

Preclinical dentistry II. 1.

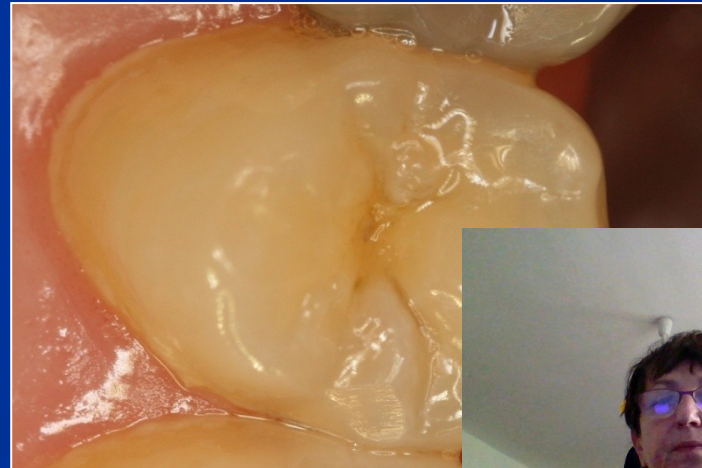
CLASS II. FIRST PART



Class II.

Location:

Defects affecting one or both proximal surfaces of posterior teeth.



Interdental space

- Proximal space is caries danger area (below the contact point).
- Interdental space is infilled with interdental papilla, that moves apically during the time and the space is open.
- Dental caries begins below the contact



Class II.

Origin:

Proximal surface below the contact point

Propagation of dental caries from
the occlusal surface



Symptoms

- No symptoms
- Increased sensitivity (cold, sweet)
- Retention of food
- Defect (cariou lesion is open – the enamel is broken)
- Bite sensitivity (when cariou lesion is open)



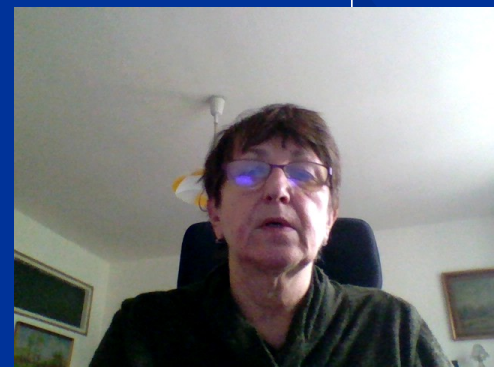
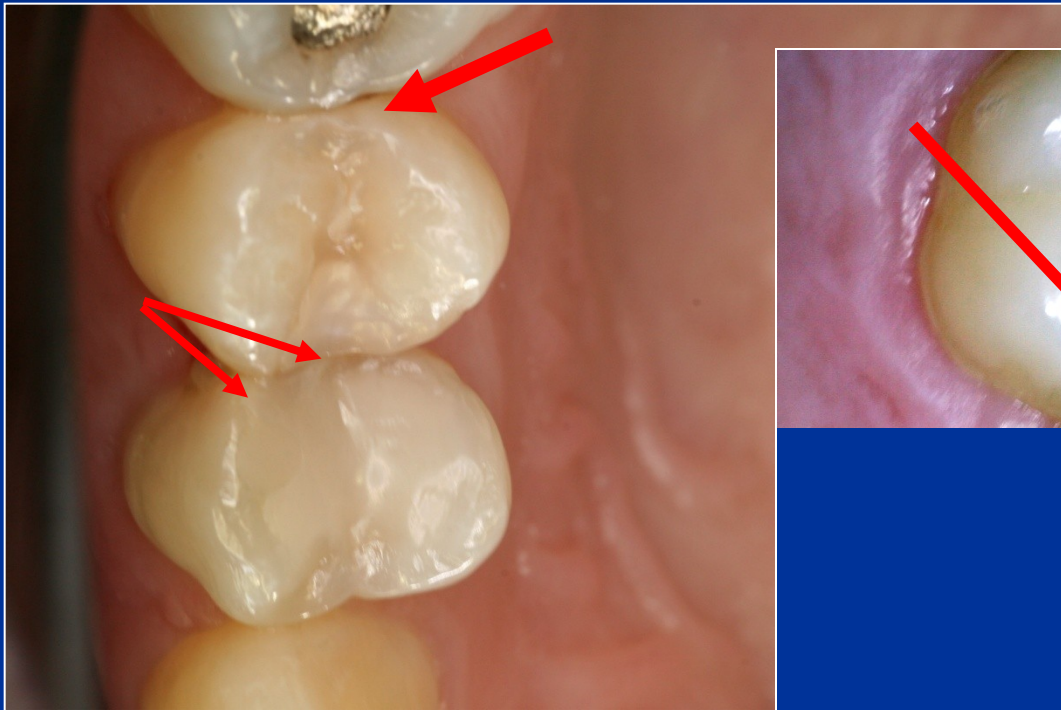
Diagnosis

- Visual changes of tooth structure (chalk white colour).
- Transillumination (white light, or Diagno Cam).
- Radiography

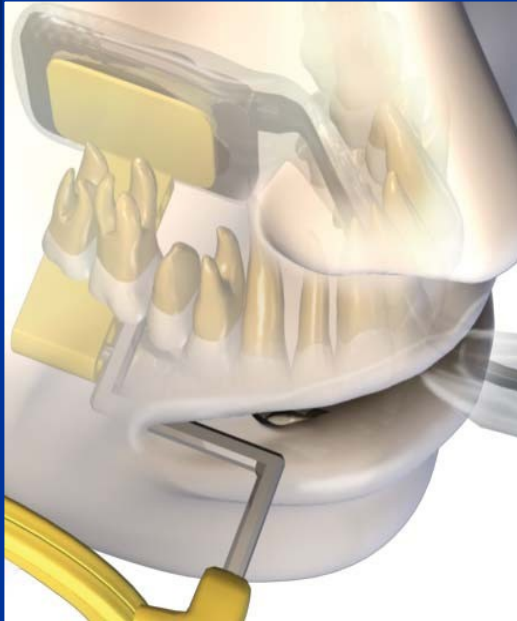








Bite wing



The sensor is placed in a special holder
Central beam goes perpendicular
to the sensor as well as the long axis of the tooth
And parallel with interdental septa

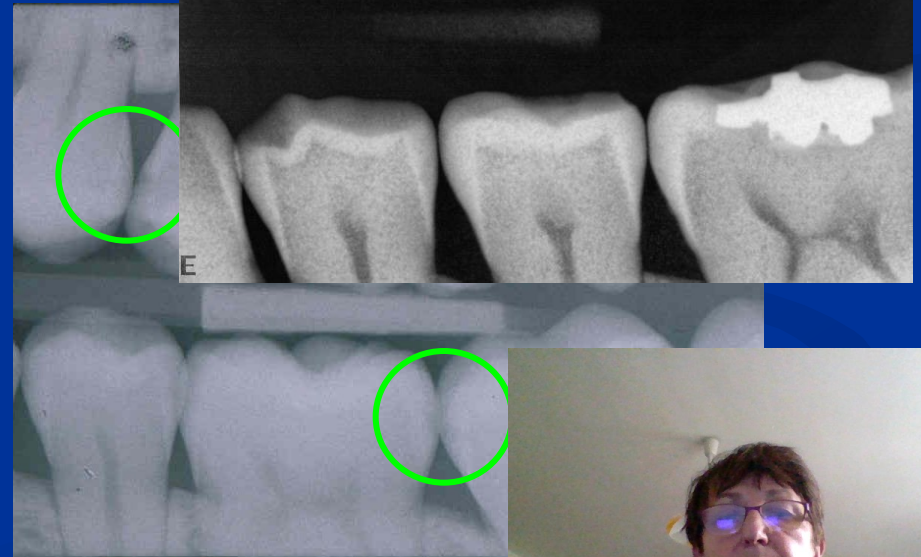
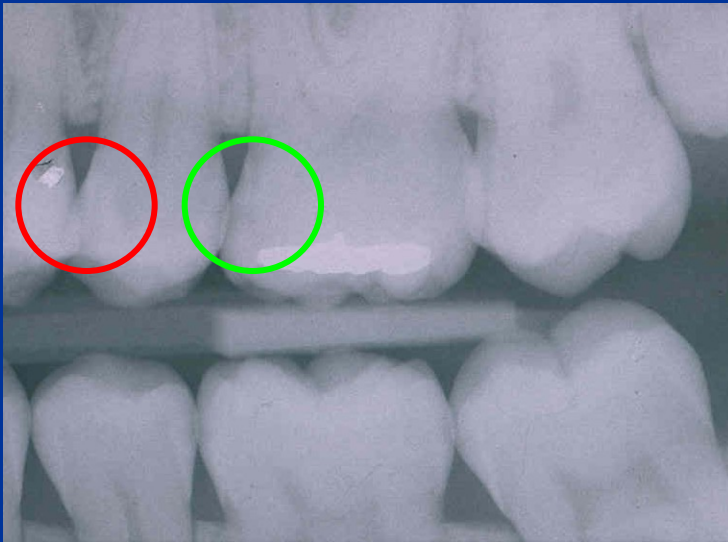


D1 –radiolucency till $\frac{1}{2}$ of enamel

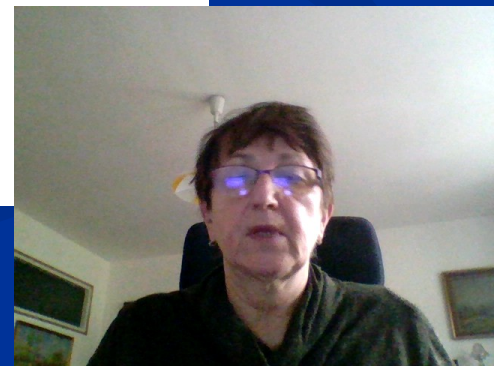
D2 – radiolucency till the border of enamel and dentin

