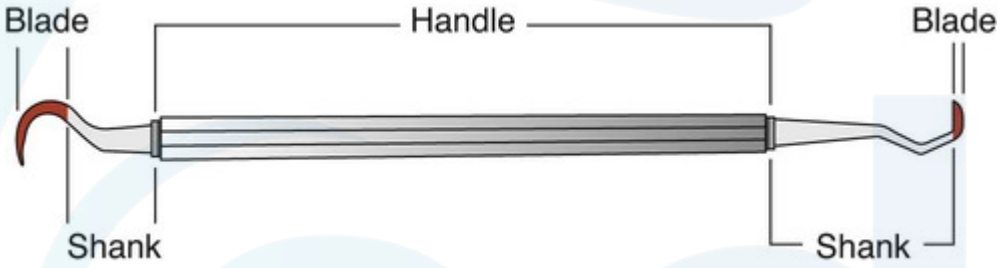
PERIODONTAL INSTRUMENTATION

Parts of Periodontal Instruments

- Blade/working end
- Shank
- Handle



Shank

Shank Type	Examples
Rigid	Sickle scalers, Periodontal files
Moderately flexible	Universal Curettes
Flexible	Explorers, Gracey Curette

- The shank of the instrument should remain parallel to the long axis of the tooth.
- During probing, the shank will be oriented perpendicular to the long axis of the tooth. and the working end will be parallel to the long axis of the tooth.

Instrument Handle

- **Weight**
  Hollow Handles increase tactile transfer and minimize fatigue.
- **Diameter**
  - Small diameter handle decreases control and increases muscle fatigue.

        - A large-diameter handle maximizes control and reduces muscle cramps.
    - **Textures**
        - Knurled handles maximize control and decrease hand fatigue.
        - Smooth handles decrease control and increase muscle fatigue

Naming of Instrument

- **Single-ended instrument** – One side working. Eg: #3 probe
- **Double-ended instrument** – Both sides working Eg: #17/23 explorer (one end is #17 and the other end is #23)

Classification of Periodontal Instruments

Nonsurgical instruments

Diagnostic instruments

- Dental Mirrors
- Explorers
- Tweezers
- Periodontal probes

Scaling and root planing instruments

Hand instruments

- Scalers
    - Sickle scalers
    - File scalers
    - Chisel
    - Hoe
- Curettes

Ultrasonic and sonic instruments

Rotating instruments

Reciprocating instruments

LASERS

Periodontal endoscope

Cleaning and polishing instruments

Surgical instruments

- Excisional and incisional instruments
- Surgical curettes and sickle scaler
- Periosteal elevators
- Surgical chisels
- Surgical files
- Scissors and Nippers
- Needle holders

Non-Surgical Instruments

Dental Mirrors

3 Types :

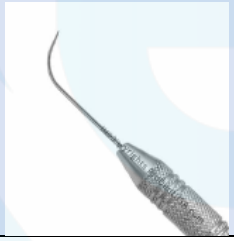
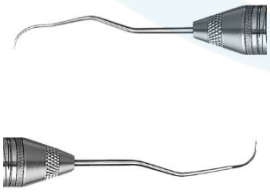
Mirror types	Features
Plane/Flat surface mirror	▪ Reflecting surface at the back of the mirror. ▪ Double image production
Concave surface mirror	Magnified image produced
Front surface mirror	▪ Commonly used in dental procedures ▪ Reflecting surface on the front of the mirror. ▪ Produce actual image.

Explorers

- For detection of calculus, deposits, caries
- Sharp tip
- Tactile examination

Uses

- To locate sublingual deposits and carious areas
- To check the smoothness of the root surface after root planning.

Explorer	Uses
17-Orbans explorer 	▪ For calculus detection interproximally and in the deep periodontal pocket ▪ Back action explorer
23 – Shepherd's Hook Explorer 	Role in subgingival calculus detection
Pigtail/Cowhorn/3CH Explorer no.21 and 22 	▪ Used for detecting calculus in areas of furcation involvement. ▪ Detecting proximal and cervical caries
3A explorer 	Used in deep pockets and furcation areas
Old Dominion University (ODU) 11/12 Gracey Type Explorer or EXD 11-12 	Calculus detection

The commonly used explorer is #17/23 explorer.

