or exam personnel.
- Noncompliance with anonymity requirements.
- Unauthorized use of cellular telephones or any electronic equipment or the taking of photographs in patient care areas by the candidate or a patient during any part of the examination.

Exam Time Schedule Overview

Candidates will be informed of their examination date and time for both the written and clinical portions of the examination approximately three weeks in advance of the examination and need only report to the school on this date and time.

The written examination will begin at a designated time and candidates will have up to two hours to complete the examination.

The clinical examination will be conducted with preassigned and staggered start times for each candidate. Candidates will be allowed time to seat their patient, set up their unit and familiarize themselves with the CRDTS-provided, head-mounted, action-camera. When the candidate and proctors are ready, the candidate will be allowed to start the examination.

General Directives and Information *(listed in alphabetical order)*

Action Cameras – CRDTS will provide and utilize two action cameras to film each candidate’s clinical performance. One camera will be mounted on the candidate’s forehead and the other will be mounted on a monopod just outside the candidate’s field of operation.

Anonymity - The anonymous testing procedures for the examination shall exclude the possibility that examiners who are involved with the grading of the examination may know, learn of, or establish the identity of a candidate, or relate or connect the patient or work to be graded to a particular candidate. The candidate’s face, name and school information will not be filmed and will not appear on any examination forms or materials. CRDTS examiners will be physically isolated from the candidates and will conduct their evaluations based on film footage.

Approved Communication - All approved communication must be in English. Candidates may communicate with their patient in another language but communication between candidates and CRDTS Examination Proctors must be in English.

Assistants (Chairside) - Candidates are NOT allowed to use chairside assistants.

Attire (Clinic) - Candidates must wear CDC and OSHA mandated operating attire, and there must be no personal identification on clinic attire other than the CRDTS’ candidate picture identification badge. No bare arms, legs or open-toed shoes are allowed in the clinic areas. Lab coats and/or long-sleeved protective garments are all acceptable. Color and style are not restricted.

Electronic Equipment - There will be no unauthorized use of phones or any electronic equipment or the taking of photographs in patient care areas by candidates or patients during any part of the examination.

Equipment Failure - In case of equipment failure the CRDTS Proctor must be notified immediately so the malfunction may be corrected.

Equipment: Use/Misappropriation/Damage - No equipment, instruments or materials shall be removed from the examination site without written permission of the owner. Nonpayment of fees for rental of space or equipment will be treated as misappropriation of equipment.

Eyewear - Candidates are responsible for providing protective eyewear for their patient. Candidates must wear goggles or a face shield (with mask) during the examination.

Evaluation - Each candidate's performance will be evaluated by 3 independent examiners.

Examination Materials - CRDTS examination materials distributed by the testing agency may NOT be removed from the exam site, nor may the forms be reviewed by unauthorized personnel. All required forms and records must be turned into the CRDTS Proctor before the examination is considered complete.

Extraneous Study Materials - Only this Candidate Manual and approved examination forms may be brought into the candidate's cubicle. No textbooks or other study materials are permitted in the candidate's cubicle at any time.

Health History - A Health History Form must be completed for all patients. The CRDTS Health History Form is included in this manual (copies are acceptable) and/or can be downloaded from the CRDTS website.

Identification Picture Badges - During the examination, candidate ID picture badges (handed out prior to the examination in the Examination Packet) must be always worn.

Infection Control Standards - Candidates must follow the most current recommended infection control procedures as published by the CDC. The operatory and/or operating field must remain clean and sanitary in appearance.

Instruments and Required Armamentarium for the Clinical Examination

CRDTS will provide each candidate with the following:

- Short (~20 mm) 27 gauge (yellow cap) needles with plastic hub
- Long (~32 mm) 25 gauge (red cap) needles with plastic hub

Testing Sites will provide each candidate with the following:

- Gloves and masks
- Operatory asepsis supplies and disposables to include surface disinfectants, surface barriers, headrest covers, tray covers, etc.
- Clinic supplies to include cotton swabs, gauze, saliva ejectors and air/water syringe tips.
- Candidates can bring their own supplies as listed above if they feel more comfortable using a specific brand or type of product.

