

# Basic periodontal instruments

## Probes

### Parodontologic probe

- To examine the depth of the periodontium (in healthy periodontium we insert the probe into the sulcus)
- At 4 sites - interbuccal, buccal, distobuccal, oral
- First visit - still mesiooral and distoral = six-point measurement
- Pressure - 0.25 N (gentle probing)

**⚠ The supporting apparatus is very vulnerable, the probe easily penetrates the bottom of the paradontal socket further into the tissue.**

- We are not talking about the depth of the paradontal socket, but the depth of the probing
- Usually greater than the histological depth of the paradontal socket (inflamed tissues do not resist)



Periodontal Probe Examination

### WHO probe

- Calibrated by colour coding, blunt-tipped ball
- Pieces on the working part are separated from each other
  - 0.5/ 3.5/ 5.5/ 8.5/ 11.5 mm (for CPI-TN)

### Williams-Fox probe

- Millimetre scale (division usually in 1 or 2 mm increments)

### Florida-Probe, Interprobe

- Electronic, pressure-calibrated probes
- Measurement and results acquisition - in conjunction with a computer
- Improved resolution (depth of 0.1 mm)
- Result reproducibility comparable to manual probes

## Tools used to clean teeth and remove tartar

### Scalers

- For hard surface removal and rough depuration
- Pointed, large - cannot work subgingivally without damaging the gingiva
- Straight - entire maxillary and mandibular area
- Curved - to remove tartar from interdental spaces
- Sickle - triangular cross-section, 2 cutting edges that converge into a tip
- Hoe-scaler

- Hoe-shaped or hook-shaped working end - Removal of tartar even subgingivally without uncovering the gingiva - Cannot reach the bottom of the gingival sulcus - Sharp edges - risk of scratching the root surface



Sickle

### Curettes

- Removal of subgingival deposits, necrotic and infected root cementum, granulation tissue and epithelium from the paradontal sockets - Tiny, rounded end

### Universal curettes

- Can be used in all quadrants of the dentition on all tooth surfaces
- Sharpened on both sides of the spoon-shaped working end
- Angle between shank and working edge = 80°
- Columbia, Langer...

### Special curettes

- Sharpened on one side only - it is necessary to choose the right tool

- Angle between working edge and surface =  $80^\circ$
- Angle between shank and working edge =  $60-70^\circ$
- Gracey's curettes - numerical coding - selection of the tool specifically designed for the surface

## Chisels

- Removal of interdental calculus in the frontal and anterior lateral sections
- E.g. Zerfing chisel



Curette set

## Ultrasonic tartar removers

- Removal of tartar and subgingival concretions (when the gingiva is uncovered)
- Do not use to remove soft plaque - risk of damage to hard dental tissues

Principle of magnetoconstriction - steel/nickel core vibrated longitudinally in a coil through which an alternating current passes

Piezoelectric effect - deformation of silicon crystals in an alternating field, oscillations transmitted to the working end

- Conversion of electric current to microscopic beats at 25-50 kHz
- For tartar removal in the molars - special tips (Slimline™) - very thin, coolant supplied through the inside of the instrument to the tip - removal of concretions, reduction of bacteria and their toxins in the molar and on the root surface



Ultrasound tip

## Airscalars

- Connected to the unit via a quick coupler to a quick release elbow, powered by air
- Max 10000 oscillations/second - not UZ area
- Release of hard adherent coatings from tooth surface
- Cooling required - risk of overheating (up to  $195^\circ\text{C}$ )
- Risk of cavitation ( even with UZ) - place tips flat on tooth, work intermittently with minimum pressure, use tips with rounded edges

## Working technique when working with hand instruments

- Hold them like a writing pen, with the middle finger resting on the tooth row - exert sufficient force, prevent the instrument from slipping (injury to the patient or doctor)
- Chisel - gentle strokes away from you
- Scalars and curettes - pulling from the apex towards the coronal
- Grind after using the instrument

## Sources

### Related articles

- Articulation instruments
- Imprinting spoons
- Tooth extraction