

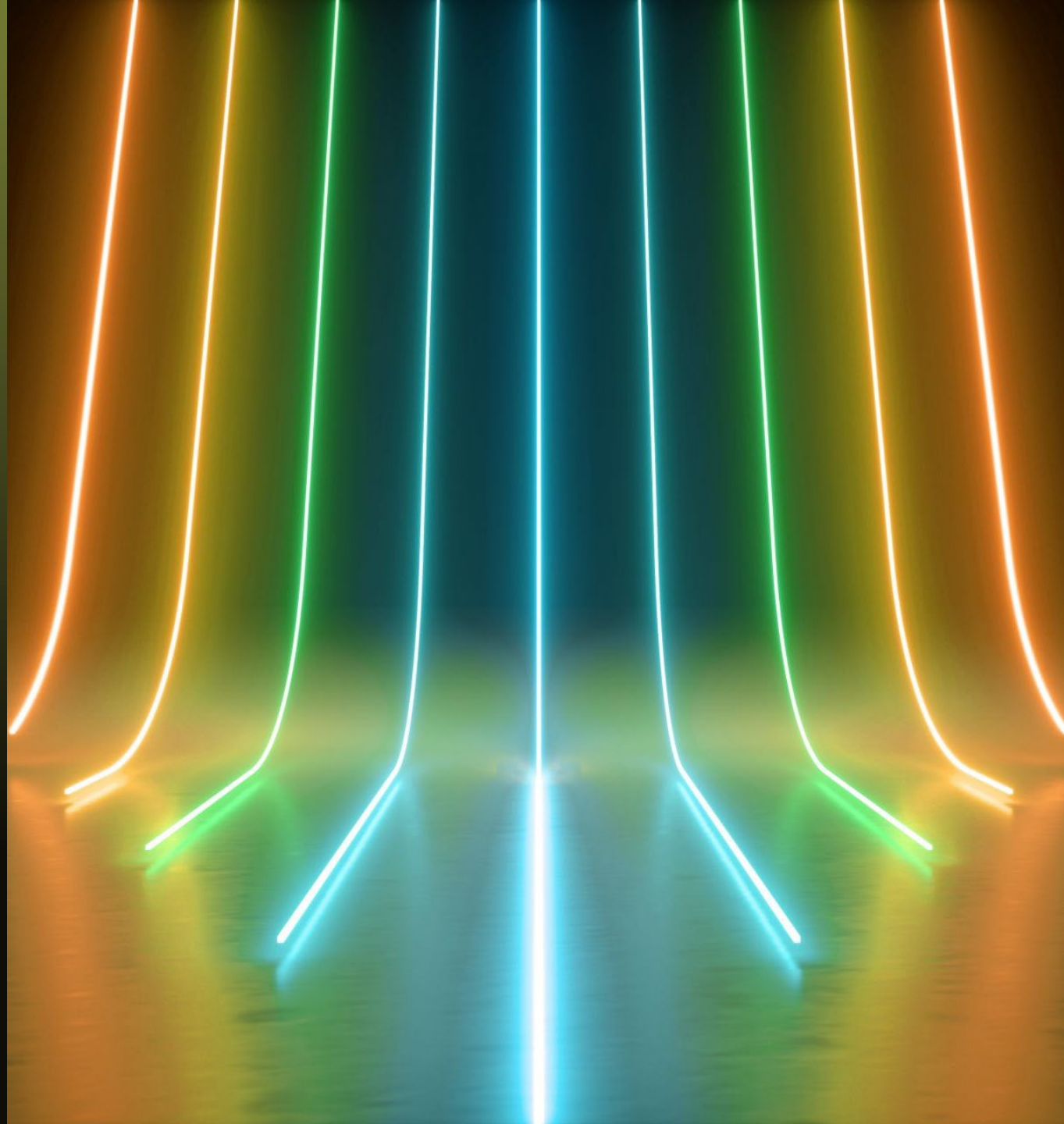
11/12

Explorer

FUNDAMENTALS OF PERIODONTAL
INSTRUMENTATION

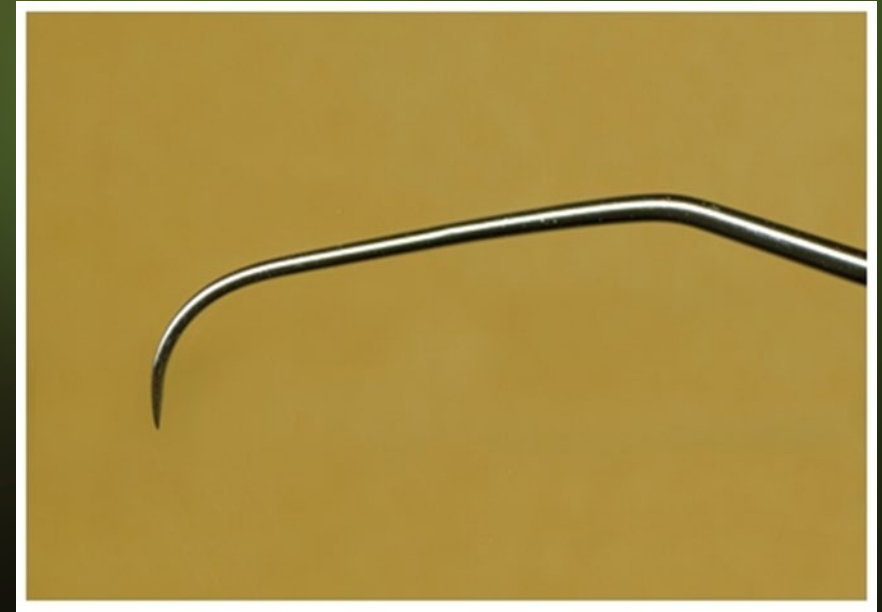
MODULE 13 (288-313)

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Explorer

- An **assessment** instrument with a flexible wire-like working-end
- An explorer is the instrument of choice for **calculus detection**.
- Used to detect **subgingival** calculus deposits and anatomic features
- The fine working-end and flexible shank of an explorer enhances tactile information to the clinician's fingers.