Candidates must provide/bring with them to the examination the following:

- Lab coat or disposable gown
- Protective eyewear for the patient and goggles or face shield for themselves
- Blood pressure cuff (Manual/Automatic/Arm/Wrist are all acceptable) & Stethoscope
- Topical anesthetic of choice (not mandatory but strongly recommended)
- Injectable anesthetic of choice
 - No long-acting anesthetics
 - No expired anesthetics

- Two aspirating syringes
 - No self-aspirating syringes allowed
- Recapping device if one-handed scoop technique is not used
- Locking cotton forceps or hemostat
- Mouth mirror
- Optional: Engineering controls designed for cheek retraction that do not interfere with vision of injections are allowed and can be used at the candidate's discretion if desired

Patient Selection and Management - Consideration should be demonstrated for the patient's welfare and comfort. A patient should not be selected who is apprehensive or hypersensitive.

Shared Patients – Shared patients are NOT allowed for the local anesthetic examination.

Test Site Fees - All testing sites (schools) charge a fee for use of clinic facilities, equipment, supplies and disposables. This fee is independent of the examination fee and is not collected by the testing agency. Testing site fees vary from school to school. Specific information regarding site fees will be included in the candidate's application email confirmation.

Treatment Consent - The candidate must complete a Treatment Consent Form for each patient. 18 is the minimum acceptable age to sit for the local anesthesia examination. This form is included in this manual (copies are acceptable) and/or can be downloaded from the CRDTS website. The Treatment Consent Form must be completed PRIOR to the examination and will be submitted prior to starting the examination.

Written Examination Additional Information

References used to compile test questions for this exam:

1. Bassett,KB, DiMarco,AC, Naughton,DK; Local Anesthesia for Dental Professionals; Pearson, 2nd Edition, 2015.
2. Logothetis,DD; Local Anesthesia for the Dental Hygienist; Elsevier, 3rd Edition, 2021.
3. Malamed, SF Handbook of Local Anesthesia; Elsevier, 7th Edition, 2020.

The following information is provided to candidates to aid in preparation for the written exam. It is **NOT A COMPLETE** list of information included in the exam, but rather examples of the types of questions found in each of the five categories of the exam. Questions cover all five available local anesthetic drugs: articaine, bupivacaine, lidocaine, mepivacaine, prilocaine, and two types of vasoconstrictors: epinephrine, levonordefrin. Generic names are used in the exam. For drug dose calculation questions, this exam uses 1.8 ml of solution per cartridge. (It is known that some cartridges are labeled 1.7 ml, however the resource tables in textbooks used for the exam use 1.8 ml.) Some released exam questions are provided to further guide candidates' study efforts.

1. Pre-Anesthetic Patient Assessment

- Health history review to include medications being taken and how they might influence local anesthetic drug and vasoconstrictor selection
- ASA classification based on a review of the health history
- Systemic conditions that modify or prevent use of local anesthetics and vasoconstrictors

Example Question:

All of the following are consideration for selection of a local anesthetic drug EXCEPT one. Which is the EXCEPTION?

- a. Duration of anesthesia required
- b. Undiagnosed medical condition
- c. History of atypical plasma cholinesterase
- d. Potential for self-inflicted injury while anesthetized

2. Head, Neck, and Oral Anatomy

- Anatomic landmarks associated with local anesthetic injections (bony projections, foramen, etc.)
- Trigeminal nerve, its branches, cross-over and accessory innervation
- Tissues, hard and soft, anesthetized by nerves and injections

Example Question:

Studies have demonstrated the ABSENCE of the MSA nerve in approximately:

- a. 0-10% of the population
- b. 15-30% of the population
- c. 50-72% of the population
- d. 75-100% of the population

3. Pharmacology and Physiology

- Impulse generation, neuroanatomy
- Maximum safe doses of local anesthetics and vasoconstrictors

- Duration of action and onset of action of local anesthetics
- Metabolism of local anesthetic drugs and vasoconstrictors
- Potency and half-life of local anesthetic drugs
- Pregnancy category

Example Question:

Which of the following drugs provides the LONGEST duration of action?

