IN THE NAME OF GOD

PREPARATION OF ESTHETIC ONLAY RESTORATIONS

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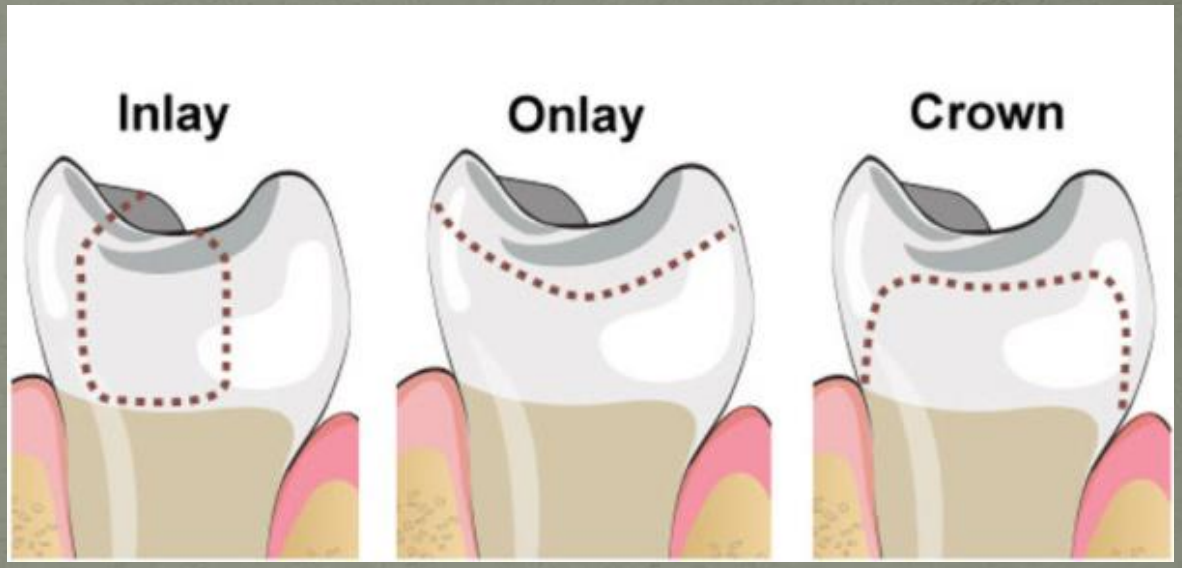
Preparations

- Inlay
- Onlay
- Crown



Preparations

Preparations

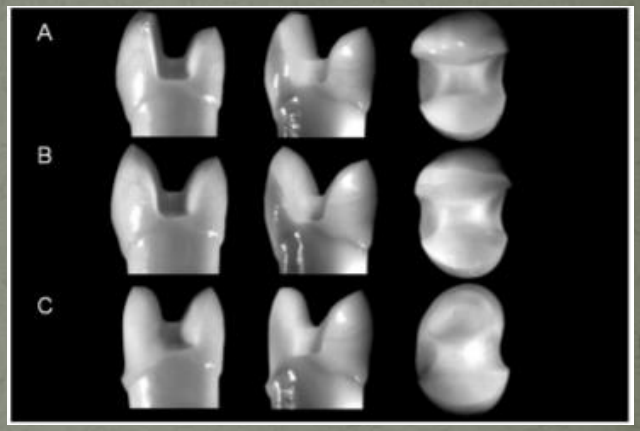
- Ceramic and resin composite inlays or onlays

- CAD/CAM and laboratory-fabricated inlays or onlays

THE SAME

Preparations

- Divergent
- (6-8 degrees in proximal boxes)



- Relatively nonretentive preparation

- Rounded internal angles and proximal boxes
- (the best fitness)

- Grooves should not be used

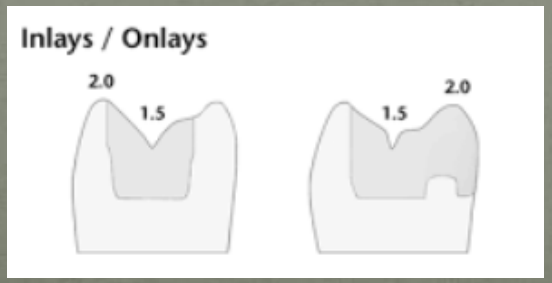
Preparations

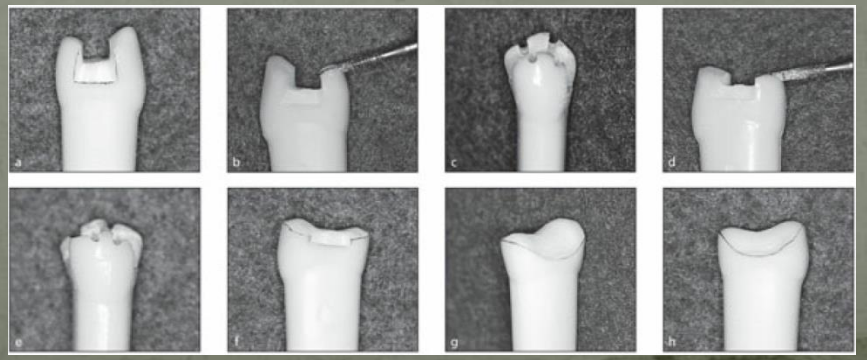
- Walls and floors: smooth and even

-(not necessarily flat)

