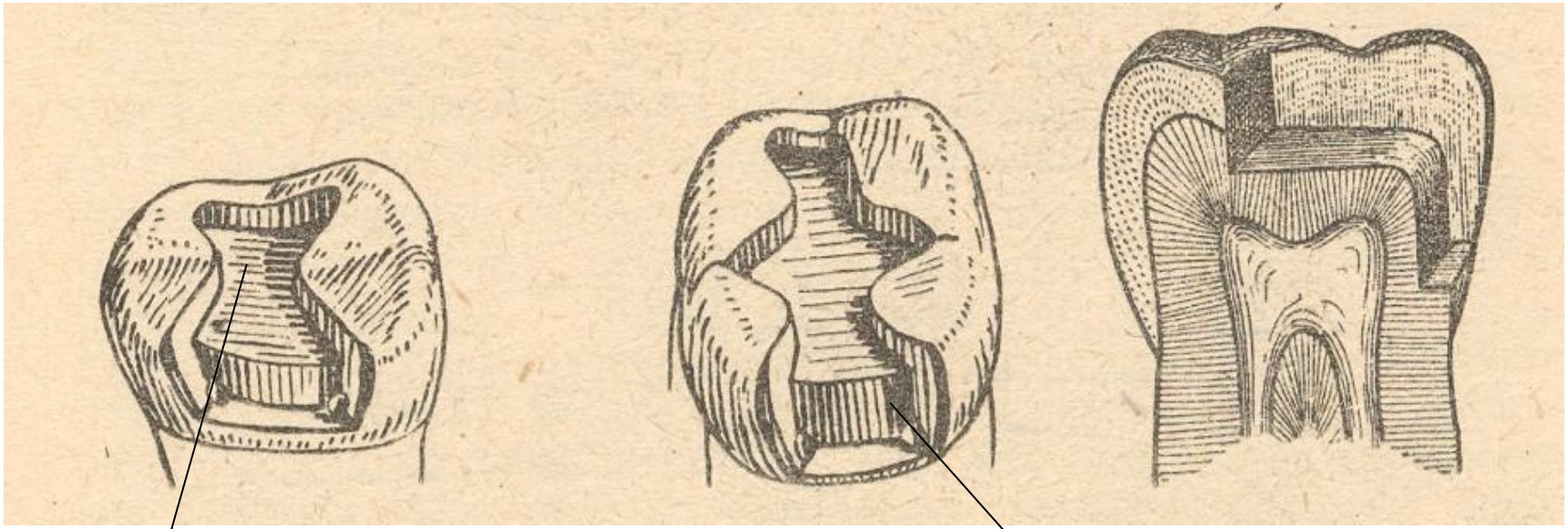
Class II. – classification

- The cavity that is composed of the occlusal and proximal cavity
- Slot
- Large defects - restoration with the replacement of cusps

The cavity composed of two cavities



Occlusal cavity

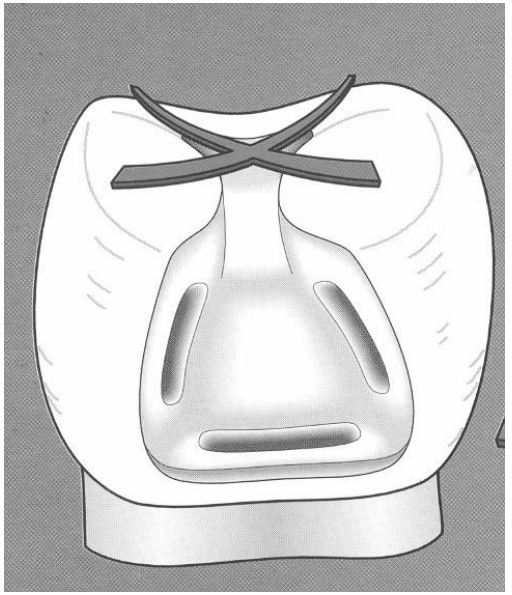
Proximal cavity

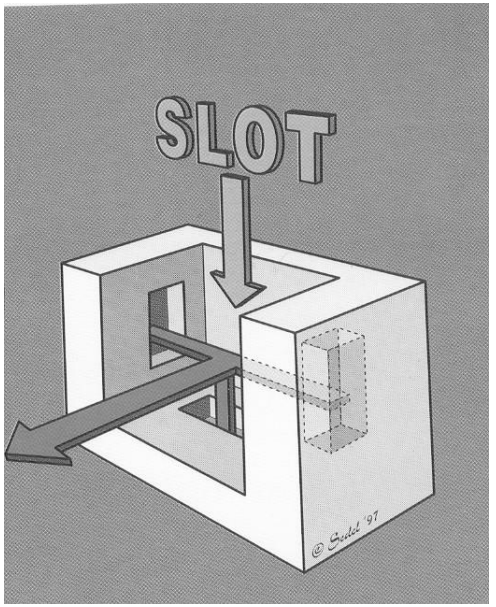
Slot cavity

- The cavity is limited on proximal surface only

Access:

