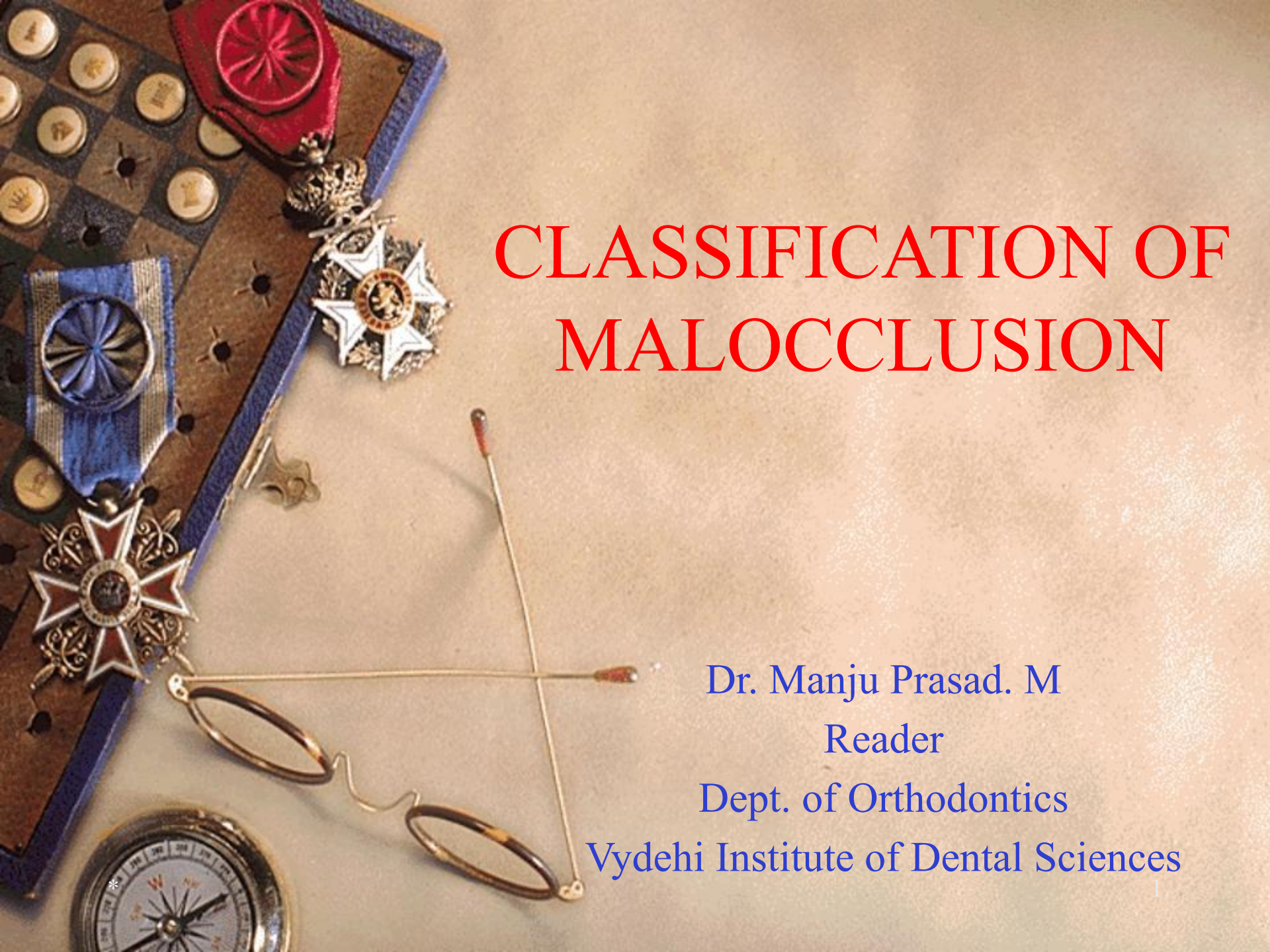

CLASSIFICATION OF MALOCCLUSION

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Outline

- Introduction
- Purpose and need for classification
- Classification systems:
  - Angle' classification
  - Modifications of Angle's classification
  - Simon system
  - Ackerman-Proffit system
  - Bennet's classification
- Conclusion

Introduction

- Orthodontics -"Science of Infinite Variations" *-Jackson*
- Occlusion – "Normal relation of occlusal inclined planes of the teeth when the jaws are closed" -E.H.Angle
- Malocclusion – Any deviation from the normal or ideal occlusion.

-Glossary of Orthodontic terms

What is a classification system?

- A classification system is a grouping of clinical cases of similar appearance for ease in comparison, handling and discussion;
- it is a system of diagnosis, method for determining prognosis, or a way of defining treatment.

Advantages

- 1. helps in diagnosis and treatment planning.
- 2. helps in visualizing and understanding the problem associated with that malocclusion.
- 3. helps in communicating the problem.
- 4. comparison of various malocclusion becomes easy.

