



# Local Anesthesia Guide for:

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Operator Positioning (OP), Retraction, Fulcrum, Point of Injection (POI),  
Angulation, and Depth of Needle Insertion

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# Maxillary

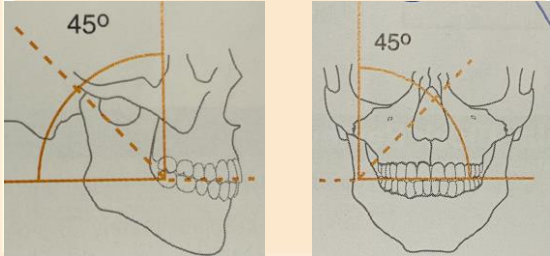
**PSA** (Conservative Method),  
**MSA,**  
**ASA.**



### PSA

- OP: UR - R.Hand 8:00 - 9:00
- OP: UR - L.Hand 3:00 - 4:00
- OP: UL - R.Hand 10:00
- OP: UL - L.Hand 2:00

- Vertical retraction/Slide Mandible
- Fulcrum - Rest syringe on retracting finger for support, syringe extends commissure and presses down on lower lip
- POI - Height of the Vestibule distal to 2nd molar
- 45' Angulation Superiorly & Medially
- 5-6 mm needle insertion



### MSA

- OP: UR - R.Hand 8:00
- OP: UR - L.Hand 4:00
- OP: UL - R.Hand 9:00
- OP: UL - L.Hand 3:00

- Pull tissue taut, lip more anteriorly to avoid injecting frenum (maintain "C" shape)
- Fulcrum - Rest pinky of dominant hand on chin and support barrel with finger from retraction OR use double finger support-pinky of dominant hand with thumb of retraction hand
- POI - Height of Vestible, 3mm away from bone, Apical (midline) to 2nd premolar
- Angulation Parallel w/long axis of tooth or slope of alveolar bone
- 5 mm needle insertion

### ASA

- OP: UR - R.Hand 8:00
- OP: UR - L.Hand 4:00
- OP: UL - R.Hand 9:00
- OP: UL - L.Hand 3:00

- Pull upper lip taut outward and upward using tip of index finger & thumb (maintain "C" shape)
- Fulcrum - Rest pinky of dominant hand on chin and support barrel with finger from retraction OR use double finger support-pinky of dominant hand with thumb of retraction hand
- POI - Height of Vestible, 3mm away from bone, Mesial to the Canine Eminence
- Approximately 10' Angulation or parallel with slope of alveolar bone
- 5-6 mm needle insertion

# Maxillary

**NP,  
AMSA,  
GP.**



## NP

OP: R. Hand 11:00  
OP: L. Hand 1:00

No Retraction - Pt. Opens wide. Max. Occ. Plane Perpendicular to floor. May need to raise chin further

Fulcrum for R. Hand or L. Hand – Pinky finger of dominant hand rests on pt. chin

POI – Lateral side of base of incisive papilla. Maintain pressure on opposite lateral side with cotton tip for DURATION of deposit

40° Angulation Superiorly & Medially

4-5 mm needle insertion or gentle contact with bone (often only 3-4 mm)

## AMSA

OP: UR - R. Hand 8:00  
OP: UR - L. Hand 4:00  
OP: UL - R. Hand 9:00  
OP: UL - L. Hand 3:00

No retraction - Pt. Opens wide. Max. Occ. Plane Perpendicular to floor

Fulcrum for UR site - Syringe barrel rests on index finger of nondominant hand and pinky finger of dominant hand on chin

Fulcrum for UL site - Rest pinky of dominant hand on chin

POI - Posterior hard palate. Approx. midway on the imaginary bisecting line bt. 1st & 2nd premolar to the median suture. DISCONTINUE pressure and move cotton tip away from POI.

90° Angulation

4-6 mm needle insertion or gentle contact with bone (often only 3-4 mm)

## GP

OP: UR - R. Hand 8 -9:00  
OP: UR - L. Hand 4 - 3:00  
OP: UL - R. Hand 11:00  
OP: UL - L. Hand 1:00

No Retraction - Pt. Opens wide. Max. Occ. Plane Perpendicular to floor

Fulcrum for UR site - Syringe barrel rests on index finger of nondominant hand and pinky finger of dominant hand on chin

Fulcrum for UL site - Rest pinky of dominant hand on chin

POI - Posterior hard palate. 1-2 mm anterior to the GP foramen. Approx. midway on the imaginary bisecting line bt. 1st & 2nd molar to the median suture. DISCONTINUE pressure and move cotton tip away from POI.