From the occlusal surface through the enamel and dentin

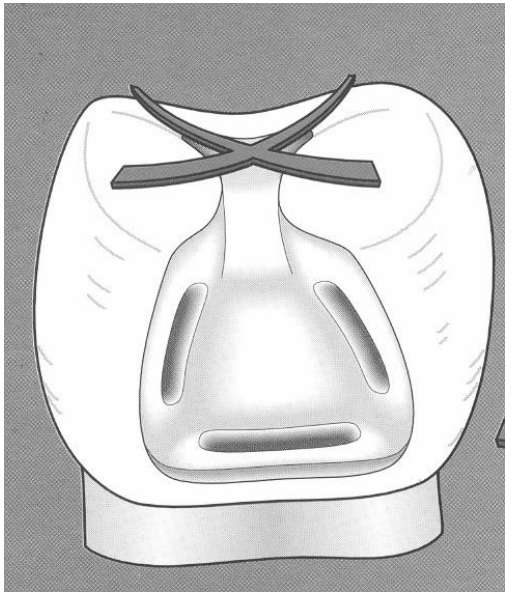


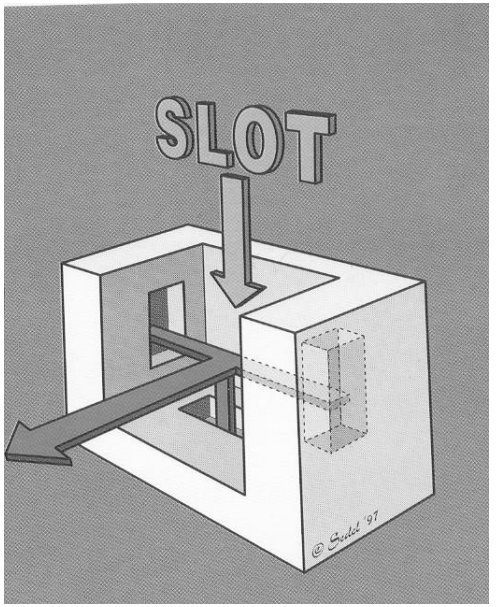


Slot cavity

- **The cavorusface margin:**

- The cavity is open occlusally within the proximal ridge.
- Position of the axial walls: axial walls are 0,5 mm orally and 0,5 mm vestibulary from the contact point (contact area)
- Position of the gingival wall: the gingival wall is located 0,5 mm subgingivally

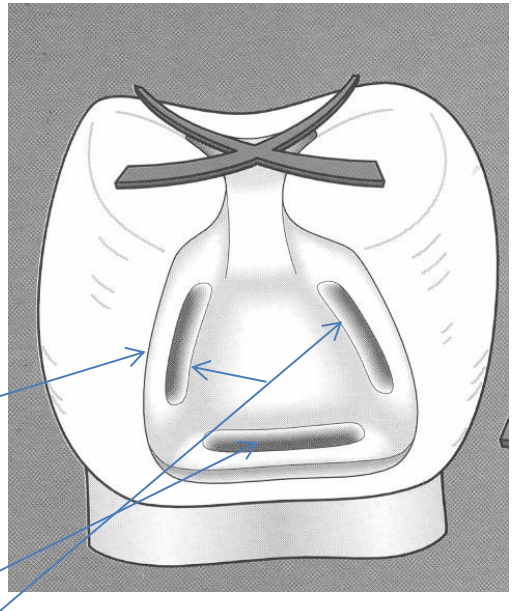


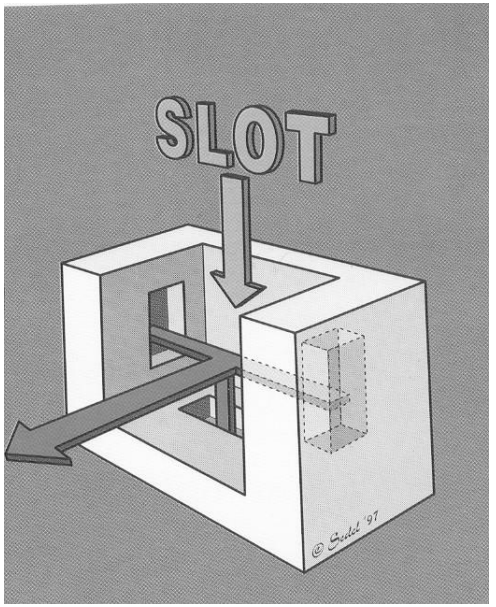


Slot cavity

- **Retention**

- The axial walls are divergent towards the gingiva
- Vertical retention grooves are prepared in the axial walls
- A horizontal groove is prepared in the gingival wall