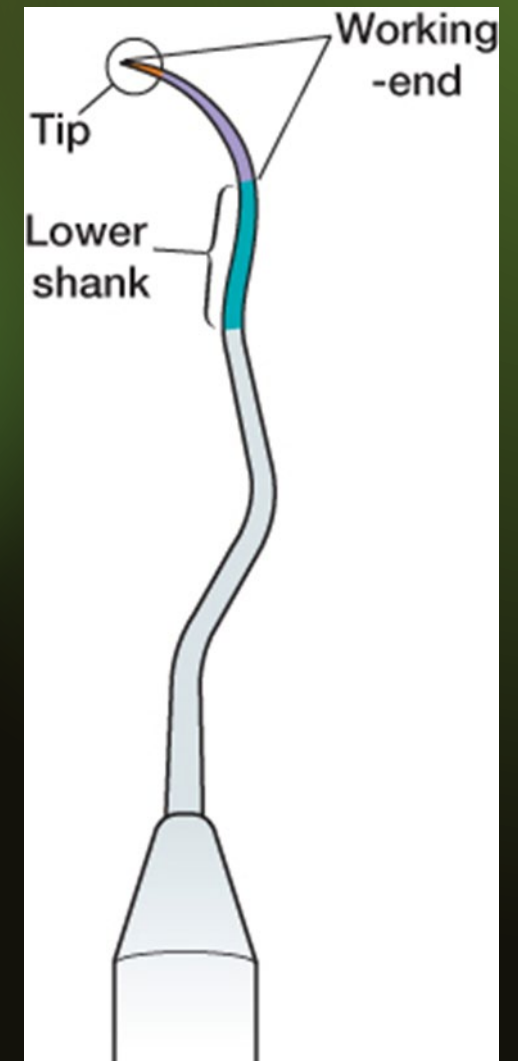


Sub- or Supragingival?

- **Supragingival**: use of an instrument **coronal to** (above) the gingival margin. For example, examine the margins of restorations.
- **Subgingival**: use of an instrument **apical to** (beneath) the gingival margin

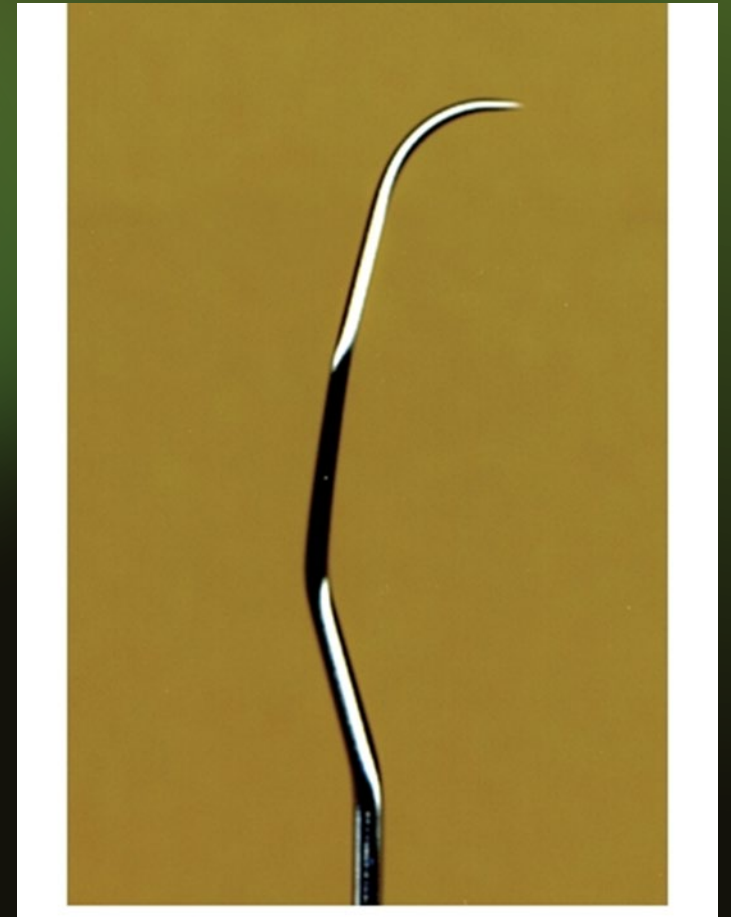
Design Characteristics: 11/12-Type Explorer

- Made of flexible metal that conducts vibrations from the working-end to clinician's fingers
- The tip is **1 to 2 mm from the side** of the explorer.
- The side of the tip is adapted to the tooth for the detection of calculus deposits. Ideal for subgingival use.
- The point is never used for detection
- The tip is bent at a 90-degree angle to lower shank
- The lower (terminal) shank of an explorer is the section of the shank that is nearest to the tip.
- Long, complex shank design excellent for anterior and posterior teeth
- Smooth back of tip is in contact with soft tissue base of sulcus or pocket