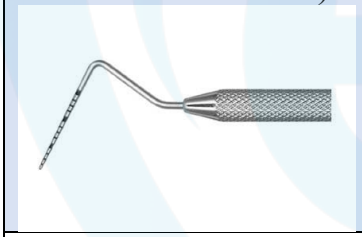
Periodontal Probe

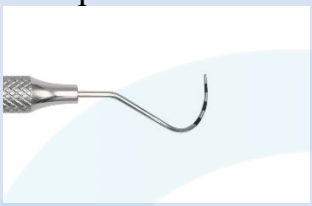
Used for measurements, have graduated markings.
General design features:

- Rod-shaped working ends
- Smooth, rounded/blunt tip
- Rounded or rectangular in cross-section.
- Calibrated with color coding and millimetre graduations.

Types of periodontal probes

- Color-coded
- Noncolor-coded

Probe	Features
Marquis color-coded probe 	▪ Calibrations are in 3 millimetre sections. ▪ Markings at **3, 6, 9, 12** mm.
UNC-15 probe (University of North Carolina – 15 Probe) 	▪ **15 mm** long probe. ▪ Millimetre markings at each millimetre. ▪ Color coding at the **5th, 10th, and 15th mm**.
University of Michigan "O" probe with Williams marking 	▪ Both color and noncolor coding. ▪ Markings at **1,2,3,5,7,8,9,10** mm ▪ Most commonly used probe.
Michigan "O" probe 	Markings at **3,6 and 8mm**

WHO Probe 	▪ **0.5 mm** ball at the tip. ▪ Millimetre marking at **3.5, 8.5 and 11.5 mm**. ▪ Color coding from **3.5 to 5.5 mm**
Nabers probe 	▪ The curved probe used for furcation areas. ▪ Markings at every **3 mm (3,6,9)**
CPITN probe 	▪ Color coding from **3.5 to 5.5 mm** and **8.5 mm to 11.5 mm** ▪ Used for epidemiological purposes. ▪ Ball at the tip with 0.5 mm diameter.

- **Goldman fox probe**: Flat, rectangular probe with markings at 1, 2, 3, 5, 7, 8, 9, and 10 mm.
- **NIDR probe**: It is a color coded and is graduated in 2 mm increments at 2, 4, 6, 8, 10 and 12 mm with alternating increments colored in yellow.
- **Novatech probes**: These are probes with a unique right-angle design for improved adaptability in the posterior.
- **DNA Probe**: used for identification of species-specific sequences of nucleic acids that make up DNA.
- **Periotemp probe**: Detects pocket temperature differences of 0.1 degrees C from a referenced subgingival temperature.

Generations of periodontal probe

- **First generation** - Conventional probes; Manual probes.
- **Second generation** - Constant force probes; Pressure sensitive probes. Examples: Vine Valley, True Pressure Sensitive TPS.
- **Third generation** - Automated and computerised probes. Examples: Florida, Foster-Miller, Toronto automated probes, Inter probe.
- **Fourth generation** -Three-dimensional probes

- **Fifth generation** - Non-invasive 3 - dimensional probes.

Florida probe system

- It is an automated probe system.
- Components: Probe handpiece, digital readout, foot switch, computer interface, computer.
- Probe tip: **0.4 mm in diameter.**

Advantages

- Constant probing force
- Precise electronic measurement
- Computer storage of data

Disadvantages

- Lack of tactile sensitivity
- Patient discomfort
- Inaccurate measurements
- Underestimation of deep probing depths by the automated probe.

Foster miller probe

- Coupling pocket depth measurement with detection of cement-enamel junction.
- Clinical attachment level can be detected from this.

Toronto probe

- Automated probe.

- Uses occlusal incisal surface to measure clinical attachment levels.
- sulcus measurement by 0**.5 mm** nickel-titanium wire.
- Mercury tilt sensor: controls angular discrepancies, it limits angulation within ± **30 degrees**.
- Disadvantages: requires reproducible positioning of patients, second and third molar cannot be easily measured.