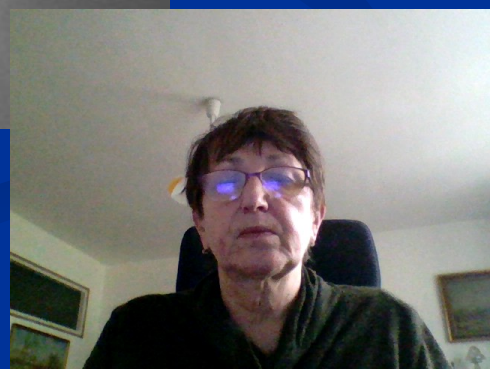
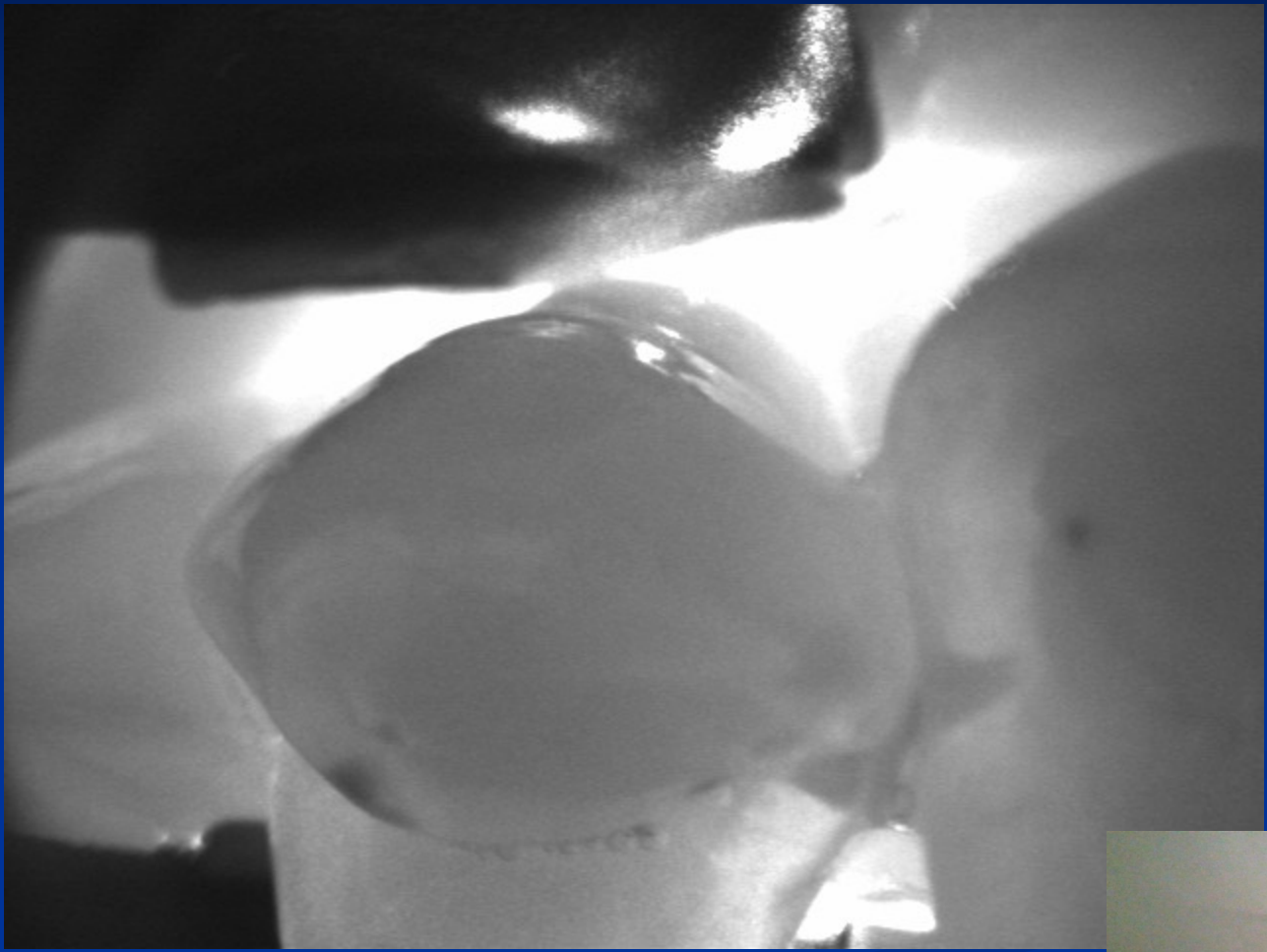
D3 – radiolucency that reached the outer half of the dentine

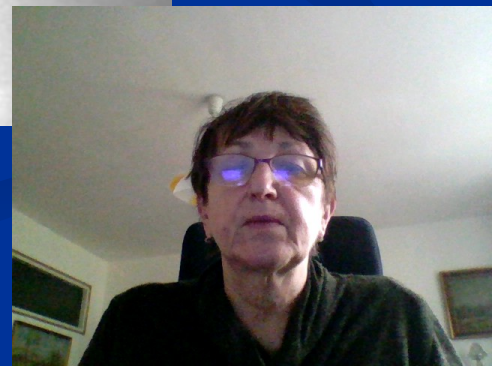
D4 - radiolucency reaching the inner half of dentine



DIAGNOCam



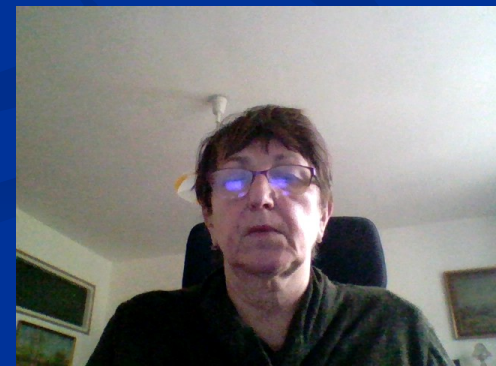






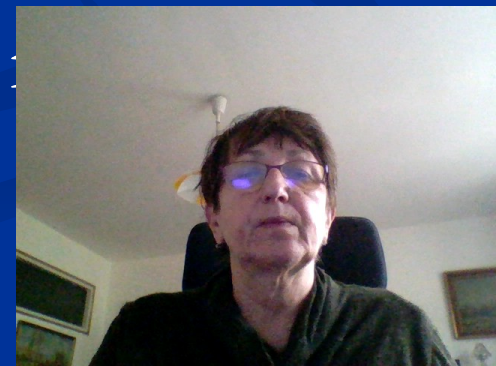
Filling materials

- Amalgam
- Composite materials
- Glass ionomer cements



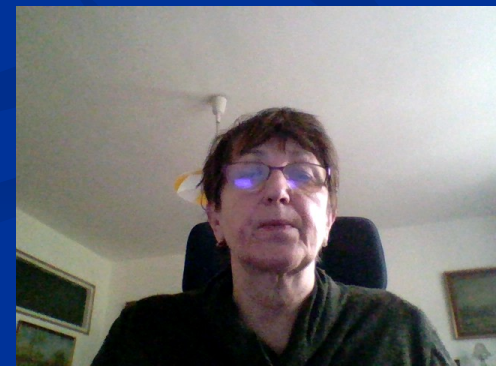
Choice of the material depends on

- Size of carious lesion
- Level of oral hygiene
- Occlusal loading
- Cooperation of the patient and other



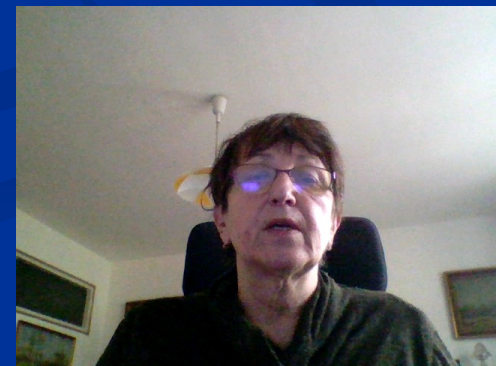
Preparation - amalgam

- Conventional preparation acc. to the Black s rules
- Slot preparation
- Large preparation – cusp(s) involved

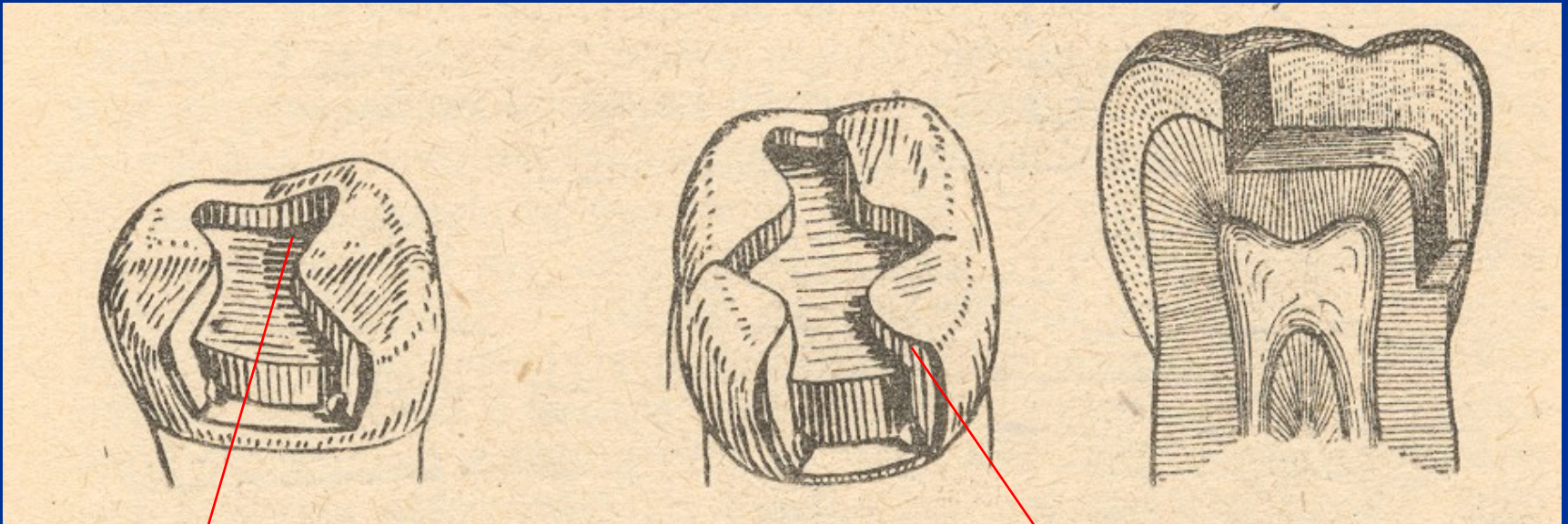


Preparation - adhesive materials (composites, glass ionomers)