-Smoothness plays a big role in the fitness of the CAD-CAM restorations

- Internal angles: rounded
- Occlusal reduction: uniform and of sufficient thickness
- Depth: At least **1.5 mm** in the central fossa and non-functional cusps and **2.0 mm** over functional cusps
- Width: At least **2 mm** (faciolingually)





Preparations

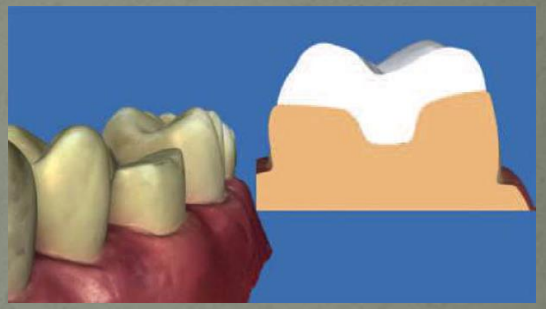
- Resistance and retention form for the restoration are provided primarily by **adhesion to enamel and dentin**

Preparations

- **Supragingival margin** placement is desired to facilitate isolation for the adhesive cementation of the inlay or onlay

Preparations

- No bevels at the occlusal or gingival margins
- A 90-degree butt joint(cavosurface):



-minimizes the chipping problem

BUT

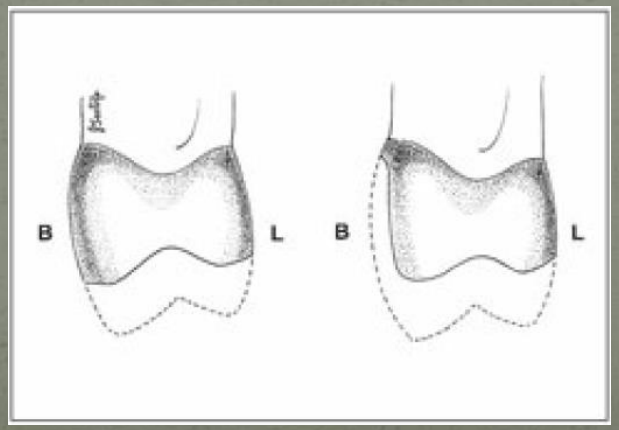
-may result in a visible demarcation between the tooth and the restoration

Preparations

. when the esthetic blend of the restoration and the tooth is important, such as on the **facial surface of a maxillary premolar:**

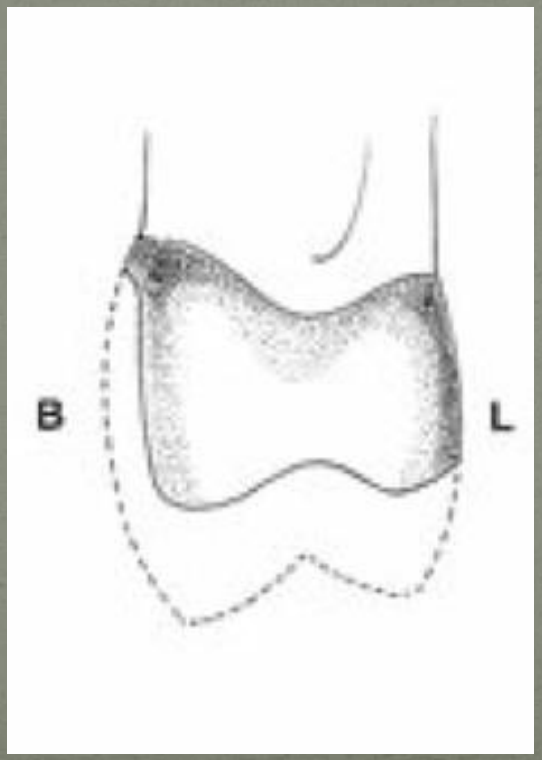
-the entire facial surface of the premolar may be included in the preparation

- The cavosurface margin is modified with a football-shaped diamond at a 45-degree angle to the cavosurface margin



