SICKLE SCALERS

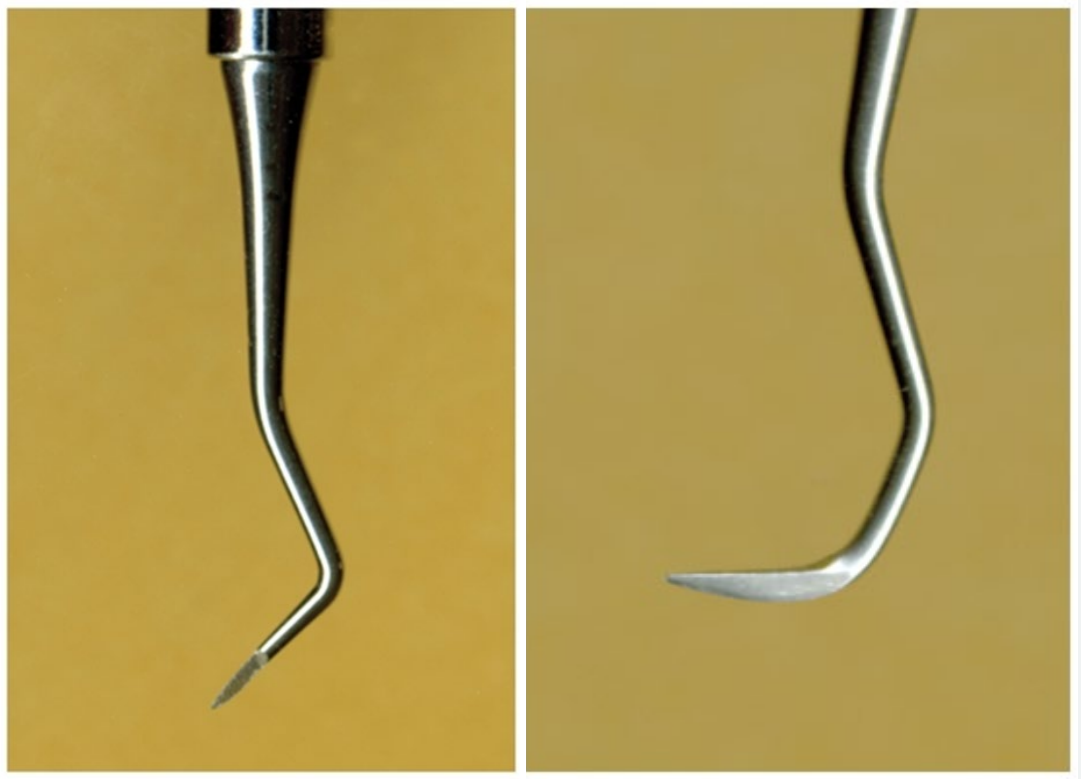
FPI Module 15

Sickle Scaler

A periodontal instrument used to remove calculus deposits from the **crowns** of the teeth.

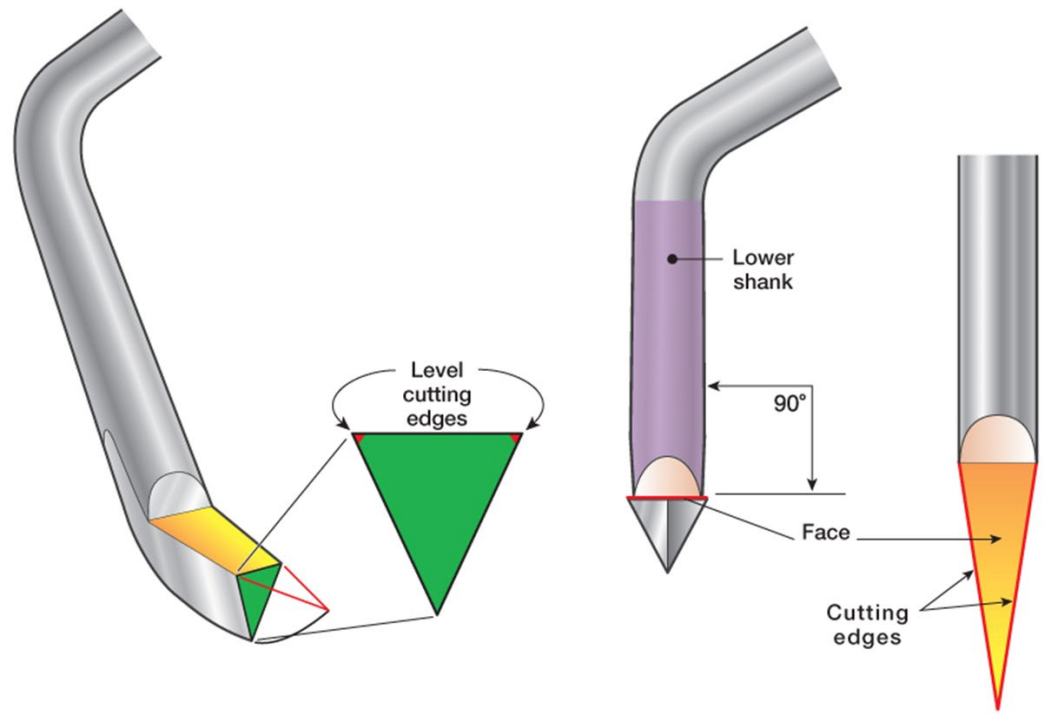
Removal of medium to large-sized **supragingival** calculus deposits.