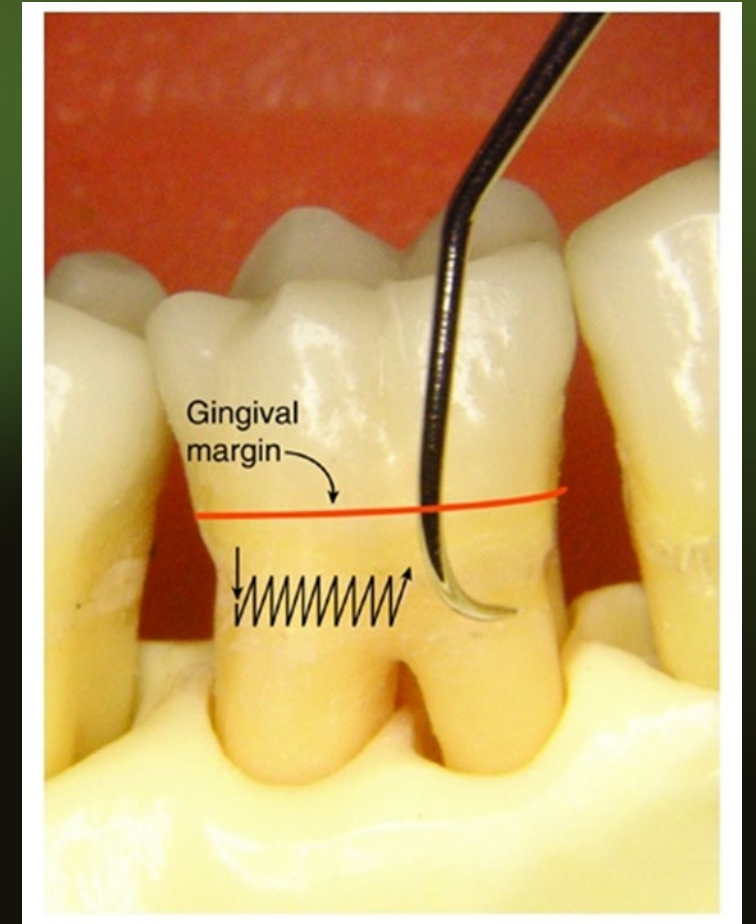
The 11/12 Type is Ideal

- Curved back of the working-end touches the soft tissue base of the sulcus or periodontal pocket
- Complex shank makes it easy to reach root surfaces of **anterior** and **posterior** teeth
- Can be used in shallow sulci and deep pockets
- Disadvantages: NONE



The Assessment Stroke

- An **assessment stroke** is used to detect calculus deposits or other tooth surface irregularities on the tooth surface.
- It is also called an “exploratory stroke.”
- During **subgingival** instrumentation, the clinician relies on the **sense of touch to locate** calculus deposits hidden beneath the gingival margin.
- **Tactile sensitivity** is the ability to detect tooth irregularities, such as calculus deposits, by feeling vibrations transferred from the explorer tip to the instrument shank and handle.
- Assessment strokes should be **short** in length and involve many **overlapping** strokes.



Technique Tips for Exploring

- **Grasp**—relaxed grasp, middle finger rests lightly on the shank
- **Adaptation**—1 to 2 mm of the side of the tip
- **Lateral Pressure**—feather-light pressure against the tooth
- **Activation** - wrist activation is recommended
- **Strokes**— many close, overlapping, multidirectional, fluid, sweeping strokes

Common errors:

- **AVOID** a tight, tense “death grip” on the handle
- **AVOID** applying pressure with the middle finger against the shank.
- **Do NOT** remove the explorer tip from the sulcus or pocket as you make an upward stroke. Keep the tip beneath the gingival margin.

Steps for Subgingival Exploration:

- 1. Get ready and Insert.** Adapt the tip to the middle third of the crown (above gingival margin) and slide the tip under the gingival margin.
- 2. Insert to the Base of Pocket.** Keep the tip in contact with the root surface, and slide in an apical direction until the back touches the base of the sulcus.
- 3. Initiate Assessment Stroke in Coronal Direction.** Move the tip in vertical or oblique direction up the surface of the root.
- 4. Stroke Length.** Move the tip to a point just below the margin, do not remove it completely.
- 5. Reposition at the Base of the Pocket.** Move forward and reposition, return to the base of the pocket (sulcus)
- 6. Divide Root into Apical, Middle, and Cervical Thirds** and keep the strokes no more than 2-3mm long
- 7. Considerations for Proximal Surfaces.** Lead with the point, do not "back" into the proximal surfaces.

Anterior Teeth

Selecting Correct Working-End

CORRECT

- Working-end curves inward toward the facial surface, "Wraps around" facial surface



INCORRECT

- Working-end curves outward away from the facial surface



Exploring Anterior Teeth

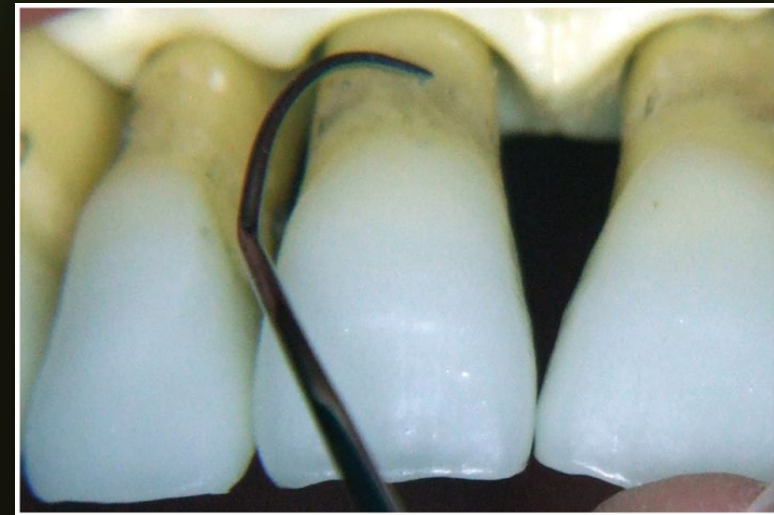
RIGHT-HANDED CLINICIANS BEGIN WITH SURFACES AWAY, LEFT-HANDED - TOWARD.

