

## INSTRUMENTS

### INSTRUMENT GRASP; USE OF FULCRUM; INSTRUMENT ACTIVATION

#### 3 TYPES OF INSTRUMENT GRASPS

1. Pen grasp – acceptable for writing but does not provide stable working control
2. Palm grasp – used for air/water syringe and holding mirror for retraction
3. Modified pen grasp – most efficient and stable, with greatest control for intra oral procedures. If fingers blanch with this grasp, you are holding instrument too tight.

FULCRUM; 2 types; Purpose: to stabilize the hand and increase control of instrument

1. Intraoral – inside oral cavity- always use when performing intraoral procedures, always use fulcrum close to the working area for control and increase leverage
2. Extraoral- outside the oral cavity – lips /cheeks- no stability because of movement – use: retraction

Motion used to activate instruments is a unified motion of shoulder-arm-wrist-hand

The rolling arm/rocking arm motion results in less fatigue and controlled force.

Finger movement results in fatigue and reduced control of instrument.

#### EXPLORERS

2 Uses: 1. Evaluate completion of treatment

2. Gather information for treatment planning

- (a) tooth surface defects
- (b) root surface irregularities
- (c) calculus
- (d) decalcification
- (e) caries lesions

Types of explorers: 1. # 17 explorer used for (a) calculus (b) root surface irregularities (c) surface defects or irregularities (d) tactile sensitivity.

2. Pigtail or cowhorn used to check for interproximal calculus

3. #23 Shepherd hook; used to detect caries, it is more rigid and less flexible and too thick for good tactile sensitivity.

Light modified pen grasp with exploratory strokes are recommended for use with explorer #17 and pigtail/cowhorn

Shepherd hook – moderate pressure with modified pen grasp to check for caries

Explorer is round in cross section and has round end and sharp point

MOUTH MIRROR – Used to see all surfaces and for retraction of lips, buccal mucosa and tongue, to defog mirror, warm on buccal mucosa, used modified pen grasp and keep parallel to occlusal plane of teeth.

#### PROPHYLAXIS ANGLE AND HANDPIECE

1. For minimal loss of tooth structure with polishing, use least abrasive paste.
2. Rubber cups can be ribbed, webbed, soft, firm, or flexible.
3. Prophy cup needs to be lifted off the tooth every 1 – 2 seconds to prevent frictional heat build up which can damage the pulp of tooth.
4. Applying the edge of the prophy cup to the tooth can cause grooving to the tooth. Use smooth, overlapping strokes.
5. Floss after polishing to remove excess prophy paste and dislodge deposits /debris.

PROPHY PASTES; Fine polishing paste – light stain

Medium polishing paste – moderate stain

Coarse polishing paste-heavy stain

Do not polish inflamed gingival tissue, or following deep subgingival scale, root curattage and planing.

#### USE OF SCALERS AND CURETS

2 Basic strokes using most instruments

1. Push or Exploratory stroke which is a light pushing motion It is not recommended during scaling because it can injure sulcular epithelium, embed calculus and debris into sulcular area. Use: to detect hard deposits, note irregularities and for inserting instruments subgingivally.
2. Working stroke is a pulling motion to remove supra gingival and subgingival deposits.

SICKLE SCALER; Use to remove supragingival or slightly below gingiva margin if tissue permits. Do not insert into junctional epithelium because it causes lacerations to sulcular tissue.

### 3 Shapes of sickle working surface

1. straight – used for anterior teeth – facial & lingual surfaces
2. angle – posterior teeth – use one end for facial surface and other end for lingual
3. contra angle – double mirror image pair

Use modified pen grasp – establish fulcrum close to working area

Angle between tooth and working surface of scaler 70 –80 degree

Terminal portion of shank should be parallel to the long axis of the tooth always

Use rolling arm or rocking arm motion to activate instrument

**PERIODONTAL PROBE;** Use to detect perio or gingival pockets by examining shape and depth of sulcus, detect furcation and involvement, evaluate gingiva bleeding and inflammation, determine width of attached gingiva, measure gingival recession

3 Parts of probe are 1. Handle 2. Shank 3. working end

Use modified pen grasp; firm fulcrum close to working area; use parallel to the long axis of the tooth. Exploratory stroke using continuous walking up & down or bobbing motion

6 areas to take measurement on a tooth are: 1.MB 2.B 3 DB 4.ML 5.L 6.DL

Obstructions are; calculus deposits, overhanging restorations, or tooth surface abnormality.

Measurements are made from the margin of the free gingiva down to the junctional epithelium or base of the pocket.

Working end of probe can be 1.round 2.flat 3.rectangular (straight or tapered)

Tip will be smooth and round

**CURET;** Instrument of choice for subgingival scaling and root planing

### 2 Types of curettes

- 1.Universal : both cutting edges used – adapts to all surface
- 2.Area specific – one cutting edge used , blade adapts to only one surface

Use modified pen grasp – firm fulcrum close to working area, working stroke activated to remove supragingival and subgingival deposits, angle of curette to tooth when scaling is 70-80 degree, rocking arm or rolling arm motion used , terminal portion of shank parallel to long axis of tooth. If the working end surface of curette is facing directly to you, then you have the wrong area specific instrument.