Should NOT be used on root surfaces



Unique Design Characteristics

- Pointed tip and back
- Triangular in cross-section
- Two cutting edges per working-end
- The **face** of a sickle scaler is **perpendicular** to the **lower shank**
- **Anterior sickles** are often single-ended; may have two different sickles on a double-ended instrument
- **Posterior sickles -** usually two sickles paired on a double-ended instrument; working-ends are mirror images



Nevi Series

You will learn and use Nevi 1 and 4

There are many other sickle scalers on the market

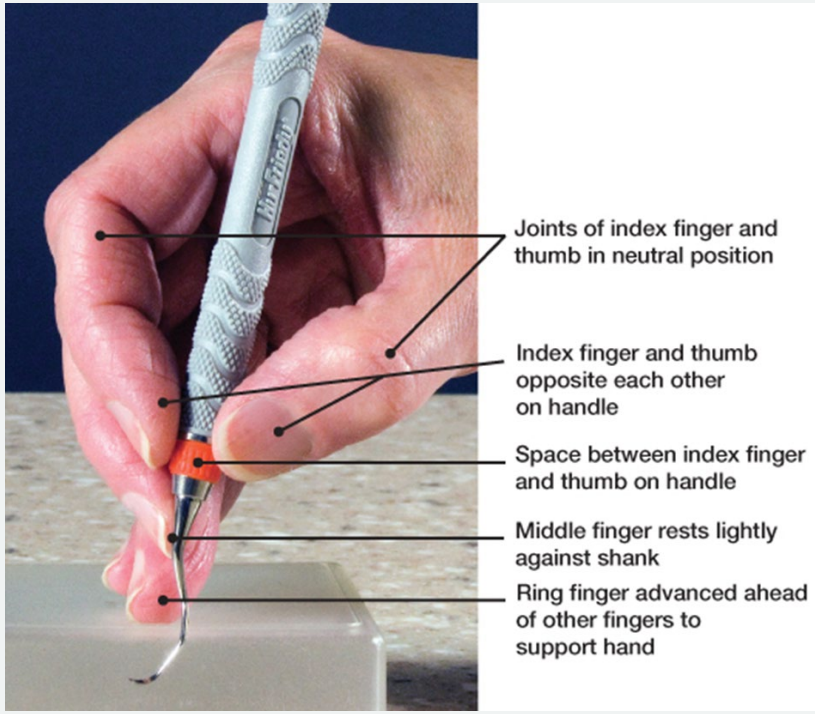
TABLE 15-2. NEVI SERIES OF SICKLE SCALERS

Instrument	Characteristics
	**Nevi 1: Sickle End** • Sickle-end of the Nevi 1 instrument • Rigid shank • Small, thin sickle • Use on coronal surfaces of anterior teeth
	**Nevi 1: Disc End** • Disk-end of the Nevi 1 instrument • All surfaces are sharp on the disk-end • *Supra*gingival use on lingual surfaces of anterior teeth
	**Nevi 2** • Paired, mirror-image working-ends • Thin, curved sickles for use on posterior teeth • Long cutting edge facilitates access to proximal tooth surfaces • Use on coronal surfaces of posterior teeth
	**Nevi 3** • Paired, mirror-image working-ends • Thin, curved sickles for use on posterior teeth • Long cutting edge facilitates access to proximal tooth surfaces • Use on coronal surfaces of posterior teeth • Excellent for use on pediatric patients
	**Nevi 4** • Paired, mirror-image working-ends • Strong, curved sickles for use on posterior teeth • Rigid working-end and shank • Removal of medium- or large-size deposits

Calculus Removal Concepts

Maintaining a correct **modified pen grasp** is important for effective calculus removal

Pause to check that finger placement in grasp is correct before initiating an instrumentation stroke



Calculus removal stroke with a sickle scaler

- Stabilization
- Adaptation – tip third of the cutting edge
- Angulation – 70-80°
- Lateral pressure – moderate to firm
- Controlled, short strokes
- Various stroke directions – vertical, oblique, horizontal
- Number of strokes – minimum number of strokes needed only in the area where calculus is present

TABLE 15-3. THE CALCULUS REMOVAL STROKE WITH SICKLE SCALER

Stabilization	Apply pressure with the index finger and thumb inward against the instrument handle and press the tip of the fulcrum finger against the tooth surface
Adaptation	Tip-third of cutting edge is adapted
Angulation	70 to 80 degrees; for sickle scalers the lower shank must be tilted slightly toward the tooth surface to achieve correct angulation
Lateral Pressure for Calculus Removal	Moderate to firm pressure against the tooth surface is maintained during the short, controlled calculus removal stroke made away from the soft tissue When making a stroke the instrument handle moves slightly away from the tooth surface being instrumented; for example when working on a facial surface the instrument handle moves slightly toward the cheek or lip and not toward the facial surface
Characteristics	Controlled strokes, short in length
Stroke Direction	Vertical strokes are most commonly used on anterior teeth and on the mesial and distal surfaces of posterior teeth; stroke direction is *away from the soft tissue (in a coronal direction)* Oblique strokes are most commonly used on the facial and lingual surfaces of posterior teeth; *away from the soft tissue (in a coronal direction)* Horizontal strokes are used at the line angles of posterior teeth and the midlines of the facial or lingual surfaces of anterior teeth, stroke direction is *parallel to the gingival margin but never touching the soft tissue base of the sulcus or pocket*
Stroke Number	Strokes should be limited to areas where calculus is present; use the minimum number of strokes needed to remove calculus deposits