90° Angulation

4-6 mm needle insertion or gentle contact with bone often only 3-4 mm)

# Mandibular

## Buccal, Mental, Lingual.



### BUCCAL

OP: LR - R. Hand 8:00 – 9:00  
OP: LR - L. Hand 4:00 – 3:00  
OP: LL - R. Hand 10:00  
OP: LL - L. Hand 2:00

Retract buccal soft tissue laterally, pinching between both index finger and thumb, pulling tissue taut and then push buccal fat pad into injection site - position finger on anterior border of the ramus

Fulcrum pinky finger of dominant hand rests on pt. chin

POI – alveolar mucosa distal and buccal to the most distal mandibular molar

Angulation – direct syringe barrel parallel and directly superior to the mandibular occlusal plane

Insertion until gently contacting with bone (Anterior Ramus) approximately 2-4 mm

### MENTAL

*Horizontal Approach*

OP: LR - R. Hand 8:00 -9:00  
OP: LR - L. Hand 4:00 – 3:00  
OP: LL - R. Hand 8:00 – 9:00  
OP: LL - L. Hand 4:00 – 3:00

Retract lower lip outward, pulling the tissue

Fulcrum for LR & LL site - Syringe barrel rests on index finger of nondominant hand

POI – depth of mandibular mucobuccal fold anterior to mental foramen depression, bt. apices of 1<sup>st</sup> and 2<sup>nd</sup> molar

20° Angulation 2 to 3mm away from the Mucogingival line

5 mm needle insertion

### LINGUAL

OP: LR - R. Hand 8 -9:00  
OP: LR - L. Hand 4 - 3:00  
OP: LL - R. Hand 11:00  
OP: LL - L. Hand 1:00

Use mouth mirror to retraction Pt. tongue

Fulcrum pinky finger of dominant hand rests on pt. chin

POI - middle of the attached gingiva by the 2<sup>nd</sup> molar

20° Angulation

2-4 mm needle insertion or gentle contact with bone

# Single tooth Infiltration, Papillary & Topical & Pressure Times



## Papillary

OP: Adapt according for area of injection

Retraction - Adapt accordingly for area of injection

Fulcrum - Adapt accordingly for area of injection

POI – midpoint of papilla

45° - 90° Angulation Superiorly & Medially

2-3 mm needle insertion

## Single Tooth Infiltration

OP: Adapt accordingly for area of injection

Retraction - Adapt accordingly for area of injection

Fulcrum - Adapt accordingly for area of injection

POI – apices of tooth, Height of vestibule or mucobuccal fold, 3 mm away from bone

Angulation – parallel with long axis of tooth or slope of alveolar bone

3 mm needle insertion

## Topical & Pressure Time

- Topical for 30 seconds with 20% Benzocaine
- NEVER use topical on Palate Injections
- Pressure with cotton swab for 1 minute

# Things to Remember



## Syringe

- Large Window always faces operator
- Bevel aligns with small window
- Choose syringe with correct thumb ring size
- Do not let thumb ring slide down thumb
- Always use pad of thumb or nail pad for aspiration and depositing
- Be careful not to retract needle from tissue when aspirating
- Carefully inspect carpule for cracks or bubbles before inserting into syringe barrel

## Needle Insertion

- Always insert Bevel to Bone
- Retract needle swiftly
- Never place uncapped needle-syringe on tray
- Always use one-handed scoop method to recap needle
- Assembling - Insert carpule into syringe barrel first and then needle
- Disassembling – Remove needle first and then carpule
- Never hold syringe in palm of hand when engaging harpoon to carpule stopper

## Additional Reminders

- Make sure you have all Armamentarium items before beginning
- Provide verbal descriptive of injection you are administering before you begin
- Say aloud if you have negative or positive aspiration
- For positive aspiration change carpule and needle and try again near area but not exact same POI

### Reference

Rdh Ms, D. L. D. (2016). *Local Anesthesia for the Dental Hygienist* (2nd ed.). Mosby.