**GRACEY 1 / 2** is area specific and used for anterior teeth

**GRACEY 11 / 12** is area specific and used for posterior teeth

Use exploratory stroke to insert curettes beneath the gingival margin, proceed with a working stroke. Follow working stroke with an exploratory stroke to check for roughness, repeat working stroke if still rough, but not for good measure.

Subgingival curettage is used to remove epithelium lining / attachment or chronically infected connective tissue in pocket.

Subgingival curettage prepares the root surface for new cementum and dentin to be deposited.

Clean, smooth and free of any contaminated cementum / dentin will provide for new connective tissue and cementum. If epithelium attachment is not removed reattachment of the periodontal ligament will not occur after subgingival scaling.

### Sharpening Instruments

Arkansas Stone – lubricate with thin oil or petroleum jelly

Ceramic Stone – lubricate with water (video) manual says no lube

Video talks about conical stone for smoothing curved areas

The terminal shank is the area of the instrument between the blade and the first angle.

Proper alignment of the terminal shank will always place the blade to be sharpened into proper position for sharpening.

Start all sharpening techniques from the position of 12:00 on a clock. You will then tilt either to 11:00 for left handed operator or 1:00 for a right handed operator.

Grasp the sharpening stone by the lower half in your dominate hand with the top of the stone upright toward 12:00. It will be angled to 11:00 or 1:00 depending whether you are right handed or left handed.

Sludge is accumulation of metal shavings that become suspended in the oil on an Arkansas stone. Metal filings instead of sludge forms on a Ceramic stone.

To Sharpen: Grasp will be secure palm on instrument for sharpening; non dominate hand; blade toward 6:00 with tip toward you. Brace shank with index finger.

A sharp instrument will not reflect light.

When testing instrument after sharpening, hold in dominate hand with modified pen grasp. Hold test stick or plastic saliva ejector in non-dominant at 12:00.

Sharp edge will bite or grab into test stick or plastic saliva ejector. You should not shave plastic off test stick when testing sharpness.

Sickle scaler has 2 cutting edges that meet at the tip of the instrument. Hold in non-dominant hand—blade to be sharpened at 6:00 with tip of blade toward you, terminal shank at 12:00.

Universal curette: 2 parallel cutting edges that meet at a rounded toe. Cutting edge is formed at the junction of the lateral surface with facial surface on top. Hold in non-dominant hand, terminal shank 12:00 and blade to be sharpened at 6:00 with toe toward you. Tilt sharpening stone to 11:00 or 1:00 on lateral surface.

Gracey 13/14: Has one edge to sharpen (lower edge) because facial surface angles downward. Cutting edge is not curved off one side, but straight and comes forward off the shank. For even number (14) point toe of blade away from you. For odd number (13) point toe of blade toward you. Firm palm grasp with blade to be sharpened at bottom, tilt terminal shank to 11:00 or 1:00 for right or left hand. Non-dominant hand.

Most common sharpening error of Gracey is failing to round toe.

#### CAVIJET:

Ultrasonic device to remove gross calculus, especially supragingival, & stain

Precautions:

1. Patient and operator should wear protective eyewear and the operator should wear a facemask.
2. Contraindicated for patient wearing a cardiac pacemaker or in immediate vicinity.
3. Contraindicated for children.
4. Tip should be kept in motion at all times.

The greater the water flow, the lower the water temperature during use. Insert used is determined by the area of the mouth to be scaled.

1. 30K-10 Universal Insert: supra & subgingival, interproximal calculus on all teeth, High setting, Insert at 15 degree angle, use side of insert with light pressure, keep moving at all times.
2. 30-K-3 Insert: supragingival calculus, Labial & Lingual surface on posterior teeth, High setting, vertical strokes, light pressure, 15 degrees angle to tooth surface, using tip of instrument to remove calculus
3. 30-K-EWPP Insert: Resembles perio probe, used for subgingival calculus on most Labial & Lingual and interproximal areas, use overlapping parallel and horizontal strokes, Low setting, use side of tip for calculus removal, move at all times.

Principles:

1. Inserts should be kept positioned at a 15degree angle to the tooth surface.
2. Insert should be kept moving at all times especially in hypersensitive areas
3. If sensitivity is noted: 1. Lighten finger pressure 2. Change motion of insert –vertical to horizontal & ect. Or change power setting (decrease)

JET AIR POLISH MODE; Used to polish and remove extrinsic stain, soft debris and plaque, and prepare teeth for sealants.

#### PRECAUTIONS;

1. Operator should wear facemask and protective eyewear
2. Patient lips should be coated with petroleum jelly
3. Patient should wear protective eyewear
4. Never direct spray into sulcus, soft tissue or composite restorations
5. Contraindicated for patient with sodium restricted diet, hypertensive or with respiratory illness.

Occlusal surfaces – jet spray should be directed at a 90 degree angle with constant circular motion employed.

Anterior teeth: spray directed at 60 degree angle to tooth. F,M,D& L surfaces

Posterior Teeth- 80 degree angle to teeth, circular motion, L & B same angle.