Malocclusions can be broadly categorized into-

- Dental dysplasias
- Skeletal dysplasias
- Skeletodental dysplasias

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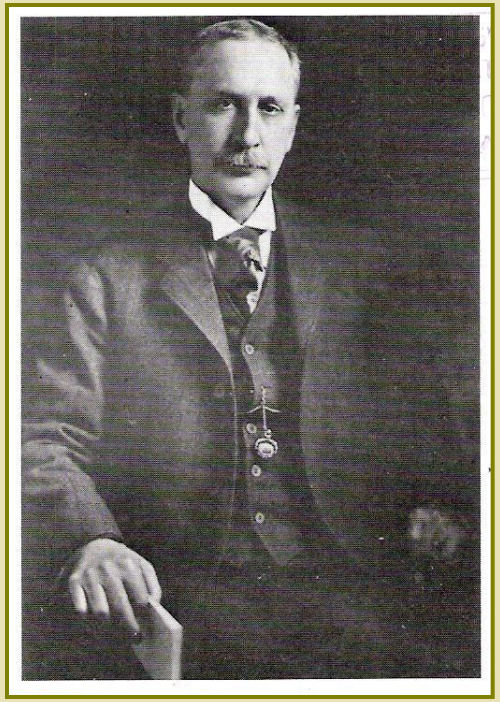
Angle's Classification

- Introduced by Edward H.Angle in 1899.
- First and most important universally used classification.



E.H.Angle
Father of Modern Orthodontics

*

Angle's classification of malocclusion

- It was given by Edward Angle in 1899
- Based on the mesio-distal relation of the teeth, dental arches and jaws
- Maxillary 1st permanent molar- key to occlusion

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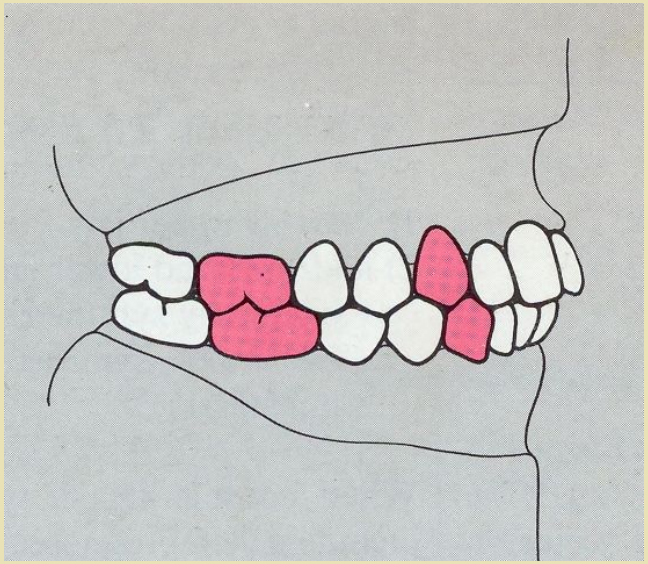
Class I malocclusion

Class I molar relationship

Mesiobuccal cusp of the maxillary first molar occludes in the buccal groove of the mandibular 1st permanent molar



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- Crowding, spacing, rotations missing tooth etc.
- Normal skeletal and normal muscle relationship
- **Class I bimaxillary protrusion**– normal class I relationship but dentition of both the arches are forwardly placed in relation to facial profile

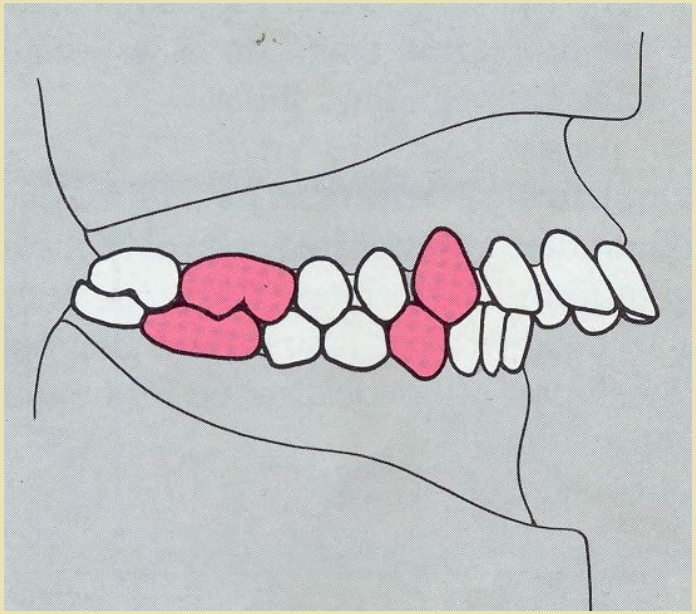
Angle's class II malocclusion

- **Class II molar relationship-** disto buccal cusp of the upper first permanent molar occludes in the buccal groove of the lower 1st molar
- It is sub classified into