USE OF ANTERIOR SICKLE SCALERS

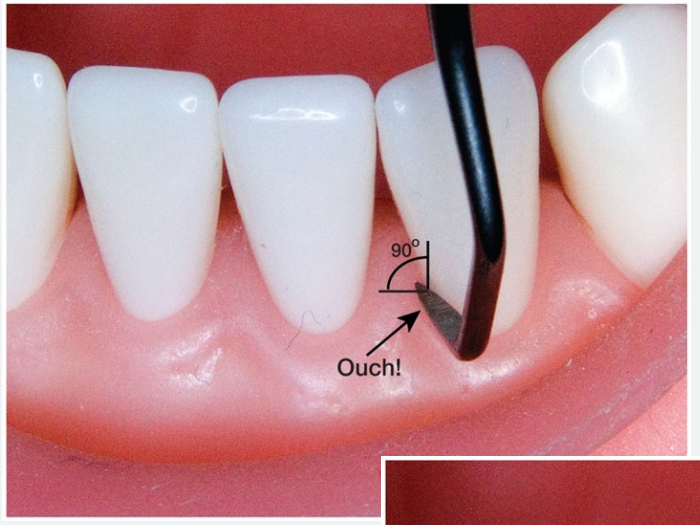
Establishing Angulation

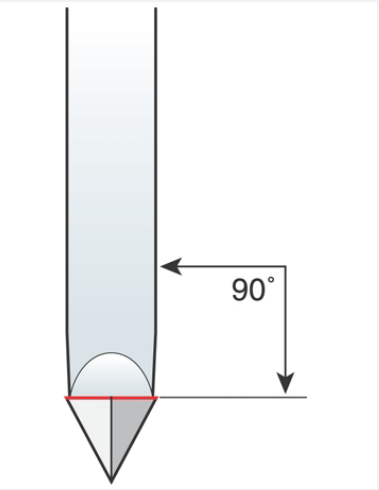
The face of the working end is at a **90-degree angle** to the lower shank.

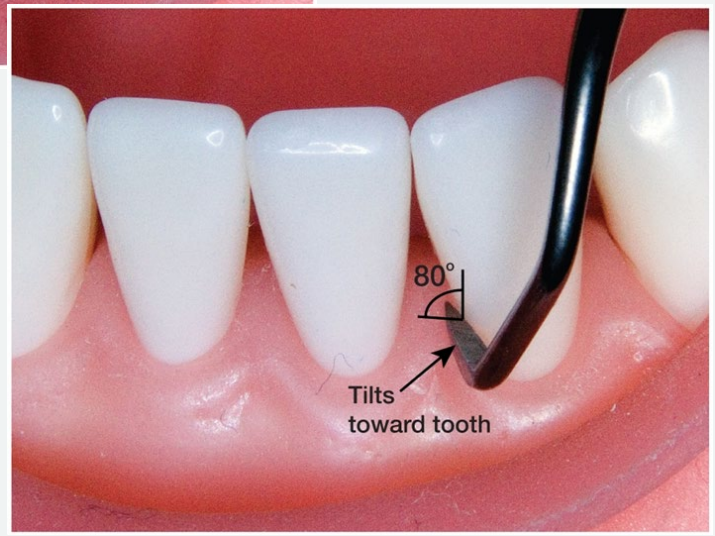
Correct angulation is achieved by tilting the lower shank toward the tooth surface.

This creates a **face-to-tooth surface angulation** of 70 to 80 degrees.

Positioning the lower shank parallel to the tooth surface creates an incorrect face-to-tooth angulation of 90 degrees.



