Restoration of destructed and root canal treated teeth
The perfect root canal filling

- Appropriate longness until the physiological foramen
- Homogenity
- Fit to the canal wall
- Perfect compaction (no gap, no bubble)
Terms of restoration

Correct root filling
(symptoms, rtg.)
Factors that affecting the treatment planning

- Location of the tooth
- Function of the tooth
- Morphology of the root (canals)
- Periodontal status
- Indication of the restoration
- Habits, requirement of the patient
- Amount of remaining sound tooth structure
After root canal treatment

- The tooth structure weaker (thin, fragile remaining enamel walls)
- The extended access cavity makes weaker the coronal tooth structure
- The dentin will be dryer if the tooth is non-vital
- Discoloration of root canal treated teeth
Fracture after root canal treatment (dry dentin)
The remaining sound tooth structure

- Insufficient retention
- Supra or subgingival margins
- Possible fracture (micro cracks in the enamel)
- Weak thin walls
- Dentin unsupported enamel walls
Weak remaining tooth structure

- Posts, pins can provide additional retention for different kind of restorations, if the remaining tooth structure won’t provide the required macro or micro retention
Types of post

- Intrapulpal or parapulpal
- Fabricated or prefabricated
- Active or passive
- Taper or parallel
- Metal or fiber
Parameters of posts

• Length
• Diameter
• Shape
• Surface
• Material
Parapulpal pin

- Vital tooth
- Provide additional retention
- More extended filling restorations
- Important the knowledge of the tooth morphology
Self-threading parapulpal pins
Depth-limiting drill and self-threading parapulpal pin
Anterior composite restoration with the help of parapulpal pin
Parapulpal Pins located different vertical levels
Pins inserted
Intrapulpal posts

- Root canal treated teeth
- Inserted into the prepared root canal(s)
- Screw posts
- Posts without screw (fixation with cements, or with the help of the friction effect)
- Retentive head
Prefabricated intrapulpal screw post
Screw post and screwdriver
Selection of post

- Selection of canal
- Length of post
- Size of post
- Position of post
- Remaining tooth structure
Removing root canal filling

- 5mm Gutta percha for the apical sealing is essential to leave
- Removing the Gutta percha with Gates Glidden according to the canal, and post size
Post insertion
Post in the root canal
Fixed posts in canal(s) of upper praemolars
Restoration

- Filling with amalgam, or composite
- Core build up
Core build up for crown
Core build up for crowns
Core build up for crown and bridge
Core build up covered by crown
Filling restoration
Fiber posts
Stress in case of different kind of post and core restorations
Fiber post
Fiber post
Cast post and core

• Root canal treated tooth
• Made by dental technician
• Direct/indirect method
• Fixation with cement
Cemented post and core
Restoration

- Filling
- Inlay
- Onlay
- Ceramic endo-crown
- Full crown
- Additional surgery
Composite fillings
Inlays/onlays
Metal (gold) inlay
Metal ceramic inlays
Ceramic inlays
Composite inlays
Endo-crowns

• This restoration is extended into the pulp chamber which provide a good retention
Ceramic endo-crown
Full crowns

- Metal crowns
- Metal ceramic crowns
- Full ceramic crowns
- Full crowns effectively protect the remaining weak, fragile tooth structure
Crowns from different kind of materials
Metal ceramic crowns
All porcelain crowns
Full ceramic, and metal ceramic crowns