  class II division 1

  class II division 2

  class II subdivision



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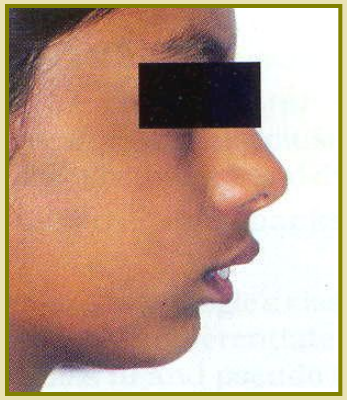
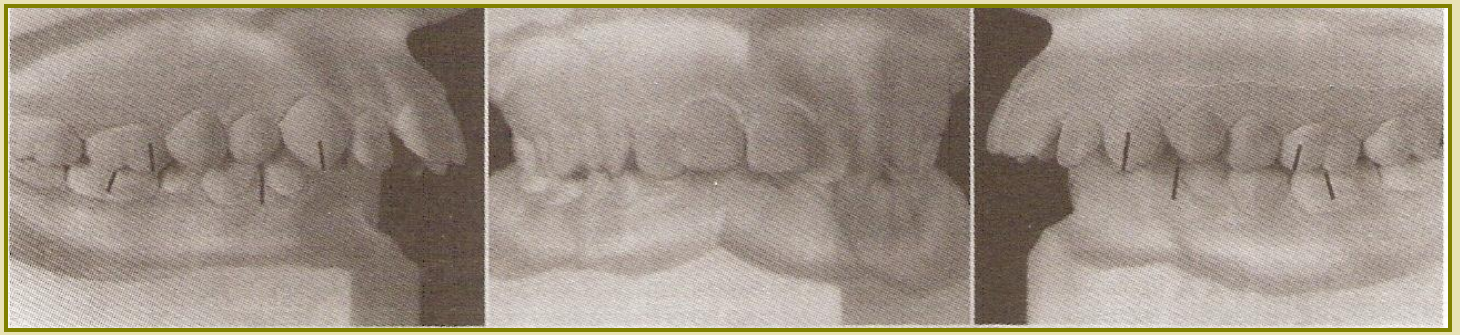
Division 1

- Class II molar relation.
- Proclined upper incisors.
- ‘V’ shaped maxillary arch.
- Supraversion of the lower anteriors.
- Abnormal muscle activity.





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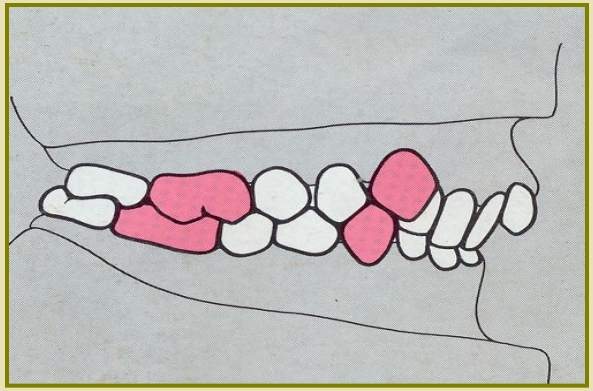
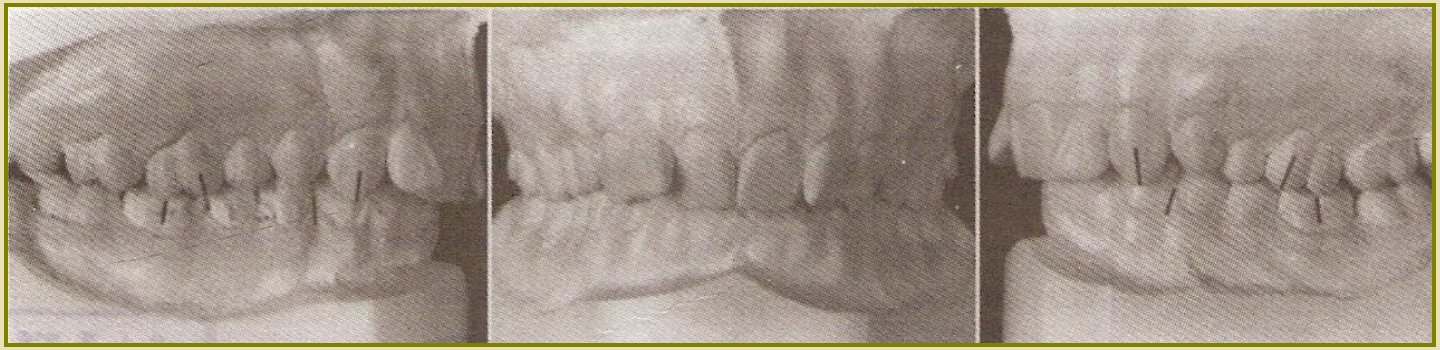
Division 2

- Class II molar relation.
- Lingually inclined upper centrals and labially tipped upper lateral incisors.
- Wide maxillary arch.
- Exaggerated curve of spee.
- Closed bite.





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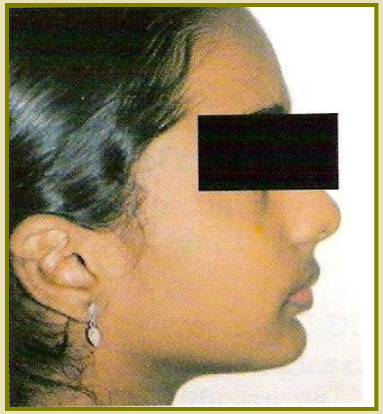
Division 2 (contd.)

- Supraversion of mandibular incisors.
- Perioral musculature usually normal.
- Excessive interocclusal clearance.
- Forced retrusion of the mandible.



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Class II subdivision

- Class II molar relation on one side and class I on other side.