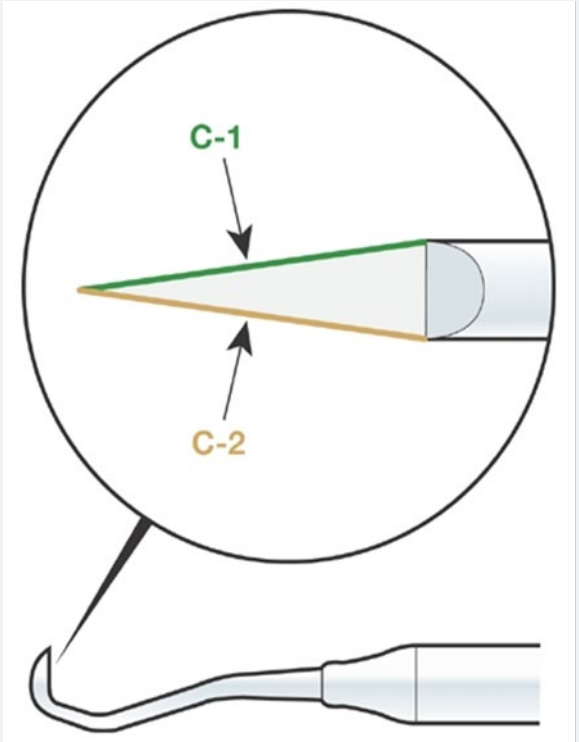


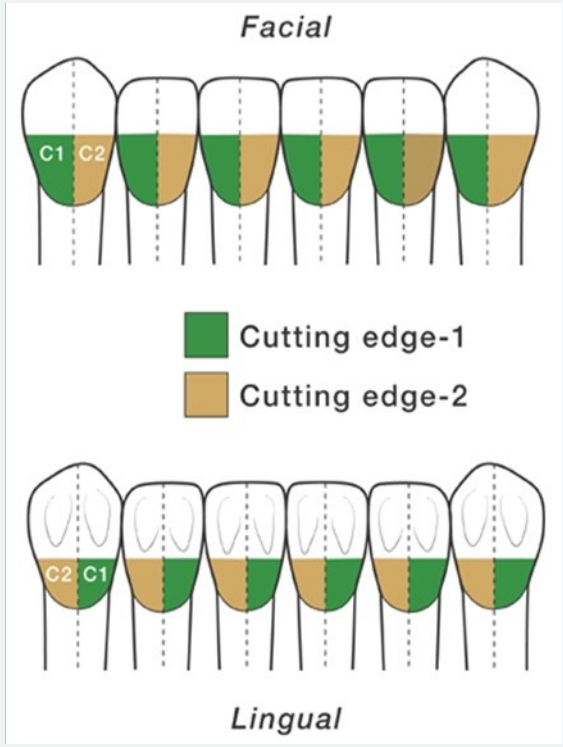


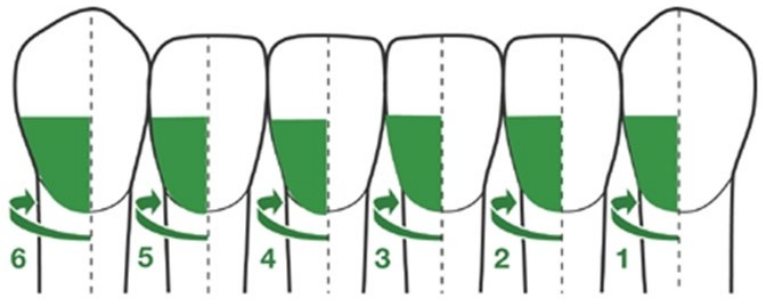
Application of Cutting Edges

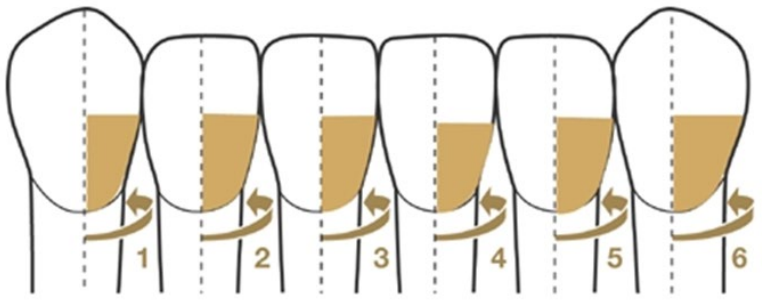
The working-ends of the anterior sickle have two cutting edges C-1 and C-2

This shows how the two cutting edges are applied to anterior teeth. Remember the sequence for the instrumentation of the anterior teeth.



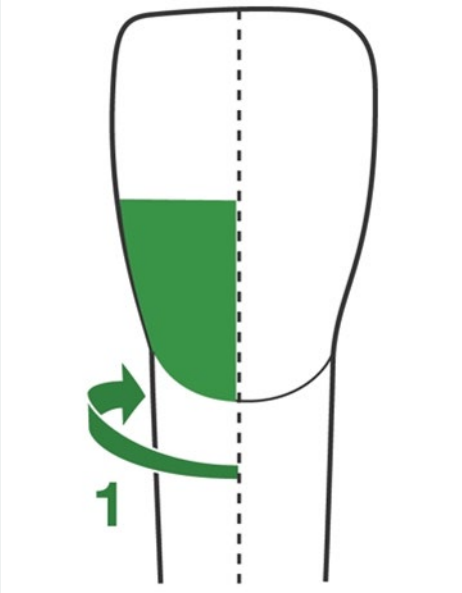






Step1

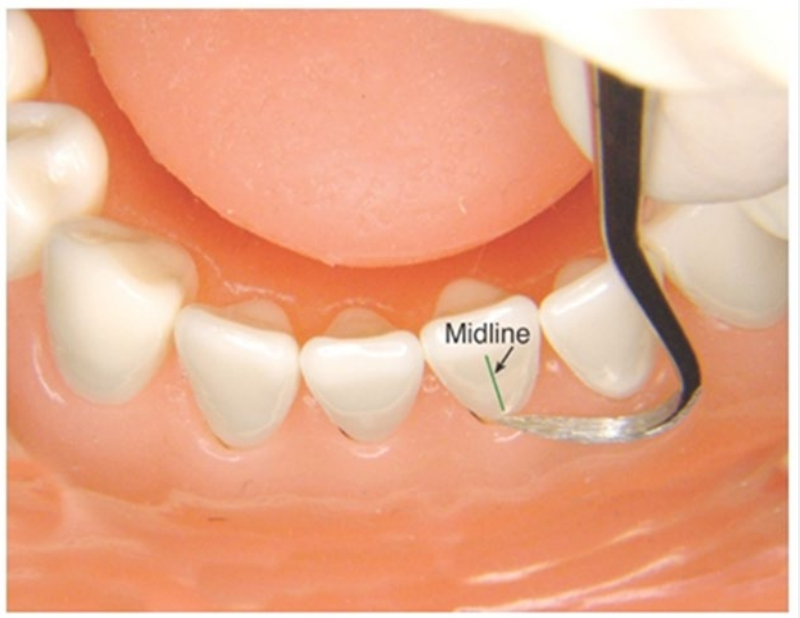
Begin at the midline of the tooth and work toward the proximal surface.



Step 2

Position the **tip-third** of the working-end near the midline of the tooth.

Tilt the lower shank **toward the tooth** surface to establish correct angulation.



Step 3

Make strokes across the facial surface toward the mesial surface.