- articaine
- bupivacaine
- lidocaine
- mepivacaine
- prilocaine

4. Delivery Technique

- Minimum and maximum volume of anesthetic for each injection type
- Needle length and gauge selection for each injection type
- Positive aspiration management
- Deposition rate

Example Question:

What is the minimum recommended volume of anesthetic for a single greater palatine (GP) injection?

- .25 ml
- .45 ml
- .9 ml
- 1.5 ml

5. Prevention and Management of Complications

- Self-explanatory – techniques for preventing and recognizing complications and for managing complications should they occur. (hematoma, muscle trismus, overdose, allergic reaction, etc.)

Example Question:

A patient experienced hemi-facial paralysis immediately after an inferior alveolar (IA) injection. The cause of this complication is that the needle was positioned too far:

- Superiorly
- Inferiorly
- Anteriorly
- Posteriorly

The exam consists of 60 questions, 20 stand-alone, multiple-choice questions, and 40 case related questions. For the cases, candidates are given the vital statistics for a patient, to include age, gender, weight, health history, medications, dental history/assessment, and treatment plan. 3 to 8 questions follow the information. Candidates are asked to answer questions related to the case using the provided information. Questions come from the above five categories.

Clinical Examination Additional Information

Patient Acceptability and Health History Requirements

- The same (one) patient must be used for both injections.
- Most patients for the Local Anesthesia examination are fellow classmates, family or friends who meet the CRDTS criteria for patient acceptability.
- No patient may be a dental or dental hygiene educator.
- No patient may be shared with another candidate during the same examination.
- Minimum patient age is 18 years.
- Patients must have:
 - Second molars (teeth #'s 2 and 15) present in both maxillary quadrants
 - At least one permanent premolar in both mandibular quadrants
 - No intraoral sores or puncture marks near selected injection sites
 - Back-up patient can be submitted without penalty if patient is rejected due to pre-existing sores or puncture marks
- On the day of the exam, the CRDTS Health History will be submitted with the patient. This submitted form must reflect the patient's current health. All items marked with an asterisk (*) must be completed on the day of the exam at the testing site. This includes the current blood pressure reading, pulse and all medications (prescription, nonprescription, supplements or pills) being taken by the patient.
- Candidates must insure the confidentiality of the patient's health history.
- Medical Clearance must be obtained for pregnant patients and patients with blood pressure readings that exceed the CRDTS criteria as listed below.
- Patients must present with an acceptable blood pressure:
 - 159/94 or below : Can proceed without medical clearance
 - 160/95 to 179/109: Are accepted only with written a Medical Clearance letter
 - 180/110 or above : Will not be accepted for this examination even if a consult from a physician or dentist of record authorizes treatment
- Candidates are expected to take and record the patient's blood pressure and pulse prior to starting the examination. Please advise your patient that blood pressure and pulse may be checked again by CRDTS personnel during the examination.
- Medical Clearance letters can be written on the Medical Clearance Form (provided in this manual) or on a separate piece of paper and must include:
 - A legible statement from a primary care provider or dentist of record written within 30 days of the examination clearly stating the medical concern

- A positive statement of how the patient should be managed during the examination (including a statement on the use or non-use of local anesthesia for pregnant patients)
- The primary care provider or dentist's name, address, and phone number
- Any item on the Health History with a "YES" response MAY require a written Medical Clearance letter if the explanation section indicates the possibility of a significant systemic condition that could affect the patient's suitability to sit for dental treatment during this examination.
- Candidates MUST obtain and submit a written Medical Clearance letter for all patients that respond "YES" to any of the shaded questions on the Health History form.

