
Terminology of Dental caries and

Tooth preparation

Classification of Tooth Preparation

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By the end of this lesson, the student
should

- Describe the types of dental caries
- Memorize the classification of tooth preparation.
- Describe the terminologies of tooth preparation.

DENTAL CARIES

“It is a infectious microbial disease of calcified tissues of teeth characterized by demineralization of inorganic portion and destruction of organic portion of teeth.”



Classification of caries

Caries can be classified as according to

- 1. Location**
- 2. Extent**
- 3. Rate**

Sturdevants art and science operative 5 th edition page – 288 - 290

1. Location of caries

2 types

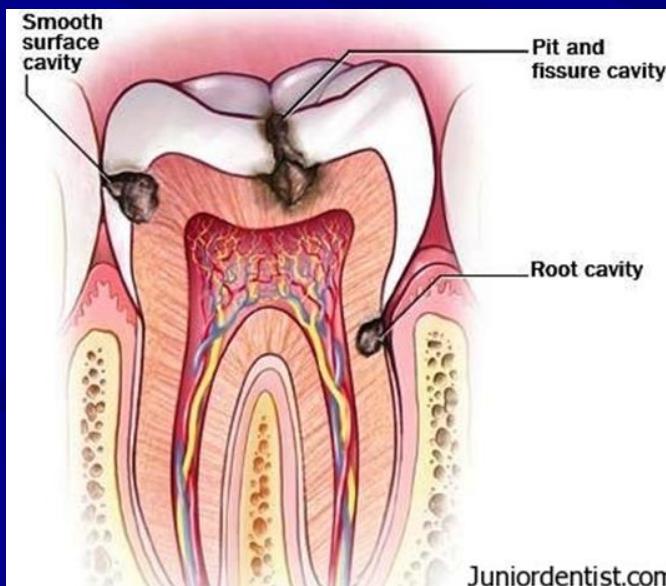
- Primary caries
- Secondary caries

■ Primary Caries: Primary caries is the original(first) carious lesion of the tooth.



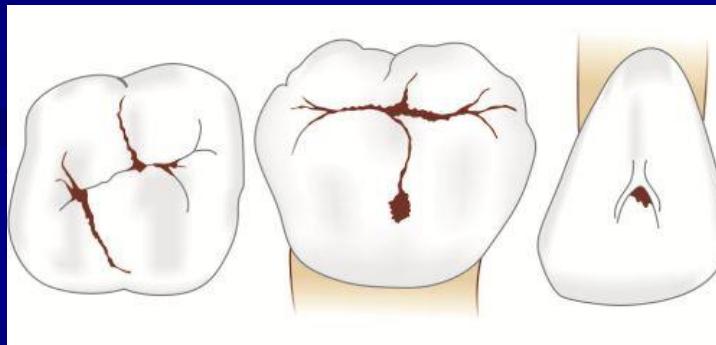
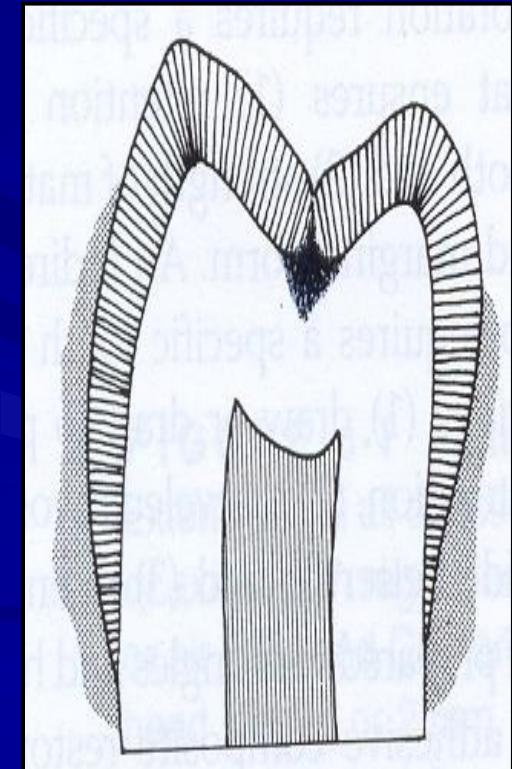
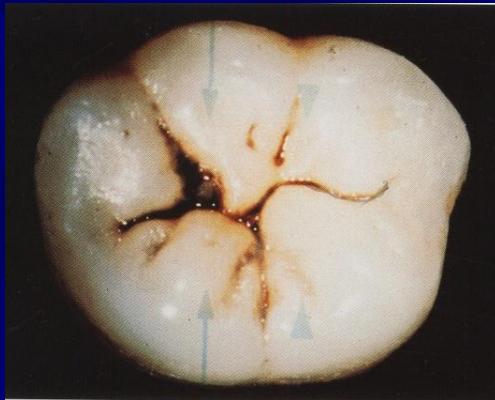
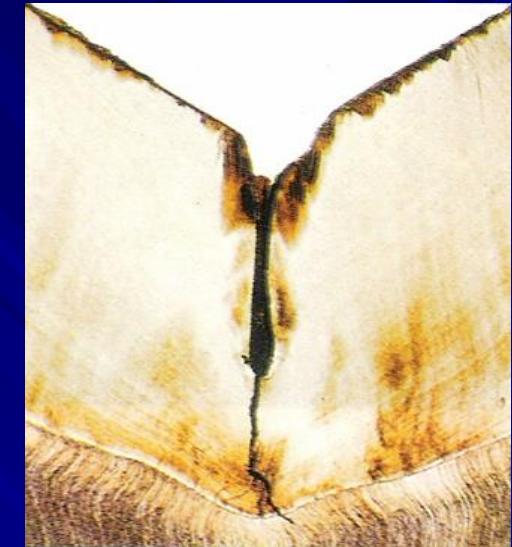
3 types of primary caries

Accordingly, **3** morphologic types of primary caries are evident in clinical observation.

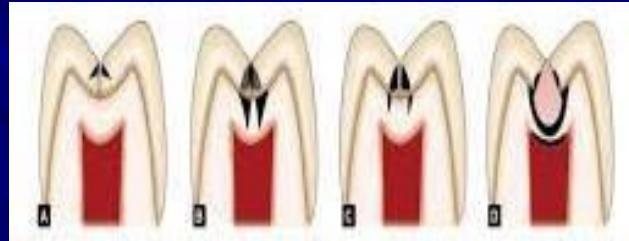


1. Pit and fissure caries:

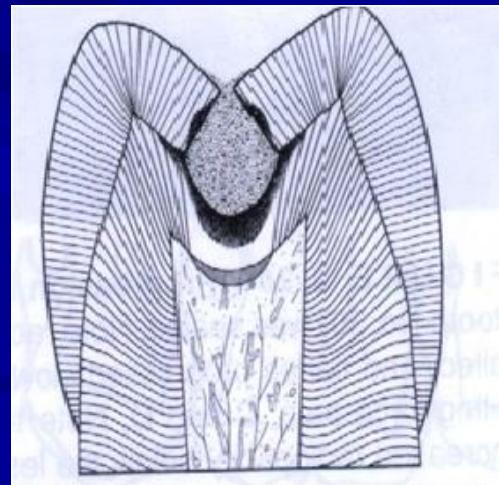
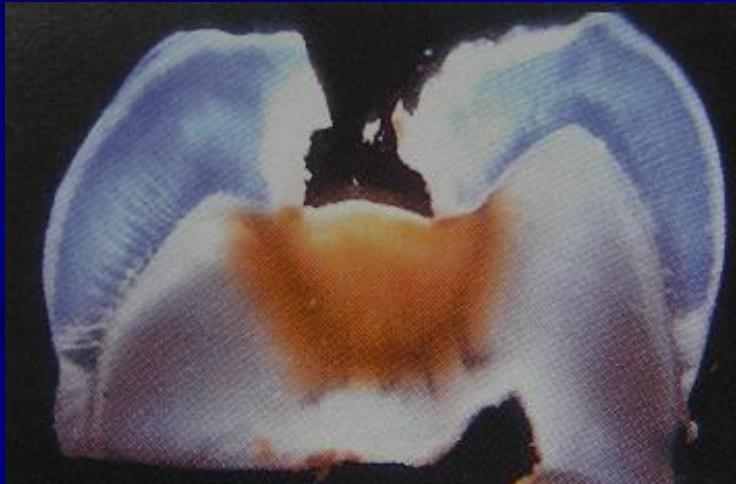
Pit and fissure caries can form in the regions of pits and fissures resulting from the imperfect coalescence of developmental enamel lobes.