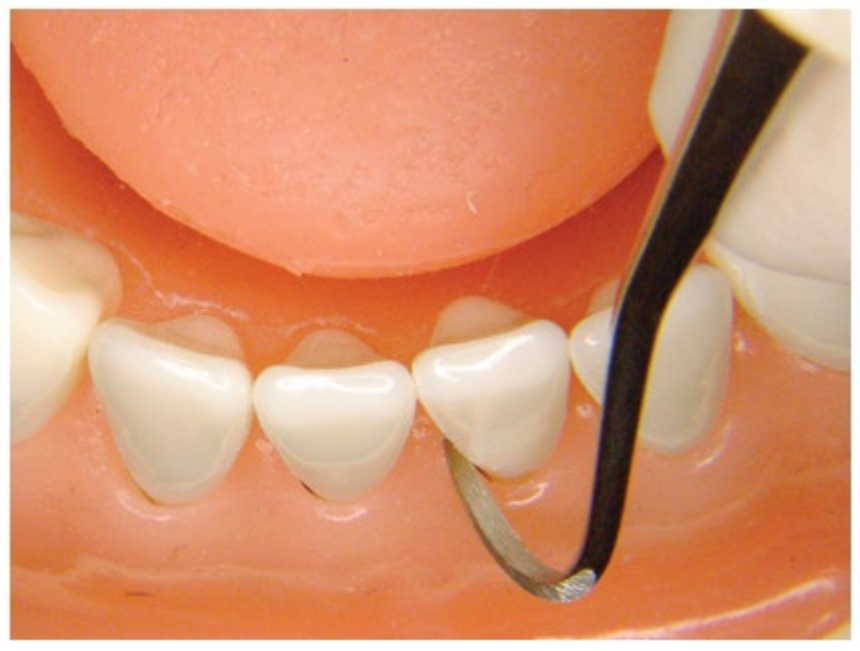
Step 4

At the line angle, roll the instrument handle to maintain adaptation of the tip-third of the working-end.

Step 5

Continue making strokes as you work along the mesial surface.

Make sure your angulation is still between 70 and 80 degrees.



Step 6

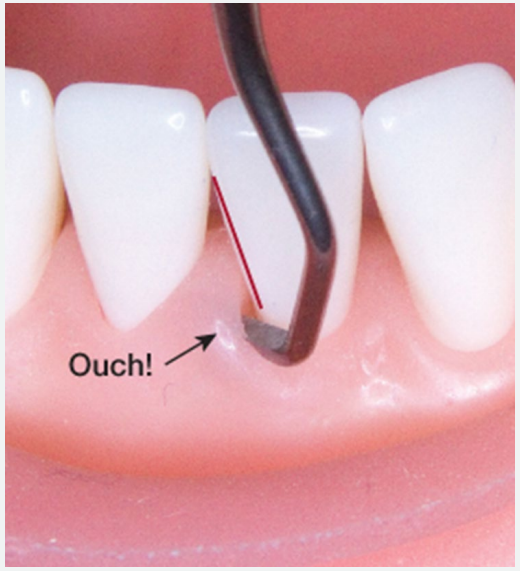
Be sure to make strokes at least halfway across the mesial surface.

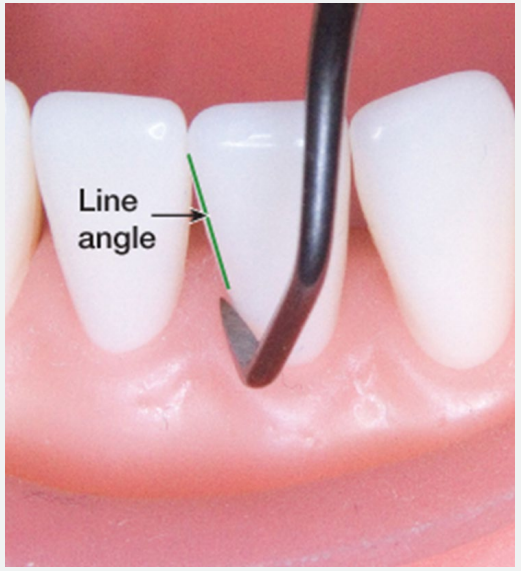
Maintaining Adaptation at the Midline and Proximal Surfaces

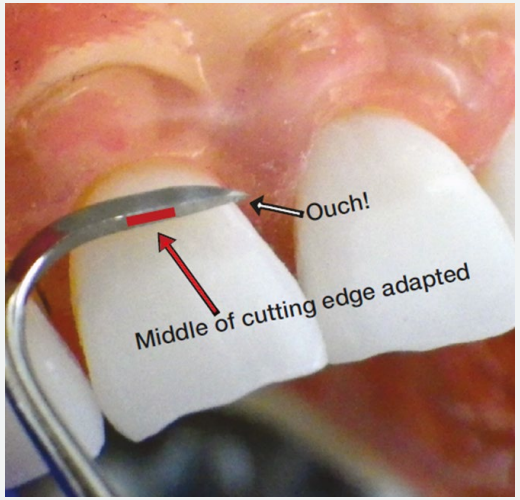
Tooth surfaces are curved.

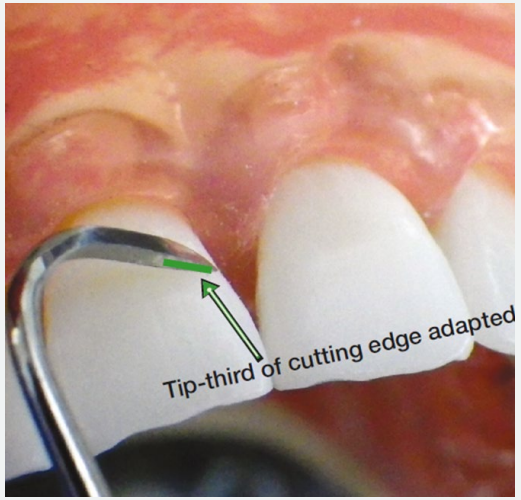
A common technique error is a failure to adapt the tip-third of the cutting edge to a tooth surface.

Correct technique involves **rolling the instrument handle** in a series of tiny movements as you move around the line angle into the proximal surface.