It can be-

- Class II div.1 subdivision
- Class II div.2 subdivision

Class III MALOCCLUSION

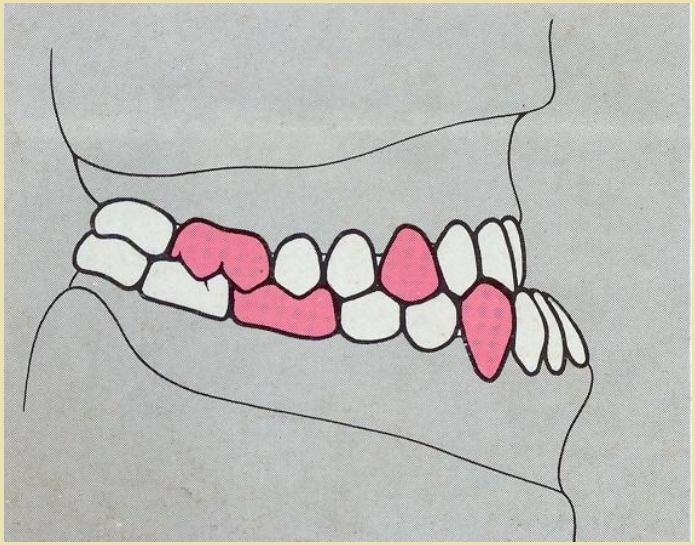
CLASS III MOLAR RELATIONSHIP-

MESIOBUCCAL CUSP OF MAXILLARY FIRST MOLAR OCCLUDES IN THE INTERDENTAL SPACE BETWEEN THE DISTAL CUSP OF MANDIBULAR FIRST MOLAR AND SECOND MOLAR.

- CLASSIFIED INTO-

TRUE CLASS III

PSEUDO CLASS III



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TRUE CLASS III

- Class III molar relation
- LOWER INCISORS LINGUALLY INCLINED
- LOWER TONGUE POSTURE- NARROW UPPER ARCH

PSEUDO CLASS III

- CAUSED BY FORWARD MOVEMENT OF THE MANDIBLE

- CAUSES OF PSEUDO CLASS III:-

1. OCCLUSAL PREMATURITY
2. LOSS OF DECIDUOUS MOLARS
3. LARGE ADENOIDS

CLASS III SUBDIVISION

- CLASS III MOLAR RELATION ON ONE SIDE AND CLASS I RELATION ON THE OTHER

CANINE RELATIONSHIP

- CLASS I RELATION: Mesial incline of the upper canine overlaps the distal incline of the lower canine.
- CLASS II RELATION: In this canine relationship upper canine is placed forward , i.e. distal incline of upper canine contacts the mesial incline of lower canine.

- CLASS III RELATION: The lower canine is placed forward to the upper canine and there is no overlapping.

Advantages

- Simplicity.
- It is the most traditional, most practical and ***Universally accepted*** method of classification.
- It was the first to define ***normal occlusion*** in natural dentition.
- Foundation for future classifications.

Disadvantages of Angle's Classification

- Considered Anteroposterior relationship, not vertical & transverse.
- First permanent molars are not fixed points.
- Cannot be applied if first molars missing.
- Cannot be applied to deciduous dentition.
- No differentiation between skeletal & dental malocclusion.
- Classification does not highlight etiology.

Martin Dewey's modification of Angle's Malocclusion(1915)

Dewey modified Class I malocclusion with-

- Type I: Crowded anterior teeth.
- Type II: Protrusive maxillary incisors.
- Type III: Anterior crossbite.
- Type IV: Posterior crossbite.
- Type V: Mesial drifting of permanent molar.

Type I: Crowded anterior teeth.

Type II: Protrusive maxillary incisors.

*

Type III: Anterior crossbite.

Type IV: Posterior crossbite.

*

Type V: Mesial drifting of permanent molar.

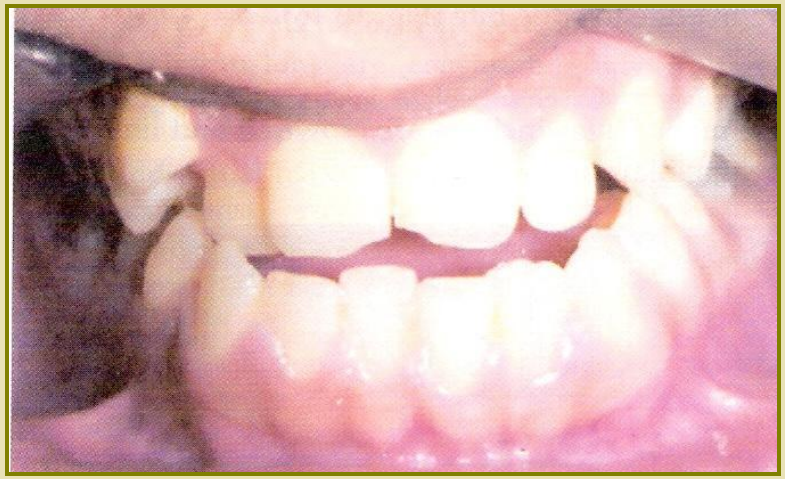
*

Dewey modified class III malocclusion with-

- Type 1: Viewed separately, arches are normal, In occlusion – edge to edge incisor alignment suggestive of forwardly moved mandibular arch.

- Type 2: Crowding and lingual relation of mandibular incisors to maxillary incisors.

- Type 3: Crowding and cross bite relation of maxillary incisors to mandibular incisors.