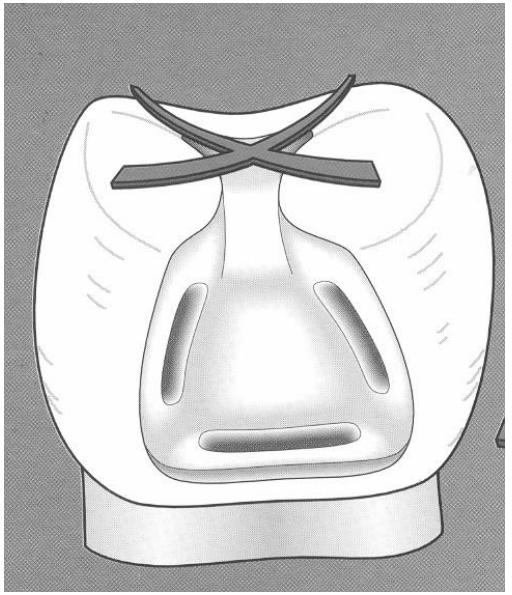


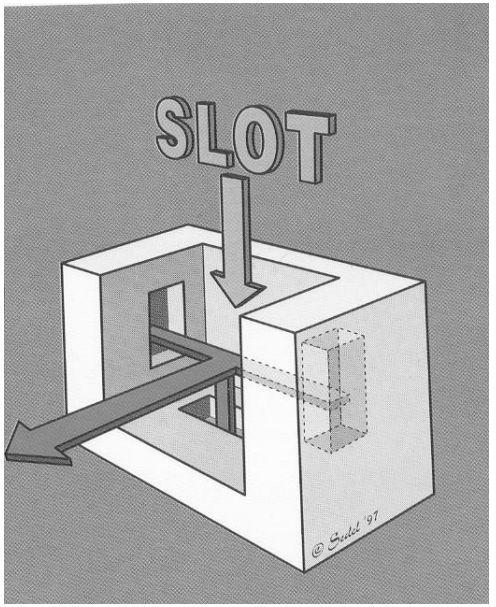


Slot cavity

- **Resistance**

- the enamel must be supported with dentin
- all edges are smoothened (rounded)
- the thickness of amalgam is appr. 2 mm
- the angle betwen the gingival wall and the pulpal wall is 90°
- the gingival wall is 1 mm wide



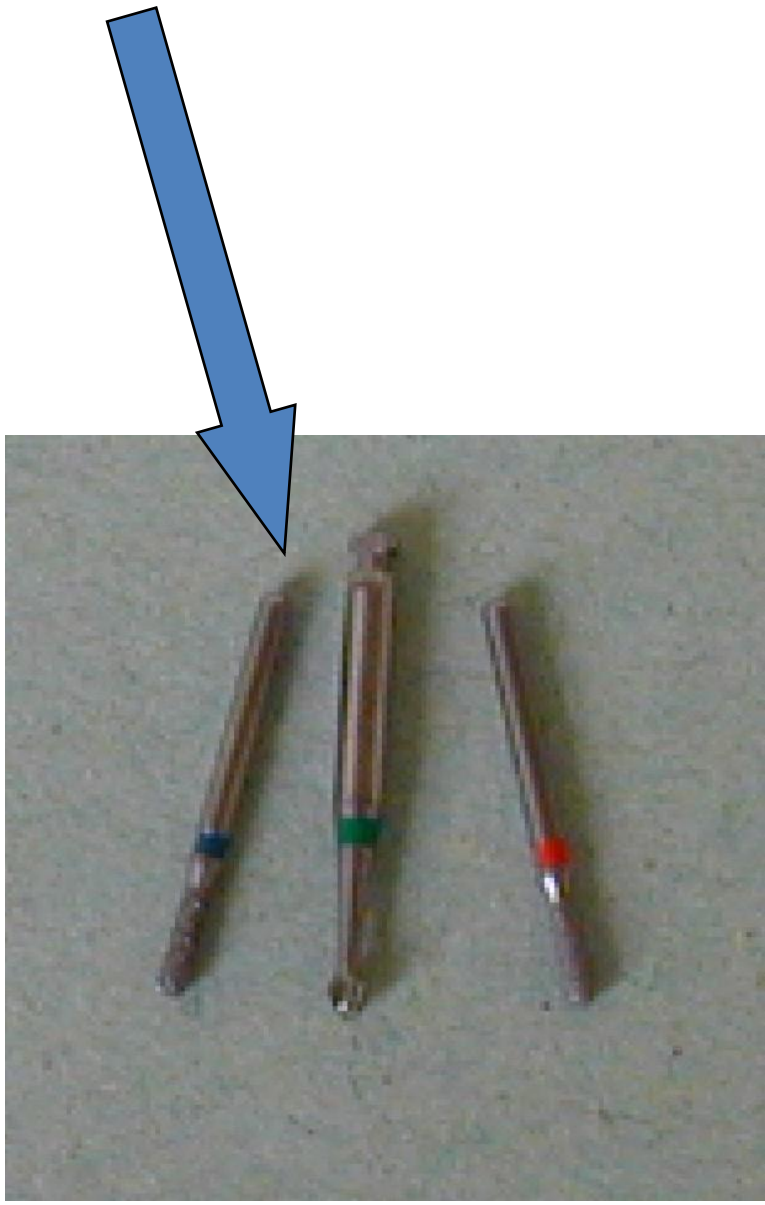


Slot for amalgam

- Access to the caries lesion
- go through the enamel wall
- breaking out of the enamel lamella
- excavation of carious dentin

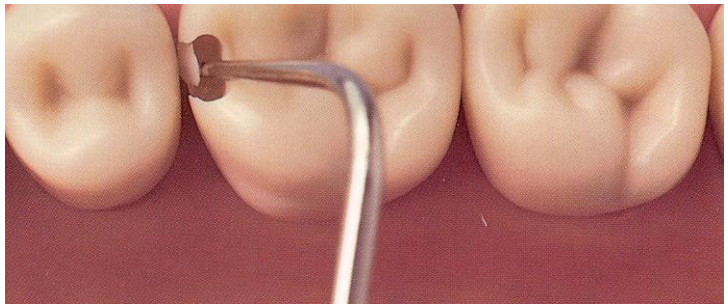
Pre op

froubal@med.muni.cz



Access to the cavity

lroubal@med.muni.cz



The matrix and the wedge must be used

For the slot preparation small instruments are necessary

A magnification (loops) is usefull

Large defects

- When one or more cusps are undermined, these must be cut and replaced with amalgam

Access: from zhe nocclusal surface

Cavosurface margin: depend on the size and shape of the defect. It is similar to the conventional preparation see pictures in the following slide.