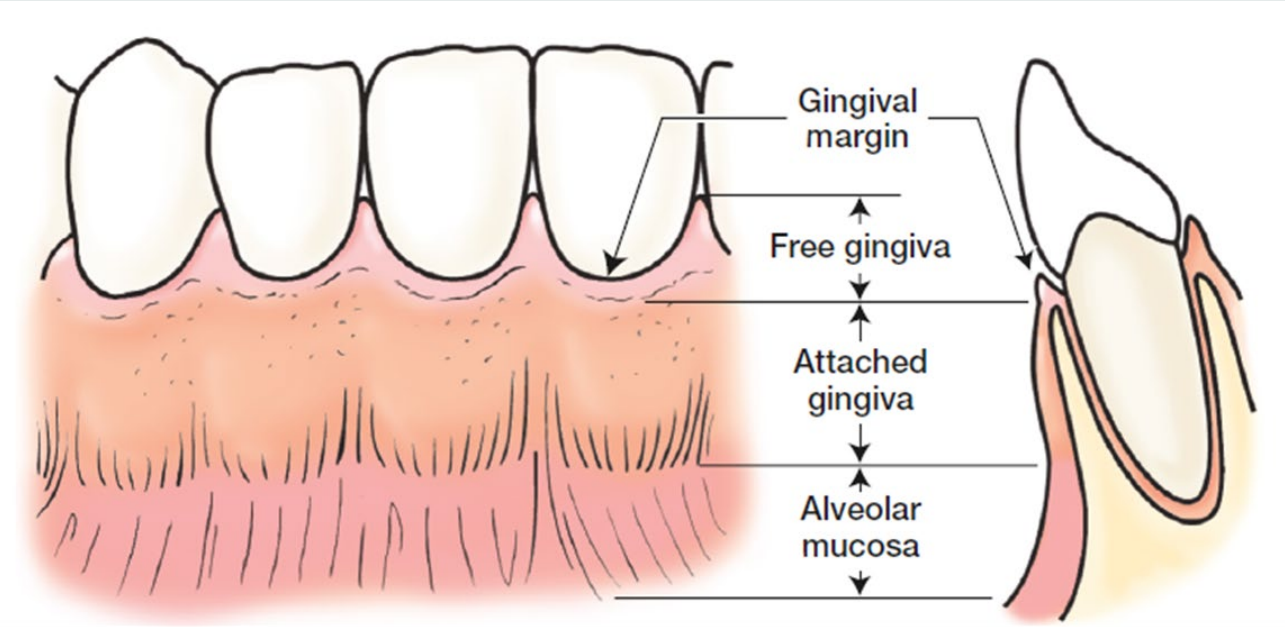








Adaptation Adjacent to Papillary Gingiva



Instrumentation of proximal surfaces adjacent to papillary gingiva can be challenging

New clinicians may “trace the pointed contours of the papilla” with the working-end—**Incorrect**

Position cutting edge against proximal tooth surface—**Correct**

Adapt tip third only!

USE OF POSTERIOR SICKLE SCALERS

Choosing Correct Working End

- **Establish a finger rest**
- Place working-end in the Get Ready Zone of the **distal surface.**
- Use the **lower shank as a visual clue**

Correct working-end

-**Lower shank** is **parallel** to the distal surface

-Functional shank **goes up and over the tooth**

Incorrect working-end

-Lower shank **not parallel**

-Functional shank is **down and around the tooth**

“Posterior = Parallel”

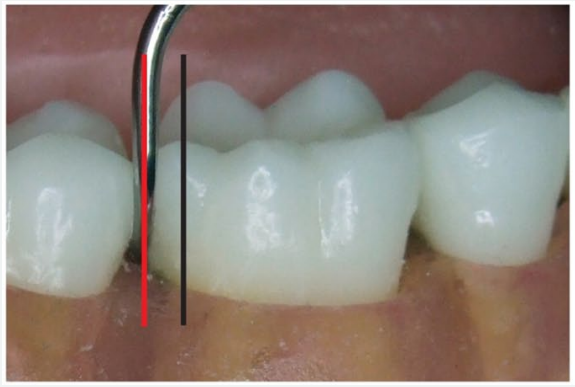
Establishing Angulation

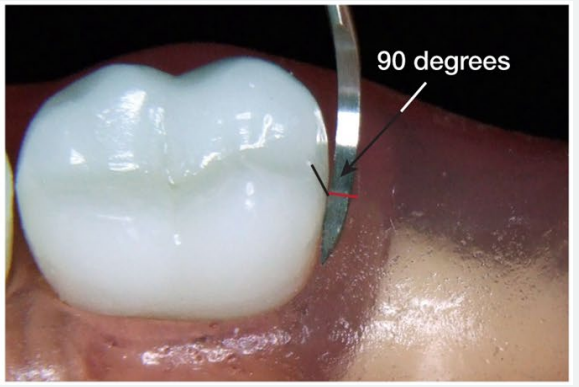
Correct face-to-tooth surface angulation for calculus removal is 70 to 80 degrees.

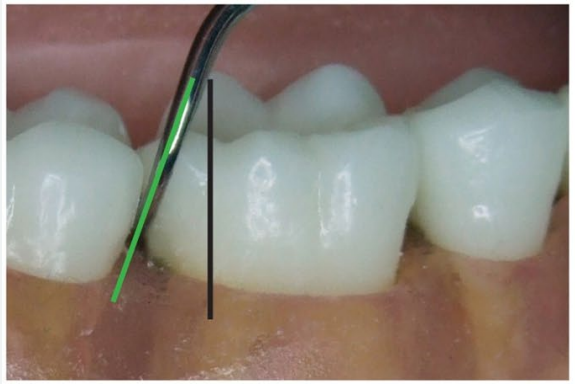
The **face** of the working-end of **posterior sickle** is **perpendicular to the lower shank**.