REMEMBER: "ME - MY PATIENT - MY LIGHT- MY DOMINANT HAND -MY NON-DOMINANT HAND - MY FINGER REST - MY ADAPTATION".

1. Select correct working-end. Insert to the base of the pocket. The get ready zone is the **Midline**.



2. Work Across the Facial surface towards the mesial. Roll the handle to keep the side of the tip adapted to the root surface.

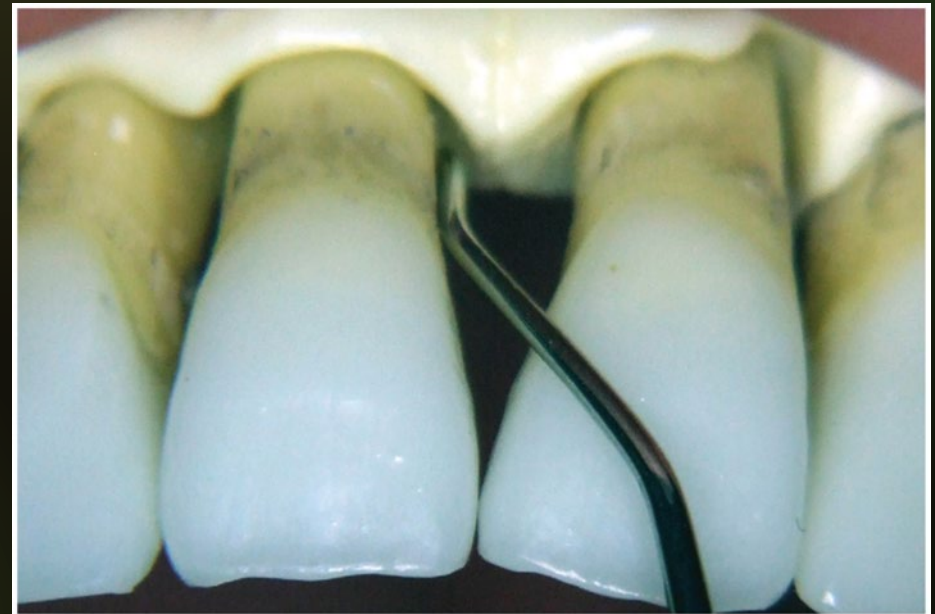


Exploring Anterior Teeth

3. Move around the line angle. Roll the handle to move the tip around the mesiofacial line angle.

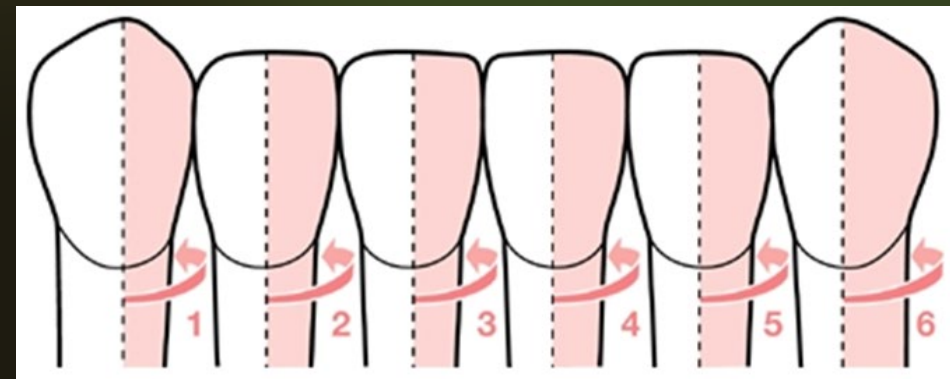
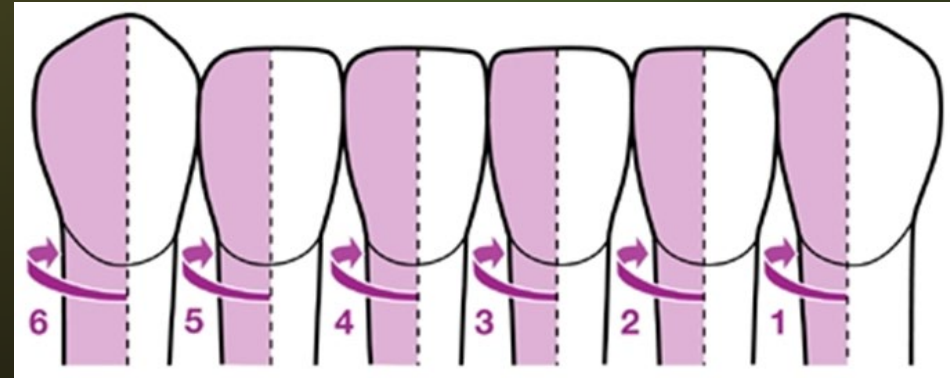
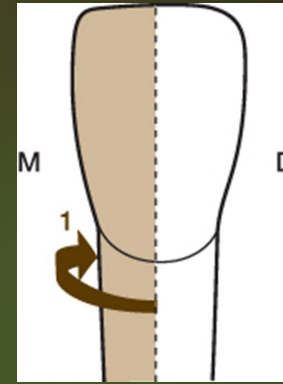


4. Assess the mesial surface at least halfway across from the facial/lingual aspect.



Sequence for Exploring Anterior teeth with 11/12 Explorer:

1. Place the tip on the middle-third of the crown near the **midline of the facial surface**. Point should face in the direction you are moving in.
2. Explore all the surfaces toward you (right-handed clinician shown).
3. Next, do the surfaces away (right-handed clinician shown).