- As the decay progresses, caries in enamel gradually goes deeper.

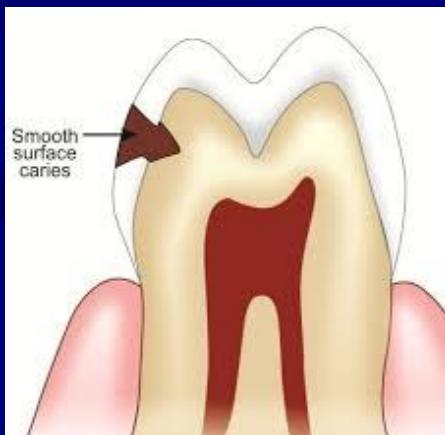
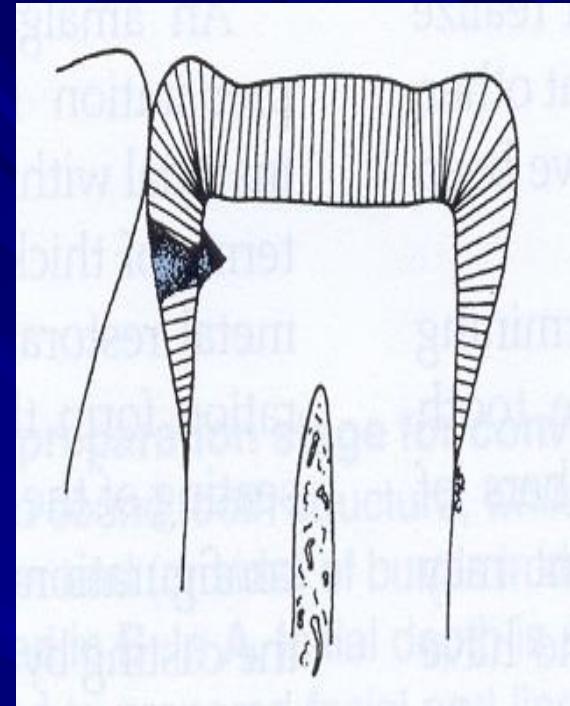


- Once it reaches the dentin, at the dentino-enamel junction (DEJ) the caries or decay quickly spreads laterally.



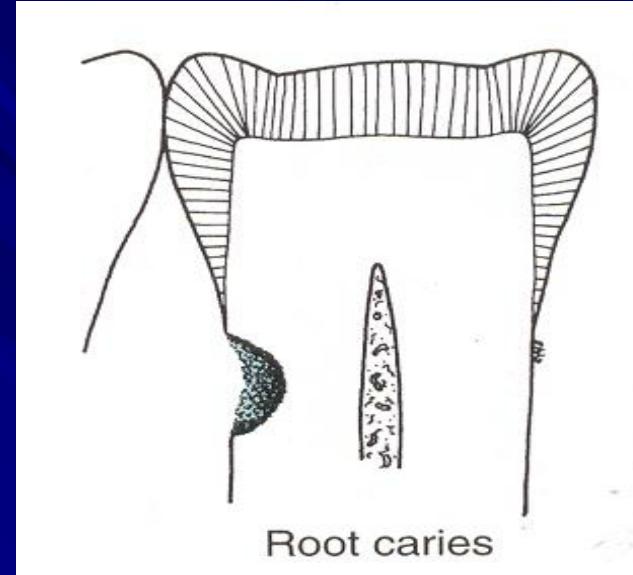
2. Smooth Surface Caries:

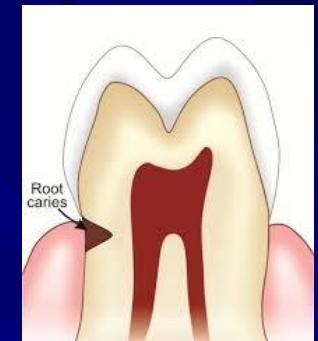
Smooth surface caries does not begin in an pit and fissure defect, but rather in a smooth area of the enamel surface that is habitually unclean and is thereby continually of usually covered by plaque.



3.Root Surface Caries:

- Root surface caries may occur on the tooth root that has been exposed to the oral environment and habitually covered with plaque.
- Root caries is usually more rapid than other forms of caries, and thus should be detected and treated early.

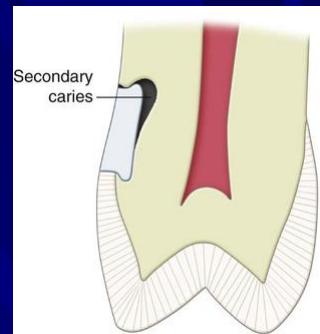
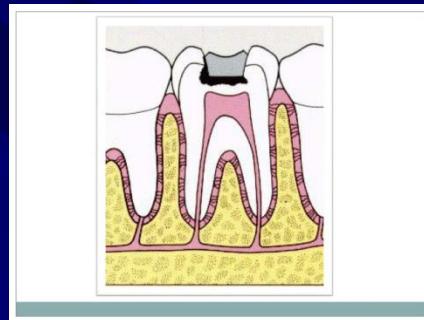




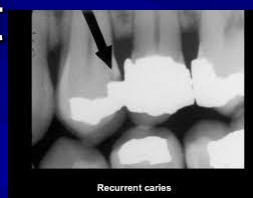
- The root surface is more susceptible to the demineralization(caries) process than enamel because the cementum covering the root surface is extremely thin & provides little resistance to caries attack.
- Common in older patients . As older patients have more gingival recession



Secondary Caries (Recurrent Caries):



- Secondary caries occurs at the junction of a restoration and the tooth and may progress under the restoration.
- It is often termed as recurrent caries.
- This condition usually indicates that microleakage is present, along with other conditions conducive to caries development.



2. Extent of Caries

■ Incipient Caries (Reversible):



Incipient caries is the first evidence of caries activity in the enamel. On smooth surface enamel, the lesion appears **opaque white when air dried** and well seems to be disappear if wetted.

This type of lesion can be remineralized if immediate corrective measures are taken like use of fluoride, plaque removal by dental professional.



■ Cavitated Caries (Non-reversible):

In cavitated caries, the enamel surface is broken (non-intact) and usually the lesion has advanced into dentin, usually remineralisation is not possible and treatment by tooth preparation and restoration is often indicated.



3. Rate (Speed) of Caries



- Acute (Rampant caries):

Acute caries is when the disease is rapidly progressing. It is usually in the form of soft, light colored lesions in a mouth & is infectious.

▲ Feeding of Child with sweetened Milk through the night.



■ Chronic (slow or Arrested) caries:

Chronic caries is slowly progressing or caries progression arrested or stopped.

An arrested enamel caries lesion is hard ,brown to black ,as a result of fluoride, may be more caries resistant than contiguous unaffected enamel.