Expros are double-end instruments with an explorer on one end and a probe on the other, e.g. 17/Williams, 23/0 Michigan, 23/Williams.

Scalers

Supragingival Scaling	Subgingival Scaling
Sickle scalers, cumine universal scalers, posterior Jacquette scalers, Morse scalers, Surface scalers, and cingulum scalers.	Hoe scaler, chisel and file scalers. Curettes

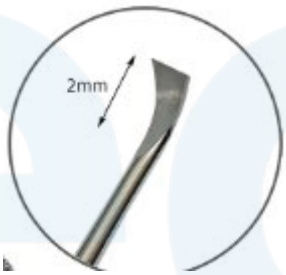
Sickle Scaler

- For supragingival scaling, calculus removal.
- Sickle scalers have a flat surface and two cutting edges that converge in a sharply-pointed tip.
- They appear triangular in cross-section.
- The angle between the shank and the blade is 90 degrees.
- The Morse sickle has a very small, miniature blade.
- Sickles with straight shanks are designed for use on anterior teeth and premolars.
- Sickle scalers with contra-angled/curved shanks adapt to posterior teeth.
- **Anterior sickle scaler**: OD-1, Jacquette- 30, Jacquette- 33, Goldman- H6,Goldman- H7
- Commonly used anterior scalers are U15/30 scaler and Indiana University scaler.

- **Posterior sickle scaler**: Jacquette- 34/35, Jacquette- 14/15, Jacquette- 31/32.
- Commonly used posterior scalers are Montana Jack scaler and Nevi Scaler.

Chisel Scaler

- For the removal of heavy supragingival calculus deposits that bridge open interproximal spaces of anterior teeth.
- One straight cutting edge
- Heavy, straight shank



- The instrument is activated with a **push motion**.

Hoe Scaler

- Scaling of ledges or rings of calculus.
- The blade is bent at a **99° angle**.
- The cutting edge is bevelled at **45°**.
- The instrument is activated with a firm pull stroke towards the crown.
- **2-point contact** with the tooth and stabilizes the instrument.
- Prevents nicking of the root.

Files

- They have a series of blades on a base.

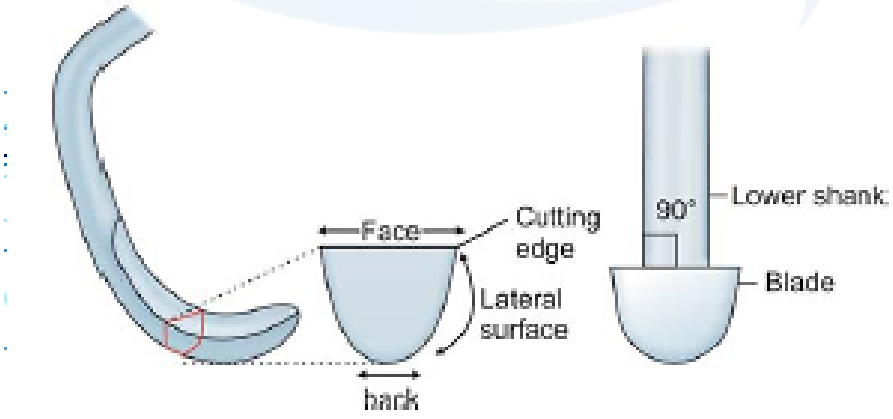
- Their primary function is to fracture or crush tenacious calculus

Curette

- For subgingival calculus removal, root planing, and removing soft tissue from the periodontal pocket.
- Curette means – to cleanse.
- Two cutting edges
- **Spoon-shaped working end**
- Cutting edges meet in a rounded toe
- Rounded back
- Semicircular in cross-section
- Two basic types: Universal curette and Area-specific curette