Posterior Teeth: Selecting Correct Working-End

For each sextant: observe the relationship of the lower shank to the distal surface of a premolar tooth easily seen.

CORRECT

- The **lower shank** is **parallel** to the distal surface.
- The **functional shank** goes **“up and over”** the tooth.



INCORRECT

- The **lower shank crosses** the buccal surface.
- The **functional shank** is **“down and around”** the tooth.

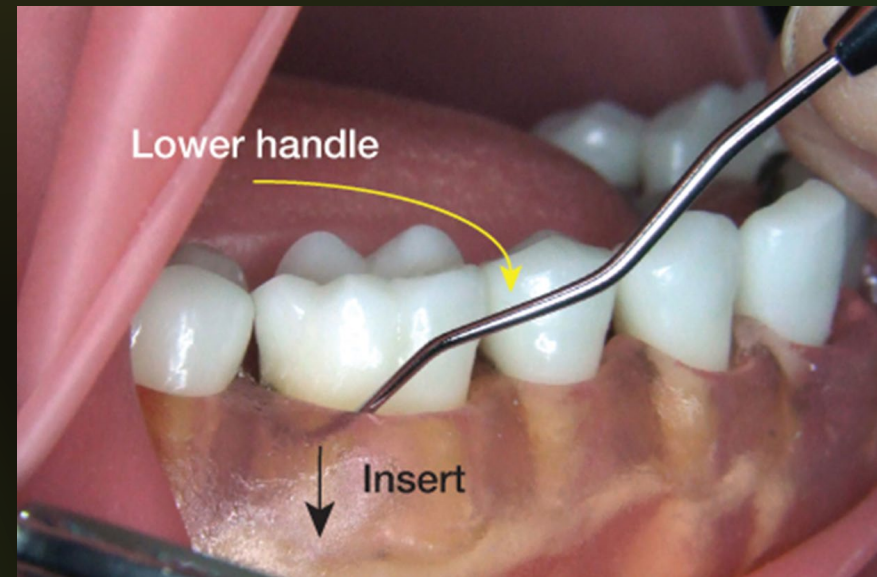


Exploring Posterior Teeth

1. Place the explorer tip in the **Get Ready Zone**. For posterior teeth it is the **Distofacial or Distolingual line angle**.



2. **Lower** the instrument handle. Gently **insert** beneath the gingival margin. Make **feather-light strokes** toward the distal surface.



Exploring Posterior Teeth

3. As you approach the distal surface, **roll the instrument handle** slightly to maintain adaptation. Explore **at least halfway across** the distal surface.



4. **Get ready.** Reposition the tip in the **middle-third of the crown.**

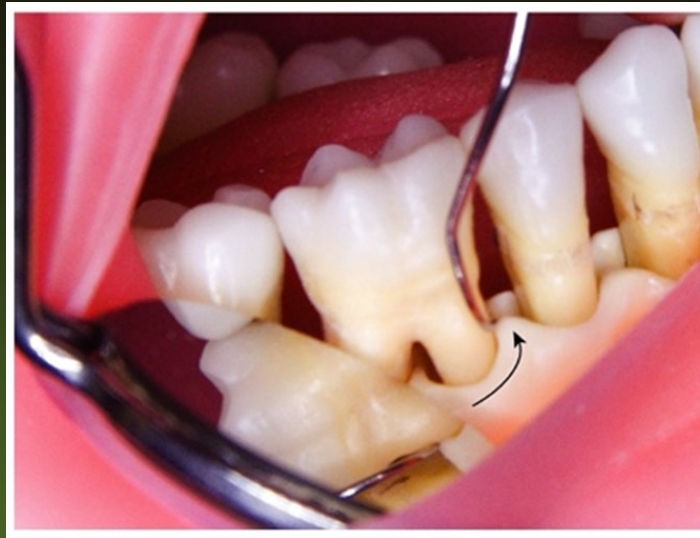


Exploring Posterior Teeth

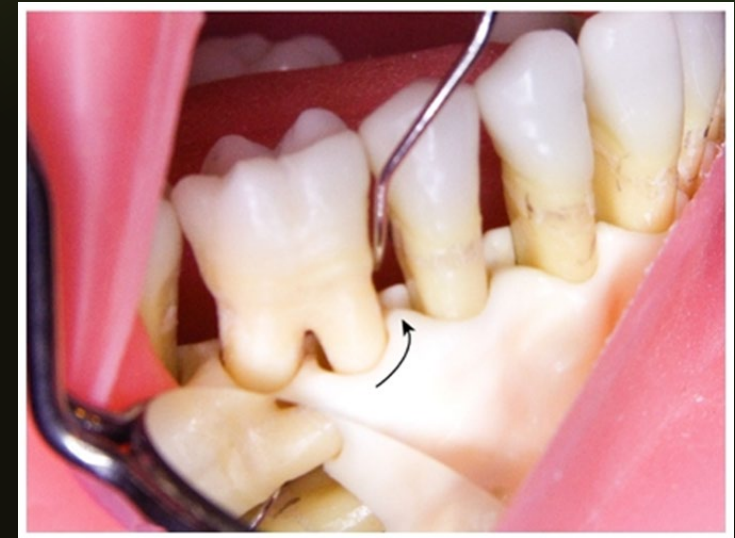
5. **Lower** the instrument handle. Gently **insert** beneath the gingival margin. Make a series of **feather-light strokes** across the buccal surface.