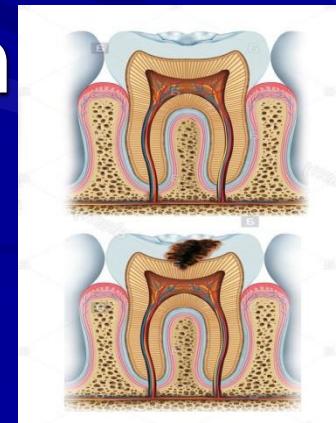
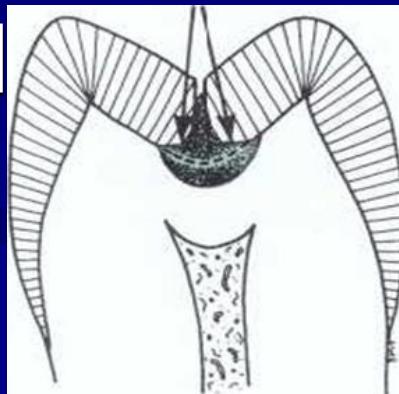


OTHER NOMENCLATURES :

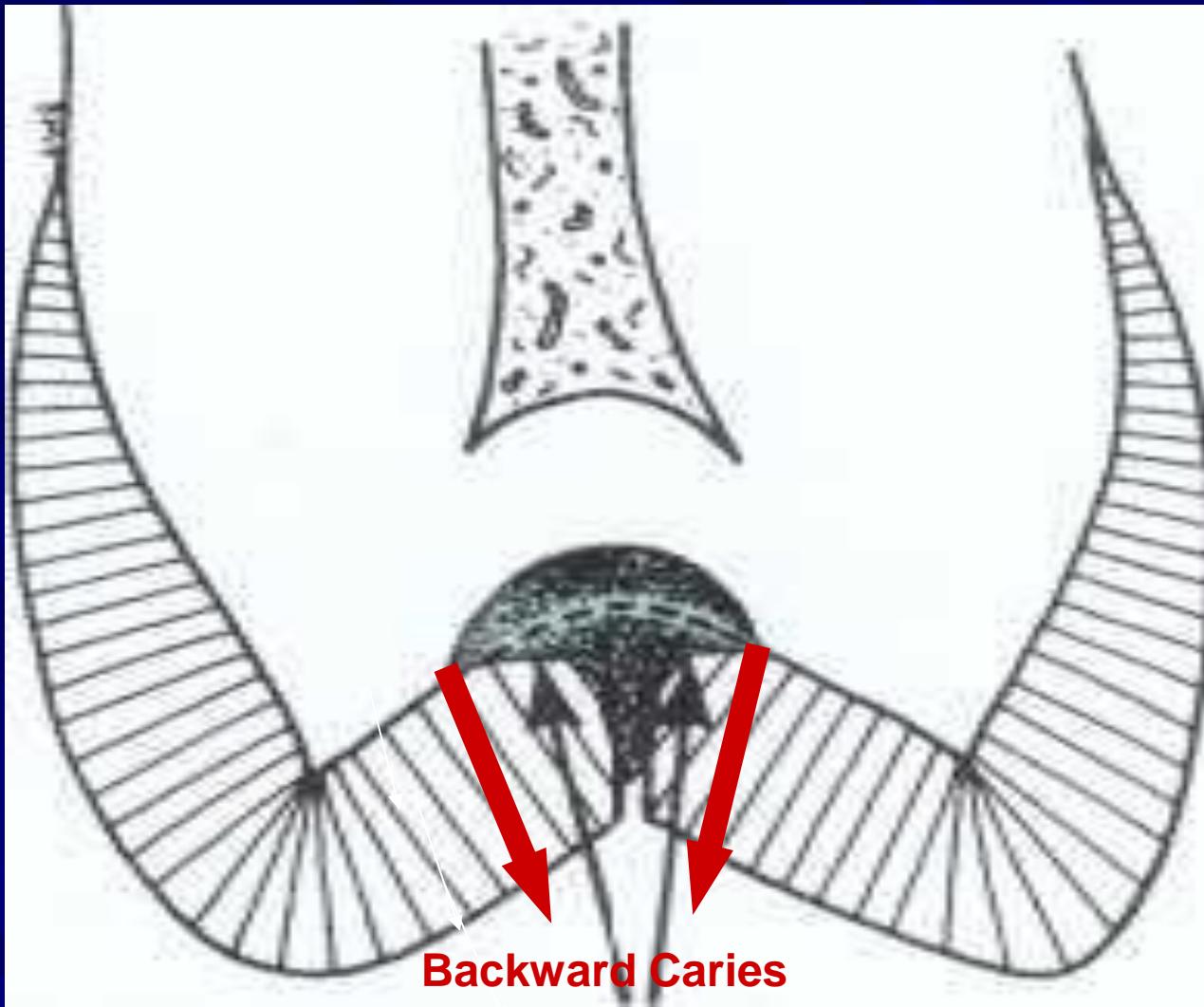
Depending on the direction

- Forward caries : It is that type of caries process which extends from pit and fissure towards dentinoenamel junction and then to dentin.

- Proceeded from enamel to dentin

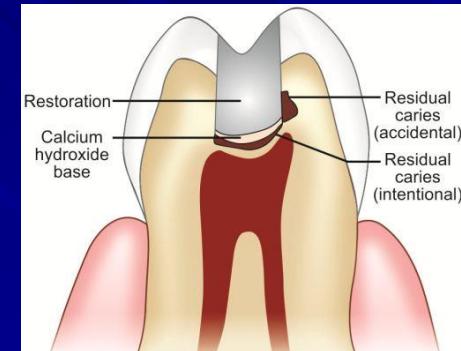


- **Backward caries:** If the caries extends from Pit and fissure to dentinoenamel junction, then spreads laterally and extends back to enamel is back ward caries.



RESIDUAL CARIES

- It is that remains in a completed cavity preparation whether by operator intention or by accident
- Such caries is not acceptable, if it is present on the prepared enamel wall
- May be accepted, if affected dentin is present especially near the pulp.

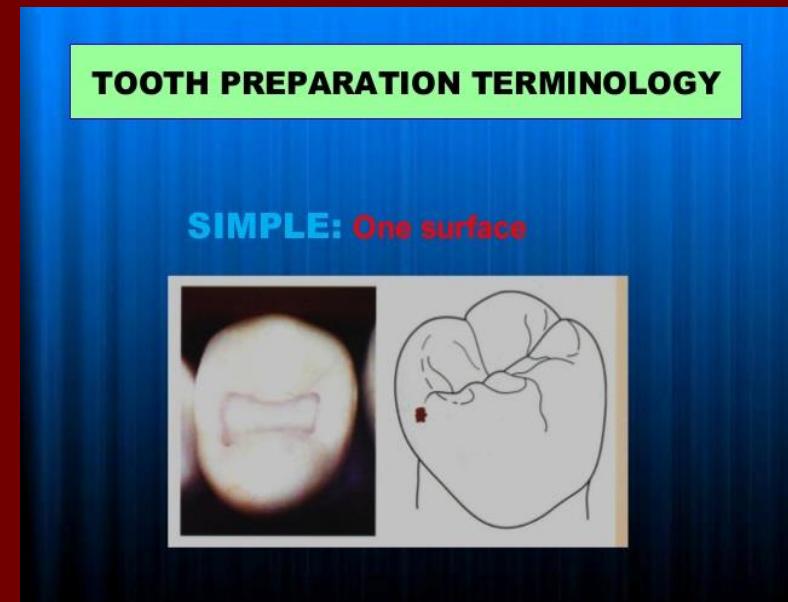
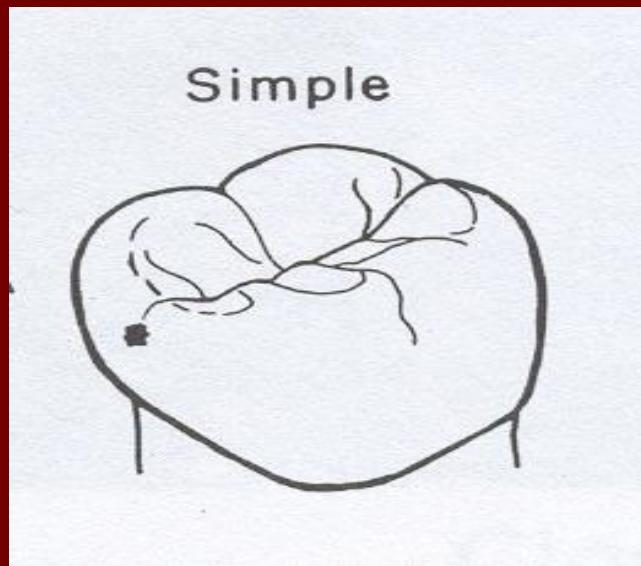