Universal curette

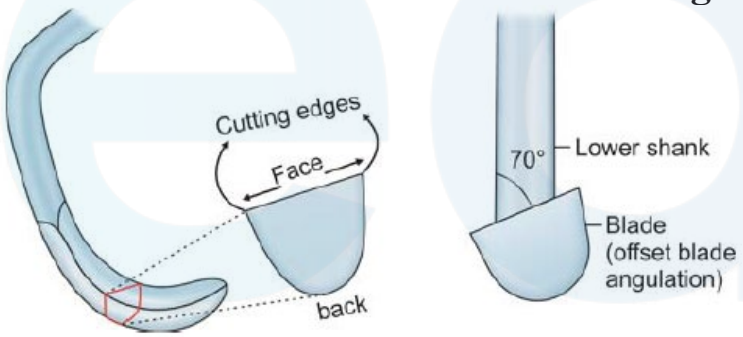
- Designed for all areas and surfaces
- Two parallel cutting edges are formed, one on either side of the face.
- Both cutting edges are used
- Curved in one plane
- The face of the blade of every universal curette is at a 90-degree angle to the lower shank.



- Some commonly used instruments are the Columbia 13-14, 2R-2L and 4R-4L, Barnhart curettes # 1-2 and 5-6. McCall's curette #17-18, Young good curette #7-8, Indiana University curette #17-18.

Area-specific curette

- Best choice for subgingival scaling and root planning.
- These are designed for specific areas and surfaces
- The outer edge is the cutting edge
- Curved in two planes
- Offset blade – face of blade bevelled at **60-70 degrees to shank**.



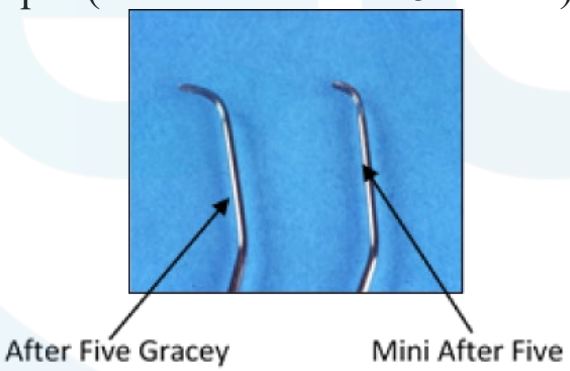
- Examples: Gracey curettes, Kramer-Nevin curettes, Turgeon curettes, After five curettes, Mini five curettes, Curvette Curettes.

Gracey curettes

7 set instruments :

Instrument	Area of use
Gracey 1-2 and 3-4	Anterior teeth
Gracey 5-6	Anterior teeth and premolar
Gracey 7-8 and 9-10	Posterior teeth, facial and lingual surfaces
Gracey 11-12	Posterior teeth, mesial surface
Gracey 13-14	Posterior teeth, distal surface
Gracey 15-16	▪ Posterior teeth, mesial surface. ▪ Modification of # 11-12. ▪ Shank extended by 3 mm.
Gracey 17-18	▪ Posterior teeth, distal surface. ▪ Modification of # 13-14. ▪ Shank extended by 3 mm.

- **After five curettes/Extended shank curette**: These are modifications of the standard Gracey curette design. The terminal shank is **3 mm longer**. All standard Gracey numbers except for the #9-10 (i.e #1-2, 3-4, 5-6, 7-8, 11-12, 13-14) are available in the After Five series. it is used in pockets greater than 5 mm depth (hence called after 5 curette).



- **Mini-bladed curette**: **Also named as Hufriendly mini five curettes**. They are modifications of After Five Curettes with shorter blades. Mini Fives are available in all standard Gracey numbers except for the # 9-10. They are used to curette furcation areas. **The blade length is halved**. The shorter blade allows easier insertion and adaptation in deep, narrow pockets and furcations.
- **Micro mini five curettes**: the blade is **20% thinner**.

- **Langer and mini langer curette**: Set of 3 curettes. These curettes combine the shank design of standard Gracey 5-6,11-12 and 13-14 curettes with Universal blades honed at 90°. **2 cutting edges present.**

Curette	Area of use
Langer 1-2	Mandibular posterior teeth
Langer 3-4	Maxillary posterior teeth
Langer 5-6	Mandibular and maxillary Anterior teeth
Langer 17-18	Maxillary and mandibular second and third molar

- **Curvette Area-Specific Curettes**: Also known as **American gracey curette** a set of 4 mini bladed curettes with a **50% shorter working end**, Increased curvature of the working end, Straighter shank on anterior instruments and Extended lower shank on the posterior instrument. The blade has been curved slightly upward. This allows the curettes to adapt more closely to the tooth surface especially on the anterior teeth and on line angles.