The position of the gingival wall is 0,5 mm subgingivally

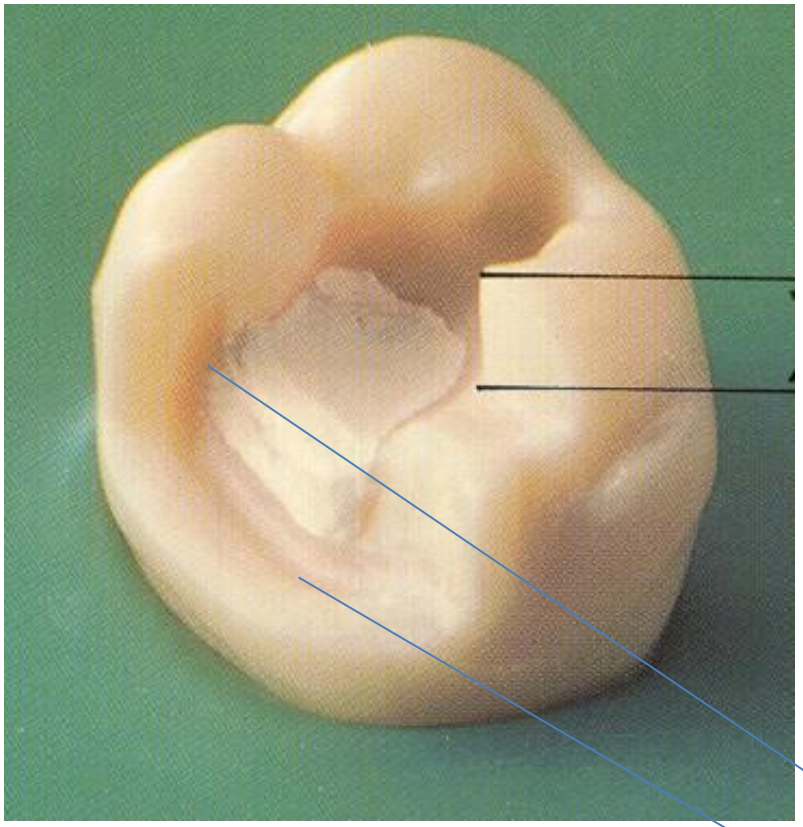
Large defects

- Retention
- Undercuts
- Retention grooves
- Small cavities
- Endodontic cavity in case of endodontically treated teeth
- Parapulpal pins (small screws – rare)

Large defects

- Resistance
- enamel must be supported with dentin
- all sharp edges must be smoothened
- the gingival wall must be at least 1 mm wide
- the angle between the gingival wall and the pulpal wall must be 90°
- the thickness of the amalgam must be 4 mm on the cusp, in other parts of the occlusal surfaces 2mm

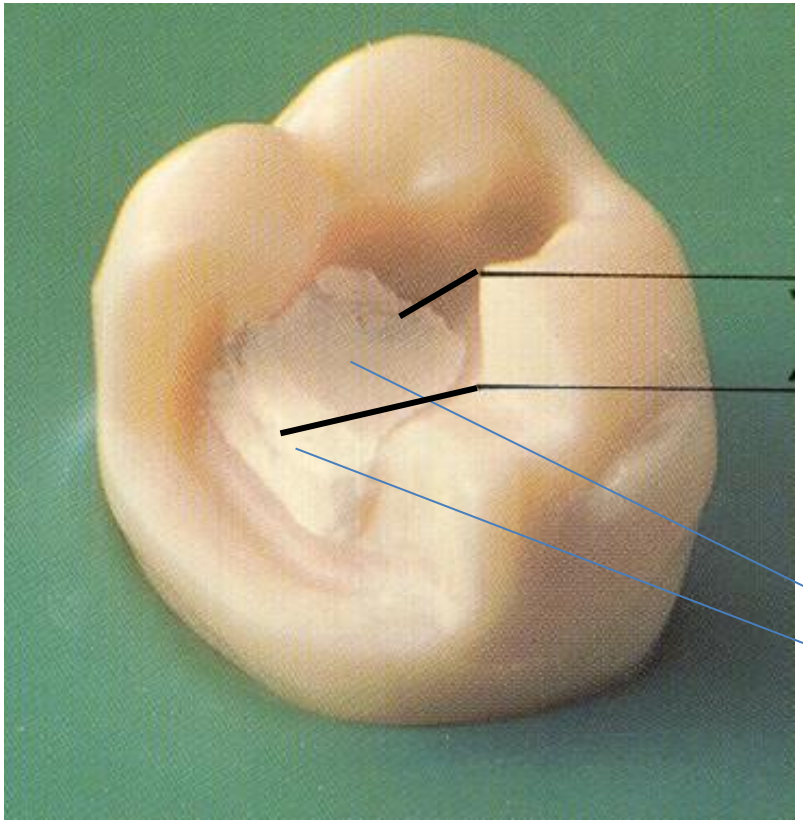
Large defects



The thickness of the amalgam must be 4 mm

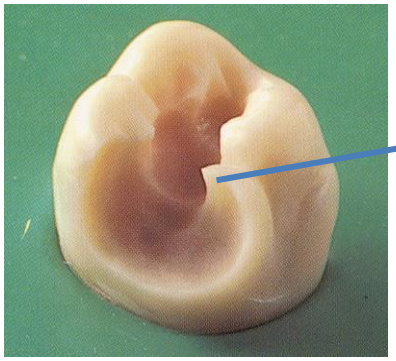
grooves

Large defects



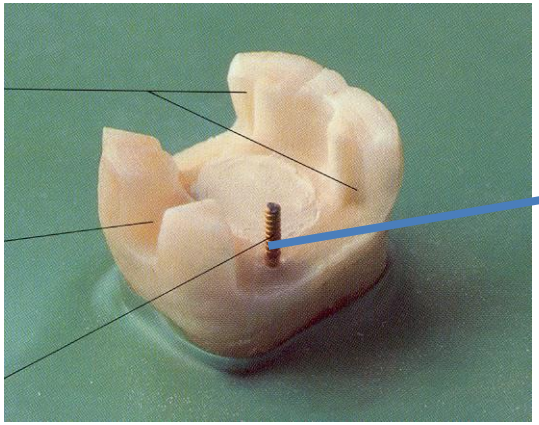
The base of zinkoxid phosphate cement is placed on pulpal walls