Questions #4.G thru #4.M:

- 4.G Artificial/Prosthetic/Damaged Heart Valve(s)
- 4.H History of Infective Endocarditis
- 4.I Heart Conditions (congenital, atrial fibrillation)
- 4.J Cardiac Medical Devices (including pacemaker, defibrillator, watchman)
- 4.K Joint Replacement
- 4.L Osteonecrosis of the Jaw
- 4.M Pregnant If yes, due date: _____

Patients with these conditions will NOT be accepted for the CRDTS local anesthesia examination under any circumstances:

- Patients requiring antibiotic prophylaxis for dental treatment.
- Patients who have used methamphetamines, cocaine, or cannabis in the past 24 hours.
- Patients who answer "YES" to Question 3: Are you currently receiving INTRAVENOUS Bisphosphonates for the treatment of osteoporosis or cancer?
- Cardiac/Organ transplant recipients (Question 4.A).
- Active tuberculosis. (Question 4.B) Note: A patient who has tested positive for TB or is being treated for TB but does not have the clinical symptoms is acceptable.
- Heart attack, heart surgery (including stents), stroke or chemotherapy/radiation therapy within the past six months (Question 4.C-F).
- Any condition or medication/drug history that might be adversely affected by the length or nature of the examination procedures.

Clinical Examination Performance Requirements

The purpose of the clinical examination is to evaluate the candidate's ability to administer one posterior superior alveolar (PSA) injection and one inferior alveolar (IA) injection successfully, safely, and competently for a patient. The specific criteria are listed below and detailed in the Grade Sheet provided in this manual.

Clinical Examination Flow

- Candidates and patients should plan to arrive at the testing site 30 minutes prior to their Clinical Exam assigned start time. (Arrival time for written exam is sent separately.)
- Candidates must present an official picture ID (e.g., driver's license, passport, school ID badge) to pick up their examination packet from CRDTS personnel.
- Candidates will be called to the CRDTS desk and escorted to their assigned cubicle approximately 15 minutes prior to their assigned start time.
 - Cubicles will already be set-up with barriers and disposable supplies by testing site personnel prior to the candidate's arrival
 - Prior to seating their patient, candidates will be allowed time to:
 - Set-up their tray, anesthetic syringes, and other supplies
 - Work with CRDTS personnel who will help candidates:
 - Fit and familiarize themselves with the CRDTS head-mounted action camera
 - Confirm both cameras; the peripheral camera (mounted on a monopod) and the head-mounted camera are ready to record/film procedures and are positioned so as to maintain candidate anonymity
- After cubicle set-up is complete, candidates will return to the reception area to:
 - Escort and seat their patient in the clinic
 - Update their patient's health history, take, and record blood pressure and pulse
- CRDTS proctors will come to each candidate's cubicle to begin evaluation procedures
- CRDTS proctors will use the CRDTS grade sheet to complete the Pre-Exam Checklist
 - Confirm patient's health history conforms with CRDTS criteria
 - Confirm candidate's syringes, cartridges and other required armamentarium conform with CRDTS criteria
 - Confirm patient's dentition and tissues conform with CRDTS criteria
 - Patient must have at least one permanent premolar present in both mandibular quadrants AND teeth numbers 2 & 15 must be present
 - Patient must have NO intraoral sores or puncture marks near injection sites
- Filming will begin when the candidate, patient and CRDTS proctors are ready
- Candidates can administer the PSA and IA in any order they prefer
- Candidates can administer the PSA and IA in the quadrant of their choice
- Candidates will need to verbalize their injection technique by announcing:
 - Inferior Alveolar (IA)
 - Initial penetration, the bevel is covered
 - At periosteum
 - Aspirating
 - Negative (or Positive) aspiration
 - Delivering anesthetic