CLASSIFICATION OF TOOTH PREPARATIONS:

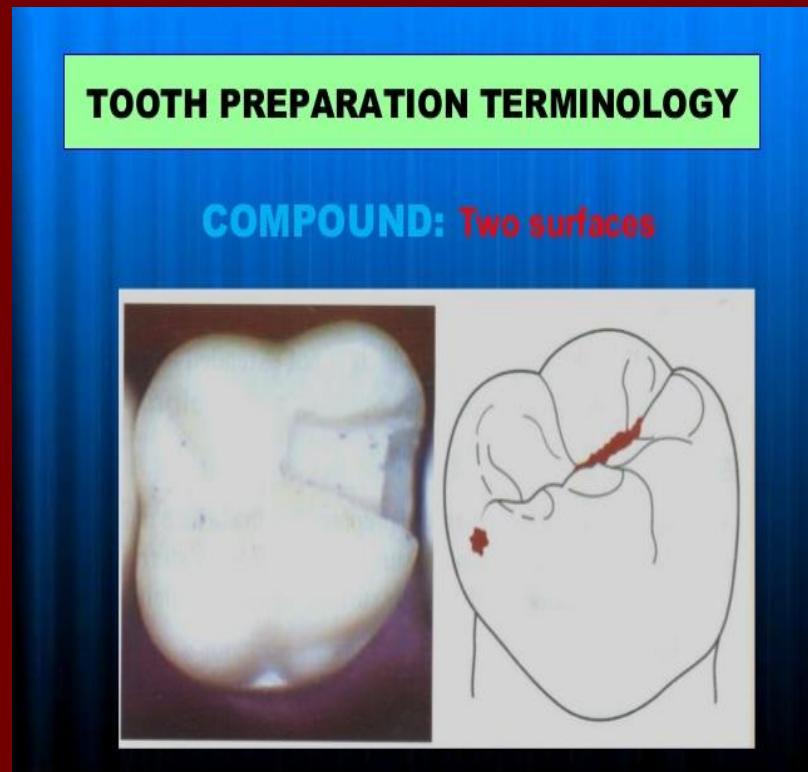
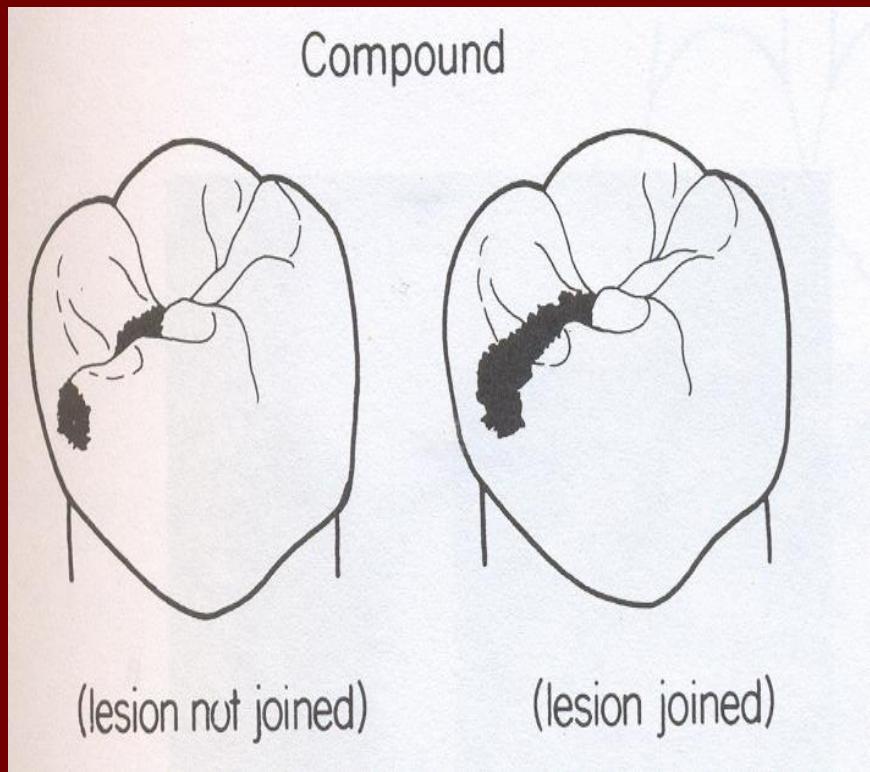
(According to Sturdevant)

■ Simple Tooth preparation:

A tooth preparation is termed simple if only one tooth surface is involved.

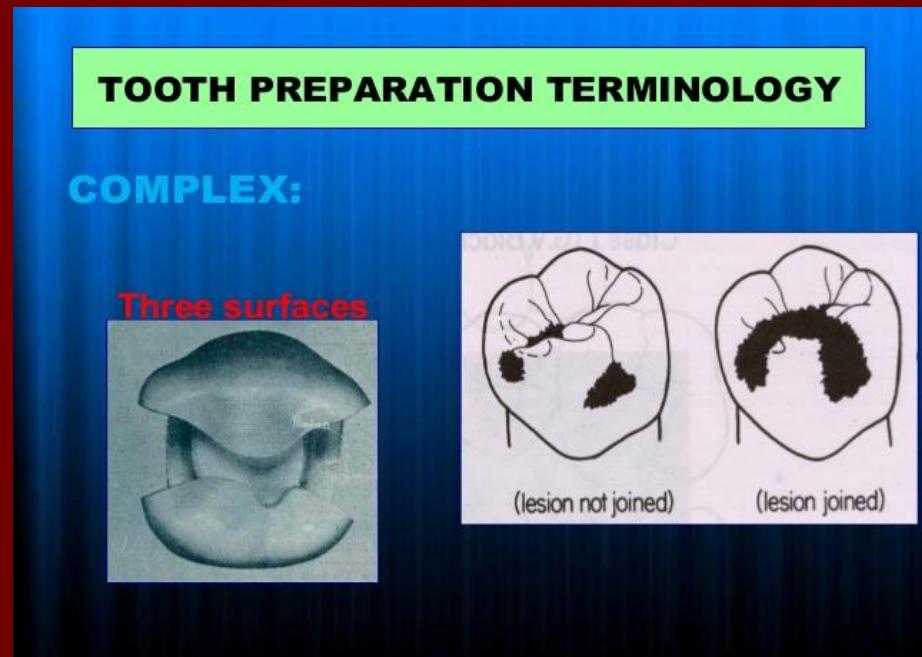
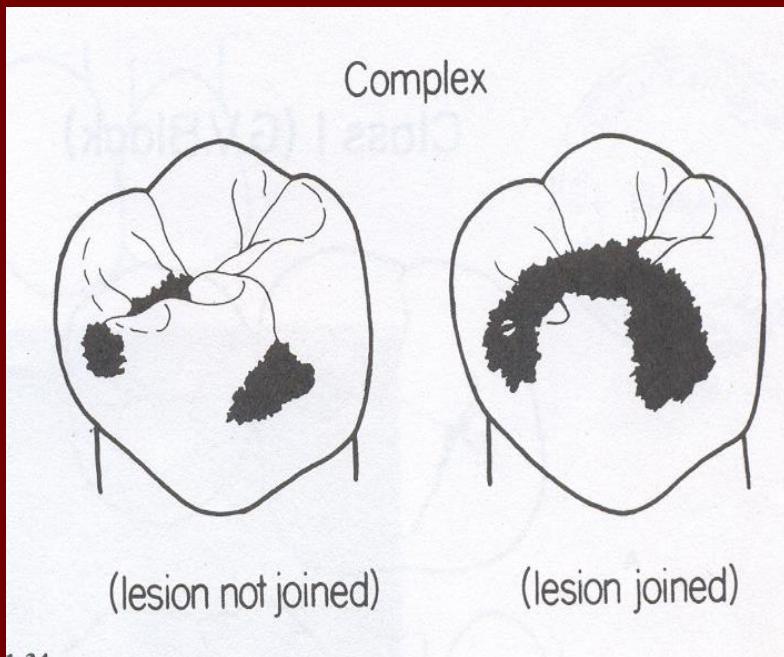


■ Compound tooth Preparation: If two surface are involved.



