

CLASSIFICATION OF TOOTH PREPARATIONS

Classification of tooth preparations according to the anatomic areas involved as well as by the associated type of treatment was presented by Black and is designated as Class I, Class II, Class III, Class IV, and Class V. Since Black's original classification, an additional class has been added, Class VI. Class I refers to pit-and-fissure lesions, whereas the remaining classes are smooth-surface lesions. Classification was originally based on the observed frequency of carious lesions on certain aspects of the tooth.

Class I Restorations. All pit-and-fissure restorations are *Class I*, and they are assigned to three groups, as follows.

Restorations on Occlusal Surface of Premolars and Molars. The names of the walls, line angles, and point angles of an occlusal conventional tooth preparation take the name of the tooth surface (or aspect) that the wall is toward.



FIG. 6-12 Typical Class I tooth preparation for amalgam on maxillary premolar.

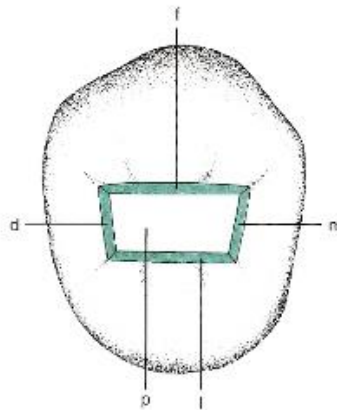


FIG. 6-13 Schematic representation (for descriptive purpose) of Fig. 6-12 illustrating tooth preparation walls: facial (*f*), distal (*d*), lingual (*l*), mesial (*m*), and pulpal (*p*).

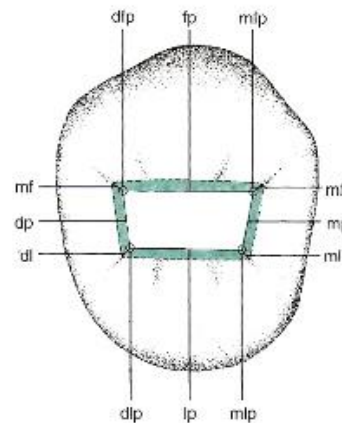


FIG. 6-14 Schematic representation (for descriptive purpose) of Fig. 6-12 illustrating tooth preparation line angles and point angles. *Line angles* are faciopulpal (*fp*), distofacial (*df*), distopulpal (*dp*), distolingual (*dl*), linguopulpal (*lp*), mesiolingual (*ml*), mesiopulpal (*mp*), and mesiofacial (*mf*). *Point angles* are distofaciopulpal (*dfp*), distolinguopulpal (*dlp*), mesiolinguopulpal (*mlp*), and mesiofaciopulpal (*mfp*).

Restorations on Occlusal Two Thirds of the Facial and Lingual Surfaces of Molars. The names of the walls, line angles, and point angles of these tooth preparations are the same as those depicted for the preparations for Class V restorations

Restorations on Lingual Surface of Maxillary Incisors. The names of the walls, line angles, and point angles of these tooth preparations also are the same as those depicted for the preparations for Class V restorations

Class II Restorations. Restorations on the proximal surfaces of posterior teeth are Class II.

Class III Restorations. Restorations on the proximal surfaces of anterior teeth that do not involve the incisal angle are Class III.



Fig. 6-18 Class III conventional tooth preparation on maxillary central incisor.

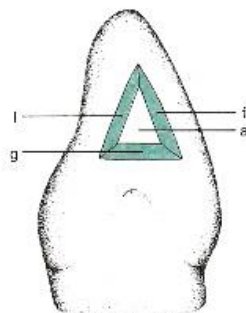


Fig. 6-19 Schematic representation (for descriptive purpose) of Fig. 6-18 illustrating tooth preparation walls: facial (*f*), lingual (*l*), gingival (*g*), and axial (*a*).

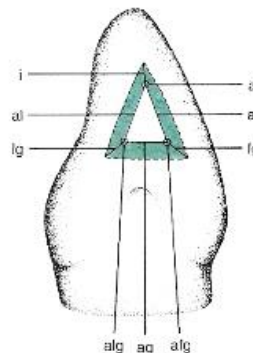


Fig. 6-20 Schematic representation (for descriptive purpose) of Fig. 6-18 illustrating tooth preparation line angles and point angles. *Line angles* are axiolingual (*al*), linguogingival (*lg*), axiokingival (*ag*), faciokingival (*fg*), axiofacial (*af*), and incisal (*i*). *Point angles* are axiolinguogingival (*alg*), axiofaciokingival (*afg*), and axioincisal (*ai*). (Note that names for incisal line angle and point angle are exceptions to the general naming rule.)

Class IV Restorations. Restorations on the proximal surfaces of anterior teeth that do involve the incisal edge are Class IV.



Fig. 6-21 Class IV conventional tooth preparation for inlay on maxillary canine.