- Posterior Superior Alveolar (PSA)
 - Initial penetration, the bevel is covered
 - At target
 - Aspirating
 - Negative (or Positive) aspiration
 - Delivering anesthetic
- For positive aspirations, the CRDTS proctor will wait for the candidate to self-correct. If the candidate does not self-correct and starts to deliver anesthetic, the exam will be stopped and recorded as unsuccessful.
- Candidates will be told by the CRDTS proctor when to stop depositing and withdraw
 - Delivery will be stopped when the CRDTS proctor determines an appropriate amount of anesthetic (approximately one stopper width) has been filmed to give examiners enough film footage to evaluate the candidate's deposition rate
 - Candidates will be required to demonstrate appropriate recapping technique
 - Work practice control using the one handed-scoop technique, or
 - Engineering control designed to assist with one-handed recapping
- After completing the first injection and recapping, candidates can proceed with their second injection.
- After completing both injections, candidates must verbalize to the CRDTS proctor how they intend to perform proper sharps disposal.
- The CRDTS proctor will conclude filming when the above procedures are complete.
- Film footage will be utilized by three independent examiners to evaluate:
 - Insertion site
 - PSA
 - SAT – anything other than DEF
 - DEF
 - Too Anterior
 - Too Posterior
 - Erroneous insertion of needle into any tissue other than muco-buccal fold
 - IA
 - SAT – anything other than DEF
 - DEF
 - Too Superior
 - Too Inferior
 - Too Lateral
 - Too Medial

- Injection angle
 - PSA
 - SAT – anything other than DEF
 - DEF
 - Not at 45° to occlusal plane
 - Not at 45° to midsagittal plane
 - IA
 - SAT – anything other than DEF
 - DEF
 - Barrel too mesial
 - Barrel too distal
 - Occlusal plane angle too high or low
- Injection depth
 - PSA using CRDTS provided 27 gauge Short (~20mm) needle
 - SAT – anything other than DEF
 - DEF
 - Too shallow
 - Too deep (ex: hubbing)
 - IA using CRDTS provided 25 gauge Long (~32mm) needle
 - SAT – anything other than DEF
 - DEF
 - Too shallow
 - Too deep (ex: hubbing)
- Deposition rate
 - Depositing anesthetic at a rate of 1.0 ml/minute is ideal and a rate of 1.8 ml/minute is acceptable for both the IA and PSA injections
 - SAT – anything other than DEF with the following being ideal:
 - Depositing 1.5ml/minute equates to .025ml/sec
 - One stopper = .2ml = 8 seconds
 - Administering one stopper width at 6 seconds or more
 - DEF
 - Administering too fast defined as one stopper width at 5 seconds or less
 - Administering anesthetic prior to aspiration
 - Administering more than 2 stopper's width of anesthetic prior to arriving at terminal deposition site.
- The following Critical Deficiencies, as determined by CRDTS proctors, will result in the exam being stopped and recorded as an unsuccessful attempt:
 - Inappropriate anesthetic found on tray
 - Long acting and/or Expired
 - Contraindicated by patient's Health History
 - Contaminated needle
 - Candidate attempts to use previously used or uncapped needle
 - Candidate fails to notice and change contaminated needle that touches an

- inanimate, extraoral or vermilion zone surface prior to starting injection
 - Contact with any inanimate surface such as a tray cover, lab coat, sleeve or glove would be unacceptable
 - Contact with any extraoral tissue such as the patient's face and vermilion zone would be unacceptable
 - Contact with any intraoral anatomy is acceptable
- Three unsuccessful initial attempts to penetrate target area
 - Attempting and stopping 2 times is allowed
 - Starting a 3rd attempt is allowed but must be achieved
 - After 3rd unsuccessful attempt, exam is stopped and recorded as unsuccessful
 - Unsuccessful attempt rule starts over AFTER candidate withdraws due to proper management of positive aspiration
 - Unsuccessful attempt rule starts over AFTER candidate withdraws after noticing that the harpoon is not engaged and proceeds to properly prepare the syringe
- Large window not visible to candidate prior to depositing anesthetic
- Failure to aspirate prior to depositing anesthetic
- Failure to correct a non-engaged harpoon prior to depositing anesthetic
- Failure to change anesthetic cartridge after a positive aspiration that involves so much blood it would impede visualizing future positive aspirations
- Improper recapping of needle
 - Using a recapping device or engineering control is allowed
 - Using the one-handed scoop technique is allowed
 - Using a two-handed recapping technique is not allowed
- Excessive trauma to patient
 - Damage caused by candidate which demonstrates gross disregard for local anesthetic techniques and/or patient safety
 - Visibly bent needle after injection
 - Excessive bowing of needle during injection
 - Unwarranted damage caused by candidate to any extra/intraoral tissues resulting in significant injury to the patient

References:

1. Bassett,KB, DiMarco,AC, Naughton,DK; Local Anesthesia for Dental Professionals; Pearson, 2nd Edition, 2015.
2. Logothetis,DD; Local Anesthesia for the Dental Hygienist; Elsevier, 3rd Edition, 2021.
3. Malamed, SF Handbook of Local Anesthesia; Elsevier, 7th Edition, 2020.