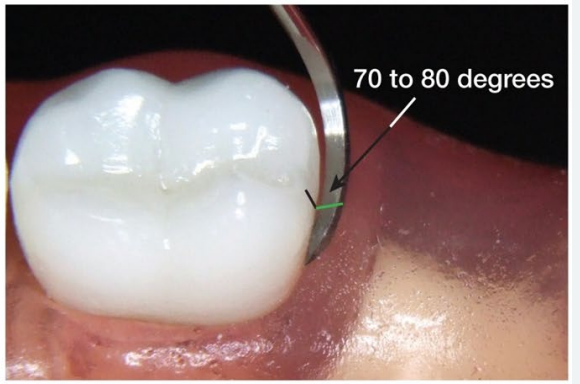
Positioning the **lower shank parallel to the tooth surface** creates an **incorrect face-to-tooth surface angulation** of 90 degrees.

Correct angulation is achieved by **tilting the lower shank toward the tooth surface**.





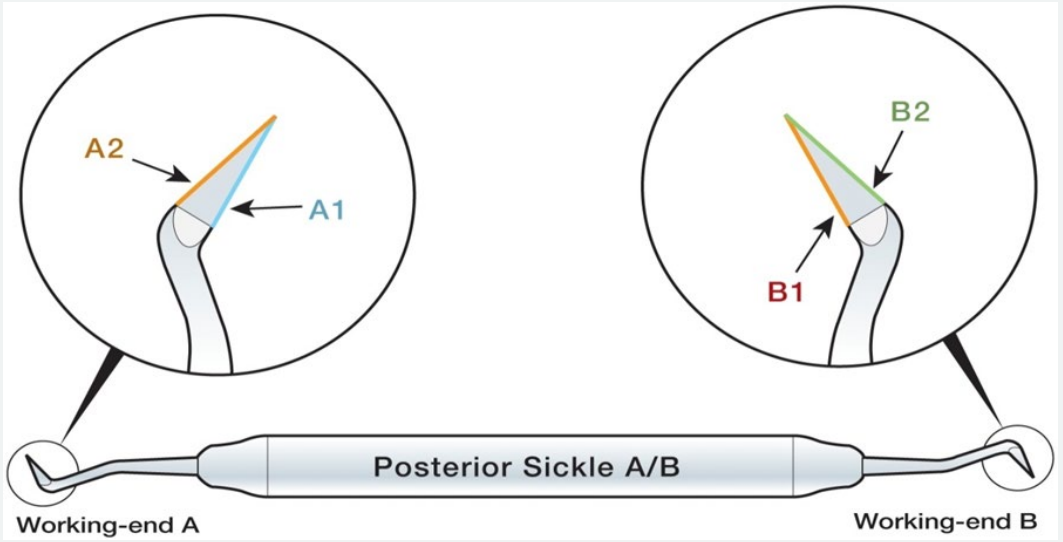


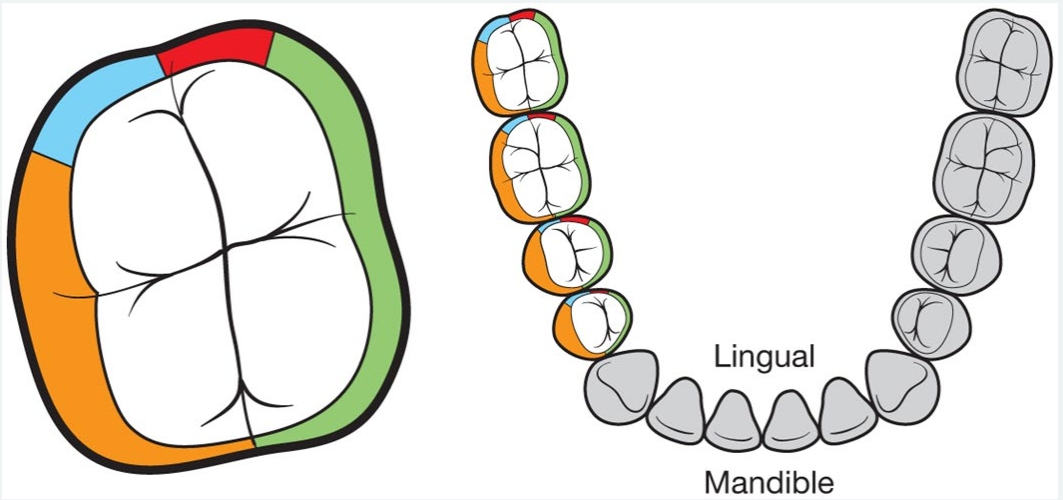


Application of Cutting Edges

Four cutting edges of a posterior sickle scaler:

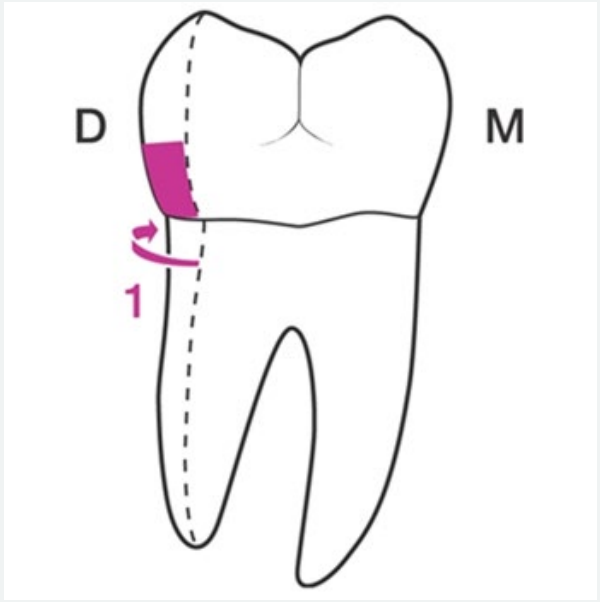
Both cutting edges of the same working end are used on the **buccal aspect** of a posterior tooth, while **both cutting edges of the opposite working** end are used on the **lingual aspect** of the same tooth.