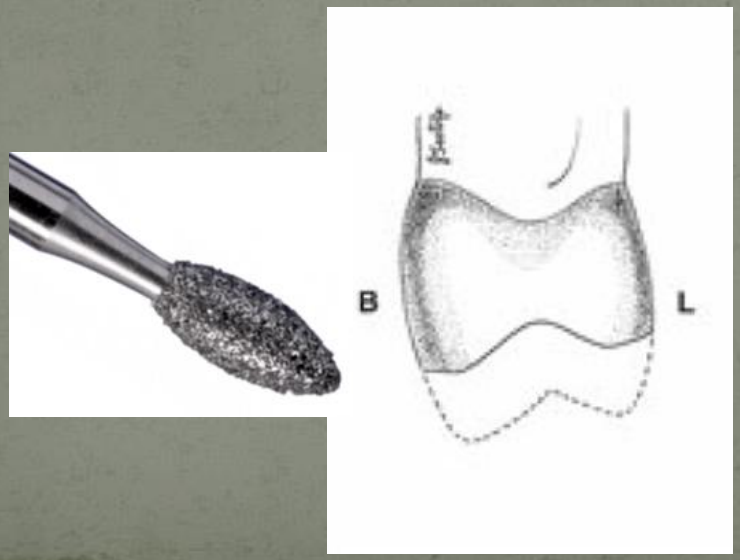
Preparations

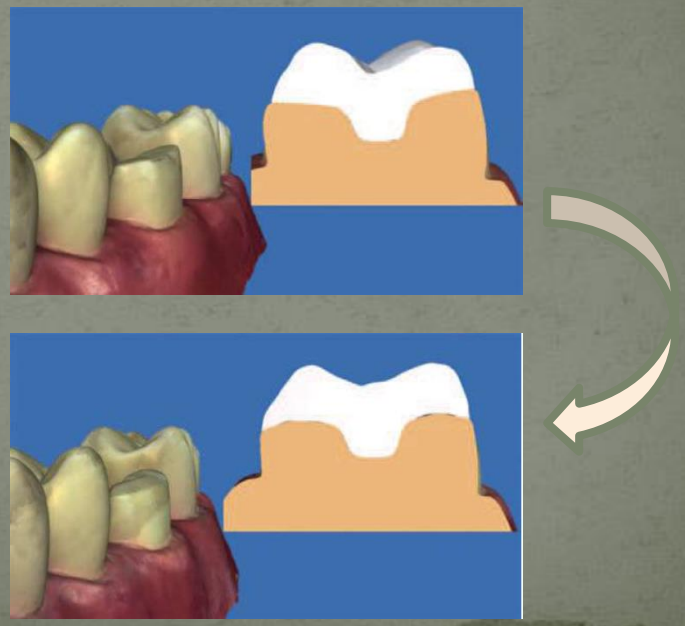
- the entire facial surface of the premolar may be included in the preparation for the best shade matching: **vonlay**



Preparations

- A modified cavosurface margin creates a blend of porcelain to enamel shading and still maintaining a bulk of ceramic at the margin and enhances the esthetic blend of the facial margin and does not involve the entire facial surface of the tooth





Bases and liners

- The use of bases and liners is somewhat controversial.
- Glass-ionomer bases were used for dentinal protection and to base the preparation to “ideal” form. But there is no need for that.
- **Therefore, glass-ionomer cement is recommended only for routine block-out of undercuts.**

Provisional restorations

- Made in the usual manner with acrylic resin or resin composite
- Cemented with temporary cement.
- **Eugenol-containing cement should not be used** with the provisional restoration when the definitive restoration will be bonded with a resin cement

Provisional restorations

- The more retentive **polycarboxylate cement** is the temporary luting cement of choice

- To improve retention:

-Small mechanical undercuts on the intaglio surface of the provisional restoration

- The provisional restorations can be connected

-A local internal area of the preparation away from any margins may be "spot etched". (A finishing diamond bur to remove the area of bonding once the provisional restoration has been removed)

Provisional restorations

- To provide retention and to decrease sensitivity:

-Dentin primer

-Small amount of resin-modified glass-ionomer cement liner on the pulpal floor

Provisional restorations

- **Only for short-term use in small preparations:**

-The preparation is filled with the provisional material, and the patient is instructed to bite into maximum intercuspation to develop the occlusion.

-Excess material is removed with an explorer, and the provisional restoration is light cured.

Summary

Tooth preparation

1. Select a shade prior to tooth dehydration.
2. Make a stent for fabrication of a provisional restoration.
3. Remove caries and any existing restorative materials.
4. Preparation should be well isolated to ensure success with the adhesive cementation technique.
5. Preparation should allow 2 mm of occlusal clearance for the definitive restoration. All internal line angles should be rounded and walls divergent occlusally. There should be no grooves or sharp angles.
6. When necessary, retract gingival tissues to expose the preparation margins. Take a final impression.
7. Make a custom provisional restoration using the stent.

Place undercuts in the intaglio surface of the provisional restoration.

8. Cement with a strong provisional cement; because the preparation has minimal resistance form, polycarboxylate cement is the cement of choice for luting the provisional restoration.

Longevity of ceramic onlays: A systematic review ,J Esthet Restor Dent,2018.

- Van Dijken and Hasselrot: Endodontically treated teeth with no retention (no post or core had the greatest failure rate (37%)

- Murgueitio and: Increased leucite-reinforced ceramic onlay thickness reduced the probability of failures, and 85.7% of the fractures were for onlays with thicknesses less than 2mm.

THANK YOU FOR YOUR ATTENTION