Checklist of Required Exam Materials

The items listed below are required for the examination. Please bring the following with you:

Day of Exam

- Picture ID for admission
- This Candidate Manual
- Completed Patient Health History Form (*Print copy from CRDTS website or manual*)
- Completed Patient Informed Consent Form (*Print copy from CRDTS website or manual*)
- Blood pressure cuff (Manual/Automatic/Arm/Wrist are all acceptable) & Stethoscope
- Protective eyewear for the patient, goggles, or face shield for the candidate
- Topical anesthetic of choice (not mandatory but strongly recommended)
- Injectable anesthetic of choice (no long-acting anesthetics, no expired anesthetics)
- Two aspirating syringes (no self-aspirating syringes)
- Recapping device if one-handed scoop technique is not used
- Locking cotton forceps or hemostat
- Sterile mouth mirror
- Comfort items for your patient; blanket in case the clinic is cold, reading materials, etc.

CRDTS will be providing each candidate with the following:

- Anesthetic needles (25 Gauge Long and 27 Gauge Short needles)



ONE OR TWO DIGIT
CANDIDATE NUMBER

**Central Regional Dental Testing Service, Inc.
TREATMENT CONSENT FORM**

LOCAL ANESTHESIA EXAMINATION

I, _____, authorize Candidate # _____,

an examinee, to perform upon myself local anesthetic injections.

I understand that the examinee may not be a licensed dentist or dental hygienist. I further understand that the injections and procedures will be performed by the examinee as part of an examination conducted by Central Regional Dental Testing Service, Inc., to determine the qualification of the examinee for licensure. I recognize that CRDTS personnel and examiners will be shown and informed of my medical information which could be pertinent to the procedures I receive during the examination.

The nature and purpose of the procedures as well as the risks and possible complications have been explained to me. My questions regarding the procedures have been answered. I acknowledge that no guarantee or warranty has been made as to the results to be obtained.

I consent to having CRDTS personnel and examiners take photographs and film the procedures being performed today provided my name is not in any way associated with these photographs or filming.

I understand that as part of this examination, it will be necessary to administer anesthetics and I consent to the use of such anesthetics by the candidate.

DATED this _____ day of _____, 2022.

Patient's Signature

Patient's Address, City, State & Zip

(_____) _____
Patient's Phone Number

Central Regional Dental Testing Service, Inc.

DH-2022

CRDTS Medical Clearance Form

This form is only needed for patients who have conditions requiring Medical Clearance.

Candidate to complete this top section:

Dental Patient Information:

Name: _____

DOB: _____

Medical or Dental Provider Information:

Name: _____

Address: _____

***Date patient scheduled to sit**

for CRDTS Exam: _____

City/State/Zip: _____

Phone: _____ Fax: _____

Dear Provider:

Our mutual patient (listed above) is scheduled for dental or dental hygiene treatment as part of a clinical board examination.

The medical history (see attached CRDTS medical history screening form) completed by this patient indicates a medical concern of:

Primary Care Provider or Dentist of Record to complete section below:

Please evaluate this patient's medical history and advise us on any special considerations that should be made for this patient regarding the dental treatment and/or periodontal therapy they have scheduled.

Would you recommend any treatment modifications for this patient?

No Yes

If yes, specify: _____

Is antibiotic prophylaxis necessary?

No Yes

If yes, specify: _____

May local anesthetic be used on this patient?

Yes No

If yes, may local anesthetic with epinephrine be used?

Yes No

Is high blood pressure (160/95 to 179/109) a concern for this patient?