The angle between both pulpal walls is 90°



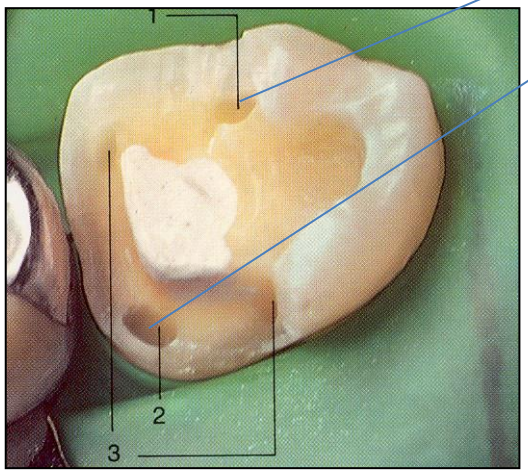
Sharp edge

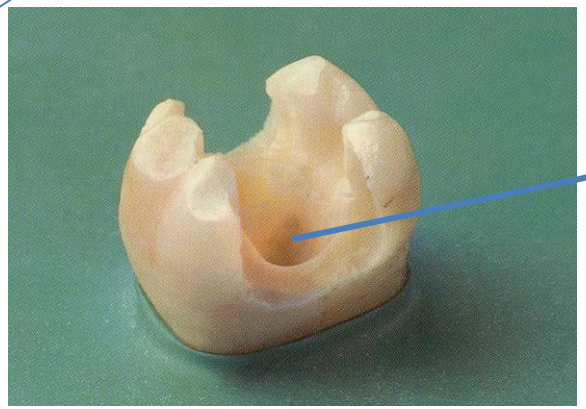
Various possibilities of retention of large restorations



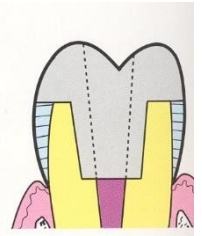
Parapulpal pin

Small cavities for retention, called sometimes pins (no parapulpal, bud pins)

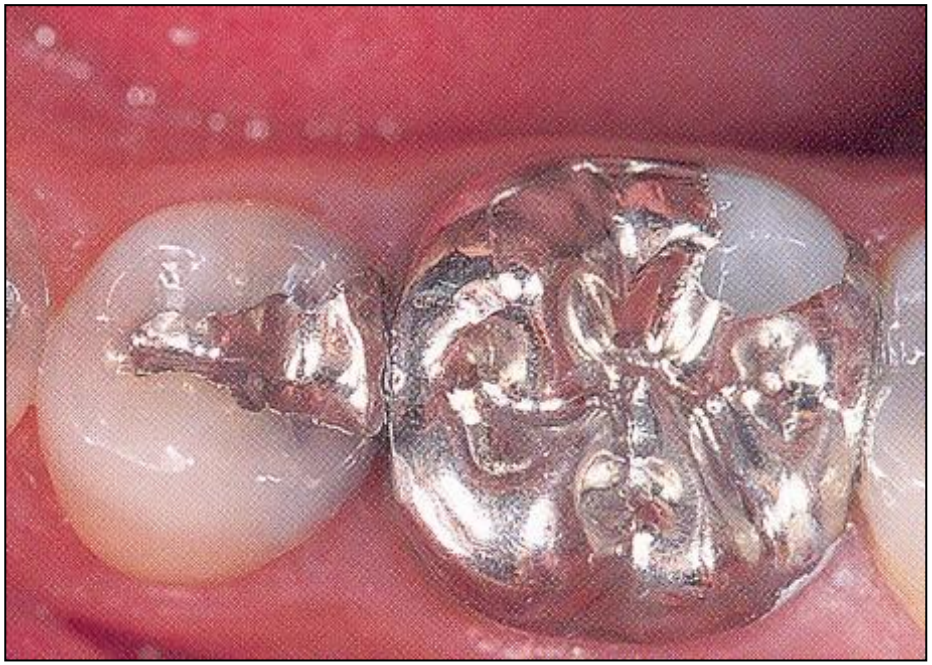




Endodontic cavity for retention



Large amalgam restorations



Matrices and wedges are necessary, the occlusal surface must be carved carefully

Composite materials and class II.

- Composite materials can be used in case of good level of oral hygiene in small and moderate cavities class II.

- There are some differences in comparison to amalgam

Preparation for composites

- Cavosurface margin:

The preparation removes the caries lesion, the extention on occlusal surfaces is not necessary.