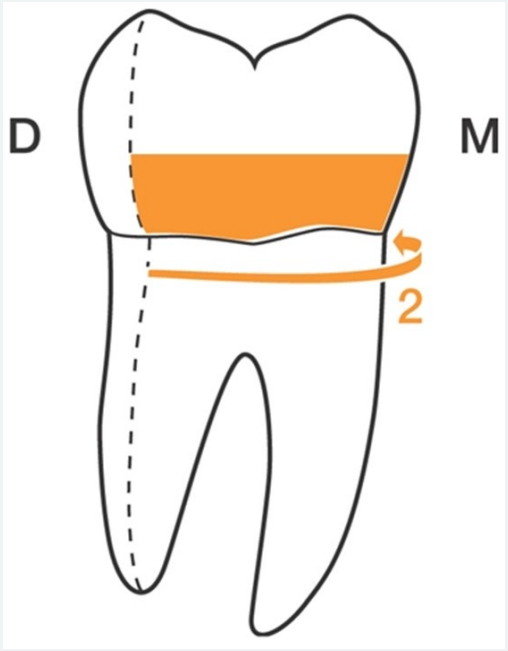


Sequence

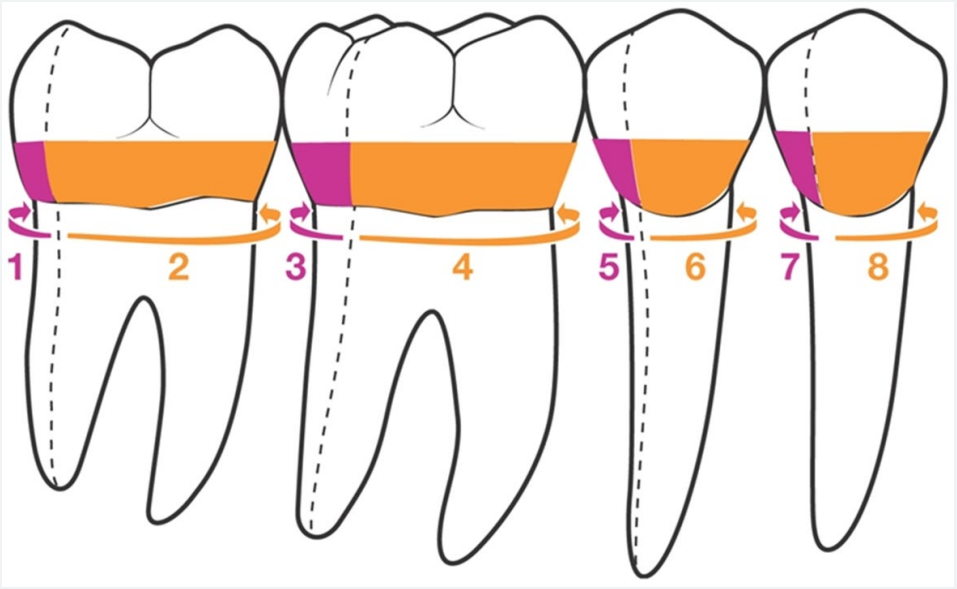
Area 1.
Distal surface



Area 2.
Distofacial line angle forward for facial and mesial surfaces



Sequence for Sextant



Technique

1. Select the correct working-end.

2. Position the tip-third of the working-end at the distofacial line angle.
Work back toward the distal surface.

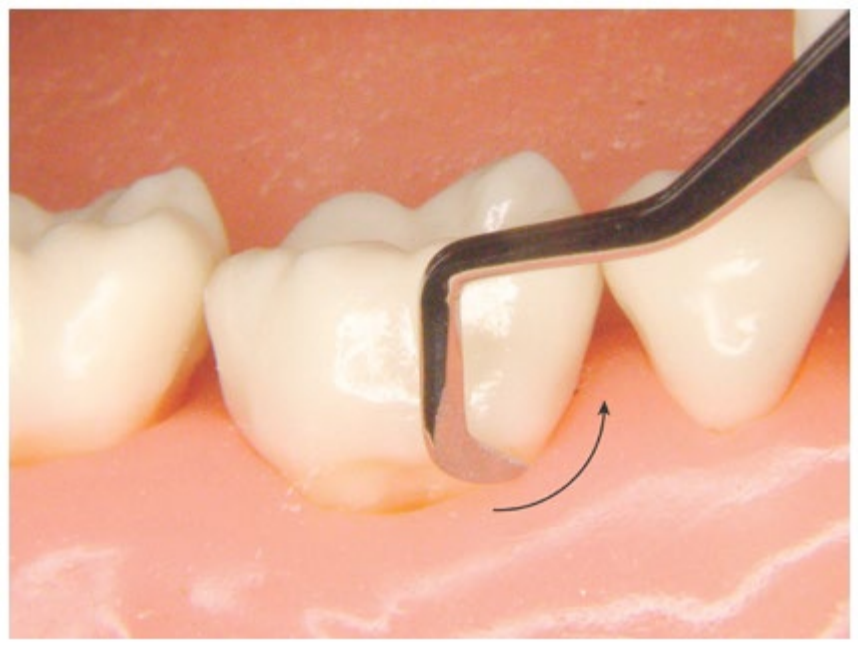
Technique

3. Check your angulation.
Tilt the lower shank toward the tooth surface.

4. Reposition at the distofacial line angle with the tip “facing” forward.
Tilt the shank toward the tooth surface.

Technique

5. Make strokes across the facial surface.



6. **Roll** the instrument handle to maintain adaptation at line angle.
Tilt lower shank toward the mesial surface.
Continue strokes at least halfway across the mesial surface.