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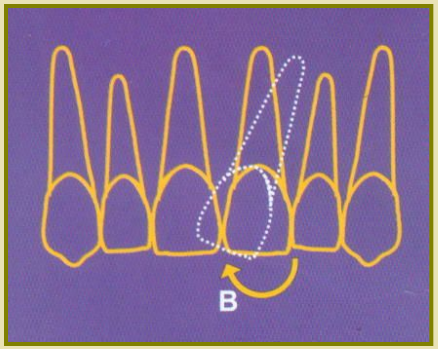
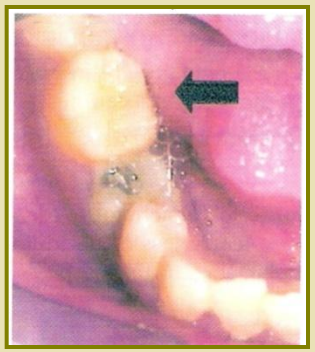
Lischer's modification of Angle's Classification(1933)

- Lischer substituted Angle's classes by-
- "Neutrocclusion" - Angle's class I
- "Distocclusion" - Angle's class II
- "Mesiocclusion" - Angle's class III

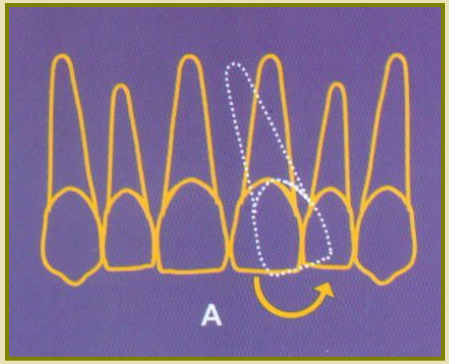
In addition, Lischer described nomenclature for individual tooth malpositions by adding suffix “version” to a word indicating deviation from normal position

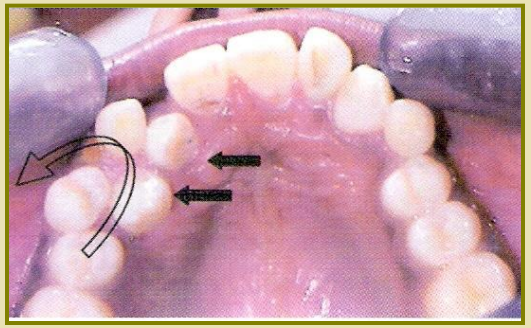
1.Mesioversion:





2.Distoversion:





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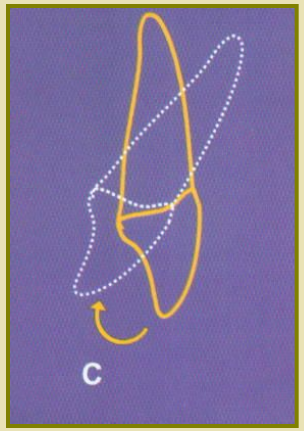
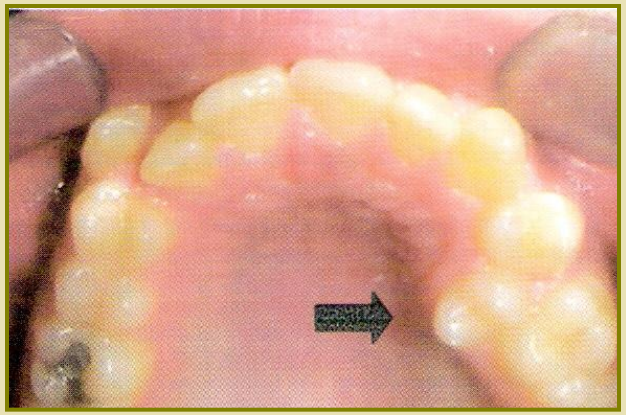
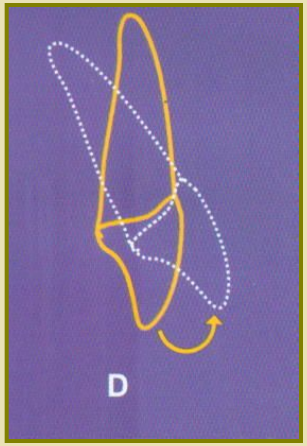
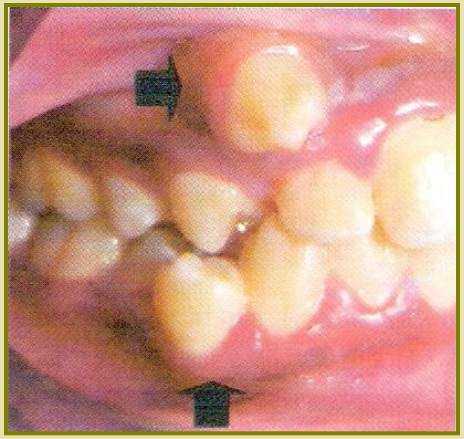
3.Lingoversion:





4.Labioversion





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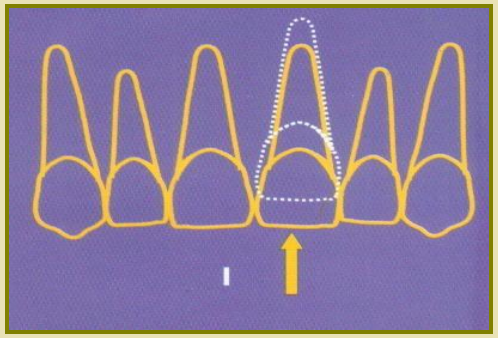
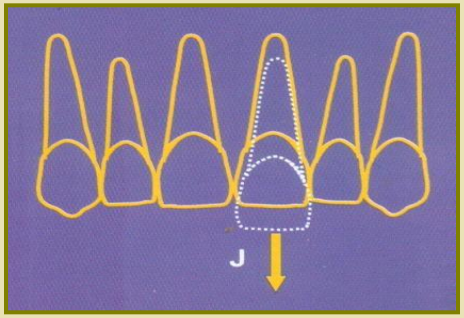
5.Infraversion:



6.Supraversion:



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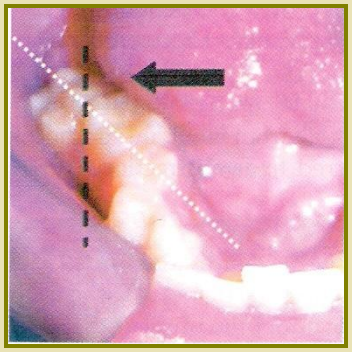
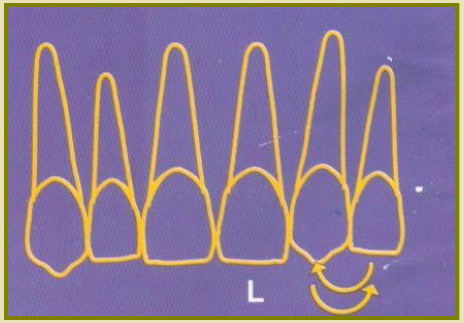
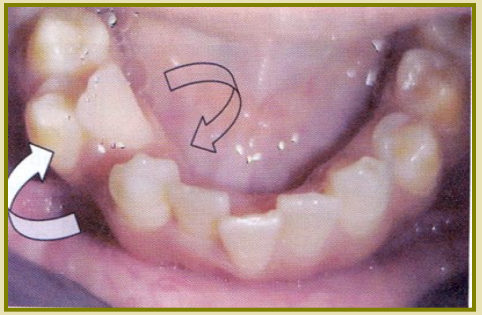
7.Axioversion:



8.Transversion:





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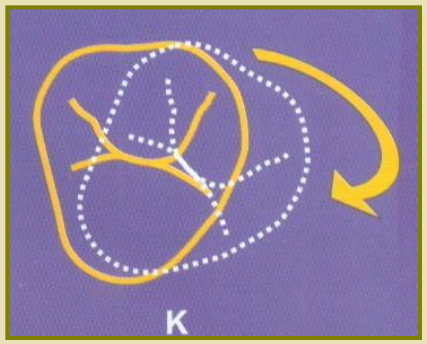
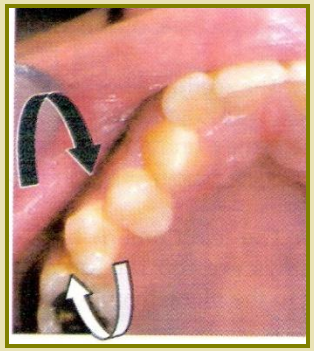
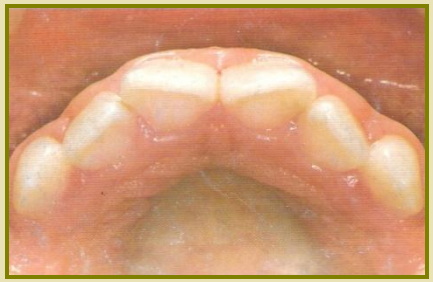
9.Torsiversion: (rotation)





Mesiolabial or distolingual rotation



Mesiolingual or distolabial rotation

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Simon's classification of malocclusion

- Simon in 1930 was the first to relate the dental arches to the face and cranium in the three plane of space i.e

1. Frankfort Horizontal Plane (vertically)
2. Orbital plane (anterio-posteriorly)
3. Mid Sagital plane (transversely)

Frankfort horizontal plane

Formed by drawing a straight line through the bony margins of the orbit to the upper margins of external auditory meatus

Fig. 13.20: Frankfort horizontal plane

- This plane is used to classify malocclusion in vertical direction

1. **Attraction**: when the dental arch or part of it is closed to FHP

2. **Abstraction**: when a dental arch or a part of it is away from FHP

*

Orbital plane

- Perpendicular to the FHP
- **Simon's law of canine-** "this plane should pass through the distal third of the canine"

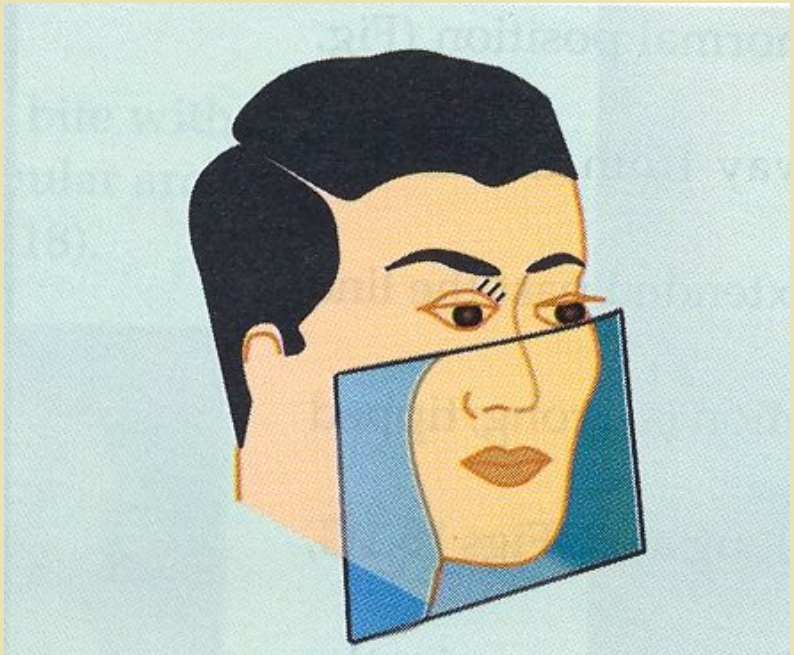


Fig. 13.21: Orbital plane

*

- This plane is used to describe malocclusion in saggital or anterio posterior plane
- **Protraction** – when the dental arch or part of it is away from this plane
- **Retraction** - when the arch or part of it is close or more posteriorly places