- Conventional preparation for composites
- Adhesive slot
- Tunnel preparation

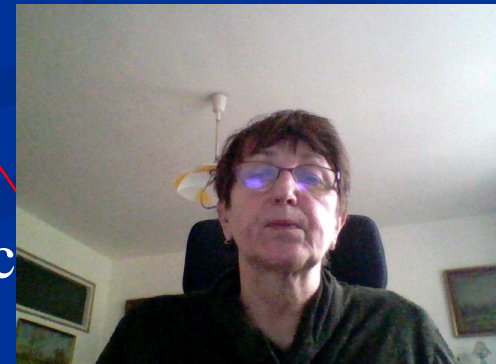


Conventional preparation amalgam

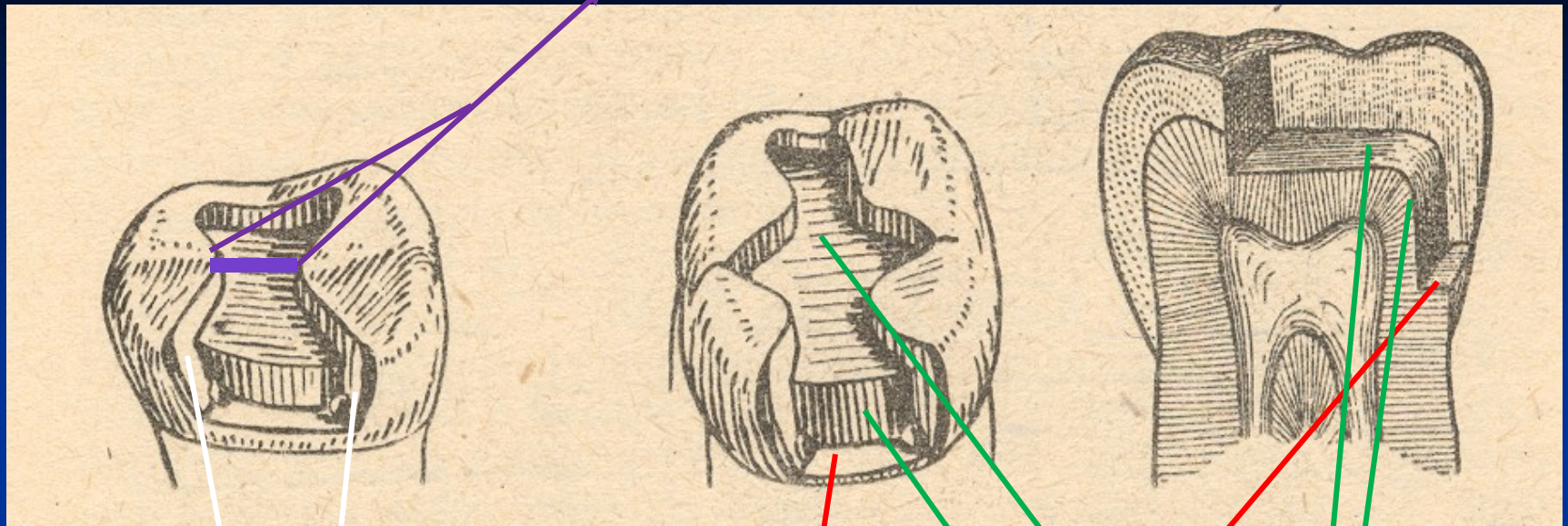


Occlusal cavity

Proximal c



Isthmus



Axial wall

Pulpal walls

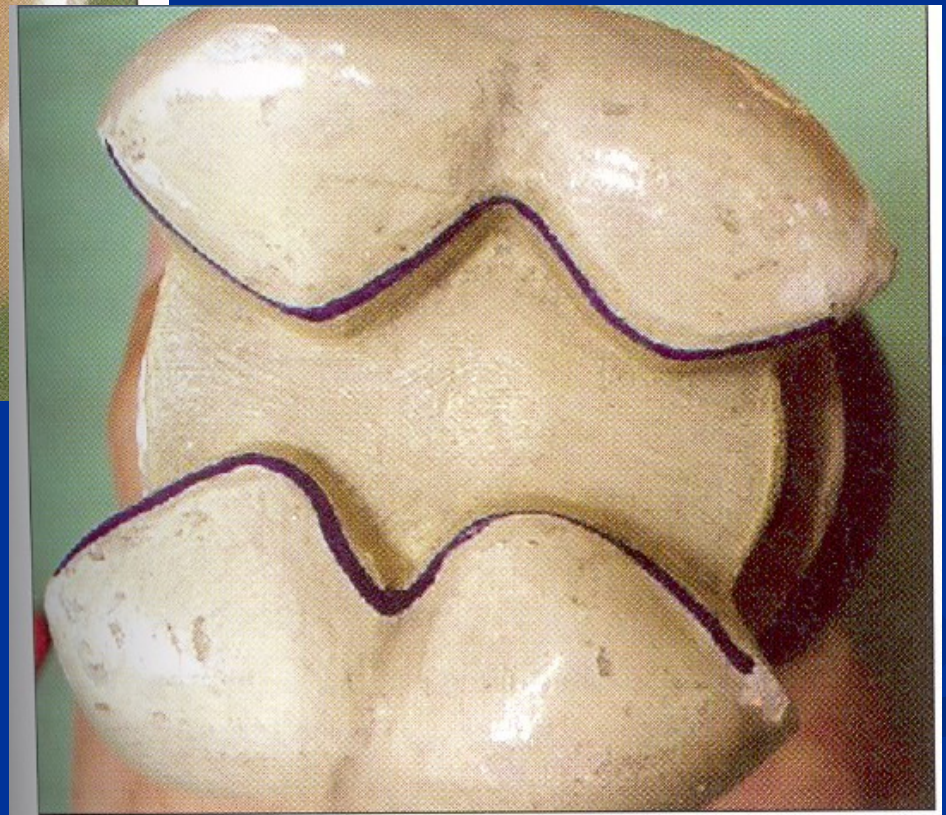
Gingival wall





MO, OD: one proximal surface affected - mesio occlusal distoocclusal

MOD: mesiodistoocclusal



Access to the cavity

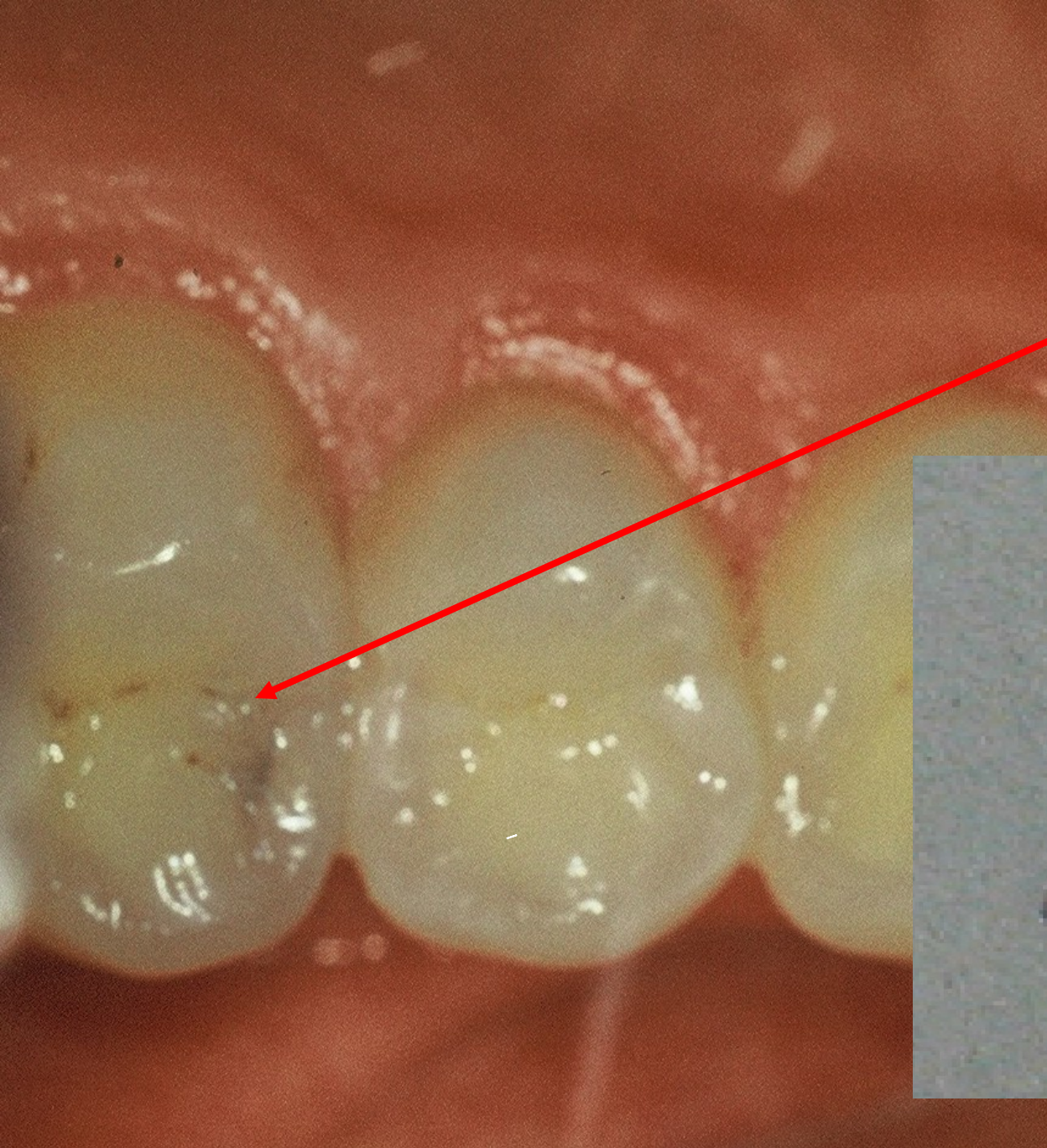
From the occlusal surface

Through the undermined enamel

Separation using wooden wedges is useful



Pre op





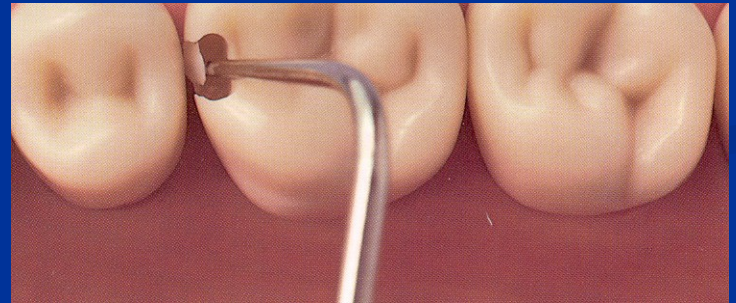
Access to the cavity

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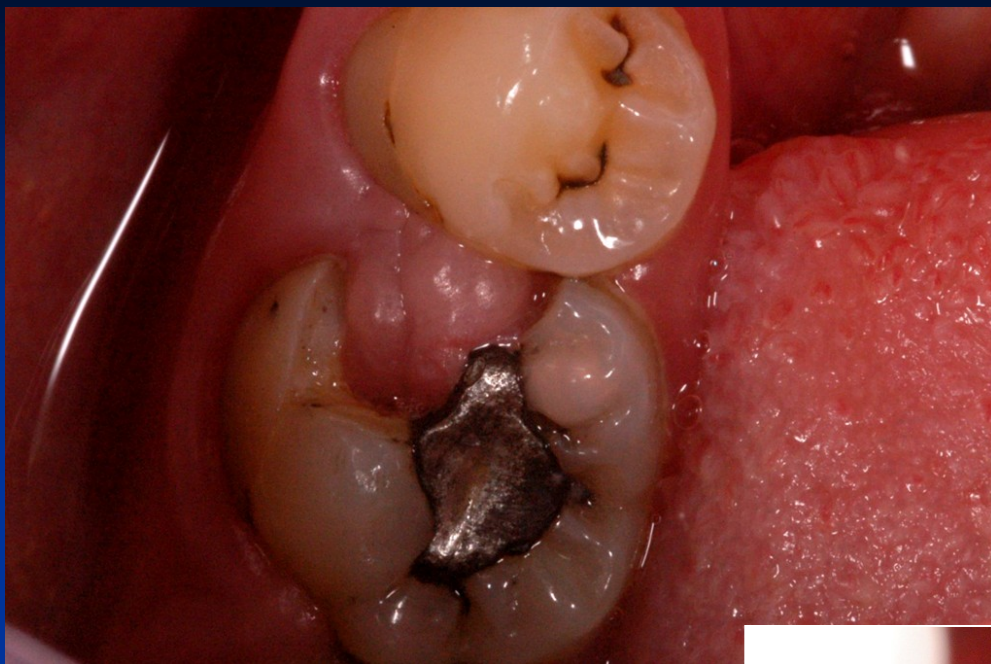


Wooden wedge



Breaking the thin enamel layer out of the ca





➤ Remove of the gingiva that grows into the cavity



Cavosurface margin and extension for prevention

Proximal box:

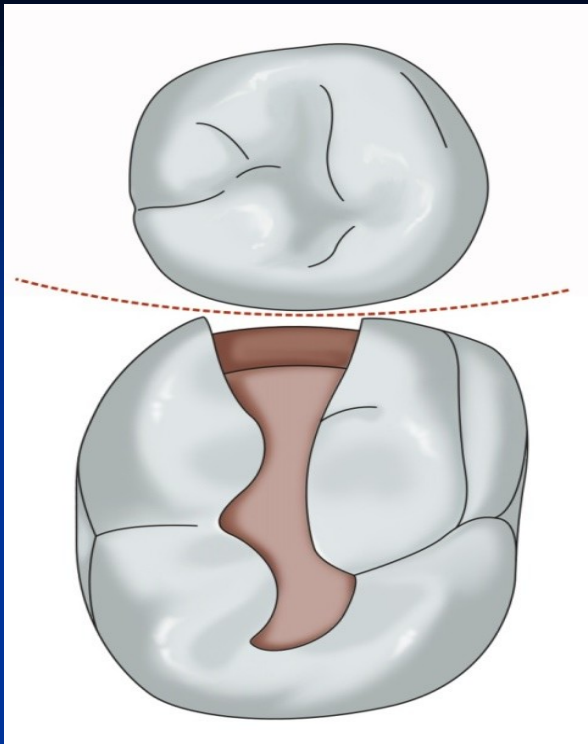
Vestibullary and orally – axial walls (the border between the oral/vestibular and proximal surface.