6. **Roll the instrument handle** as you approach the **mesiofacial** line angle to maintain adaptation.



7. Explore **at least halfway across** the mesial surface from the buccal aspect.

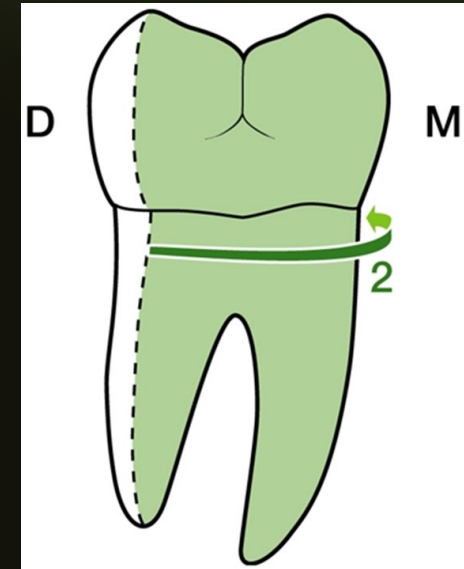
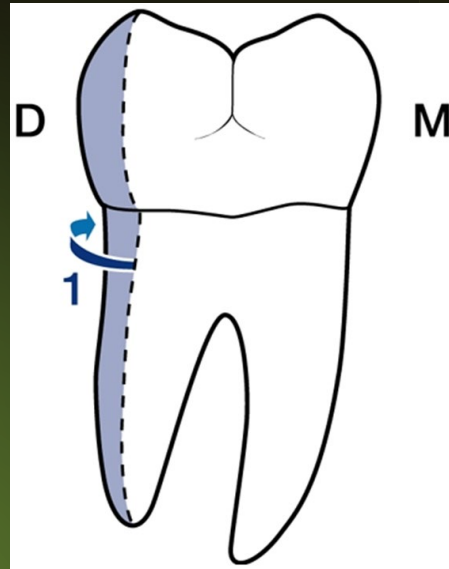
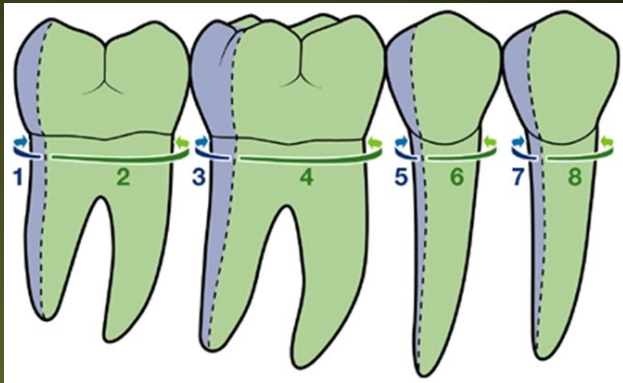


Sequence of Exploring Posterior teeth with 11/12 Explorer:

Use the sequence shown here when exploring a posterior sextant.

Start at the **distofacial line angle** and work back toward the distal surface.

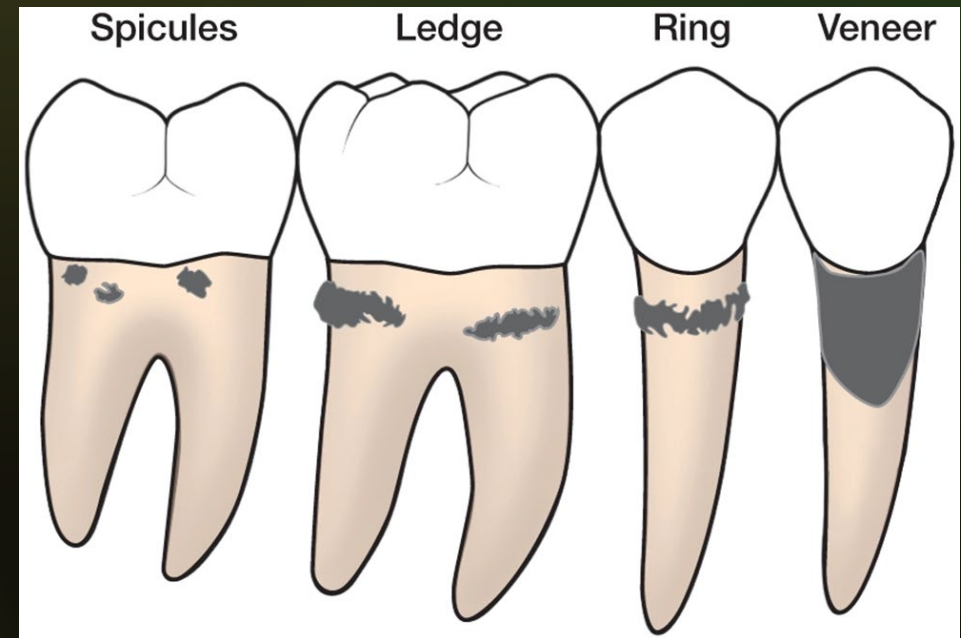
You are now ready to explore the **facial and mesial surfaces** of the tooth. Begin at the **distofacial line angle**.