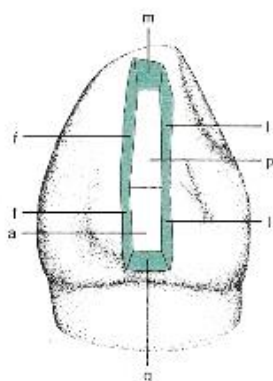


Fig. 6-22 Schematic representation (for descriptive purpose) of Fig. 6-21 illustrating tooth preparation walls: facial (*f*) of proximal and incisal portions, gingival (*g*), lingual (*l*) of proximal and incisal portions, axial (*a*), and mesial (*m*).

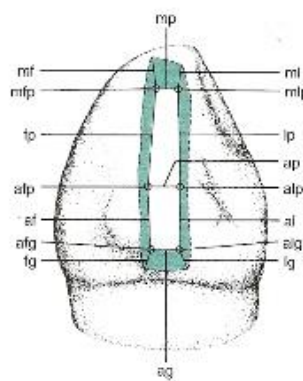


Fig. 6-23 Schematic representation (for descriptive purpose) of Fig. 6-21 illustrating tooth preparation line and point angles. *Line angles* are mesiofacial (*mf*), faciopulpal (*fp*), axiofacial (*af*), faciokingival (*fg*), axiokingival (*ag*), linguogingival (*lg*), axiolingual (*al*), axiopulpal (*ap*), linguopulpal (*lp*), mesiolingual (*ml*), and mesiopulpal (*mp*). *Point angles* are mesiofaciopulpal (*mfp*), axiofaciopulpal (*afp*), axiofaciokingival (*afg*), axiolinguogingival (*alg*), axiolinguopulpal (*alpl*), and mesiolinguopulpal (*mlpl*).

Class V Restorations. Restorations on the gingival third of the facial or lingual surfaces of all teeth (except pit-and-fissure lesions) are Class V



FIG. 6-24 Class V conventional tooth preparation.

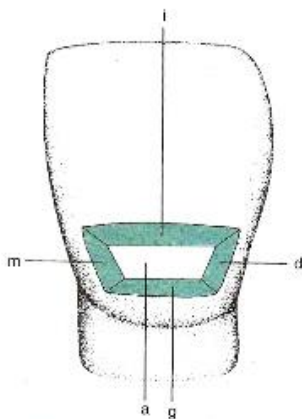


FIG. 6-25 Schematic representation (for descriptive purpose) of Fig. 6-24 illustrating tooth preparation walls: mesial (*m*), gingival (*g*), distal (*d*), incisal (*i*) (or occlusal [*o*] if preparation on posterior tooth), and axial (*a*).

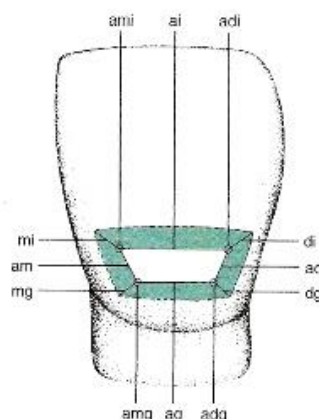


FIG. 6-26 Schematic representation (for descriptive purpose) of Fig. 6-24 illustrating tooth preparation line angles and point angles. *Line angles* are mesioincisal (*mi*) (or mesioocclusal [*mo*]), axiomesial (*am*), mesioingival (*mg*), axiokingival (*ag*), distoingival (*dg*), axiodistal (*ad*), distoocclusal (*do*), and axioincisal (*ai*) (or axioocclusal [*ao*]). *Point angles* are axiomesioincisal (*ami*), (or axiomesioocclusal [*amo*]), axiomesioingival (*amg*), axiodistokingival (*adg*), and axiodistooocclusal (*ado*).

Class VI Restorations. Restorations on the incisal edge of anterior teeth or the occlusal cusp heights of posterior teeth are Class VI.

Cavity preparation according G.V.Black principles:-

G.V.Black's Approach to Cavity Preparation

1. Outline form
2. Resistance form
3. Retention form
4. Convenience form
5. Removal of remaining caries
6. Finish enamel walls
7. Clean cavity preparation

1. Outline form

- Based primarily on the location and extent of the caries.
- Final outline form is not established until the carious dentin and, usually, its overlying enamel has been removed

2. Resistance form

- Resistance to both fracture of the tooth and filling material must be built in so both will be resistant to fracture during function

3. Retention form

- The tooth preparation must be shaped in such way to retain the filling material, without weakening the remaining tooth structure

4. Convenience form

- Allows adequate observation, accessibility, and ease of operation during the preparation and restoration of the tooth.
- Only the minimal amount of reduction that will provide the necessary convenience should be done

5. Removal of the remaining caries

- Deeper caries not removed by the initial cavity preparation. Care must be exercised as the pulp may be in close proximity.

6. Finish of enamel walls and margins

- Remove unsupported enamel, make the margins smooth and continuous to facilitate finishing of the restoration.

7. Clean the cavity preparation

- Rinse away all debris and dry the cavity preparation.