Below the free gingiva (0,5 mm)

Occlusal

Class I.



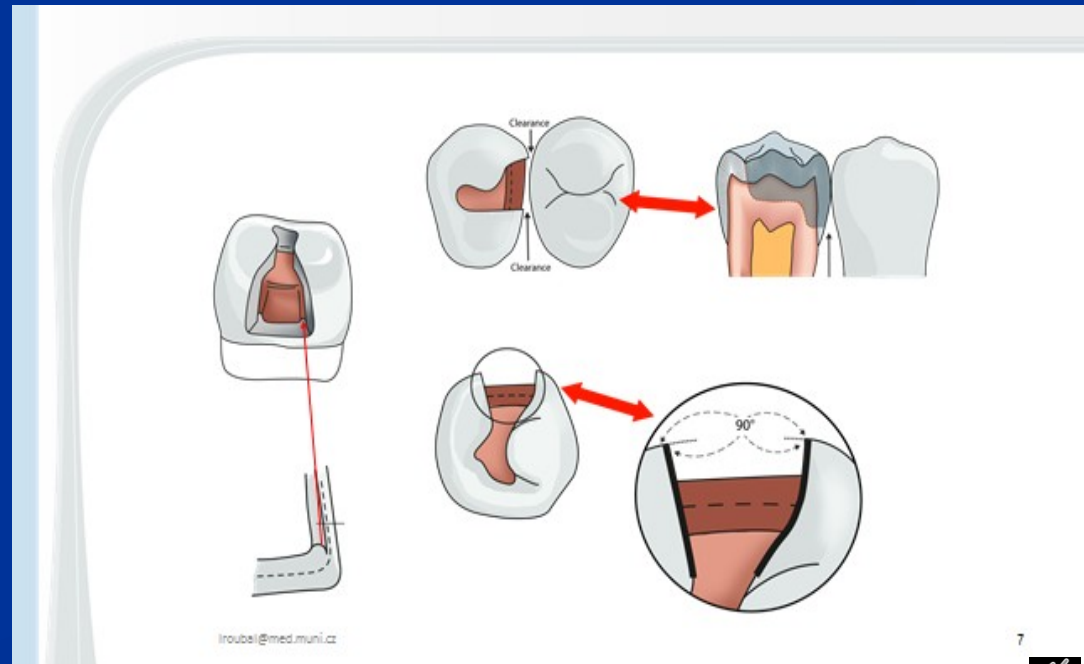


Axial walls

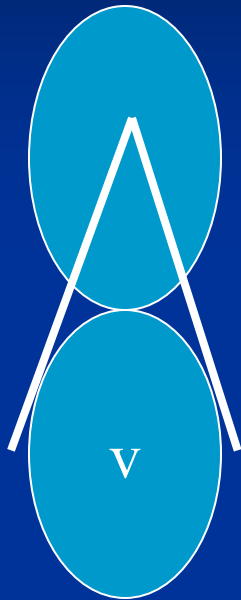
Study the contact area (contact point):
The axial walls (cavosurface margins) are approx. 0,5 mm vestibular and orally
Over this area.

The contact of the treated tooth is made
of the restorative materials.

Gingival wall is parallel with the
cementoenamel junction
and it is situated approx.
0,5 mm below free gingiva.



American rule



Tangents from the middle of treated tooth to the next tooth - where these cross the treated Tooth there are borders of the preparation



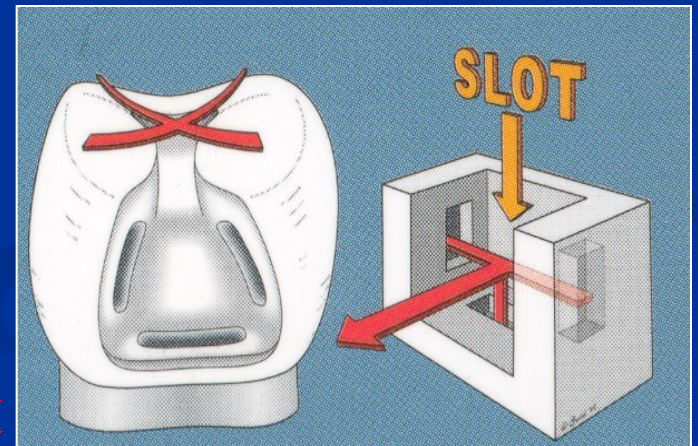
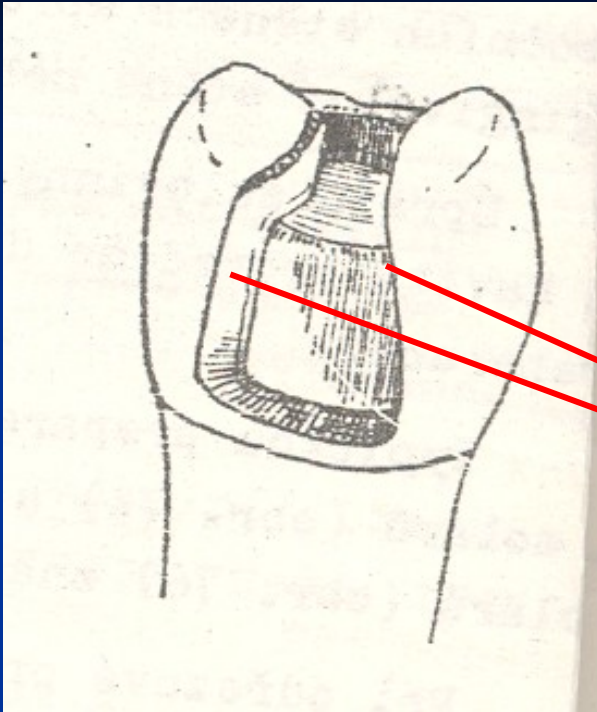
Retention

- Occlusal cavity
- Undercuts
- Grooves



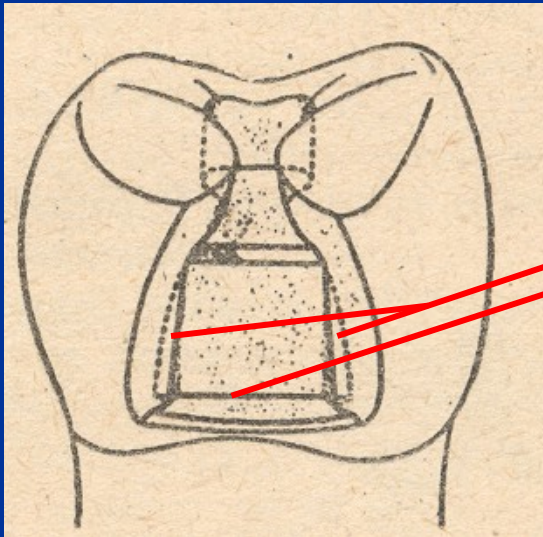
Proximal cavity - box

Slight divergency of axial walls
Gingival wall follows the cementoenamel junction
Gingival wall is below free gingiva