Detection of Dental Calculus Deposits

- **Supragingival** deposits are located coronal to gingival margin.
- **Subgingival** deposits are hidden beneath gingival margin.
- Subgingival deposits are built up layer by layer slowly over time.
- The ability to recognize what you are feeling subgingivally is a skill that takes time and concentration to develop.

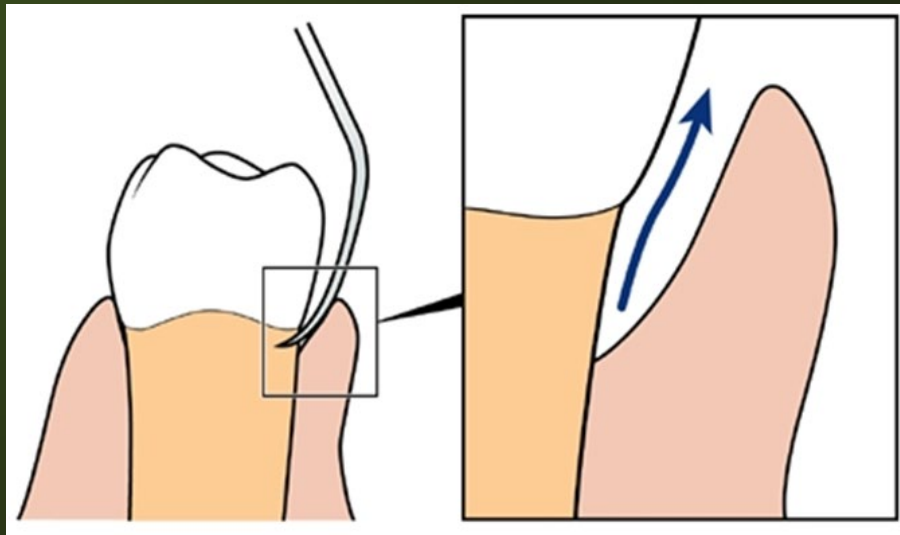
Common Types of Calculus Formations



Detection of Dental Calculus Deposits

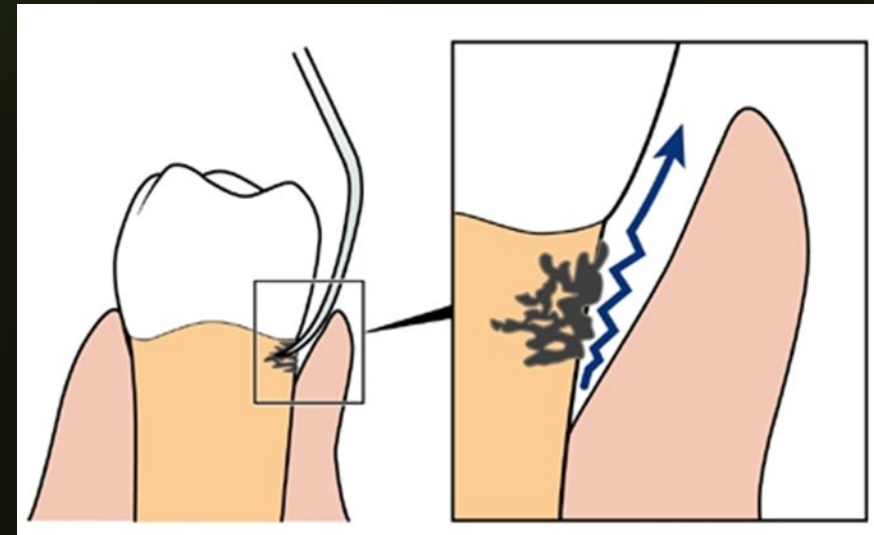
NORMAL CONDITIONS

Your fingers do not feel any interruptions in the path of the explorer.



SMALL CALCULUS DEPOSITS - SPICULES

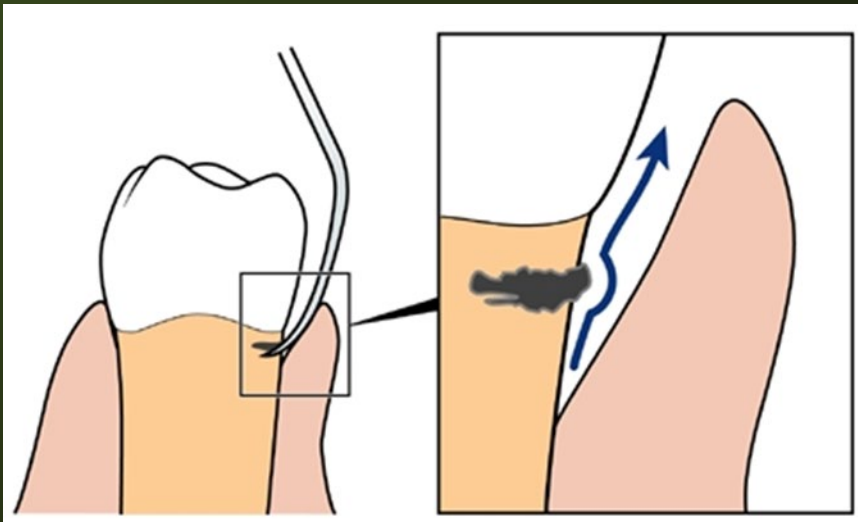
You will feel **a gritty sensation** as the explorer passes over the small calculus deposit. "Inline skating over a few pieces of gravel"



