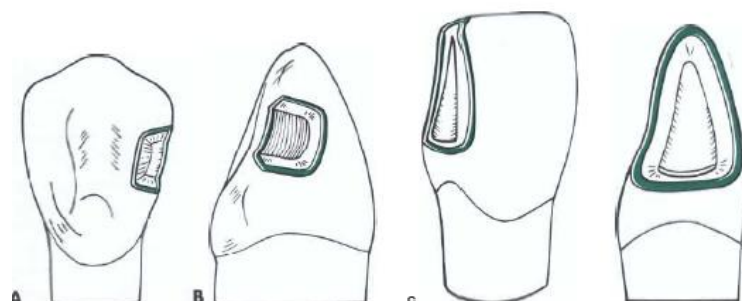


Anterior cavity preparation (Class III)

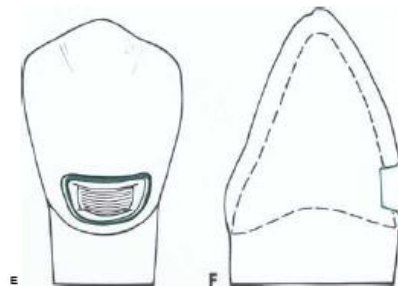
Almost all Class III and Class IV restorations are appropriately restored with composite. Most Class V restorations that are in esthetic prominent areas are also appropriately restored with composite. In addition to esthetics, these materials with adequate strength and with the benefits of being able to bond to tooth structure, often resulting in less tooth structure removal during tooth preparation.

Thus, tooth preparations for composite materials should be as conservative as possible. The extent of the preparation is usually determined by the size, shape, and location of the defect and whatever extensions are necessary to provide access for vision and instrumentation.



Class III

Class IV



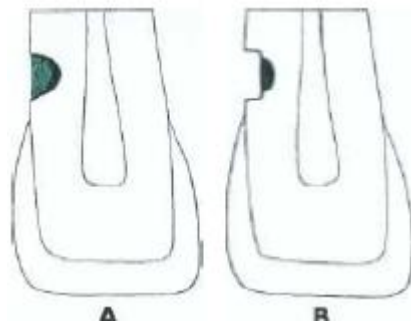
Class V

Class III tooth preparations:

Are located on proximal surfaces of anterior teeth.

Conventional Class III Tooth Preparation:

The primary indication for this type of Class III preparation is for the restoration of root surfaces, preparation the portion on the root surface that has no enamel.



The outline form on the root surface,

Box-like design may be considered, extending the external walls to sound tooth structure while extending pulpally to an initial depth of 0.75 mm.

Any remaining infected dentin on the axial wall will be removed during the final tooth-preparation stage.

The external walls are prepared perpendicular to the root surface.

The cavosurface margins exhibit a 90-degree cavosurface angle and provide butt joints between the tooth and the composite material.

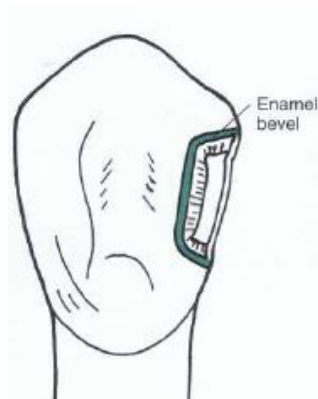
Resistance form

Extending the external walls pulpally to an initial depth of 0.75 mm thus providing adequate dimension for composite strength, placement of a retention groove (if necessary), and maintenance of strength of the gingival wall and margin.

More likely only a portion of a tooth preparation-the portion on the root surface that has no enamel margin-would be prepared in this manner.

Modified or a beveled conventional Class III Tooth Preparation.

The beveled conventional tooth preparation for composite restorations is indicated primarily for replacing an existing defective restoration in the crown portion of the tooth. However, it also may be used when restoring a large carious lesion for which the need for increased retention and/or resistance form is anticipated.



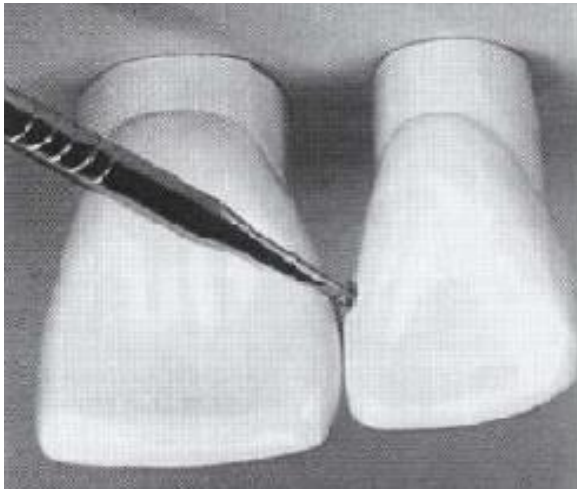
Class III beveled conventional tooth preparations are prepared as conventional preparations with the addition of a cavosurface bevel or flare of the enamel rather than a butt joint margin.