Autoretention

Grooves

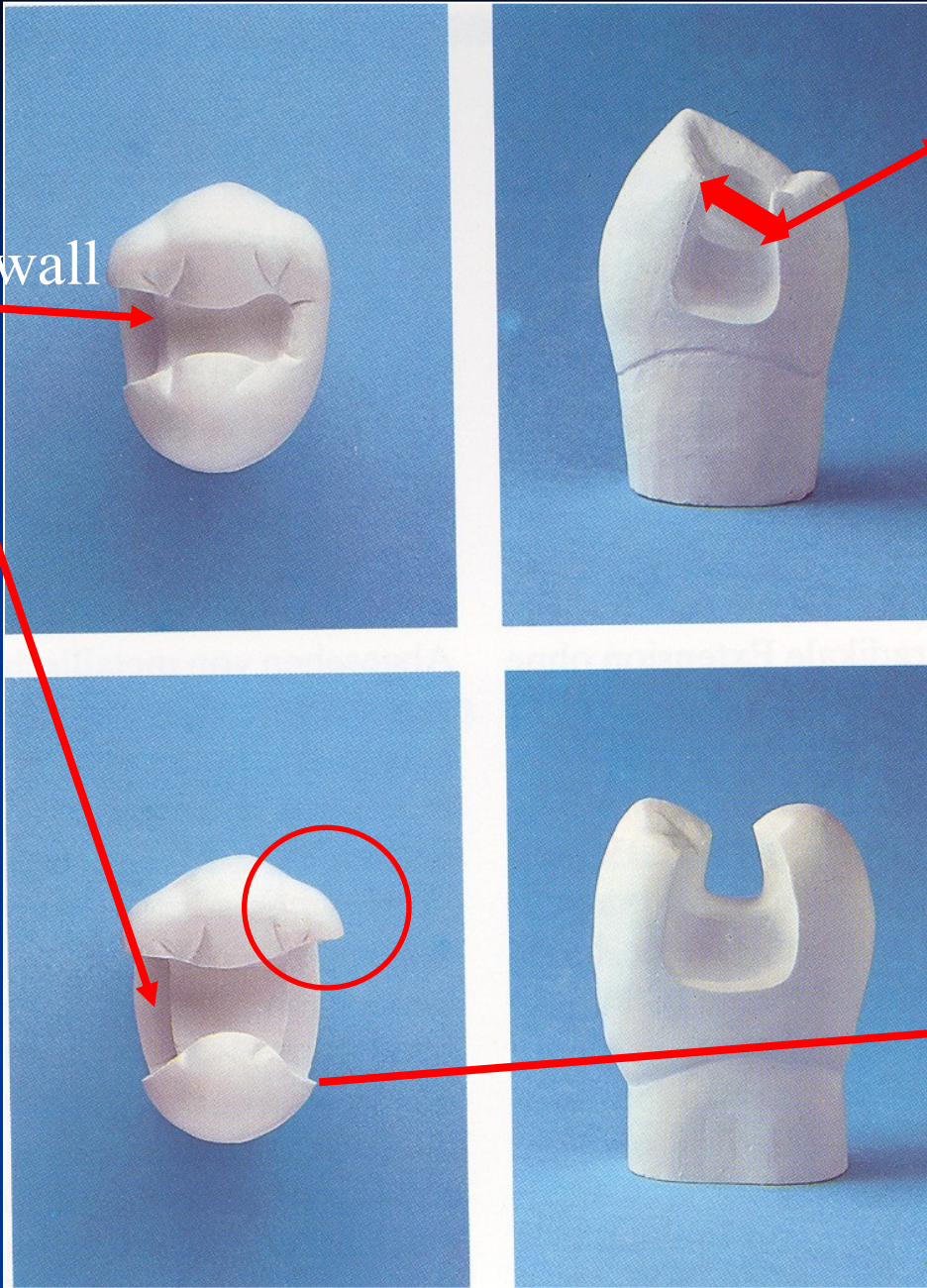


Resistance

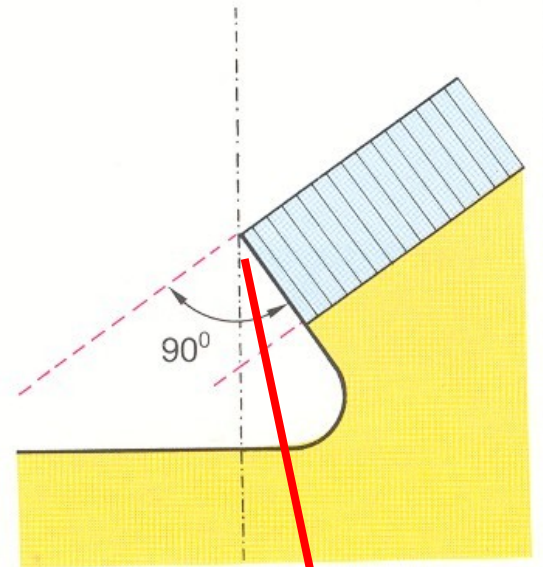
- No undermined enamel
- No sharp edges
- Isthmus is $1/3 - 1/4$ intercuspidal distance
- Angle between axial and gingival wall: 90°, or 85°
- Width of gingival wall is 1 mm at least
- Thickness of the filling 2 – 4 mm (4mm if cusp replacing)



Gingival wall



Isthmus

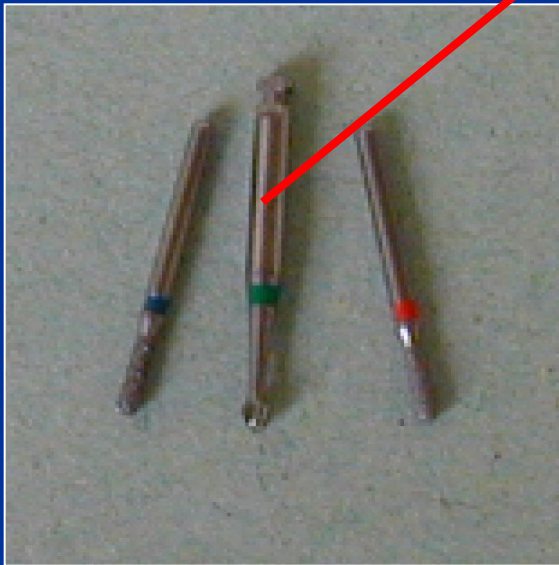


Cavosurface angle



Excavation of carious dentin

Rounded bur



(Caries Detector, Kuraray, Japonsko; Caries Marker, VOCO, Německo)

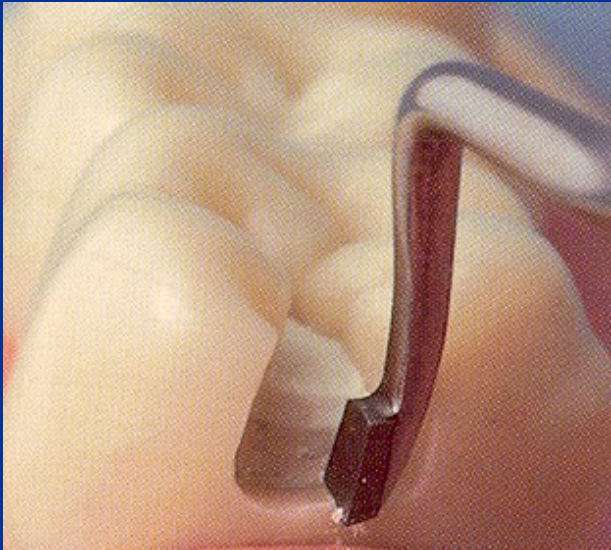
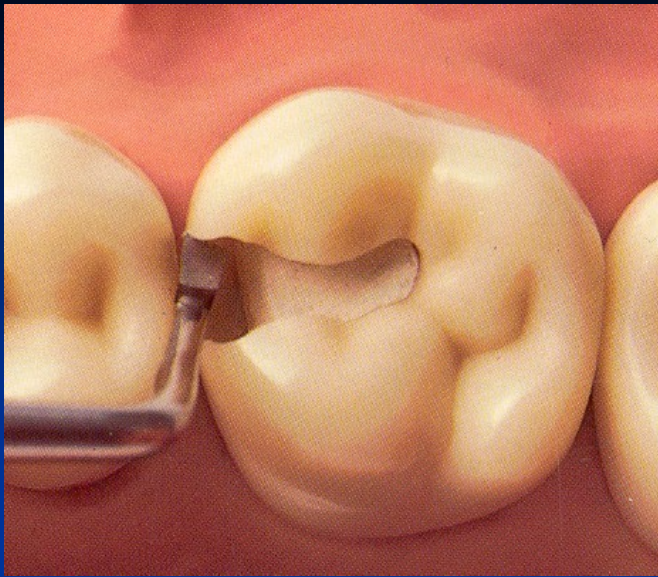


Finishing of the walls of the cavity

- Red coded diamond bur
- Chisel on the gingival wall (if in enamel)







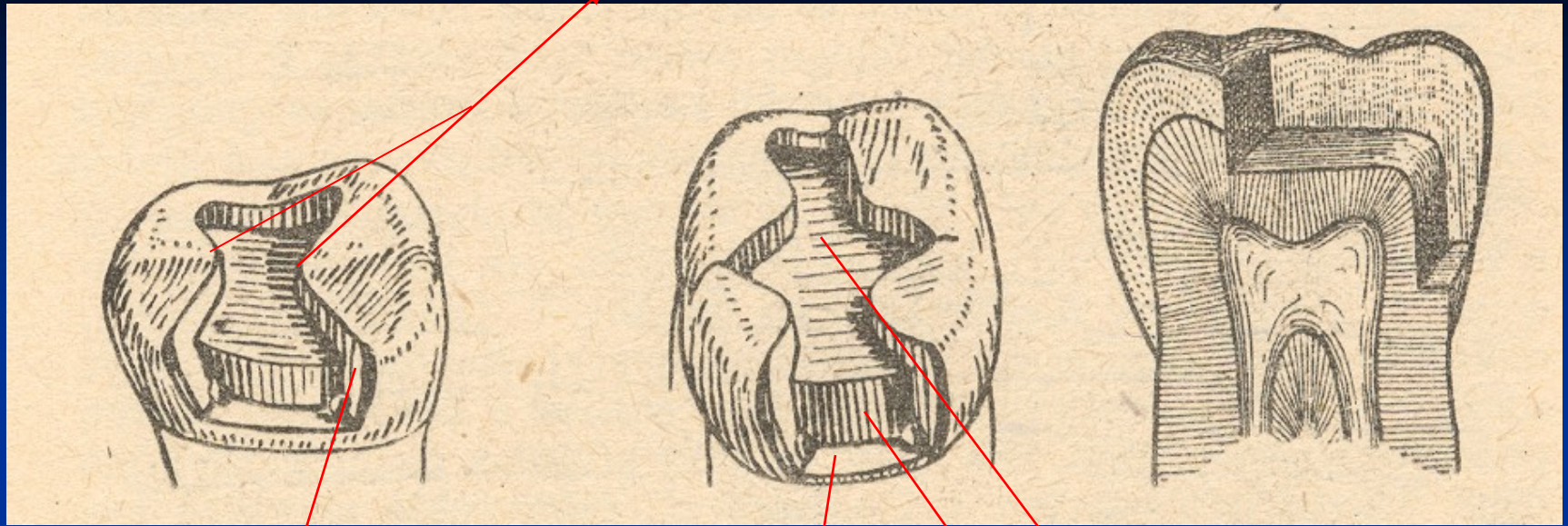


Final check

- Goog light, mirror



Isthmus



Axial wall

Pulpal wall

Gingival wall



Matrix placement

- Matrix primarily is used when a proximal surface is to be restored

The objectives:

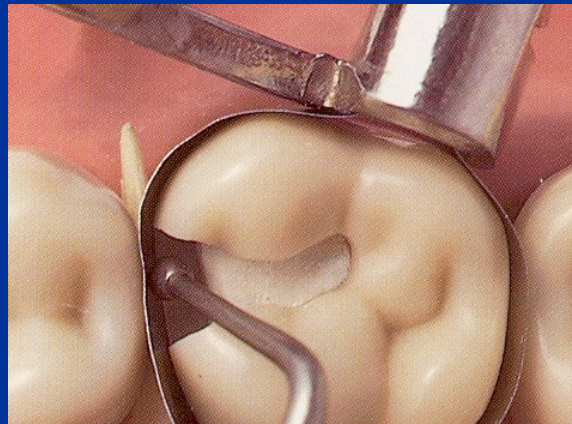
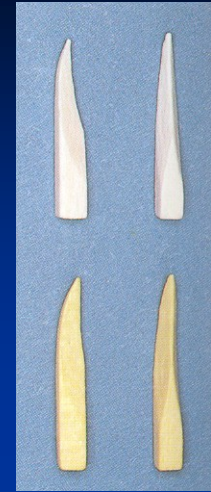
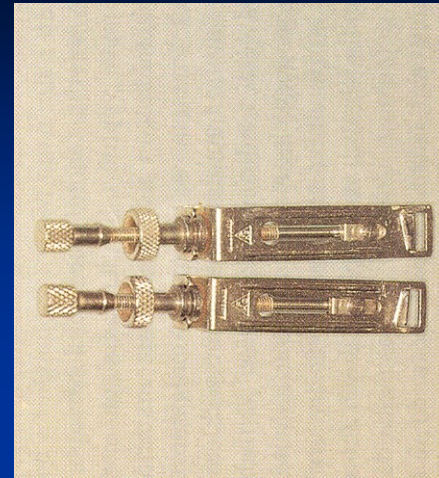
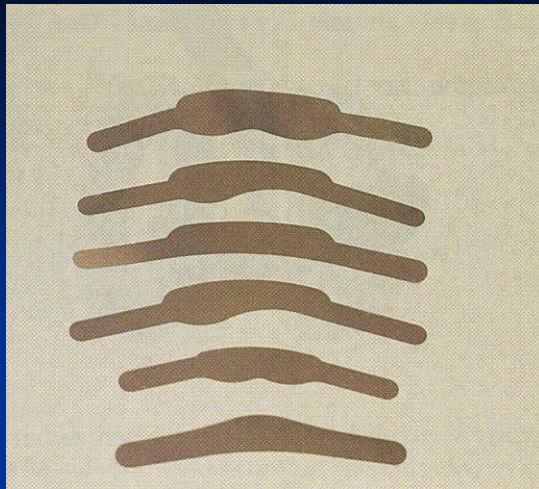
- Provide proper contact
- Provide proper contour
- Confine the restorative material
- Reduce the amount of excess material

