

Local Anesthesia Refresher

Presented by: Marie Paulis, RDH, MSDH & Gwen Grosso, RDH, MS

Presenters

Marie Paulis, RDH, MSDH is an Assistant Professor and dental hygiene program director at the University of New Haven and teaches the local anesthesia course for dental hygiene students.

Gwen Grosso, RDH, MS is an Assistant Professor at the University of New Haven and currently teaches Periodontology, Pharmacology and local anesthesia to dental hygiene students.

NOTE

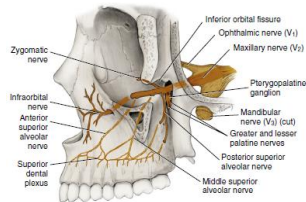
This course is a refresher course for RDH's who have been previously certified in local anesthesia. This is not a initial certification course for local anesthesia and does not fulfill state requirements as such.

Learning Objectives

After attending this course, the participants will:

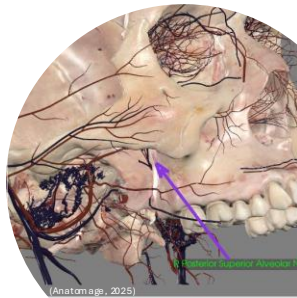
1. Identify and locate the landmarks for local anesthetic injections commonly administered.
2. Examine intricacies of the IA and palatal injections.
3. Employ corrective techniques for common local anesthesia administration errors.
4. Recognize and avoid systemic complications of local anesthesia administration.
5. Recognize contraindications to local anesthesia utilization.

Maxillary Nerve Branches



PSA Nerve

- **Insertion:** Height of mucobuccal fold above mx 2nd molar
- **Depth of penetration:** 4-6 mm (infiltration)



PSA

Insert needle:

- 1) **Upward** (45-degree angle to occlusal plane)
- 2) **Inward** (medially toward midline at 45-degree angle to the occlusal plane)
- 3) **Backward** (posteriorly at 45-degree angle to the long axis of the 2nd molar)





MSA

- **Insertion:** Above mx 2nd premolar, Height of mucobuccal fold
- **Depth:** 4-6 mm

ASA

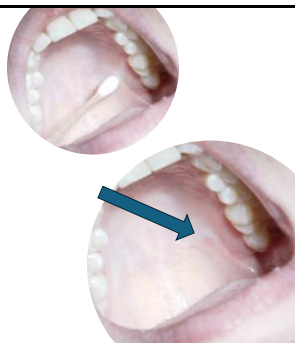
- **Insertion:** Height of MB fold above mx canine, 10 degrees off long axis of tooth; parallel to the canine eminence
- **Depth:** 4-6 mm



GP

Landmarks:

1. Maxillary third molar
2. Junction of maxillary alveolar process and posterior hard palate
3. Greater palatine foramen



GP

- Cotton tip with pressure anesthesia over the GP foramen
- Notice needle location just anterior to cotton tip/GP foramen



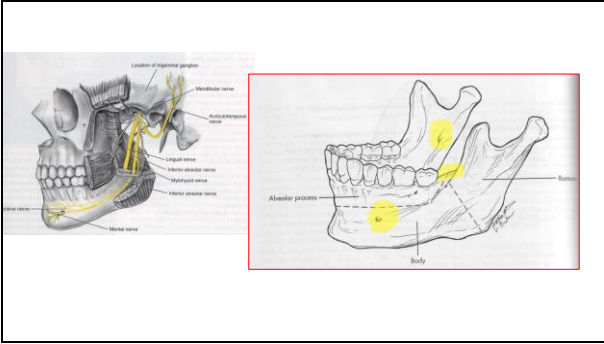
NP

- **Insertion:** Palatal tissue lateral to incisive papilla and lingual of mx central incisors
- **Depth:** 3-6 mm or until contact bone
- Pressure anesthesia