■ Complex tooth Preparation:

If three (or more) surfaces are involved



■ Simple



■ Compound



■ Complex



G.V.Black classification

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

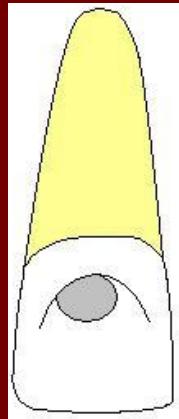
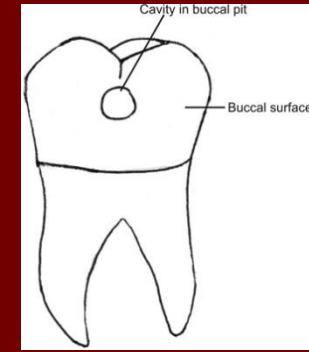
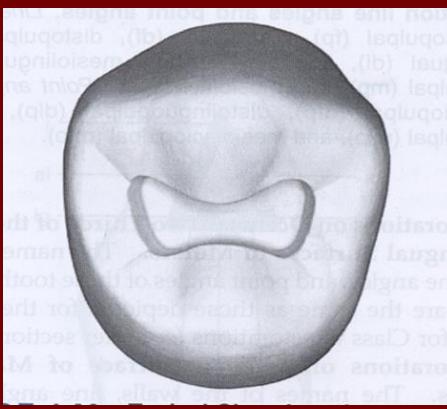
G.V.BLACK'S CLASSIFICATION:

■ Class I preparation:

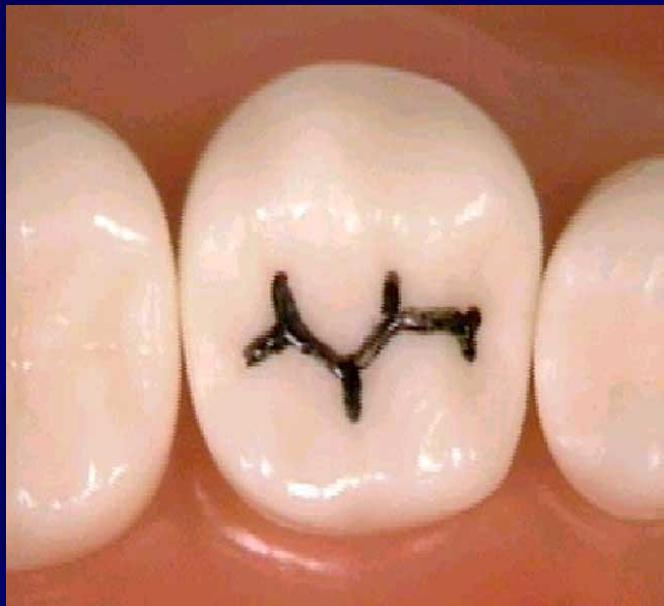


All pit & fissures are Class I.

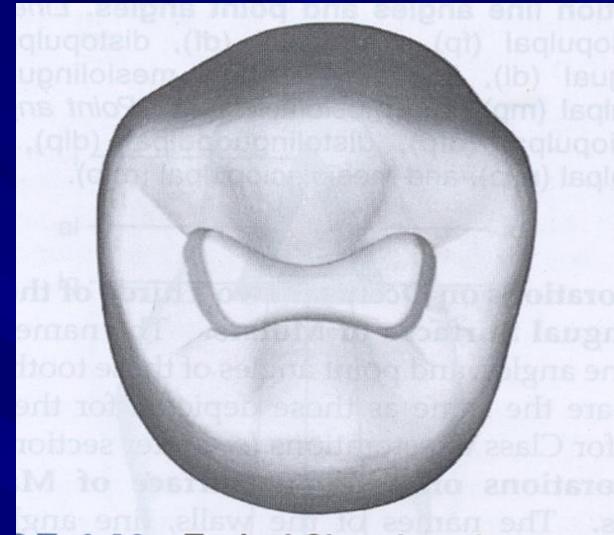
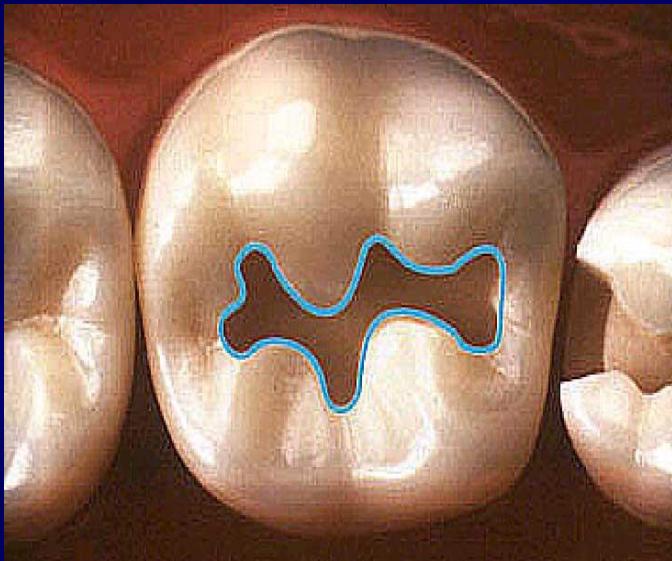
- Preparation on occlusal surface of premolars & molars.
- Preparation on facial and lingual pit and fissure in molars
- Preparation on lingual surface of maxillary incisors.



CLASS-I CARIOUS LESION



OUT LINE FORM FOR CLASS I CAVITY



•Class II Preparation:

Preparation on the proximal surfaces of posterior teeth are class II.



CLASS II CAVITY PREPARATION



■ Class III preparations:

Preparation on the proximal surface of anterior teeth that do not involve the incisal angle.



Class IV preparation:

Preparation on the proximal surfaces of anterior teeth
that do involve the incisal angle



Class IV Lesions

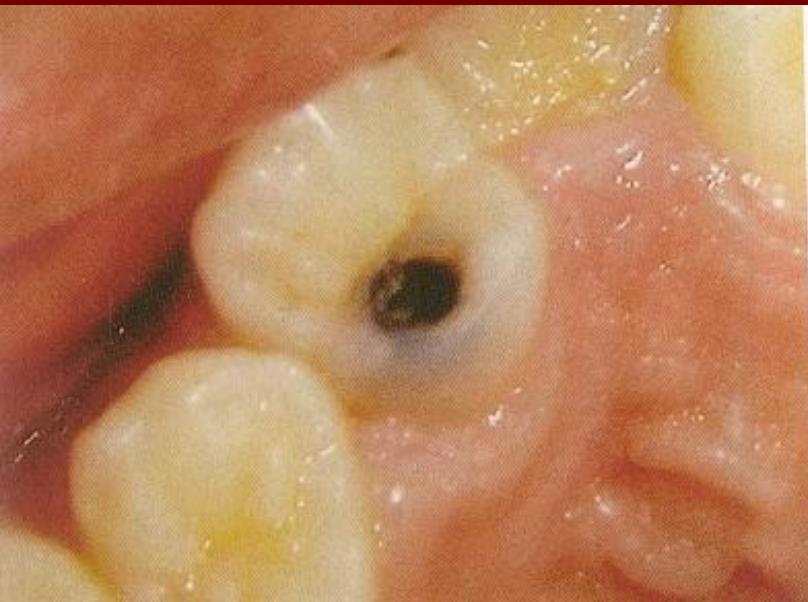
Class V preparation:

Preparation on the gingival third of the facial or lingual surface of all teeth.