The access of Class III:

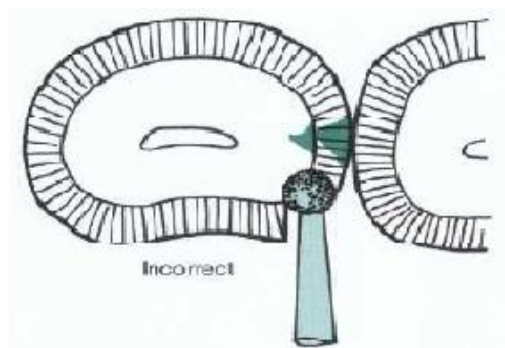
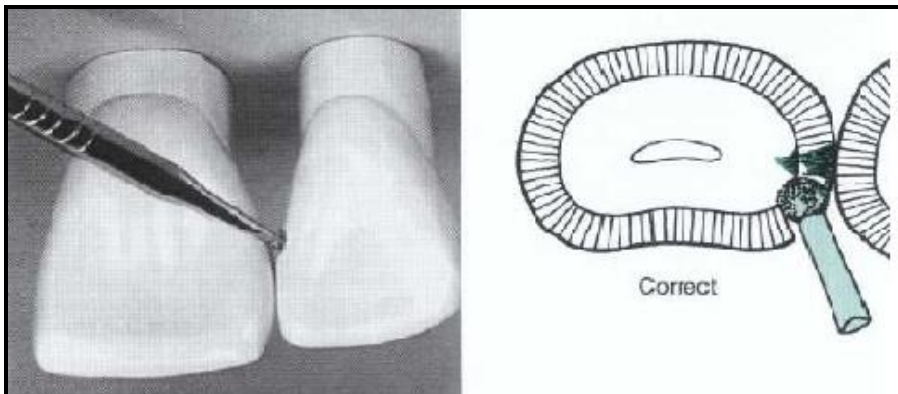
The lingual approach is preferable, unless such an approach would necessitate excessive cutting of tooth structure, such as in instances of irregular alignment of the teeth or facial positioning of the lesion.

Use a round carbide bur (No. 1/2, 1, or 2) or diamond stone, the size depending on the extent of the caries to prepare the outline form.

The point of entry is within the incisogingival dimension of the carious lesion or defective restoration and as close to the adjacent tooth as possible, without contacting it.



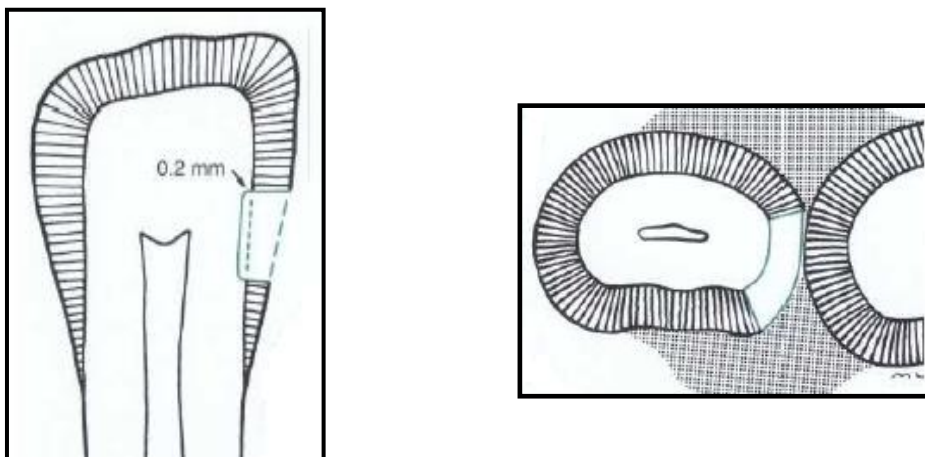
Direct the cutting instrument perpendicular to the enamel surface, but at an entry angle that places the neck portion of the bur as far into the embrasure (next to the adjacent tooth) as possible. Incorrect entry overextends the lingual outline.



The advantages of restoring the proximal lesion from the lingual approach include:

1. The facial enamel is conserved for enhanced esthetics.
2. Some unsupported, but not friable, enamel may be left on the facial wall of a Class III or Class IV preparation.
3. Color matching of the composite is not as critical.
4. Discoloration or deterioration of the restoration is less visible.

Prepare the enamel walls perpendicular to the external tooth surface, with the enamel margin beveled.



The axial wall depth approximately 0.75 to 1.25 mm (0.2 mm inside the dentinoenamel junction (DEJ)).

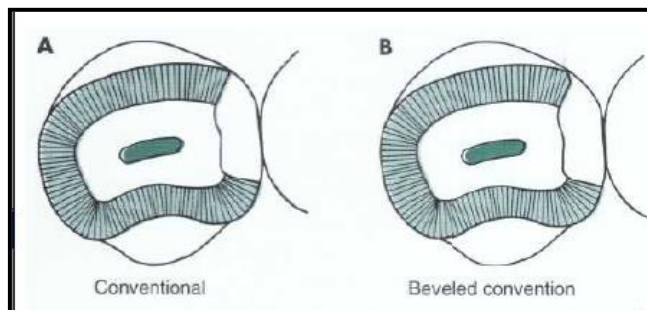
Extend the external walls to sound tooth structure during preparation of the outline form.