Mandibular Injection Sites





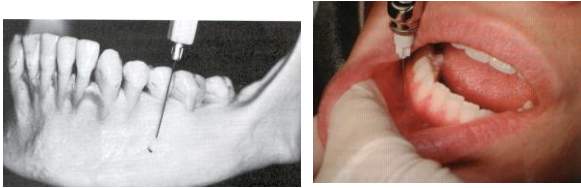
IA Landmarks

Height of injection

- Palpate coronoid notch, stretch tissue laterally
- Imagine a line running posterior from your finger (or thumb) to the deepest part of the pterygomandibular raphe
- This line should be parallel to the occlusal plane of the Md. Teeth, approx. 6-10 mm above occlusal plane
- Barrel of syringe should be over the contralateral premolars
- Average depth of 20 to 25 mm (proximally 3/4 of long needle)

Buccal Block
Height of occlusal plane and buccal to last molar

Mental Block
Palpate mental foramen



LOCAL COMPLICATIONS



- PAIN ON INJECTION
- NEEDLE BREAKAGE
- BLEEDING
- TRISMUS
- HEMATOMA
- FACIAL NERVE PARALYSIS

Resources

Ana tom a ge Ta ble (2 025). Fu nc ti on al a na to my. De n ta l.
A m f i e l d , J . M . , & M i g u e r o , P . (2 0 1 1). A c l i n i c i a n g u i d e t o p a t i e n t s o f r a i d o f d e n t a l i n j e c t i o n s a n d n u m b e r e s s . S A A D d i g e s t , 2 7 , 3 3 - 3 9 .
B a t n a c , T . , S o t o s e k , T o k m a d z i c , V . , P e h a r d e , V . , B n j a c , I . (2 0 1 3) . A d v e n e r s a c t i o n s a n d a l l e g e d a f f e r g y t o l o c a l a n e s t h e t i c s : A n a l y s i s o f 3 3 1 p a t i e n t s .
J o u r n a l o f D e r m a t o l o g y , 4 0 (5) 5 2 2 - 5 2 7 . d o i : 1 0 . 1 1 1 1 / j . 1 3 4 6 - 8 1 3 8 . 1 2 1 6 8 .
D i T o l l i a , M . , S i m o n , J . F . , P e l l i e r , B . , & C h a m b e r s , D . W . (2 0 1 0) . P a t i e n t s w h o m a k e a d e n t i s t m o s t a n x i o u s a b o u t g i v i n g i n j e c t i o n s . G l i d e w e l l
C h a i n s i d e M a g a z i n e , 5 (4) . <https://glidewellside.com/mile-du-californic-hair-side-magazin-evolution-5-4-issu-e-4/patients-who-make-a-dentist-most-anxious-about-giving-injections>
L a n e C , R a y M , C h a n d l e r M . (2 0 2 3) . M e d i c a l c o n s i d e r a t i o n s f o r s a f e a n e s t h e s i a a d m i n i s t r a t i o n . D i m e n s i o n s o f D e n t a l H y g i e n e , 7 8 (1) 2 8 - 3 1 .
<https://j8.me/n5io-n5o-fde-nt5-thygi-ene.com/5-rtic/5e-dic-al-co-n5id-5t5-5o-n5-fo-n5-af-e-an-5t-5e5i-a-ad-mi-n5t-5t-5i-5n/>
L o g e t h e t i s , D . D . (2 0 2 2) . L o c a l a n e s t h e s i a f o r t h e d e n t a l h y g i e n i s t (3) . E l s e v i e r . I S B N 9 7 8 0 3 2 3 7 1 8 5 6 1
M a t a m e d S . F . (2 0 1 3) . M a n a b o o k o f l o c a l a n e s t h e s i a (7) . E l s e v i e r .
P i e r n i , L . G a d b u r y - A m y o t C . (2 0 2 5) . D a r b y a n d W a l s h d e n t a l h y g i e n e : t h e o r y a n d p r a c t i c e (6) . E l s e v i e r .