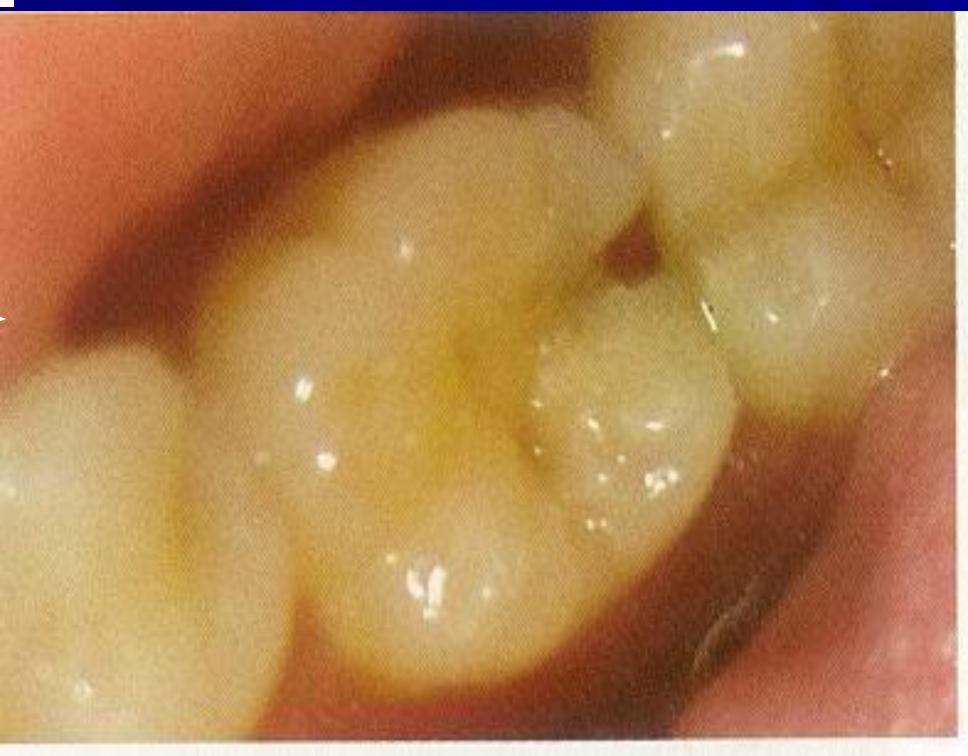
■ Class VI preparation;

Preparation on the incisal edge of anterior teeth or the occlusal cusp heights of posterior teeth are class VI.





Class II



Class I

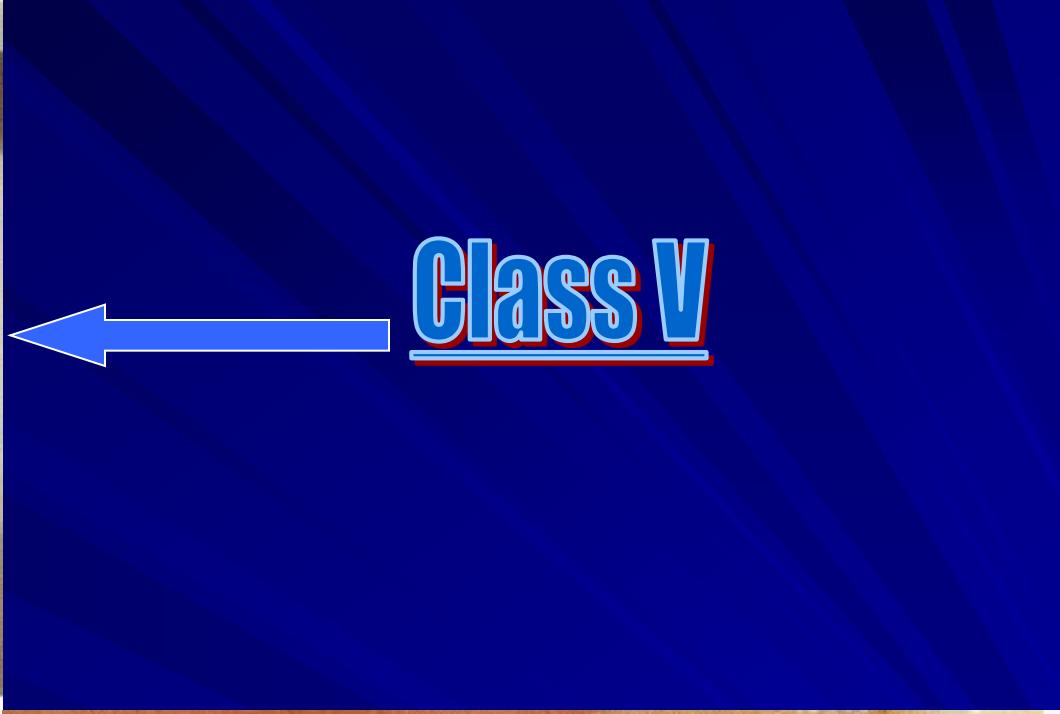




← **Class III**

Class IV





Class VI



Class V



TOOTH PREPARATION TERMINOLOGY:

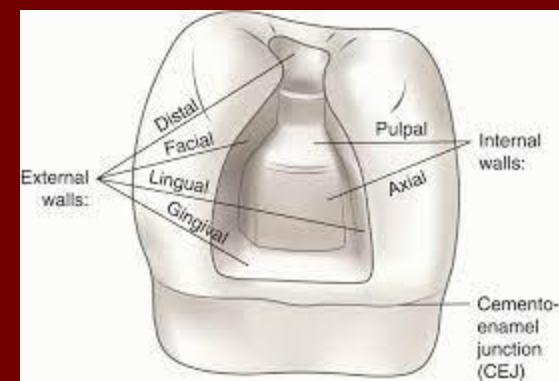
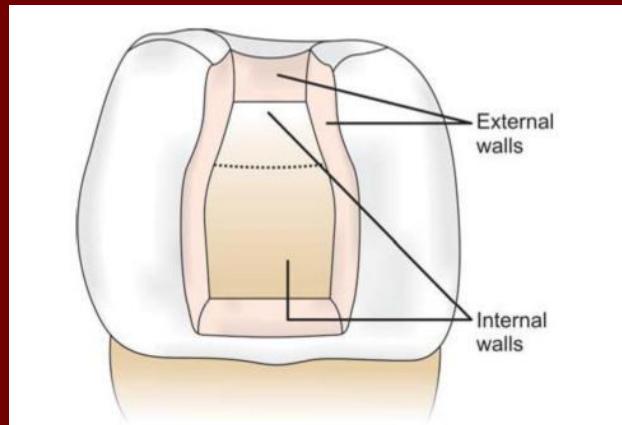
■ Internal Wall:

An internal wall is a prepared surface that doesn't extend to the external tooth surface.

Example; Axial wall and Pulpal wall

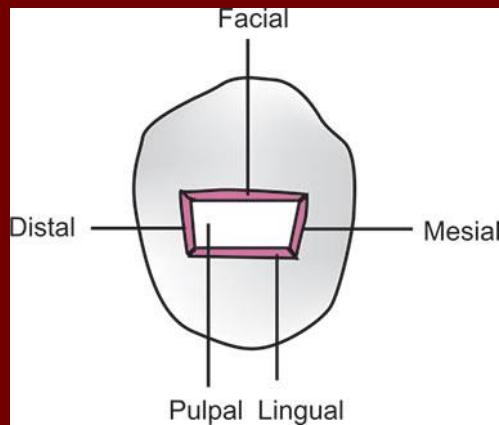


Pulpal wall or floor



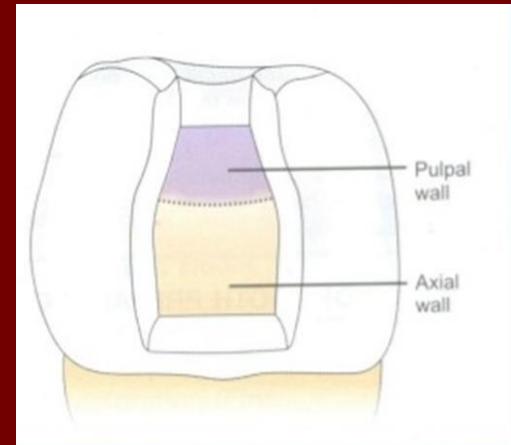
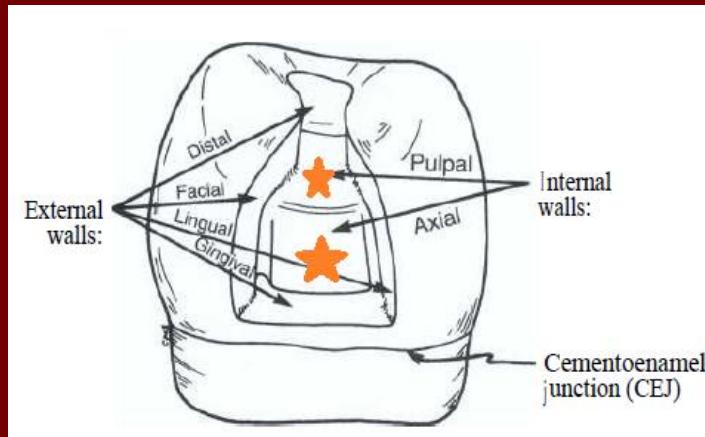
■ PULPAL WALL:

A pulpal wall is an internal wall that is perpendicular to the long axis of the tooth.