Detection of Dental Calculus Deposits

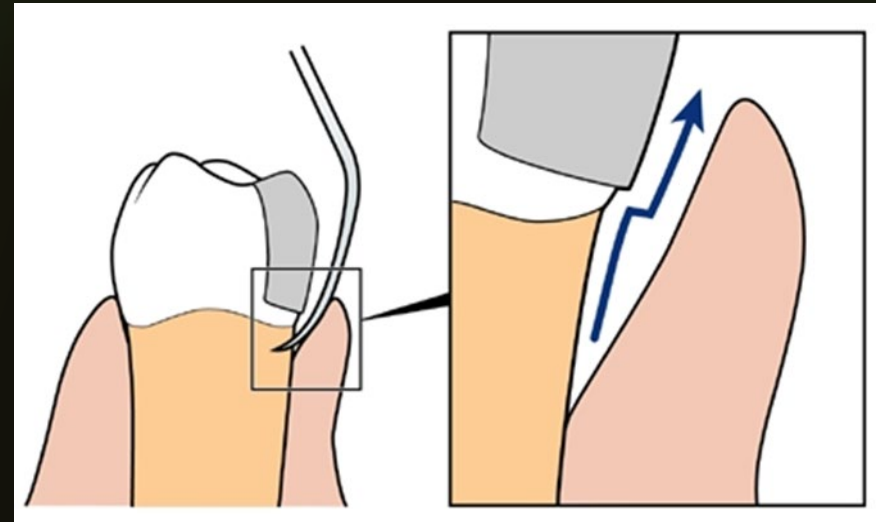
LARGE LEDGE OF CALCULUS

You will feel the **tip move out and around the raised bump** and return back to the tooth surface. "Skating over a speed bump in a parking lot"



OVERHANGING RESTORATION

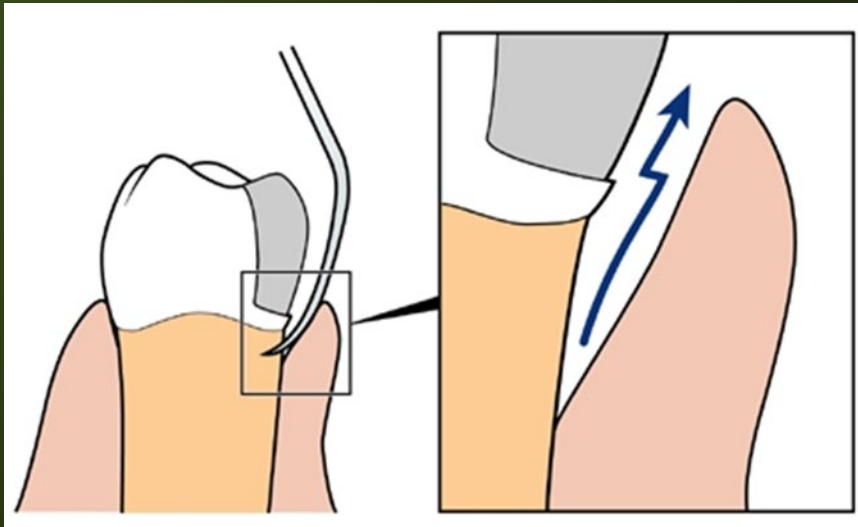
Explorer must **move away from the tooth** and over the restoration. "Skating over a section of a sidewalk that is higher than the adjacent section"



Detection of Dental Calculus Deposits

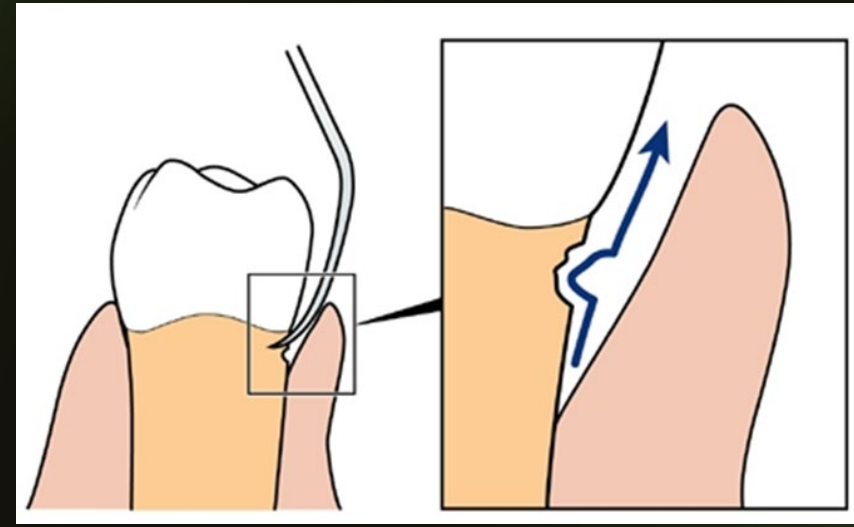
DEFICIENT MARGIN OF RESTORATION

Explorer **dips in** to trace the restoration.
"Skating onto a section of pavement that is lower than the surrounding pavement"



CARIOUS LESION

Explorer tip **dips into** a rough depression.
"Skating into a pothole"



Compressed Air for Calculus Detection

Use compressed air for visual inspection. When dried, **supragingival** calculus appears rough and chalky.