Yes No

Note: CRDTS guidelines state patients with a BP 180/110 or above are NOT allowed to sit for this exam.

If yes, would you allow this patient to sit for the CRDTS exam if they

had a blood pressure reading in the range of 160/95 to 179/109?

Yes No

Additional comments:

Provider (please print): _____

Provider's Signature: _____

*Date Signed: _____

***Must be signed within 30 days of the above exam date listed.**

Thank you for your assistance in providing optimum care for this patient.

CRDTS 2022

ONE OR TWO DIGIT
CANDIDATE NUMBER

INSTRUCTIONS:

- Use **INK** to complete this form
- Have patient complete this form **PRIOR** to the exam
- Bring this completed form with you to the exam

2022 CRDTS PATIENT HEALTH HISTORY SCREENING FORM

Patient name: _____

Birthdate: _____ **Pre-exam Screening**
Blood Pressure _____ / _____

*** Day of Exam @ Testing Site**
Blood Pressure _____ / _____

INSTRUCTIONS TO PATIENT: Please answer the following questions as completely and accurately as possible. All Information is CONFIDENTIAL.

YES NO 1. Are you currently under the care of a physician/primary care provider or have you been treated by a healthcare provider in the last six months?
If YES, please specify: _____

YES NO 2. Are you allergic or had any adverse reactions to LATEX, any medicines, drugs, local anesthetics, or other substances?
If YES, please identify: _____

YES NO 3. Are you currently receiving INTRAVENOUS bisphosphonates for the treatment of osteoporosis or cancer?

Answer Below 4. Do you have or have you had any of the following diseases/conditions?

- YES NO 4A. Cardiac/Organ Transplant
- YES NO 4B. Tuberculosis (active/currently)
- YES NO 4C. Stroke If YES Date: _____
- YES NO 4D. Chemotherapy/Radiation Therapy If YES Date: _____
- YES NO 4E. Heart Attack If YES Date: _____
- YES NO 4F. Heart Surgery (including stents) If YES Date: _____
- YES NO 4G. Artificial/Prosthetic/Damaged Heart Valve(s)
- YES NO 4H. History of Infective Endocarditis
- YES NO 4I. Heart Conditions (Congenital, Atrial Fibrillation)
- YES NO 4J. Cardiac Medical Devices (including pacemaker, defibrillator, watchman)
- YES NO 4K. Joint Replacement
- YES NO 4L. Osteochemonecrosis of the Jaw
- YES NO 4M. Pregnant If YES Due Date: _____
- YES NO 4N. Asthma/Lung/Breathing Disorder/COPD
- YES NO 4O. Bleeding Disorder
- YES NO 4P. Cancer
- YES NO 4Q. Diabetes If YES Type: _____
- YES NO 4R. Epilepsy/Seizures
- YES NO 4S. Hepatitis
- YES NO 4T. High Blood Pressure
- YES NO 4U. Immune Suppression/HIV/AIDS
- YES NO 4V. Kidney/Renal Disease
- YES NO 4W. Mental Health Disorders
- YES NO 4X. Substance Abuse Disorders
- YES NO 4Y. Do you have any disease or condition not listed above?
If YES, please specify: _____

Please explain any YES answers here

Question # _____
Explanation:

Question # _____
Explanation:

Question # _____
Explanation:

If more space is needed, please
use the back of this form.

Any item on the health history with a YES response may require a medical clearance from a licensed primary care provider or dentist of record if the explanation section indicates the possibility of a significant systemic condition that could adversely affect the patient’s suitability to take part in the examination.

Securely attach any medical clearance letters to this form.

List all prescribed, over the counter and recreational drugs taken within the last 48 hours:

IF NONE PLEASE MARK “X” HERE: _____

Name of Drug	Amount/Dose	Reason for Taking	Last Taken (Day/Time)

If needed, record additional information below:

I certify that I have read and understand the above. I acknowledge that I have answered these questions accurately and completely. I will not hold the testing agency responsible for any action taken or not taken because of errors I may have made when completing this form.