Curette	Area of use
Curvette Sub Zero	Anterior teeth and premolar (facial and lingual surface)
Curvette 1-2	Anterior teeth and premolar (Interproximal surfaces)
Curvette 11-12	Mesial surface of molars
Curvette 13-14	The distal surface of molars

- **Quentin furcation curette**: specially designed to use in the furcation area.

Curette	Blade width
MD1 BL1	0.9 mm
MD 2 BL 2	1.3 mm

Angulations of instruments

- The optimal angulation for scaling and root planning is between **45^0 – 90^0**.
- During scaling strokes on heavy tenacious calculus, angulation should be just less than 90^0. It helps the cutting-edge bites into the calculus.
- An angulation of less than 45^0 and greater than 90^0 will cause the instrument to slide over calculus and causes burnishing of calculus.
- For **gingival curettage** cases: An angulation of **greater than 90^0** is indicated

EVA System

Used to remove gingival overhangings.

Sonic and Ultrasonic Instruments

Used for scaling and root planning

Sonic scalers

- operate in low frequency
- 3000 to 8000 cycles per second
- Driven by compressed air
- Power dispersion on tip: all surfaces active
- Stroke pattern: elliptical to orbital

Ultrasonic scalers

- Used for scaling, curettage and stain removal.
- Produce vibrations at the instrument tip
- It causes dislodgement of calculus when adapted to the tooth.
- Two types: magnetostrictive and piezoelectric

Features	Magnetostrictive	Piezoelectric
Motion of tip	Elliptical 	Linear motion 
Vibration rate	18000 to 42000 kHz	24000 to 45000 kHz
Transducers	A metal rod or stack of metal sheets	Ceramic disc
Power dispersion on the tip	All surface-active	Lateral surfaces are more active
Tip positioning	Flexible	Must be lateral to surface
Tip angulation to surface	0 to 15 degree	0 degree
Technique sensitive	Less technique sensitive	More technique sensitive

- The cavitating water spray serves to flush calculus, plaque and debris dislodged by the vibrating tip from the pocket.
- The optimal flow rate of coolant for sonic and ultrasonic subgingival scaling is **14-23ml/min**.
- The aerosol which is produced by ultrasonic scaling remains in the air for a minimum of 30 minutes.
- Three benefits of water lavage are
    - Acoustic turbulence
    - Cavitation
    - Acoustic streaming

<u>Acoustic turbulence</u>

When the movement of the water tip causes the coolant to accelerate the production of intensified swirling effect.

<u>Cavitation</u>

- The process of energy release when the tiny vacuum bubbles formed from the heat dissipation of the ultrasonic instrument collapse quickly.

- It is the formation of bubbles in water by high turbulence. these bubbles produce shock waves throughout the water.

Acoustic streaming

- Tremendous pressure is produced by the continuous stream of water within a confined space of a periodontal pocket.
- It is the unidirectional fluid flow causing ultrasound waves.
- Gram-negative rods, bacteria are sensitive to acoustic streaming.

Contraindications for the use of ultrasonic and sonic scaling devices

- Patients with cardiac pacemakers (Atrial and ventricular pacing was inhibited by a magnetostrictive ultrasonic scaler).
- Patients with communicable diseases that can be transmitted by aerosols.
- Patients at risk of respiratory diseases
- Patients who are immunocompromised or suffering from chronic pulmonary diseases.
- Patients having porcelain or bonded restorations because they can be fractured or removed.

CPR Instruments

- Non-surgical endodontic ultrasonic instruments.
- Designed to work on most **piezoelectric-type** ultrasonic scalers.

Types

Types	Intensity setting	Features
CPR -1	Medium to High	▪ Used to safely remove retained posts and cores.