The axial wall will be outwardly convex, Following normal external tooth contour and the DEJ, both incisogingivally and faciolingually.

Any remaining infected dentin or old, defective restorative material on the axial wall will be removed during the final tooth-preparation stage.

Usually retention is obtained by bonding to the enamel and dentin and no groove retention is necessary. However, when replacing a large restoration or restoring a large Class III lesion, the operator may decide that retention form should be enhanced by placing groove (at gingival) and/or cove (at incisal) retention features in addition to the bonded tooth structure.

For most Class III using the beveled conventional preparation, the preparation would be complete at this time except for placing an **enamel bevel**,

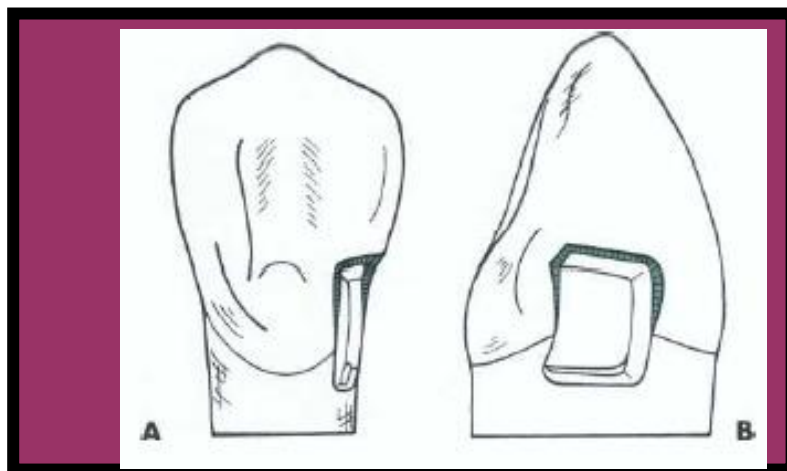


The cavosurface bevel provides more surface area for end-on etching of the enamel rods. The cavosurface bevel or flare is best prepared with either a flame-shaped or round diamond instrument, resulting in an angle approximately 45 degrees to the external tooth surface all accessible enamel margins usually are beveled, except for the gingival margin. This margin is usually not beveled if little or no enamel is present, or access is difficult for finishing procedures. In addition, bevels may not be recommended on lingual surface margins that are in areas of centric contact or subjected to heavy masticatory forces because composite has less wear resistance than enamel for withstanding heavy attritional forces.

--- When the lesion extends from the coronal to root surface, so a combination preparation design for a Class III.

The root-surface portion is a conventional tooth preparation design utilizing butt joint marginal configuration and retention groove in dentin.

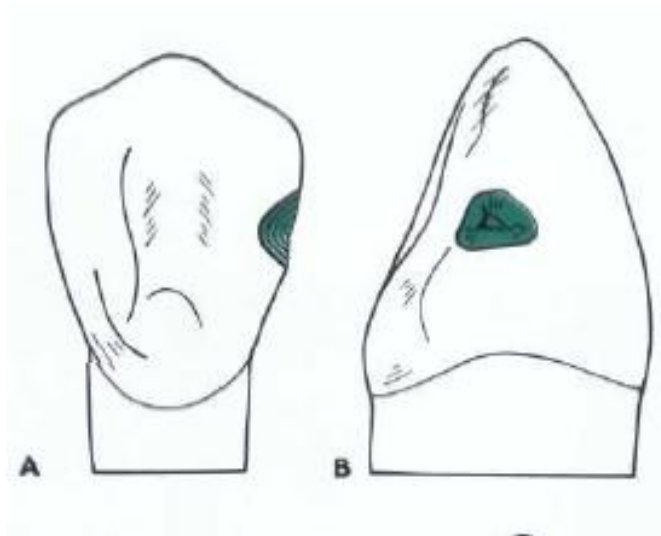
The coronal portion is a beveled conventional tooth preparation design.



Modified Class III tooth Preparation.

A modified tooth preparation is the most used type of Class III tooth preparation. It is indicated for small and moderate lesions or faults and is designed to be as conservative as possible.

. Thus, the preparation design appears to be "scooped" or concave, the cavosurface margins in a beveled configuration the retention of the material in the tooth will result from the bond created between the composite material and the etched peripheral enamel.



for all types of Class III

-If possible, the outline form should not:

- (1) Include the entire proximal contact area
- (2) Extend onto the facial surface
- (3) Or be extended subgingival.

-Retention form

Because the bond of composite to enamel and dentin is so strong, most Class III composite restorations are retained only by the micromechanical bond from acid-etching and resin bonding, so no additional preparation retention form is usually necessary. Using diamond stones for the tooth preparation leaves the prepared surfaces rougher, thereby increasing the surface area and the micromechanical retention.

Sometimes a groove or cove may be necessary for Class III restorations that either extend onto the root surface or are very large. Usually, however, additional needed retention form can be achieved simply by increasing the surface area with a wider enamel bevel or flare along the margin.