Mid sagittal plane

- This plane is formed by points apprx 1.5 cm apart on the median raphe of the palate
- This plane passes at right angle to FHP

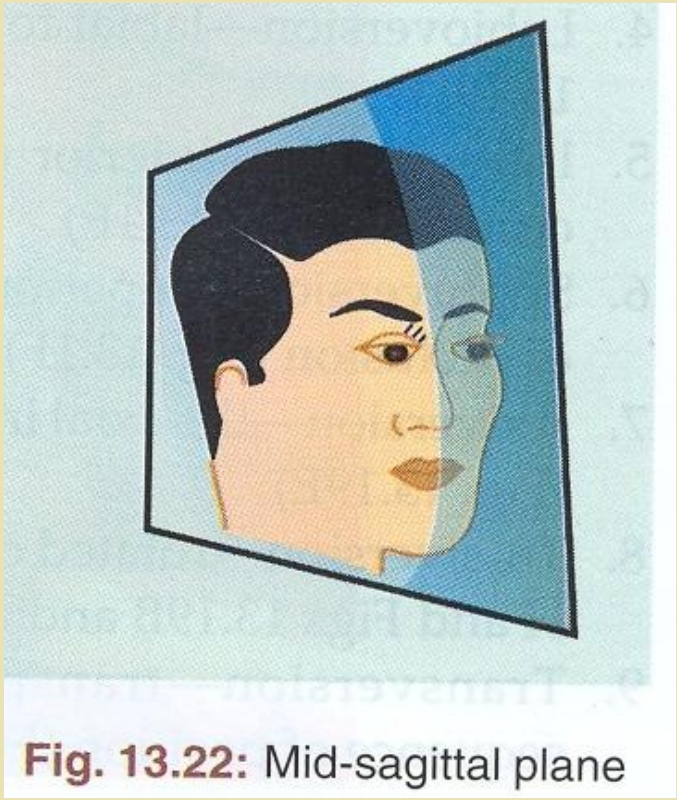


Fig. 13.22: Mid-sagittal plane

- It classifies malocclusion according to Transverse deviation from MSP
- **Contraction** : A part or all of the dental arch is contracted towards MSP
- **Distraction** : A part or all of the dental arch is wider or placed at a distance which is normal

*

Ackermann-profitt system of classification

- This classification includes description of malocclusion in all the **three spaces**
- It gives indication towards the severity of malocclusion
- The classification is illustrated using **venn symbolic** logic diagram
- It considers **five characteristics** and their inter relationship is assessed.

- 1. Alignment - Intra arch alignment and asymmetry is assessed, a dental arch is classified as- Ideal
  Crowded
  Spaced

- 2. Profile - Concave
  Convex
  Straight
  Anterior or posterior
  divergent

- 3 Transeverse relationship - Transeverse skeletal and dental relationship is assessed
  - Buccal or Palatal Cross bite
  - Unilateral or Bilateral
  - Skeletal and Dental