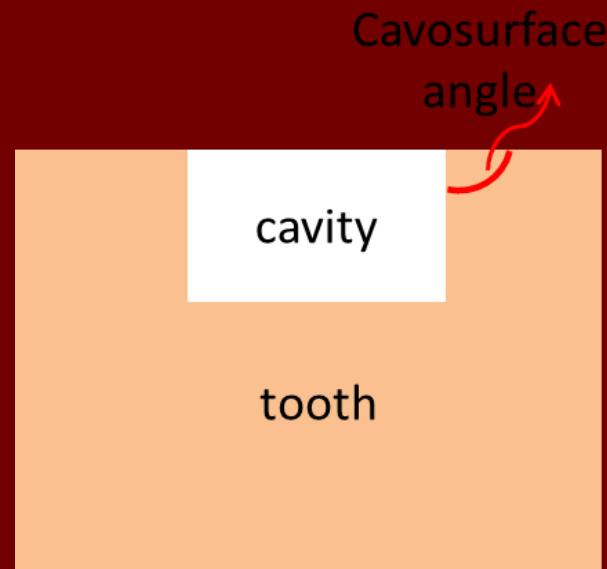
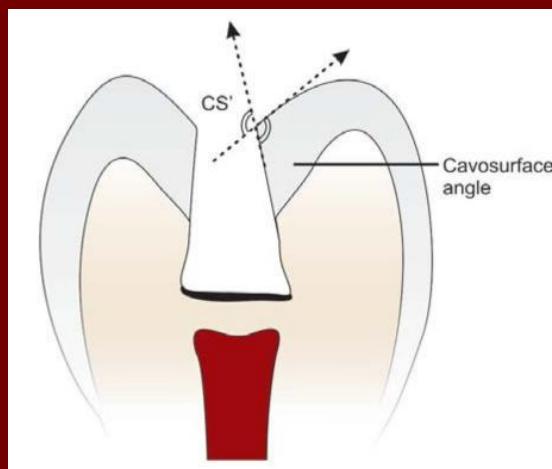
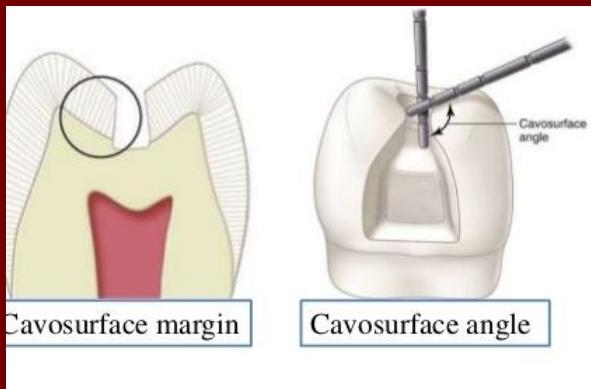
■ Axial Wall:

An axial wall is an internal wall, Parallel with the long axis of the tooth.



■ CAVOSURFACE ANGLE:

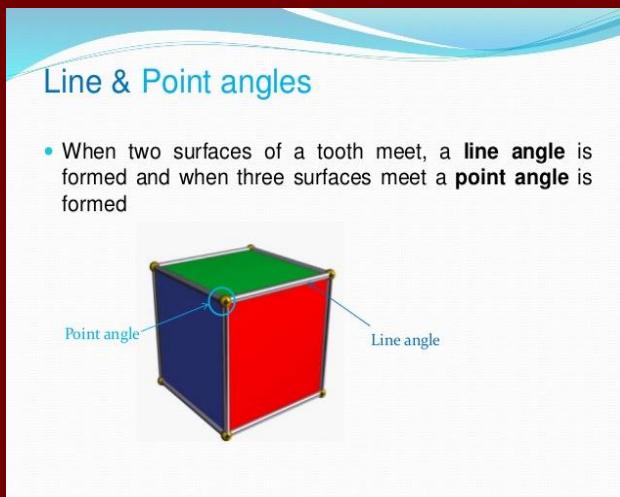
A Cavosurface angle is the angle of tooth structure formed by the junction of a prepared wall & the external surface of the tooth.



■ Line Angle:

When two surfaces of a tooth meet, it is called as line angle.

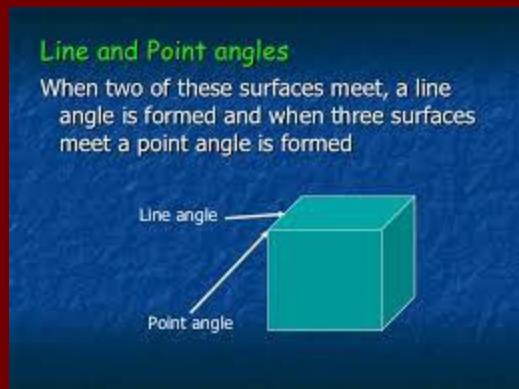
A line angle is the junction of two planar surfaces of different orientation along a line.



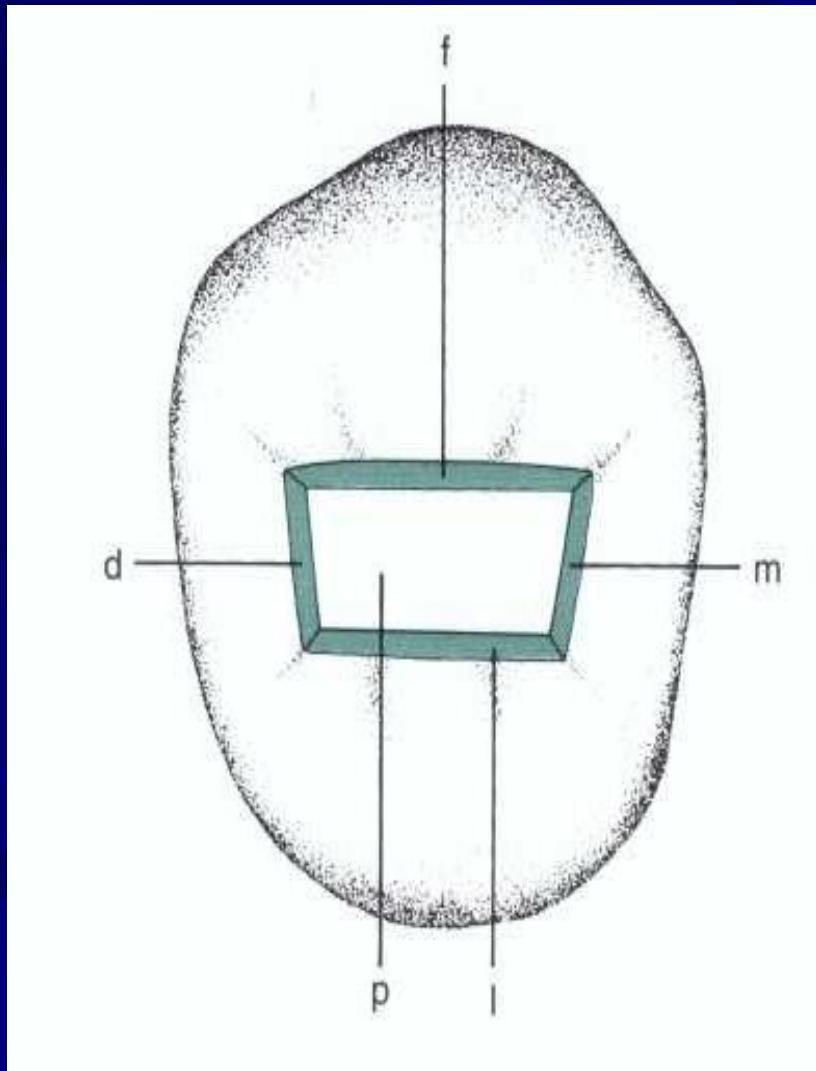
■ Point Angle:

When three surfaces of a tooth meet, it is called as point angle.

