



**WREB**

A National Dental and Dental Hygiene Testing Agency

# 2010 *Anesthesia Examination Candidate Guide*



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## GENERAL INFORMATION

This guide is designed to provide you with the WREB procedures for taking the local anesthesia examination. You may bring this guide to the clinical examination and refer to it as needed.

Understanding the content of the Candidate Guide is crucial to your performance during the examination. Candidate Orientation is designed to review the examination process and procedures but does not replace studying the Candidate and Policy Guides. You are expected to be familiar with the information in the guides and prepared for the examination prior to orientation.

The purpose of the examination is to evaluate your ability to utilize professional judgment and knowledge to safely and competently administer local anesthesia on a patient.

## EQUIPMENT AND MATERIALS

You must furnish all armamentarium for administering anesthesia. Some schools provide local anesthetic agents. Refer to the school information (included with this guide) as to availability.

### ***Written Examination***

1. A sharpened #2 pencil is required for the written examination.
2. The use of a calculator is **not** permitted.

### ***Clinical Examination***

1. Aspirating or self-aspirating syringes (disposable & self-capping syringes are not allowed).
2. Needles (self-recapping needles are not allowed).
3. Anesthetic cartridges and topical anesthetic.
4. Hemostat or locking forceps.
5. Blood pressure measuring device.
6. Candidate and patient protective eyewear (personal eyewear is acceptable for patient).

## 7. Patient napkin holder (chain or clips).

The school is requested to provide the following expendable materials: surface disinfectant, paper towels, soap, face masks, gloves, patient napkins, headrest covers, tray covers, chair covers, cotton swabs, air/water syringe tips, standard saliva ejectors, 2x2 gauze squares, mouthwash and plastic wraps.

If you wish to use a specific brand, you must provide your own. The school is responsible for any deviation from the above list.

## CLINIC TOUR

Prior to the Candidate Clinical Orientation a tour is provided by school faculty to familiarize you with clinic procedures, equipment, infection control and emergency protocol, disposal of biohazardous waste and sharps, and any school policies.

## FORMS

Enclosed with this Candidate Guide is a ***Candidate Limitation of Liability Agreement*** form and a **Medical History/Patient Consent** form.

**Medical History/Patient Consent** form (recorded pulse and blood pressure are taken not more than one hour before the assigned time). The information on the medical history should reflect current conditions on the day of the exam. The patient consent form must be completed by your patient before the examination.

**Candidate Limitation of Liability Agreement form. This form must be read and completed prior to attending the Candidate Clinical Orientation.**

At the **written** examination Candidate Orientation, you receive the following:

- ID badge
- candidate critique
- two clinical grade sheets

Instructions will be given on how to complete the two (2) clinical grade sheets. All information must be recorded using a #2 lead pencil.

The top portion of each grade sheet must contain:

- your ID number
- patient's first name
- type of anesthetic selection (including epinephrine content) and the reason for your selection
- the needle gauge and length (*i.e., short, long*) for both the **IA** and the **PSA** injections

There is an opportunity to ask questions at the end of Candidate Orientation. Individual concerns or questions should be addressed with the Chief Examiner.

## **PATIENT CRITERIA**

Patients cannot be shared for this examination. In order to be accepted as a patient, the following patient criteria must be met:

1. Be at least 18 years old.
2. Have maxillary second molars, and at least one premolar in each mandibular quadrant.
3. Have a blood pressure reading of 160/100 or below. Preoperative blood pressure and pulse are taken on each patient and recorded on the Medical History/Patient Consent form prior to beginning any procedure.
4. **Not** be a dental hygiene educator.

5. **Not** have any oral facial herpes at the prodromal, vesicle or ulcerated vesicle stages, intraoral sores or recent puncture marks at the four potential penetration sites.
6. **Not** have a known latex allergy or a sensitivity to latex.
7. **Not** have had a heart attack, stroke, or cardiac surgery within the past six months.
8. **Not** have active tuberculosis. Clinical symptoms would include: a bad cough that has lasted longer than two weeks, pain in the chest, coughing up blood or sputum. A patient who has tested positive for TB, or is being treated for TB but does not have the clinical symptoms, is acceptable.
9. **Not** have any condition or medication/drug history that might be adversely aggravated by the length or nature of the examination procedures.
10. If a patient is pregnant, written medical clearance must be obtained from a health care provider for the examination day.

You may submit one back-up patient without a penalty if your original submission is rejected for intraoral sores, orofacial herpes, or high blood pressure. Patient rejection for any other reason, or any second patient rejection, constitutes failure of the examination.

*Note: According to the American Heart Association, antibiotic prophylaxis is not required for the administration of local anesthesia.*

# EXAMINATION PROCEDURES

## EXAMINATION SCHEDULE

Refer to your issued candidate schedule for written and clinical exam times. This schedule will be mailed to you at a later date. The examination is divided into a Written and Clinical section.