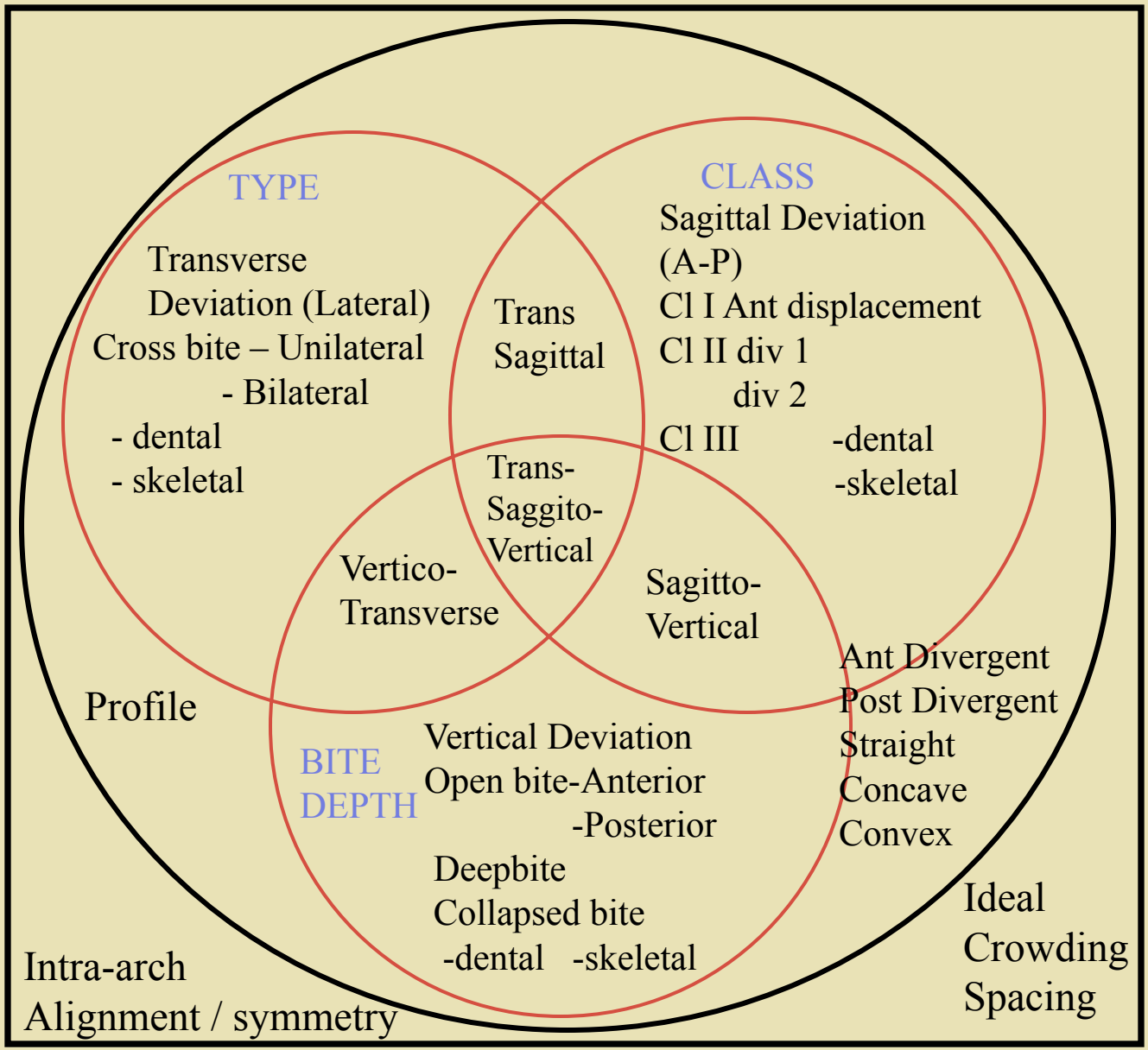
- 4. Class - Sagittal relationship is assessed using Angle's classification of malocclusion
  - Skeletal or dental

- 5. overbite malocclusion are assessed in the vertical plane

  Openbite - Anterior or Posterior

  Deep bite - Anterior or Posterior

  Skeletal or dental


TYPE
Transverse
Deviation (Lateral)
Cross bite – Unilateral
- Bilateral
- dental
- skeletal
CLASS
Sagittal Deviation
(A-P)
Cl I Ant displacement
Cl II div 1
div 2
Cl III
-dental
-skeletal
Trans
Sagittal
Trans-
Saggito-
Vertical
Vertico-
Transverse
Sagitto-
Vertical
Profile
Ant Divergent
Post Divergent
Straight
Concave
Convex
BITE
DEPTH
Vertical Deviation
Open bite-Anterior
-Posterior
Deepbite
Collapsed bite
-dental -skeletal
Intra-arch
Alignment / symmetry
Ideal
Crowding
Spacing

Benette's classification of malocclusion

- Benette classified the malocclusions **based on their etiology-**
- Class I – Abnormal location of one or more teeth is due to local factors
- Class II – Abnormal formation of a part or a whole of either arch due to development defects of bone
- Class III –Abnormal relationship of upper and lower arch due to developmental defects of bone

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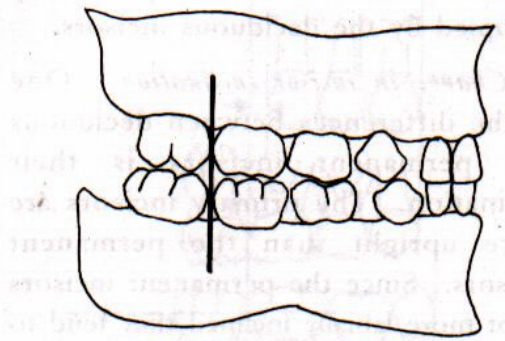
BAUME CLASSIFICATION OF PRIMARY TEETH

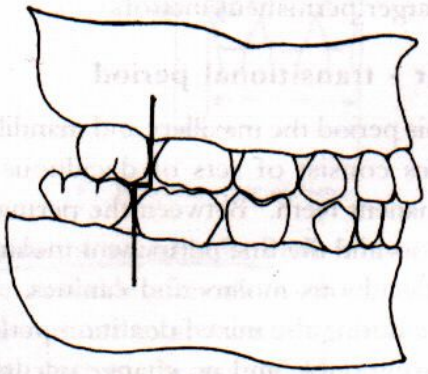
STRAIGHT OR FLUSH TERMINAL PLANE → **CLASS I OR CLASS II**

MESIAL STEP → CLASS I OR CLASS III

DISTAL STEP → CLASS II



A



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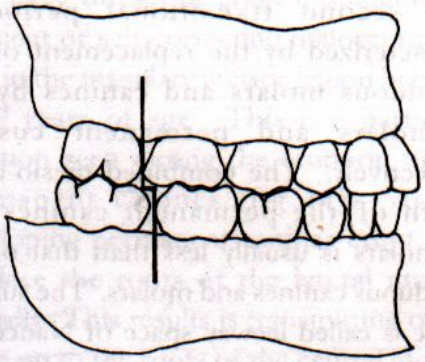

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THANK YOU