

# EXCAVATORS

- ▶ Hatchet excavators
- ▶ Hoe excavators
- ▶ Spoon excavators

## ORDINARY HATCHET

- Cutting edge of the instrument is parallel to the axis of the instrument.
- Bibevelled

### Use:-

- Preparing retentive areas on anterior teeth.
- Sharpening internal line angles in DFG restorations



## HOE EXCAVATOR

- ▶ Primary cutting edge of the blade perpendicular to the long axis of the handle
- ▶ Blade angle more than  $12.5^\circ$

**Uses:-** Planing cavity walls and forming line angles in class III and V cavity preparation for DFG

## SPOON EXCAVATOR

- ▶ Cutting edge in the form of semicircle with inner concavity and outer convexity
- ▶ Circumferential bevel
- ▶ In some types, end of the blade is circular or disc shaped- Discoid spoon excavator

**Uses:-**

- ▶ Scooping out carious dentin
- ▶ Carving amalgam or direct inlay wax



# CHISELS

- ▶ Cutting edge of the instrument is at right angle to the axis of the instrument.
- ▶ Used for planing or cleaving enamel.

Types:-

1. Straight chisel
2. Mono angled chisel
3. Binangle chisel
4. Triple angled





## SPECIAL CHISELS

1. Enamel hatchet
2. Gingival margin trimmer
3. Angle former
4. Wedelstaedt chisel

### ENAMEL HATCHET

- ▶ Cutting edge is at right angle to the axis of blade.
- ▶ Binangled
- ▶ Monobevelled
- ▶ Single plane instrument
- ▶ Paired instrument

Uses:- to cut or cleave undermined enamel in proximal cavities and on buccal or lingual walls



## GINGIVAL MARGIN TRIMMER

- ▶ Modified enamel hatchet
- ▶ Blade is curved which makes it a double plane instrument and enhances its lateral scrapping motion
- ▶ Cutting edge at an angle to the long axis (not 90)

Set of 4 instruments :-

Right and left GMT

Mesial and distal GMT

### **Uses:-**

To produce bevel on gingival enamel margins of class II cavity

To round or bevel axiopulpal line angle in class II cavity



### **Right and left bevelled**

The instrument is held in such a way that the primary cutting edge is facing down and pointing away from the operator

If the bevel appears on the right side- right instrument

If on left side – left sided instrument

### **Mesial and distal bevels**

If the dentist observes the inside of the blade curvature and the primary bevel is not visible- distal GMT

If visible- mesial GMT



## ANGLE FORMER

- ▶ Combination of chisel and GMT
- ▶ Modified from chisel by sharpening primary cutting edge at an angle to the blade axis
- ▶ Cutting edge angle 80-85°
- ▶ Three cutting edges
- ▶ Paired- right and left

**Uses:-** accentuate line and point angles in DFG

## WEDELSTAEDT CHISEL

Single plane instrument with bevel on one side of the blade only

**Use:-** for cleaving undermined enamel



## SHARPENING INSTRUMENTS

- Maintain and restore a knife like cutting edge
- Preserve the shape and proportional dimensions of the instrument
- Increase work efficiency of the instrument

### DETECTION OF A DULL CUTTING INSTRUMENT

1) Visibility of a reflection off the cutting edge.

Sharp edge – not reflect light

Dull edge – reflect light/ presence of a “glint”.

2) Obvious irregularities in the cutting edge

3) Won't cut tooth structure.



### STATIONARY SHARPENING STONES

1. Arkansas stones
2. Silicon carbide stones
3. Aluminium oxide stones
4. Diamond hones

### MECHANICAL SHARPENERS

Honing machines

### Sharpening stones used in handpeices

1. Mounted silicon carbide
2. Aluminium oxide stones

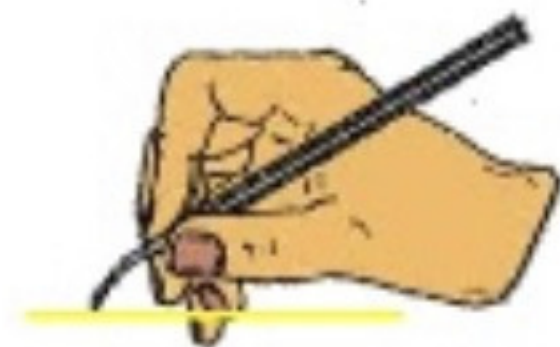
## GRASPS

Definition:- These are the manners of holding the instruments which if not held properly it will result in loss of efficiency and accumulation of unnecessary strain on the operator.

- Different grasps:-
  - 1) Pen grasp
  - 2) Modified pen
  - 3) Inverted pen
  - 4) Palm and thumb
  - 5) Modified palm and thumb

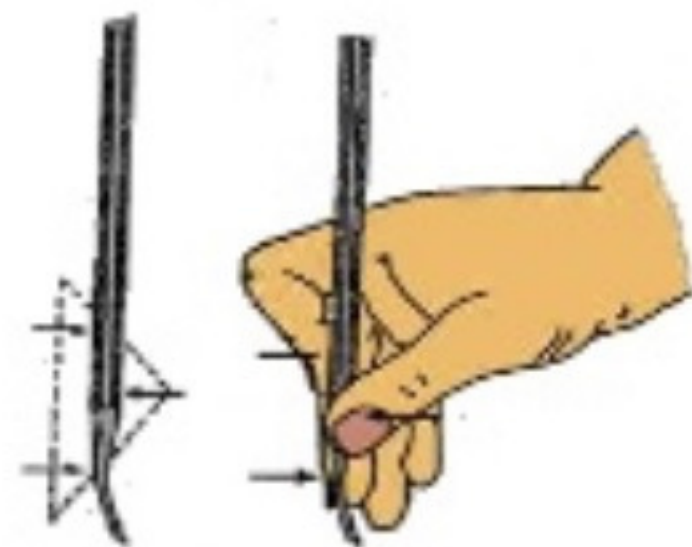
► **PEN GRASP:**

- Instrument is held between thumb and first finger with middle finger below acting as a support.
- Fourth fingers are placed on adjoining tooth as rest.



► **MODIFIED PEN GRASP**

- Pads of thumb, index and middle finger contact the instrument, while the tip of the ring finger is placed on a nearby tooth surface of the same arch as a rest.
- The pad of the middle finger is placed on the shank of the instrument creating a tripod effect





### INVERTED PEN GRASP

The palm is rotated upwards facing more towards the operator.

Used mostly for the tooth preparation utilizing the lingual approach on maxillary anterior teeth.

### PALM AND THUMB GRASP

The handle of the instrument is held between the palm and four fingers firmly with the tip of the thumb acting like a rest