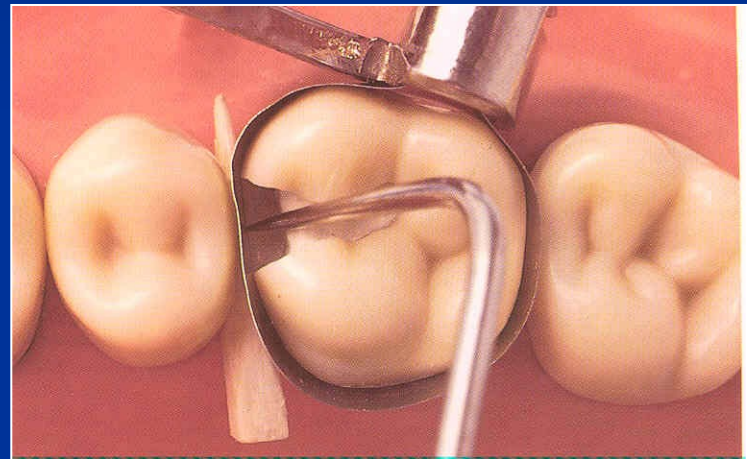
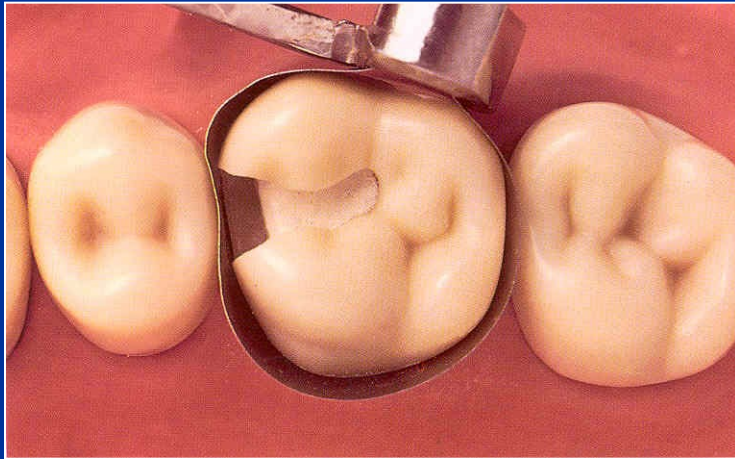
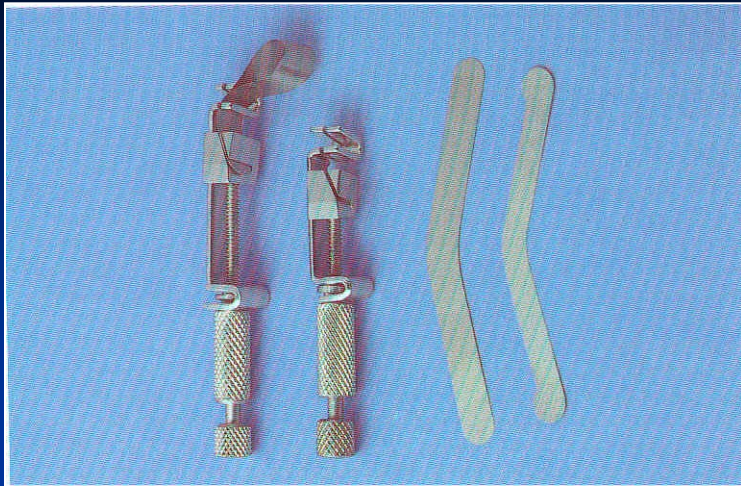


Matrices

- Ivory I retainer Ivory 1
- Hawe Neos retainer Ivory 8
- Tofelmire matrix and retainer

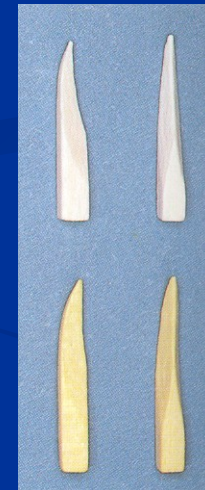






Wedges

- Wooden wedges
 - tighten the matrix band
 - compress the gingiva
 - separate the teeth



Wedging

- Slip the matrix band over the tooth (apical to the gingiva margin – 0,5, - 1 mm)
- Tighten the matrix, check it with probe
- Place a wedge
- Turn the retainer $\frac{1}{4}$ counterclockwise
- Contour the band





Amalgamators

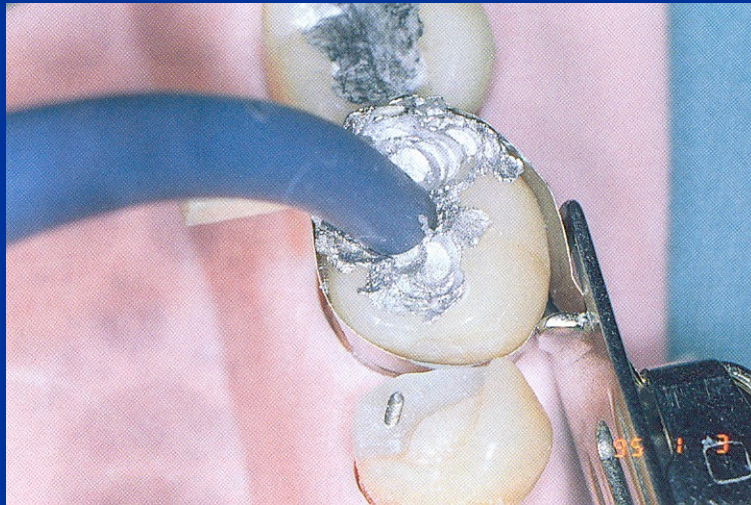
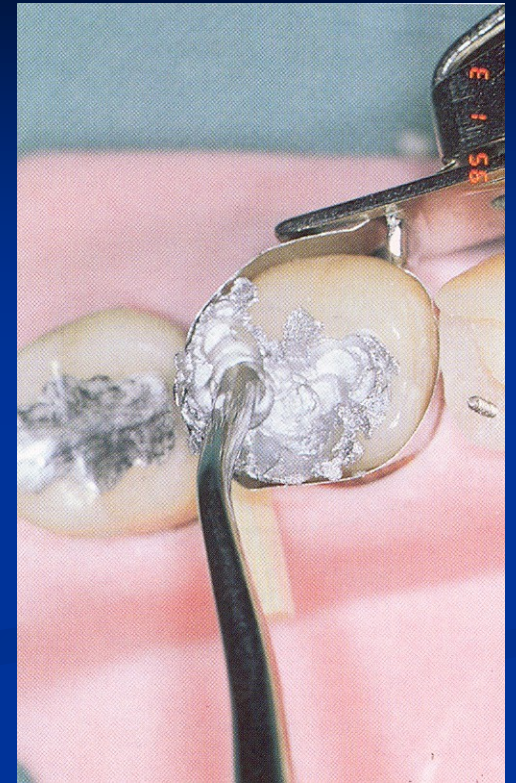


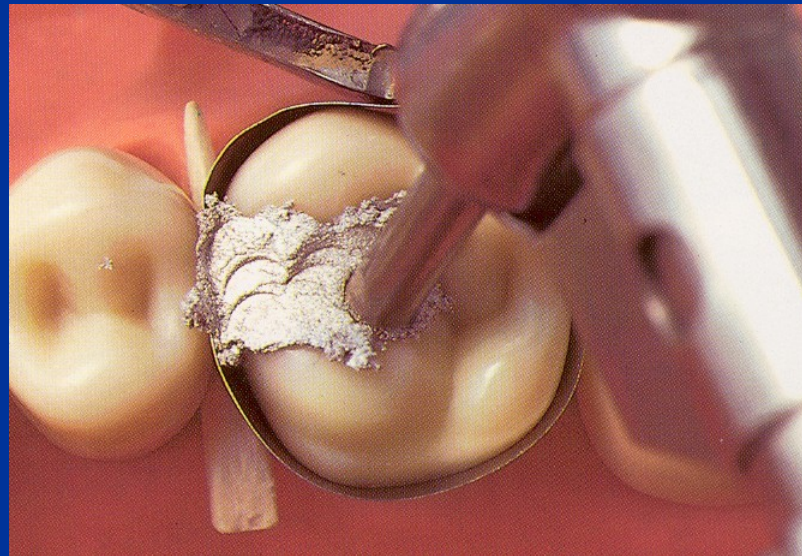
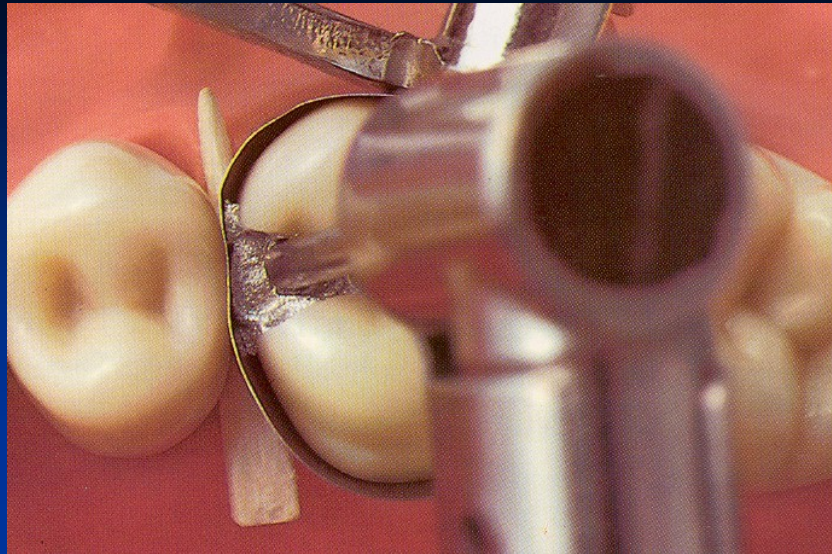
Condensation of amalgam

- Condensor – with the straight front
- Power driven condensation

How big should the front be?