## WRITTEN EXAMINATION

You must successfully pass the written exam before taking the clinical exam. If you have received a passing score on the written exam within the past **twelve (12) months**, you are not required to retake the written examination.

Prior to the written exam, backpacks and other personal items must be placed in a location away from the testing area.

Examiners verify your identity and distribute candidate packets prior to the written examination. Please do not write on any forms until instructed to do so. If you need to take notes, you may write on your test booklet.

There are fifty-five (**55**) multiple-choice questions. Items are both discipline-based and case-based and address knowledge, application, and problem-solving skills. Five of these questions are included as “field test” questions and will not be counted in your final score.

You are allowed sixty (**60**) minutes to complete all fifty-five (**55**) questions. Test booklets and answer sheets are provided.

75% is the minimum score required to pass the Written examination.

Subject matter includes:

- A. anatomy (**head and neck**) and physiology.
- B. pharmacology of anesthetic agents and vasoconstrictors, including the clinical actions and maximum recommended doses of specific agents. **NOTE: All answers are based on Malamed's MRD-a.**
- C. method of delivery of local anesthesia, including armamentarium, selection of injection type, and administration technique.
- D. medical history interpretation; prevention, recognition, and management of possible complications; and life support.

Once you begin the exam, you may not leave the room until you have turned in your test booklet and answer sheet. **No breaks are permitted.**

Below are two sample questions:

1. *Which nerve is involved in the anesthesia of the palatal gingiva of the maxillary lateral?*
  - A. *Middle superior alveolar*
  - B. *Nasopalatine*
  - C. *Infraorbital*
  - D. *Anterior superior alveolar*

*Answer: B*
  
2. *After administering a left inferior alveolar nerve block, your patient experiences a weakening of the facial muscle and is unable to close his left eyelid. What direction from the desired deposition site is most likely responsible for this complication?*
  - A. *Too posterior*
  - B. *Too anterior*
  - C. *Too inferior*
  - D. *Too superior*

*Answer: D*

The examination is graded immediately and the candidate results are distributed outside the written examination room.

**Return your candidate packet and badge if unsuccessful on the written examination.**

If you do not pass the Written examination, you may reapply to the WREB office for testing at another scheduled examination site. You will receive a Performance Report from the WREB office listing the categories and percent of questions that were incorrect.

## **CLINICAL PREPARATION**

You are directed into the clinic thirty (**30**) minutes prior to your assigned time to prepare for the examination and to seat your patient. *(To facilitate a smooth exam, be prepared to be available up to a half hour before your assigned time).*

Before seating your patient, the following forms should be completed:

***Medical History/Patient Consent*** form,  
**Two Clinical grade sheets.**

You must have a syringe(s) loaded with the chosen anesthetic. The cap(s) should be easily removable but still covering the needle(s) on the syringe(s).

If you are not ready at your scheduled time, the examiners proceed to the next candidate. In such cases you incur no penalty, but must perform the examination at the examiners' convenience.

## **CLINICAL EXAMINATION**

The Clinical examination consists of the evaluation of the candidate's technique while administering two block injections:

1. The Inferior Alveolar Nerve Block (**IA**) *(The lingual and long buccal injections are not included in the IA section of the examination).*

## 2. The Posterior Superior Alveolar Nerve Block (**PSA**).

*(Note: You may perform the IA and the PSA injections on the same side of the mouth or one on each side of the mouth).*

Two examiners observe your technique. In order to pass the examination, **both** injections must be performed to exam specifications.

The examiners may interrupt and stop any procedure that may jeopardize the health and safety of the patient. The examiner who sees the error will say “**stop and hold**” and state the error. The other examiner will be given the opportunity to view the error and if the needle has penetrated the tissue, the candidate will be instructed to withdraw.

## **ANESTHESIA ADMINISTRATION**

One examiner will check the four potential penetration sites for sores and puncture marks. Another examiner will check the **Medical History/Patient Consent** form and the **Clinical grade sheets**.

**Both** injection sites should be prepared with topical anesthetic. Topical is not mandatory, but is recommended for patient comfort.

Inform the examiners which injection is being administered first. If using a self-aspirating syringe, you must inform the examiners of this prior to beginning the injection. If the cartridge has red markings, this should be pointed out to the examiners to avoid confusion with a positive aspiration.

Because this is a demonstration of clinical skill only, it is not necessary for you to describe the technique while performing it. **However, you are required to inform the examiners upon reaching each of the three critical phases of the injection.**

- A. **Initial Penetration:** After the needle penetrates the tissue, stop and hold the needle position for both examiners to observe. The examiners indicate when to proceed.

- B. **Angle and Depth:** Proceed to the **optimum** deposition site and stop. The examiners observe the angulation and depth.
  