We prepare this occlusal cavity only:

- If the old amalgam foling is replaced
- If the dental caries affects also the occlusal surface
- The oblique ridge oblique could be undermined – it is aceptable
- If the occlusal surface is intact the extention into fissures is not necessary
- The position of axial walls is the same as in the conventional preparation
- The position of the gingival wall is supragingival

Preparation for composites

Retention

The undercuts and grooves are not prepared

The box is rounded

The enamel is beveled:

On axial walls and on outer edge of the gingival wall

No bevel is prepared in occlusal cavity

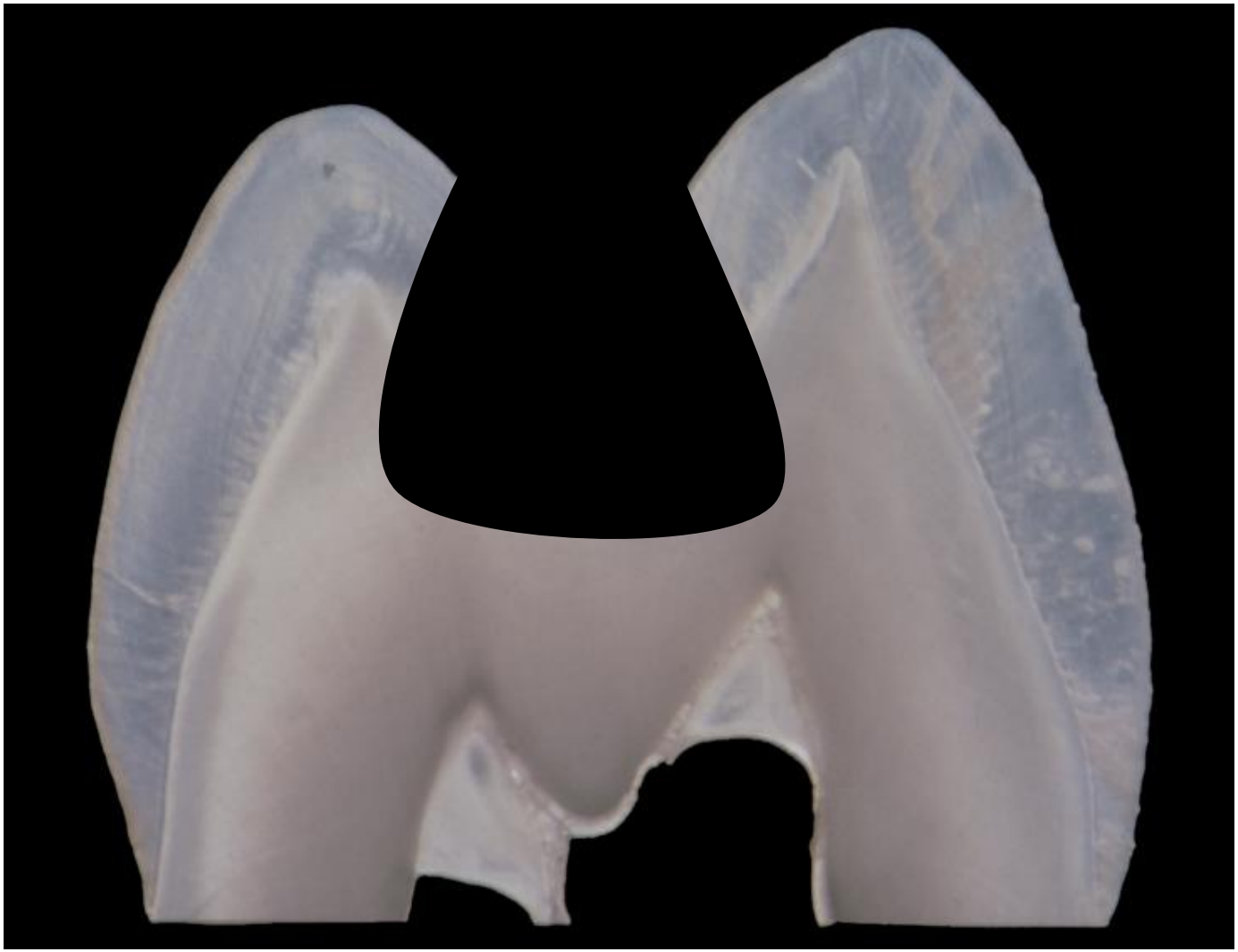
The retention:

Microretention: etching, washing, priming, bonding.