		▪ Helps in crown and bridge removal. ▪ If placed directly on ceramics it will cause severe damage
CPR – 2D	Medium to high	▪ Used primarily in the pulp chamber. ▪ Used for eliminating pulp stones, dentin removal, and locating hidden orifices. ▪ Used for the safe removal of restorative materials and amalgams. ▪ Capable of eliminating materials extending below the orifice.
CPD- 3D, 4D & 5D	Low	▪ Used in coronal, middle and apical one-third of roots. ▪ Trephine around the posts. ▪ Removal of broken instruments and other intracanal obstructions. ▪ Chasing calcified canals.
CPR 6 to 8	Low	▪ Instruments made of titanium alloy. ▪ Used in the mid and apical portion of the root to ditch around broken files and their removal.

Periodontal/Dental Endoscope

It consists of a **0.99 mm-diameter** reusable fiberoptic endoscope over which is fitted a disposable, sterile sheath.

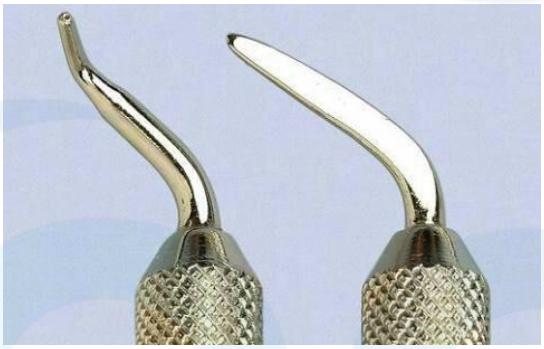
The commercial name is the perioscopic system.

Cleaning and Polishing Instruments

Prophyjet

- Remove stubborn stain
- Consists of an air powder abrasive system.
- **Sodium bicarbonate and warm saline water jet**.
- Contraindicated in patients with respiratory illnesses, infectious diseases and sodium-restricted diets.

Schwartz Periotreivers



They are a set of two double-ended, highly magnetised instruments designed for the retrieval of broken instrument tips from the periodontal pocket and furcations.

Plastic Instruments for Implants

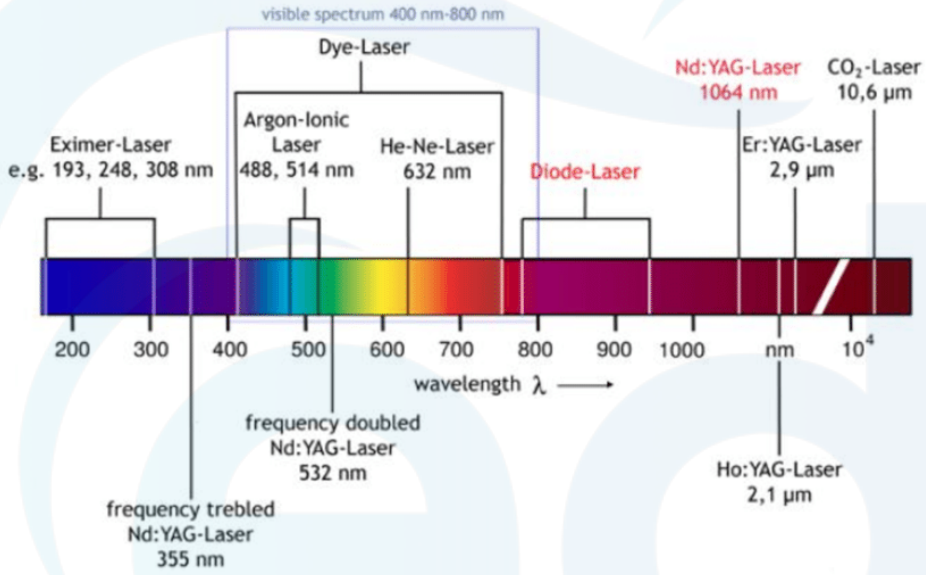
- Plastic probes are available for probing around the implant

- **Periowise premier plastic probe**: The probe has multicoloured markings. **Green colour** coding from **0-3 mm**, a **red mark** at 5mm and red colour coding from **7 to 10 mm**
- Special scalers made of plastic or nonmetallic material are designed for cleaning the abutments of dental implants.