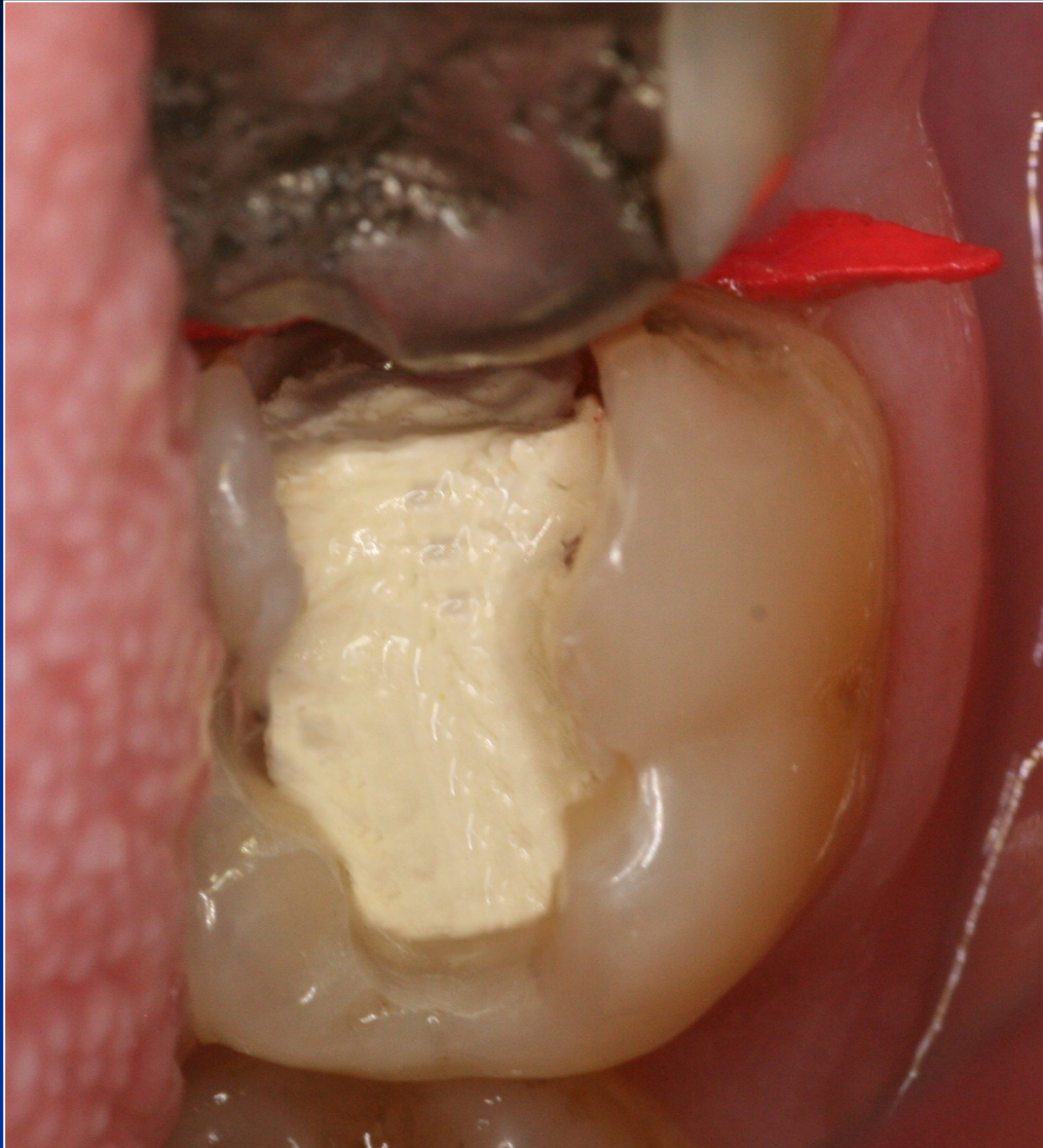
















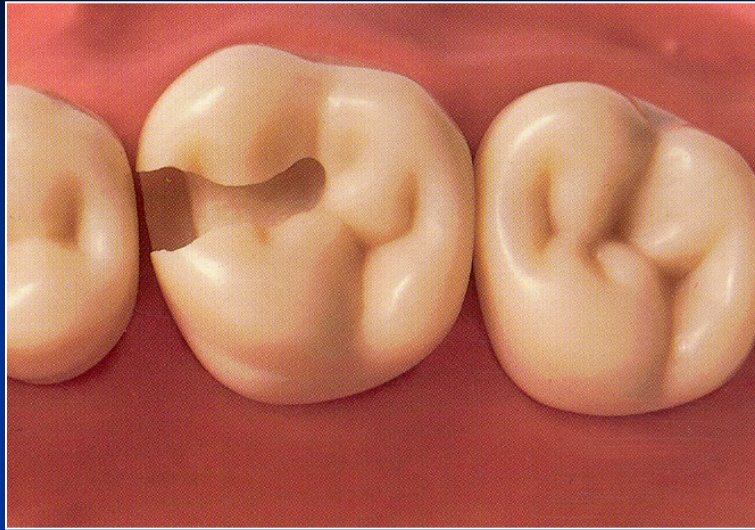


Base

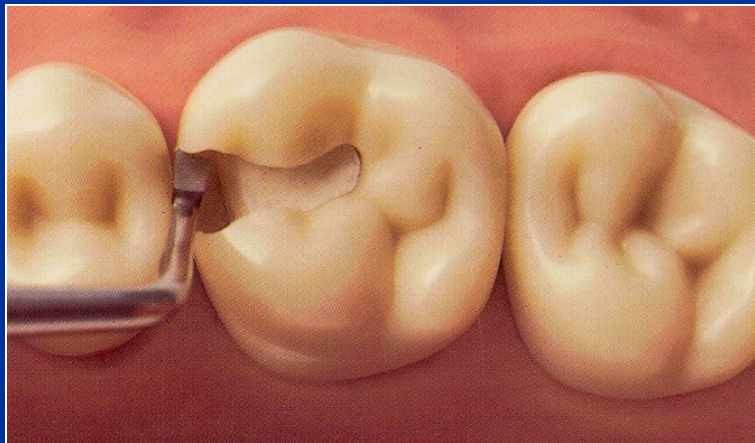
- Zinkoxidphosphate cement
- Zinkoxidkarboxylate cement
- Glass ionomer cement
- Zinkoxideugenol

On pulpal walls only!





The base must be hardened

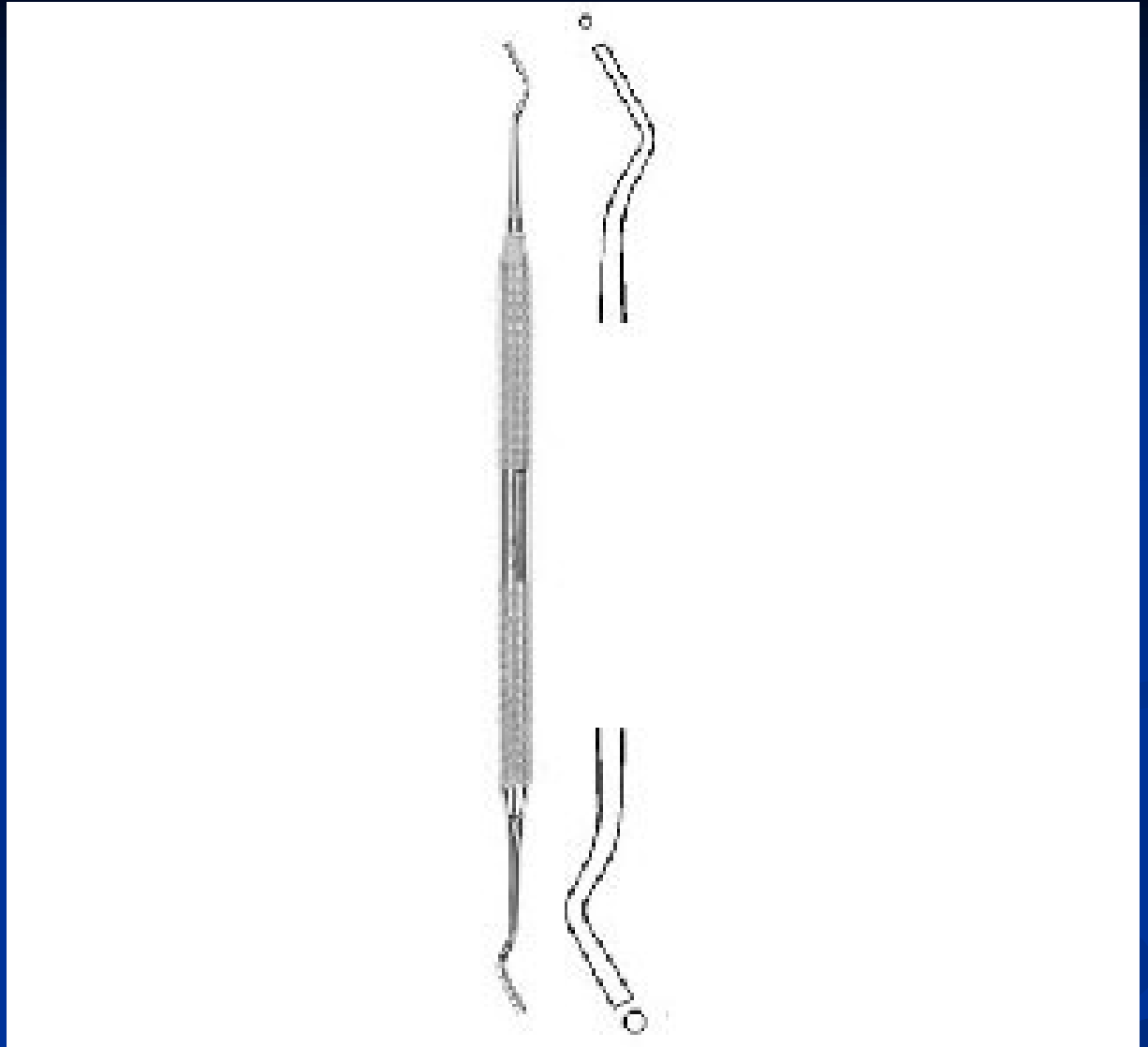


Instruments

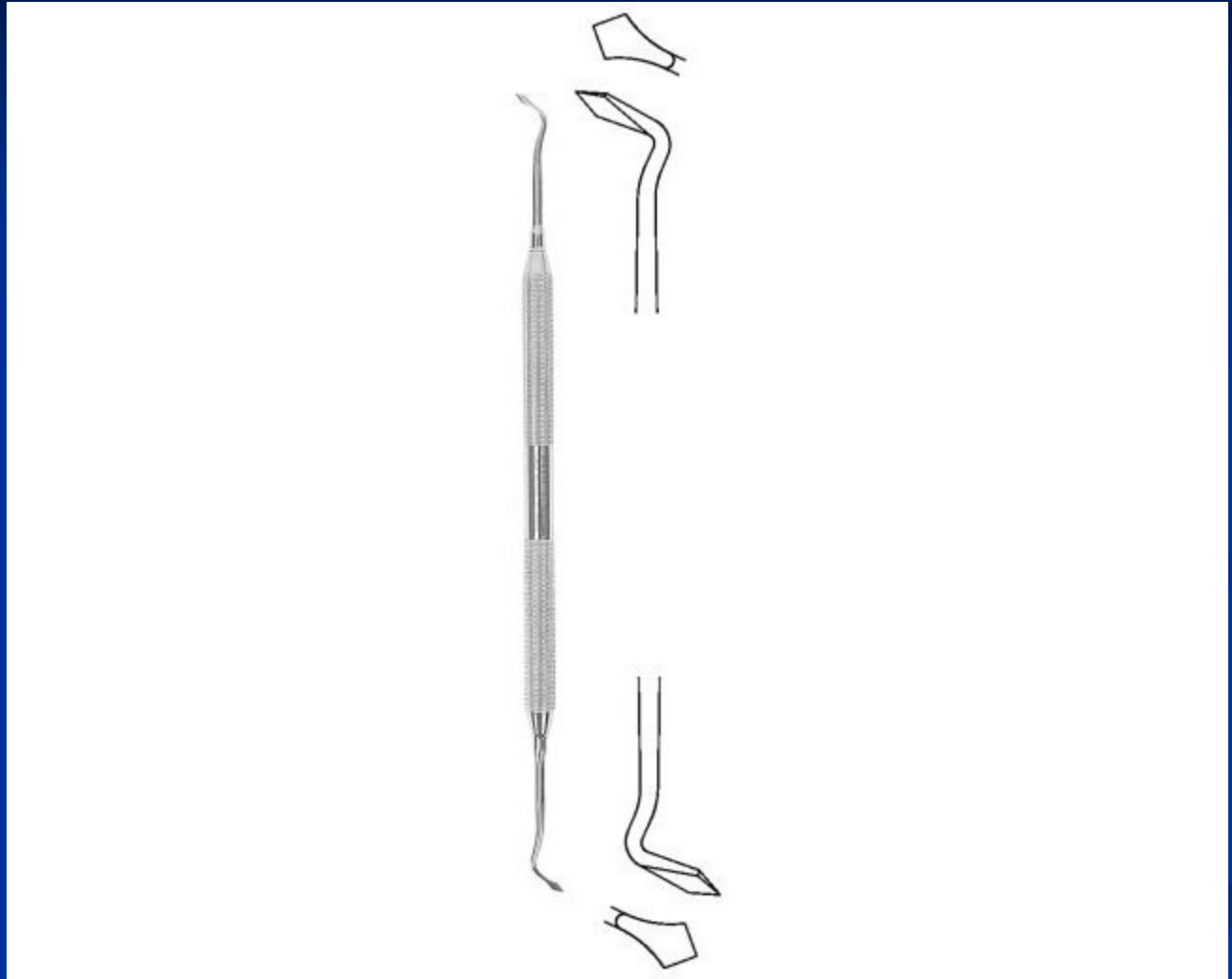
- Preparation (see previous pictures)
- Filling
- Finishing and polishing