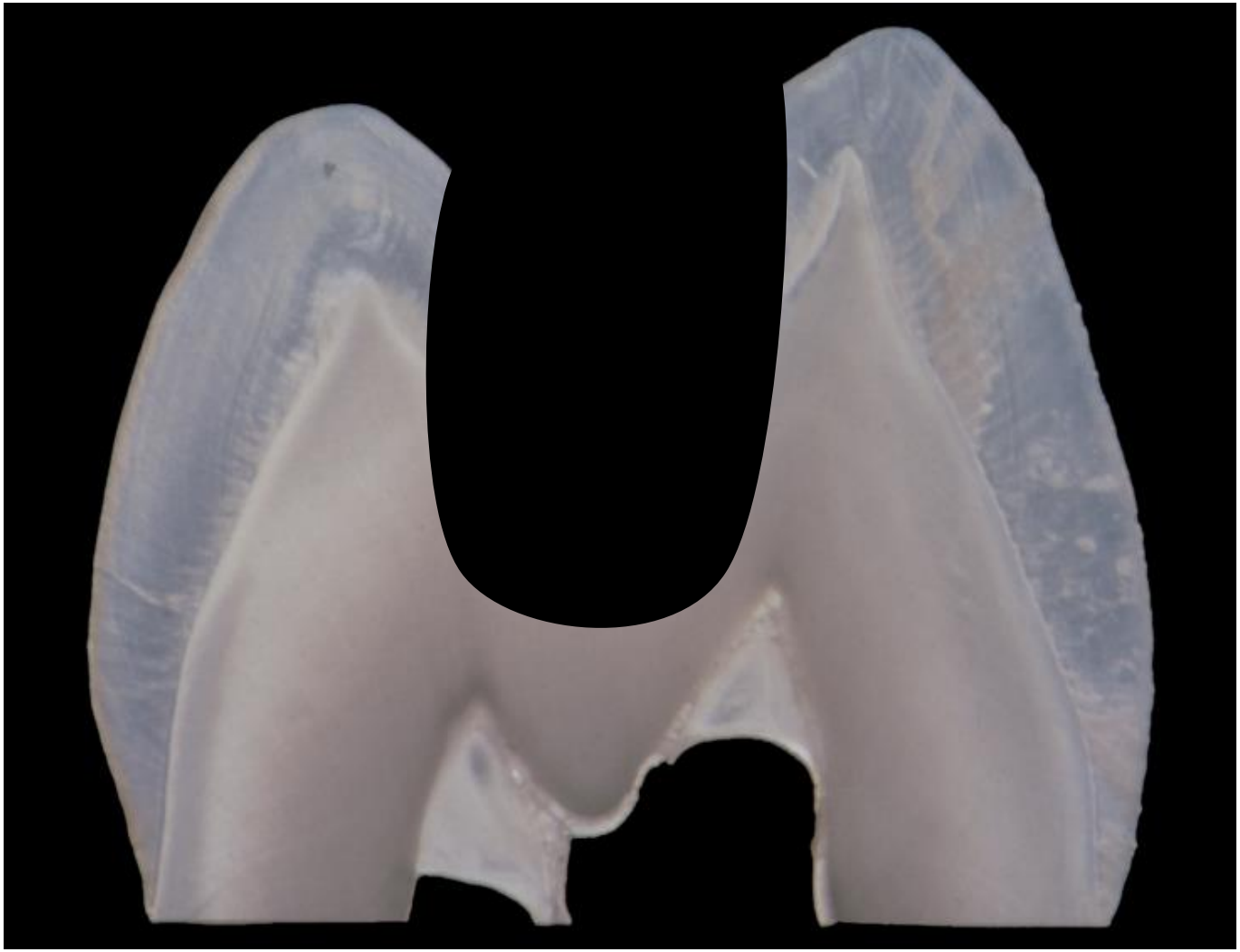
Preparation for composites

- Resistance
- No sharp edges in the cavity
- Thickness of the filling is 2 mm on occlusal surface
- The gingival wall is 1 mm wide

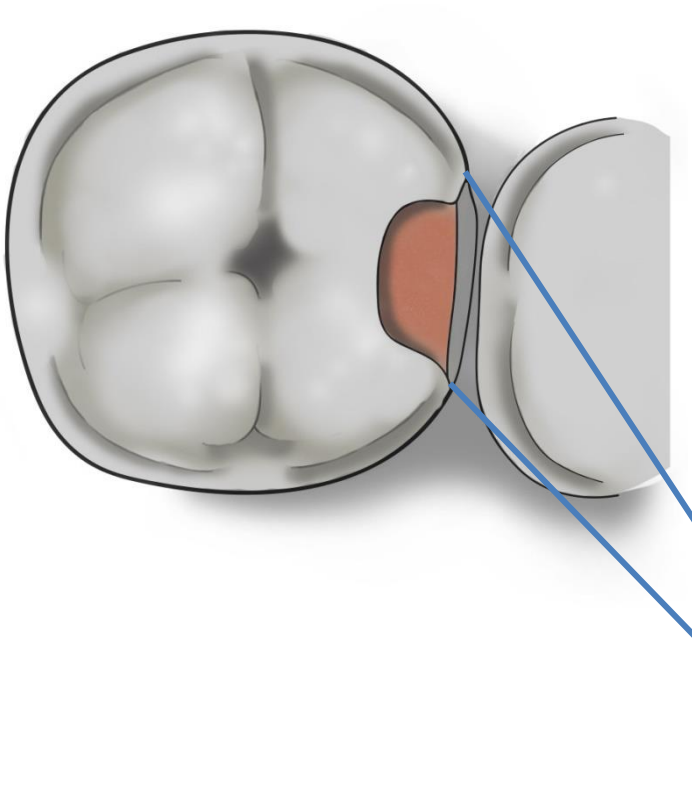
Cavity for amalgam



Cavity for composite



Preparation for composite



The occlusal surface is not involved in this case
You can see beveled enamel in proximal part of the cavity
The gingival wall is 1 mm wide
The contact area will be made of composite material

Small preparation when the cavity is open on the occlusal surface only within the proximal ridge is called adhesive slot

In comparison to the slot for amalgam

- no undercuts and groovesw are prepared,
- the gingival wall is situated supragingivally
- the enamel is beveled on the axial walls and the gingival wall

Matrices for composite materials

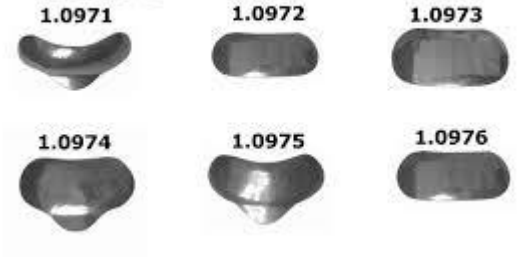
- Sectional matrices are optimal
- Circular matrices can be used also, the restoration of the contact area is more difficult

Sectional matrices

- Restore one proximal surface
- Made of soft metal
- Have various shapes and size
- They are used in combination with the wooden wedge and the separation ring
- The separation ring is handled using the rubberdam forceps