LASERS

The wavelength important lasers are:

- Argon: 438-515nm
- Diode-655-980 nm
- Nd: YAG:1064 nm
- Er: YAG-2940
- CO_2-10, 600 nm



Surgical Instruments

Periodontal Knives (Gingivectomy Knives)

- **Kirkland knife**: kidney-shaped knife with cutting edge all around its periphery.
- Kirkland knives are commonly used for gingivectomy.
- These are used on the facial and lingual surfaces of incisors and those distal to the terminal tooth in the arch.

- **The interdental knife**: spear-shaped knife having cutting edges on both sides of the blade. Examples are Orban's knife, Merrifield and Waerhaug knife.
- **Orbans and Merrifield's knives** are used for supplemental incisions.

Orbans Knife

Surgical Blades

The most commonly scalpel blades used in periodontal surgery are 11, 12, 15, and 15C.

- **# 12 blade** is a beak-shaped blade with cutting edges on both sides.
- The **# 15 blade** is used for thinning flaps and all-around use.
- **The # 15C blade** is useful for making the initial, scalloping-type incision.

Surgical Curettes and Sickles

- For debridement of granulation tissue, fibrous interdental tissue and tenacious subgingival deposits.
- Examples: Kramer curettes 1, 2, and 3, Kirkland curettes and Ball scaler B2-B3.

Periosteal Elevators

- These instruments are used to reflect full thickness flap and move or displace the flap.
- Examples: Goldman-Fox 14, Glickman 24G

Surgical Chisels and Hoes

- Chisels and hoes are used for removing and reshaping bone during periodontal osseous surgery.
- Example: Ochsenbein 1-2

Surgical Files

- Used for removing and reshaping bone primarily to smooth rough bony ledges in all areas of bone.
- Examples are Schluger, Sugarman files.

Schluger file

Scissors and Nippers

Used in periodontal surgery for removing tissue tabs in gingivectomy procedure, trimming the flap margins, widening the incision in periodontal abscess and removing tissue or muscle attachment in periodontal plastic surgery.

Needle holders

- They are used to suture the flap at the desired position.
- Example: Castroviejo needle holder.

Electro Surgery

- Uses high-frequency currents in the range of **1.5-7.5 million cycles per second**.
- **Single-wire electrodes**: for incising or excising.
- **Loop electrodes**: for planning tissue.
- **Heavy bulkier electrodes**: for coagulation procedures.

Scaling and Root Planing

- The primary goal of scaling and root planning is to restore the gingiva to health by removing the irritants, which provoke the inflammation.
- Scaling and root planning are done in the nonsurgical or Phase I therapy.

- The main aim of root planning is to remove Necrotic/altered cementum.
- The instrument used for root planing is a curette.

Instrument Stabilization

The two factors that provide stability are instrument grasp and finger rest.

Instrument Grasp

- Pen grasp
- Modified Pen grasp
- Palm and thumb grasp

Modified pen grasp

- The pad of the middle finger rests on the shank.
- Most effective and stable grasp for all periodontal instruments: Modified pen grasp.
- Uses **tripod effect**
- Permits a wide range of movements
- Good tactile conduction
- Precise control of the working end.

Standard pen grasp

- The side of the middle finger rests on the shank

Palm and Thumb grasp

- Useful for stabilizing instruments during sharpening.
- For manipulating air and water syringes.
- Inhibits manoeuvrability and tactile sensitivity
- Not recommended for periodontal instrumentation.

Tripod Effect

- The pad of the thumb is placed midway between the middle and index fingers on the opposite side of the handle.
- Creates a triangle of forces
- Enhances the control.
- Enhances manoeuvrability and tactile sensitivity.

Finger Rests

Intraoral finger rests
Extraoral finger rests

Standard Intraoral finger rests

- The finger rests on a stable tooth surface immediately adjacent to the working area.

- Provides secured support, leverage and power of instrumentation.
- Excellent tactile transfer, precise stroke control
- Not practical in edentulous areas.

Advanced intraoral finger rests

- **Modified intraoral fulcrum** – Combining altered modified pen grasp with standard intraoral fulcrum. It requires more muscle control. Useful in instrumenting maxillary teeth.
- **Piggy-backed fulcrum** – Middle finger rests on top of the ring finger. Useful in instrumenting mandibular posterior aspect. Not used in patients with limited mouth opening.
- **Cross-arch fulcrum** – resting ring finger on the tooth on the opposite side of the arch. Used for instrumentation of the lingual aspect of mandibular posterior teeth.
- **Opposite arch fulcrum** – Resting ring finger on the opposite arch.
- **Finger on finger fulcrum** – resting ring finger on the index finger.