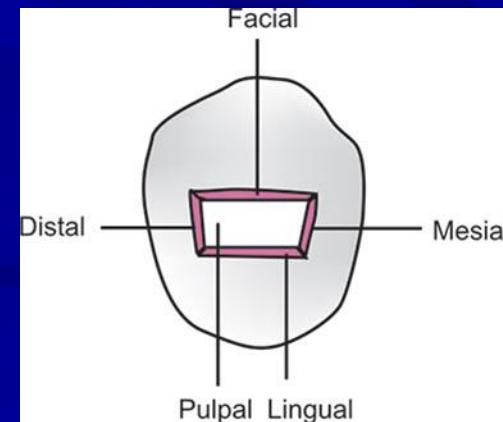
A point angle is the junction of three planar surface of different orientation.



CAVITY WALLS IN CLASS I CAVITY.



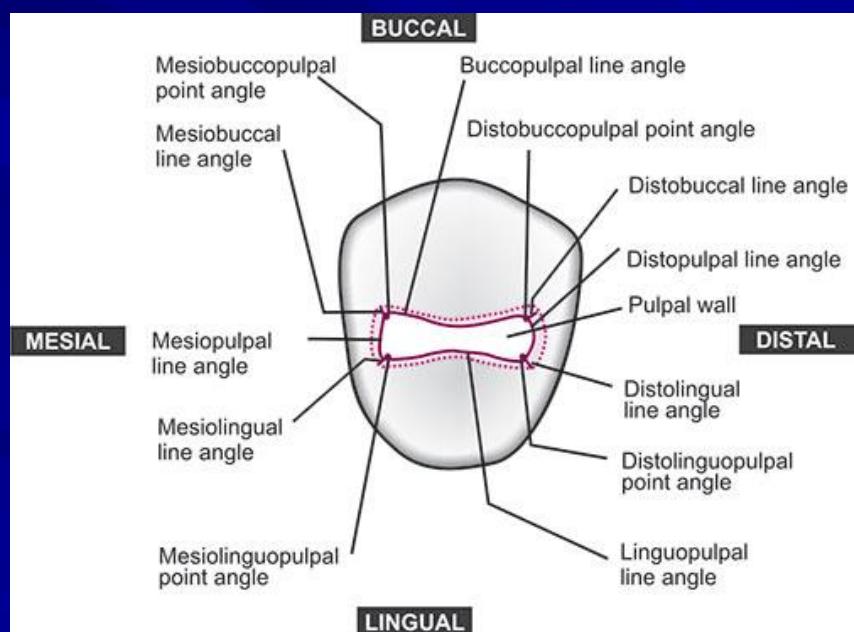
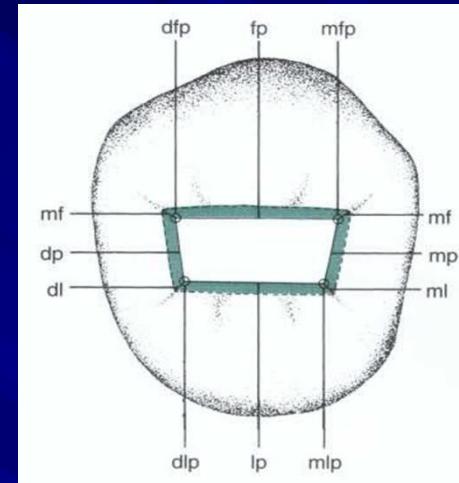
- F-Facial wall
- M-Mesial wall
- D-Distal wall
- L-Lingual wall
- P-Pulpal floor



Line Angles In Class- I Cavities:

8-Line Angles

1. Bucco-pulpal
2. Disto-buccal
3. Disto-pulpal
4. Disto-lingual
5. Linguo-pulpal
6. Mesio-lingual
7. Mesio-pulpal
8. Mesio-buccal

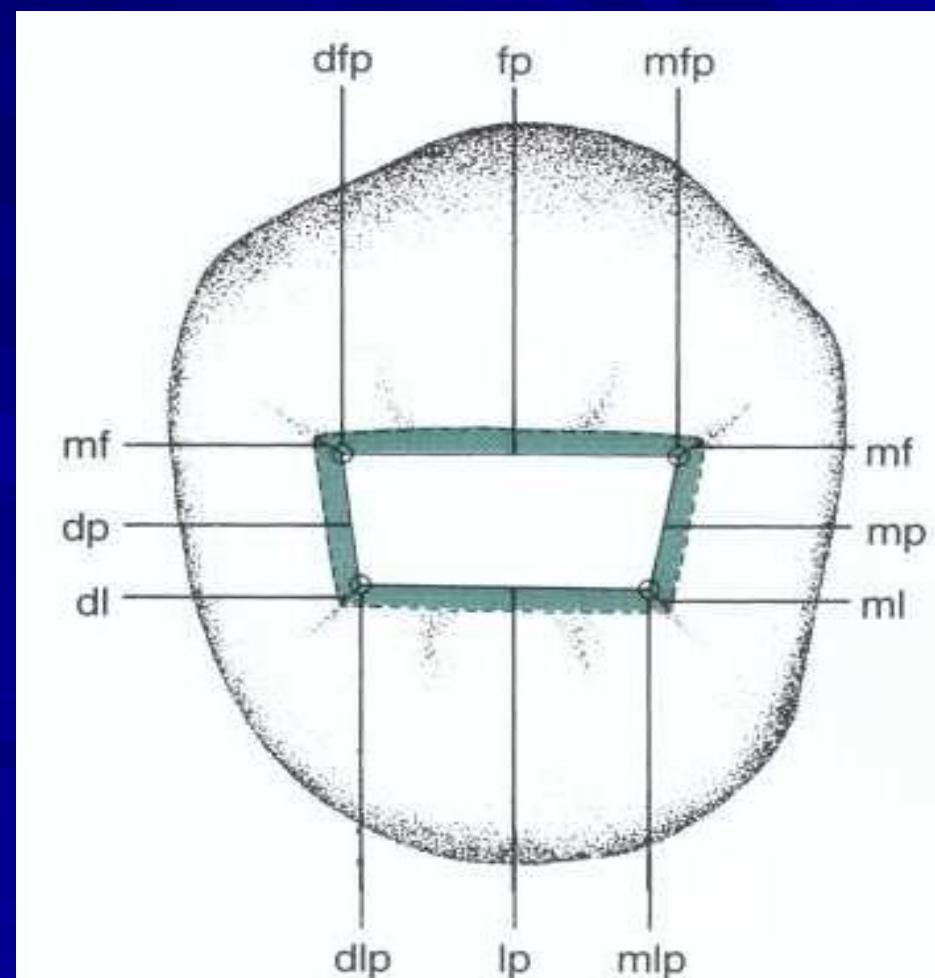


4 - Point Angles

1. Disto-facio-pulpal
2. Disto-linguo-pulpal
3. Mesio-linguo-pulpal
4. Mesio-facio-pulpal

5-Walls:

- 1.mesial wall
- 2.Distal wall
- 3.lingual/Palatal.
- 4. facial Wall.
- 5. Pulpal wall.



Learning resources

■ Sturdevants Art and science of
operative dentistry 6 th edition

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5 th edition page no – 288 -295

Thank you