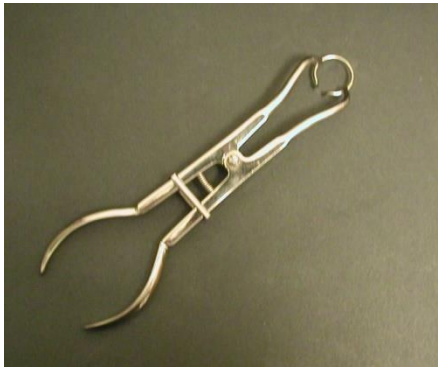
Sectional matrices

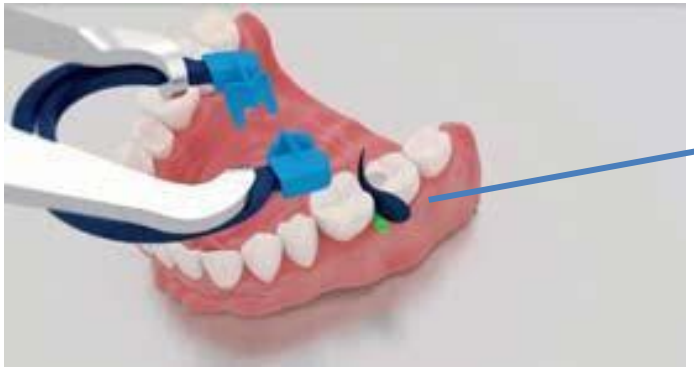
Shapes of sectional matrices



Separation rings

Rubberdam forceps and separation ring



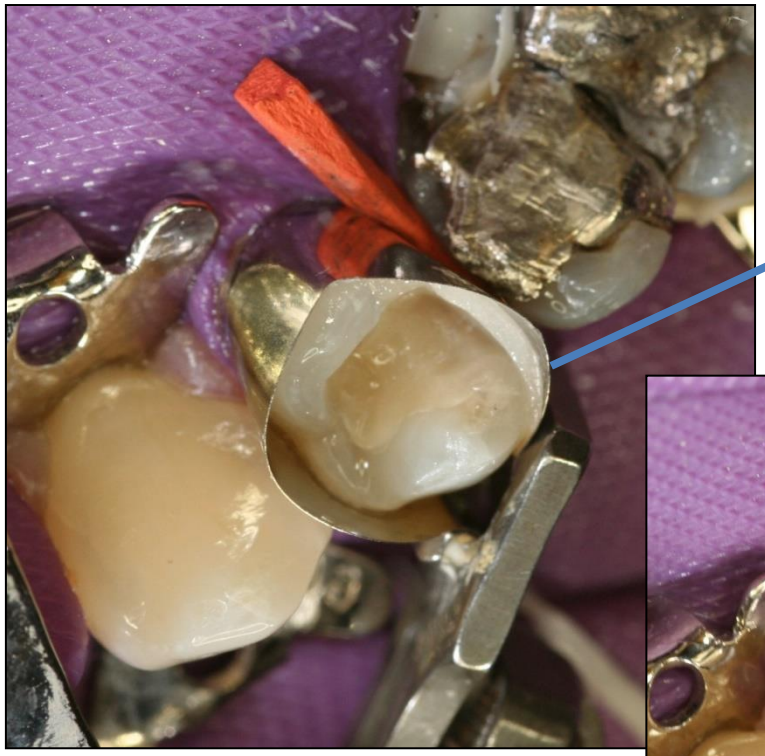


Placement of the sectional matrice

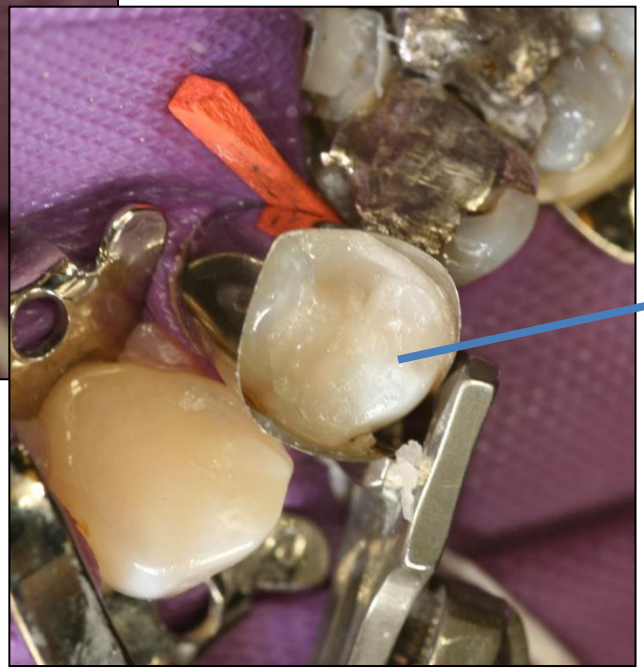
Sectional matrice in oral cavity
The proximal wall has been built first

The wooden wedge separates teeth, adapt the matrix and compresses gingiva After building of the
the mesial surface the separation ring
will be placed on the distal surface

Circular matrice and composite material



The proximal surface has been built



The other layers follow

Making filling

- Composite filling is made layer by layer
- First the proximal surface id built (see picture above)
- Than layer by layer are placed. The thickness of each layer is appr. 1,5 mm. This is and incremental technique. The reason fot this is: good polymerization (the material is cured into the depth 1,5mm)
- Finishing and polishing in usual way follows