- C. **Aspiration:** When you have reached your optimum depth and angle, you must aspirate. WREB requires you to aspirate on one plane, however there is no penalty for two-plane aspiration.

Both examiners must be able to observe each critical phase.

Aspirate and announce whether the aspiration is positive or negative. If the aspiration is negative, proceed to deposit after being instructed to “proceed.”

The rate of deposition is observed only long enough for grading purposes; it should not be necessary for all the solution to be administered because patients are not being anesthetized for clinical procedures. You will be told when to stop administering the anesthetic solution.

On completion of the first injection, proceed immediately to the second injection or make the needle safe. You have the option of using the same syringe and needle or using a different syringe/needle for the second injection. The needle(s) must be safely recapped and the cap(s) must be secured.

If the aspiration is positive you may:

Reposition the needle and aspirate again. However, you must be able to determine that the aspiration is negative before depositing solution. If unsure, replace the cartridge and perform the injection again. In the event of another positive aspiration (using a new cartridge at the same injection site) you will be asked to withdraw and the injection will be graded as performed.

Obtaining a positive aspiration on two attempts does not automatically result in a failure. All other aspects of the injection technique will be considered in the evaluation.

The examiners confer after the completion of both injections and upon returning, will either instruct you to dismiss your patient or request that an injection be repeated on the opposite side of the mouth.

## END OF EXAMINATION

After dismissing your patient:

1. Properly dispose of contaminated needles and carpules according to school policy. Do not recap the cartridge end of the needle. Improper sharps disposal is a critical error and will result in failure of both injections.
2. Promptly break down and disinfect your unit and exit the clinic.
3. Turn in your candidate packet with the **ID badge** and **Candidate Critique** to the area designated by the examiners.

If you are taking a Dental Hygiene and/or Restorative examination(s) at the same site, **retain** your **ID badge** and candidate packet. The badge and packet **must** be turned in at the completion of your last exam.

Exam results will be withheld if these items are not returned to the WREB office.

## NOTIFICATION OF RESULTS

After completion of your Clinical examination your results will be placed in an envelope identified by your Candidate number.

If you pass, you will receive a **Success Memo** stating that you passed the Anesthesia Clinical examination at this exam site.

If you are also taking the Dental Hygiene examination at the same site and plan to administer anesthesia to your patient, **you must post the Success Memo in your operatory** as proof of anesthesia qualification. **(The policy concerning administration of anesthesia during the hygiene examination is listed in the Dental Hygiene Candidate Guide).**

If you do not pass, you will receive a copy of the **Anesthesia Candidate Evaluation** form listing the reason(s) for failure and, a **Retake** application (if applicable). **Discussion with the examiners or WREB staff regarding the reason(s) for failure is prohibited.**

## RETAKE EXAMINATION ON SITE

If you do not pass the Clinical examination and are eligible, you will be allowed to retake the Clinical examination. The retake examination is a separate examination attempt and is included in the total number of examination attempts. If you elect to retake the examination at the same examination site, you will be required to repeat only the failed injection(s). If you elect to retake the examination at another site, you will be required to perform both the IA and PSA injections. In order to retake the Clinical examination at this site, you must:

1. Complete a **Retake** application form.
2. **Attach a cashier's check or money order**, payable to WREB. **The retake examination fee is \$120.** Cash and personal checks cannot be accepted. To be prepared for this contingency, you should obtain the check or money order **prior** to the examination.
3. Give the completed **Retake** application to one of the examiners **(or other designated recipient)** within the time frame announced during orientation. You are assigned a time for the retake examination and will receive a new **Medical History/ Patient Consent** form and two new **Clinical grade sheets.**

4. Provide a different patient. If failure occurred before entering the patient's mouth (i.e. contaminated needle), the same patient may be resubmitted.

The retake examination is conducted, evaluated, and exam results distributed in the same manner as the initial examination.

- If your examination attempt is successful, you will receive a **Success Memo**.
- If your examination attempt is unsuccessful:
  - A. You will receive another **Anesthesia Candidate Evaluation** form stating the reason(s) for failure.
  - B. You may not retake the anesthesia examination again at this site.

## PERFORMANCE EXPECTATIONS

Each aspect of the injection is classified as “**critical**” or “**less critical**.”

### CRITICAL ASPECTS OF INJECTION

The following critical aspects **must** be performed to exam specifications in order to pass the Clinical section of the examination:

1. **Proper utilization of medical history and proper anesthetic selection.**
  - A. The anesthetic selected is appropriate for the patient and the extent of the procedure to be performed.
2. **Syringe selection:**
  - A. Either aspirating or self-aspirating. Self-recapping or disposable syringes are not allowed.