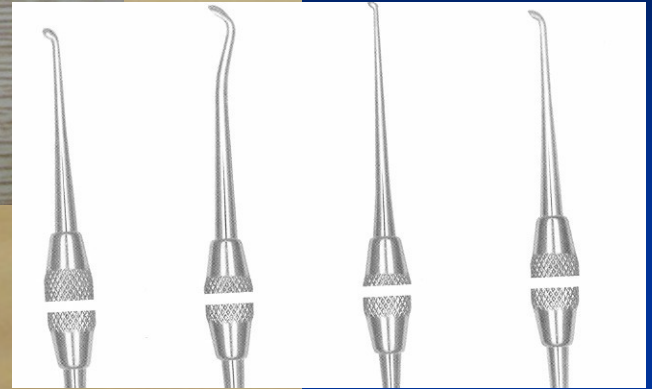


Condensor with
the straight front



Carver - Frahm

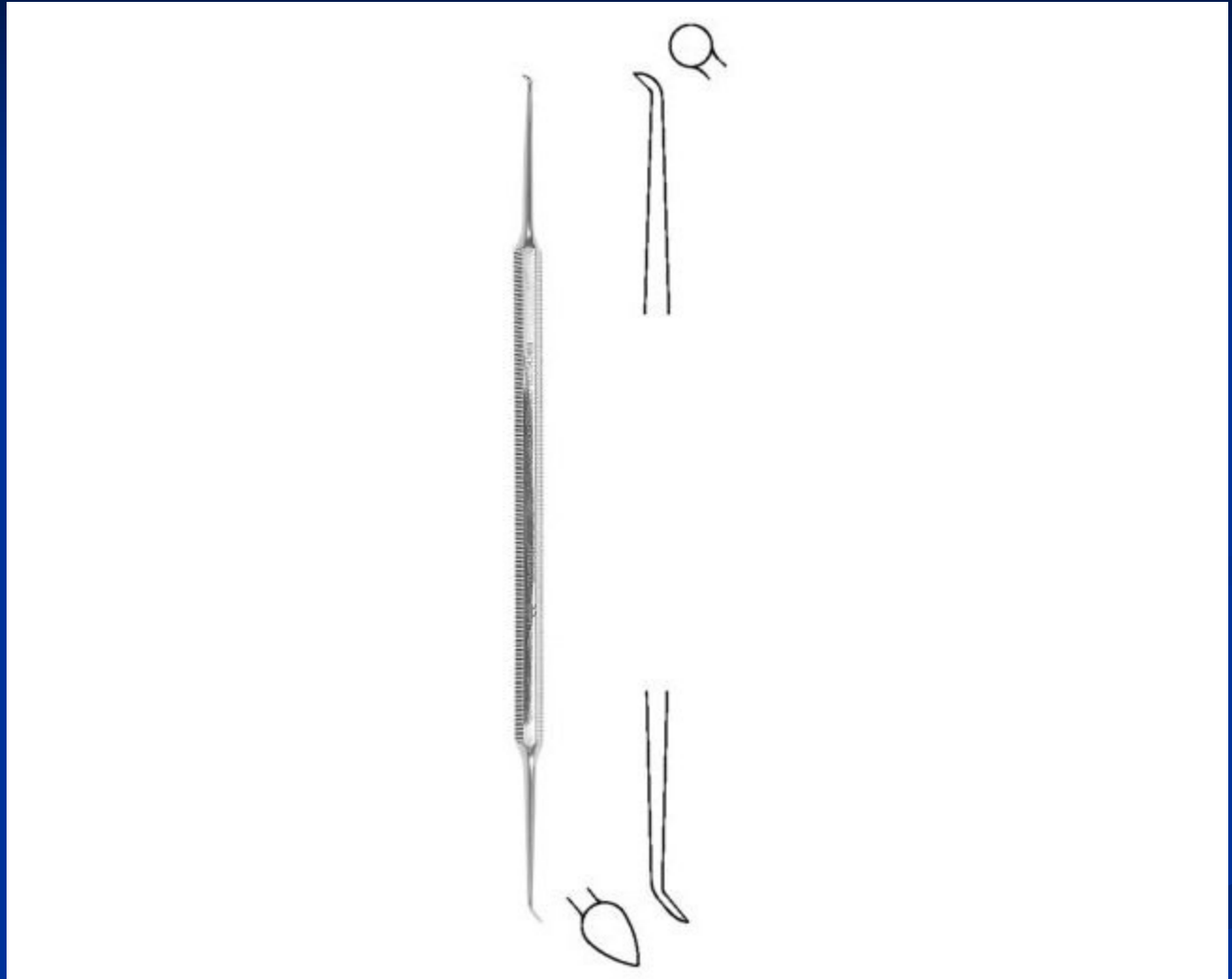




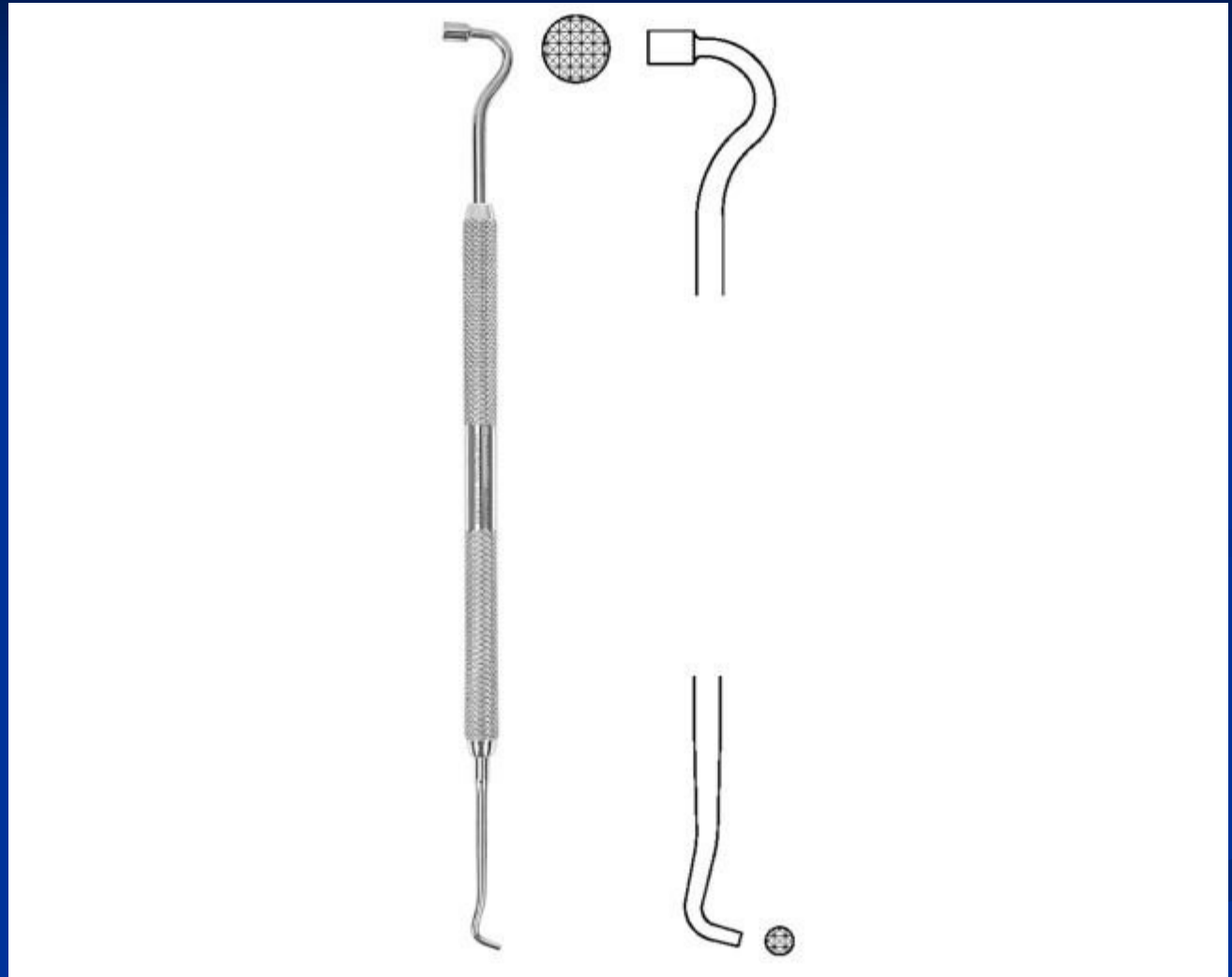
Sapin

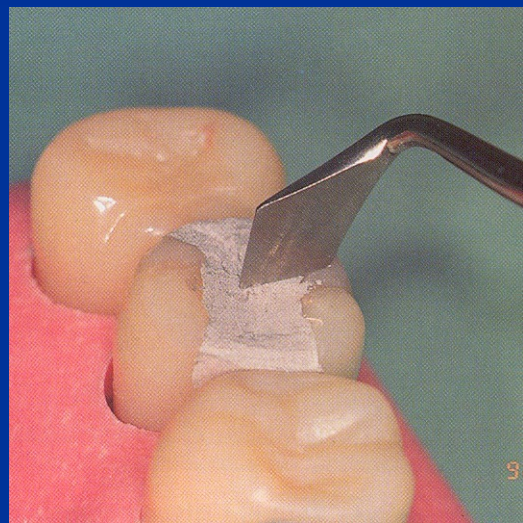
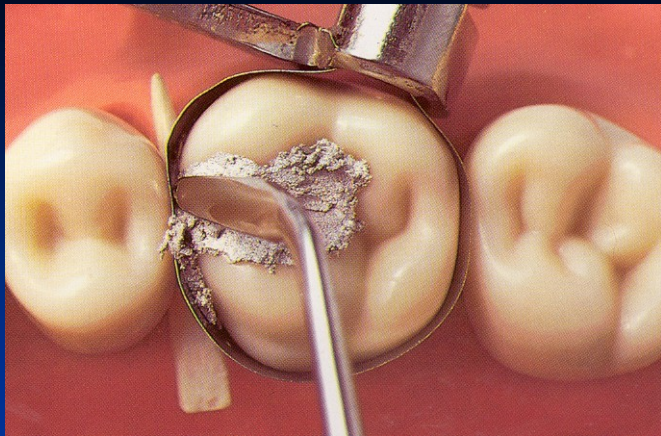


Discoid-cleoid



Amalgam carrier





Carving

Burnishing