Extraoral finger rests

- Knuckle rest technique or palm up technique – Clinician rests knuckle against patient's chin or cheek.
- Chin cup technique or palm down technique – Clinician cups patient's chin with the palm.

Instrument Activation

It includes instrument adaptation, angulation, lateral pressure and strokes.

Instrument Adaptation

- Adaptation refers to how the working end of a periodontal blade is placed against the surface of a tooth.
- The cutting edge of the instrument has 3 sections
- Leading third (used more), Middle third, and Heel third.
- Precise adaptation minimizes trauma to the soft tissues and root surfaces and ensures maximum effectiveness of instrumentation.

Angulation

- For insertion beneath the gingival margin: **0 to 40 degrees**.
- For calculus removal: **45 to 90 degrees**
- For gingival curettage: **Greater than 90 degrees**
- For subgingival insertion: angulation should be **close to '0' degrees.**

Strokes

- Placement stroke
- Exploratory/Assessment stroke
- Scaling stroke/Calculus removal stroke
- Root planing stroke

Exploratory/Assessment stroke

- Used with: **probes, explorers, curettes**
- Insertion: 0 to 40 degrees
- Working angulation – 50 to 70 degrees
- Lateral pressure: contacts tooth surface.

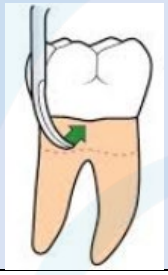
Scaling stroke

- Used with: **Sickle scalers, curettes, files**
- Insertion: 0 to 40 degrees
- Working angulation: 70 to 80 degrees
- Lateral pressure: Moderate to firm
- The scaling stroke is a short, powerful pull stroke that is used with bladed instruments for the removal of both supragingival and subgingival calculus.

Root planing stroke

- Used with: **curette**
- Insertion: 0 to 40 degrees
- Working angulation: 60 to 70 degrees
- Lateral pressure: Light to moderate

Stroke Direction

Stroke	Uses
Vertical strokes 	▪ Facial, lingual and proximal surfaces on anterior teeth. ▪ The mesial and distal surfaces of posterior teeth
Oblique strokes 	Facial and lingual surfaces of anterior and posterior teeth
Horizontal strokes/Circumferential strokes 	▪ Line angles of posterior teeth. ▪ Furcation area

Sharpening of Instruments

- The face of the blade is parallel to the floor and the stone makes a **100-110^0** angle with the face of the blade.
- Sharpening curettes and sickles, the internal angle of **70 to 80 degrees** must be preserved between the face and lateral surface.
- Hand sharpening of instruments with unmounted stones is preferred over Motor-driven mounted stones.
- **India and Arkansas oilstones** are examples of natural abrasive stones.
- **Carborundum, ruby and ceramic stones** are synthetically produced.

Sharpening of dental instruments helps increase efficiency because

- Reduce slippage and less tissue damage
- Increases tactile sensation
- Decreases Muscle fatigue

The sharpness of an instrument can be tested by:

- When the cutting edge is kept under light, a dull instrument would reflect light but a sharp instrument does not reflect light as it has less surface area.
- The instrument is lightly drawn across an acrylic rod called a test stick.
- A dull instrument will slide smoothly but a sharp instrument will raise a light shaving.

Disadvantages of Mounted rotary stones

- Difficult to control precisely
- Generates frictional heat which affects the instrument's temper.
- Ruin the shape of the instrument
- quick wear down of instrument

Other Instruments

- **Periodontometer:** Instrument for detecting tooth mobility
- **Osmoscope**: detects halitosis
- **Periotron**: Electronic instrument used to measure gingival crevicular fluid.
- **Perioaid:** Toothpick with handle
- **Periotome**: It is a narrow, flat instrument directed apically into the sulcus to slightly expand the adjacent periodontal tissues. Used in the extraction of a tooth for implant placement.