PATIENT SIGNATURE: _____ DATE: _____
 (Parent or Guardian if patient is a minor)

I hereby attest to the fact that this Health History Screening Form was reviewed and updated on the day of the exam.
 *Patient Initials _____ *Candidate Initials _____ *Today’s Exam Date ____ / ____ /2022

***All items marked with an asterisk must be completed the DAY OF THE EXAMINATION**

CRDTS LOCAL ANESTHESIA CLINICAL EXAMINATION

ONE OR TWO DIGIT
CANDIDATE NUMBER

Candidate to complete this top section:

PATIENT'S FIRST NAME: _____ BIRTHDATE: _____ TODAY'S DATE: _____

ANESTHETIC SELECTION: _____

BLOOD PRESSURE: _____ PULSE: _____

FOR CRDTS USE ONLY

Patient's Health
History Approved
__ YES __ NO

CRDTS proctors and examiners will use an electronic copy of this grade sheet for examination scoring.

This grade sheet can be copied and used in school settings to help prepare students for the CRDTS Local Anesthesia Examination

IA

25 Gauge/Long IA: Right / Left

PSA

27 Gauge/Short PSA: Right / Left

PRE-EXAM CHECKLIST							
	Yes		At least one permanent premolar present in both mandibular quadrants		Yes		Both 2 nd maxillary molars present (teeth #'s 2 & 15)
	Yes		No intraoral sores/marks present near injection sites		Yes		No intraoral sores/marks present near injection sites
	Yes		Syringe : Aspirating BUT not self-aspirating		Yes		Syringe: Aspirating BUT not self-aspirating
	Yes		Eyewear: Candidate and Patient		Yes		Eyewear: Candidate and Patient
	Yes		Required armamentarium present & set-up correctly		Yes		Required armamentarium present & set-up correctly
CRITICAL DEFICIENCIES							
		DEF	Inappropriate Anes: Expired/long acting			DEF	Inappropriate Anes: Expired/long acting
		DEF	Inappropriate Anes: Contra patient's Health History			DEF	Inappropriate Anes: Contra patient's Health History
		DEF	Contaminated needle			DEF	Contaminated needle
		DEF	Three unsuccessful attempts			DEF	Three unsuccessful attempts
		DEF	Large window NOT visible during injection			DEF	Large window NOT visible during injection
		DEF	Failure to aspirate/notice + aspiration prior to delivery			DEF	Failure to aspirate/ notice + aspiration prior to delivery
		DEF	Failure to correct non-engaged harpoon			DEF	Failure to correct non-engaged harpoon
		DEF	Failure to change cartridge after positive aspiration when indicated			DEF	Failure to change cartridge after positive aspiration when indicated
		DEF	Improper recapping			DEF	Improper recapping
		DEF	Excessive trauma to patient			DEF	Excessive trauma to patient
The criteria below will be graded by three (3) independent off-site examiners via film:				The criteria below will be graded by three (3) independent off-site examiners via film:			
INSERTION SITE	SAT	DEF	Too superior	SAT	DEF	Too anterior	
	SAT	DEF	Too inferior	SAT	DEF	Too posterior	
	SAT	DEF	Too lateral	SAT	DEF	Erroneous insertion of needle into any tissue other than muco-buccal fold	
	SAT	DEF	Too medial				
INJECTION ANGLE	SAT	DEF	Barrel too mesial	SAT	DEF	Not at 45° to midsagittal plane	
	SAT	DEF	Barrel too distal	SAT	DEF	Not at 45° to maxillary occlusal plane	
	SAT	DEF	Occlusal plane angle too high or too low				
INJECTION DEPTH	SAT	DEF	Too shallow	SAT	DEF	Too shallow	
	SAT	DEF	Too deep	SAT	DEF	Too deep	
DEPOSITION RATE		DEF	Too fast		DEF	Too fast	
		DEF	Expelling more than 2 stopper's width prior to arriving at terminal deposit site		DEF	Expelling more than 2 stopper's width prior to arriving at terminal deposit site	
POST-EXAM							
	SAT	DEF	Verbalizes to CRDTS Proctor proper sharps disposal				