### 3. **Penetration**

- A. The needle used for the injection must not touch any of the following prior to injection: patient napkin, glove, bracket table, gauze squares, extraoral anatomy or any other surface. If the needle makes such contact and you proceed with the injection, the result is a failure of that injection.
- B. You are allowed three separate penetrations to reach your optimum angle and depth. However, if your third attempt results in a first positive aspiration, you will be allowed to handle the positive aspiration and repenetrate if necessary.
- C. The injection is administered at the proper penetration site and point:
  - 1) **IA**: Penetration site is at the area bordered medially by the pterygomandibular raphe, laterally by the internal oblique ridge, and at the height of the coronoid notch.
  - 2) **PSA**: Penetration point is at the height of the vestibule in the mucobuccal fold posterior to the zygomatic process of the maxilla (visually, this approximates the distal facial root of the 2nd molar).

### 4. **Angle and Depth**

#### A. **IA**:

- 1) At the point when optimum depth is achieved, the barrel of the syringe is over the premolars on the contralateral side and the needle is parallel to the occlusal plane of the mandibular teeth.
- 2) The depth of insertion is 20 to 25 mm (**approximately 2/3 the length of a long needle or 4/5 the length of a short needle**).

B. **PSA:**

- 1) The needle is advanced **upward** 45° to the occlusal plane, **inward** at a 45° angle toward the midline, and **backward** at a 45° angle to the long axis of the second molar.
- 2) The anesthetic solution is deposited in the area above the apices of the roots of the third molar.
- 3) The depth of insertion is approximately 16 mm (**about 1/2 the length of a long needle or 3/4 the length of a short needle**).

5. **Aspiration**

Prior to aspirating, the large window must be toward the operator. Any sign of a positive aspiration must be observed and handled appropriately.

- A. Aspiration technique for aspirating syringes: The thumb retracts against the thumb ring, causing the thumb ring to move while the rubber stopper remains engaged to the harpoon. There must be a visible 1-2 mm movement of the thumb ring.
- B. Aspiration technique for self-aspirating syringes: As the needle tip moves toward the target, prior to deposition, a slight pressure is exerted with the thumb. When optimum depth is reached, pressure is released by releasing the forward pressure of the thumb.

6. **Amount and Rate**

- A. Depositing a few drops of local anesthetic while advancing the needle toward the target site is optional. However, no more than 1/4 of the cartridge solution can be deposited before reaching the deposition site.
- B. The rate of administration is not excessively slow or rapid.

## 7. ***Handling of Sharps***

- A. Needles are safely recapped and secured.
- B. Needles and cartridges are properly disposed.

## 8. ***Excessive Trauma***

If one or both examiners observe excessive trauma at any time during the injection, they will stop the procedure. Excessive trauma is defined as “excessive bending/bowing of the needle or laceration of the tissue.”

If both examiners validate that excessive trauma has occurred, it will result in a failure of the injection.

## **LESS CRITICAL ASPECTS OF INJECTION**

Three (3) less critical aspects rated as inadequate result in failure of the injection. The less critical aspects are:

### 1. ***Armamentarium:***

- A. Protective eyewear is not worn by the clinician.
- B. Protective or personal eyewear is not worn by the patient.
- C. A hemostat or locking forceps is not available on the tray.
- D. Expired anesthetic.

### 2. ***Syringe preparation and handling:***

- A. Harpoon is not securely engaged.
- B. Small bubbles are not expelled from the cartridge.
- C. Expelled solution is more than the width of a stopper.

### 3. ***Syringe is in patient's line of sight.***

## REFERENCES

These texts were used to assist in developing this exam and may be useful preparation resources.

Malamed, Stanley F. Handbook of Local Anesthesia (5th ed.), 2004.

Malamed, Stanley F. Medical Emergencies in the Dental Office (6th ed.), 2007.

## CANDIDATE EXAMINATION SCHEDULE

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***Local Anesthesia Written Examination Time***

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***Clinic Tour Time***

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***Orientation Time***

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***Assigned Clinical Examination Time***

Prepare to enter the clinic approximately thirty (30) minutes prior to this time in order to prepare for the examination.

- ◆ Confirm completion of the ***Medical History/Consent*** form, including patient's blood pressure and pulse.
- ◆ The top portions of both ***Clinical grade sheets*** are correct and completed in pencil.
- ◆ Set up operatory.
- ◆ Prepare syringe(s) with chosen anesthetic and needle(s).
- ◆ Seat the patient.

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### ***Clinical Examination***

- ◆ Prepare the injection site(s) after an examiner has checked the patient for acceptability.
- ◆ Proceed with the injection(s) when instructed.

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### ***Post Examination***

After instructed by examiners to excuse the patient:

- ◆ Properly dispose of contaminated needles and waste products.
- ◆ Quickly clean and disinfect the operatory and clean the surrounding area.
- ◆ Complete the ***Candidate Critique***.
- ◆ Return the ***ID*** badge with Candidate Critique at the designated collection area (unless another exam is being taken at this site).

## NOTES

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