CLASSIFICATION OF MALOCCLUSION
INTRODUCTION

OCCLUSION.

“Normal relation of occlusal inclined planes of the teeth when the jaws are closed”

E.H. Angle
Malocclusion

Deviation or departure from the accepted normal relation of teeth to other teeth in the arch and to teeth in the opposing arch.
Why do we need a classification?

- Visualizing & understanding problem associated with malocclusion
- Diagnosis & treatment planning
- Communication
- Comparison
Malocclusions can be broadly categorized into

- **INTRA-ARCH MALOCCLUSION**
- **INTER-ARCH MALOCCLUSION**
- **SKELETAL MALOCCLUSION**
Intra-arch malocclusion

Mesial Inclination

Distal Inclination
Buccal Inclination

Lingual Inclination
• Mesial displacement

• Distal displacement
- Lingual displacement

- Buccal displacement
• Extrusion

• Intrusion
Rotations
Transposition
Inter-arch malocclusion

- Sagittal plane malocclusions
  - Prenormal occlusion
  - Postnormal occlusion
Vertical plane malocclusion
- Deep bite
- Open bite
Transverse plane malocclusion
-cross bite: anterior and posterior
  :bilateral and unilateral
-buccal non occlusion
-lingual non occlusion
• **Skeletal malocclusion**
  Abnormalities in maxilla or mandible in vertical, sagittal and transverse plane lead to malocclusion.

Defect can be in
• Size
• Position or relationship between jaws
Classification of Malocclusion

- Angle’s system of classification
- Modification of Angle’s classification
  - Martin Dewey’s modification
  - Lischer’s modification
- Paul Simon’s classification
- Bennett’s classification
- Ackerman Proffit classification
Angle’s Classification

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

E.H. Angle
Father of Modern Orthodontics
Principles of Angle’s classification

- Maxillary first permanent molar- “key to occlusion”
- Relationship of first molars
- Line of occlusion (Caternary curve)
- Anteroposterior relationship of dental arches.
Angle’s Classification

- Normal occlusion
- Class I (neutroclusion)
- Class II (distoclusion)
- Class III (mesioclusion)
Angle’s Class I Malocclusion:

- Normal anteroposterior relationship between maxilla and mandible.
- Normal class I molar relation.
- Normal muscle function.
- Line of occlusion is incorrect because of malposed teeth, rotations or other causes.
Bimaxillary protrusion

- Occasionally, with normal anteroposterior jaw relationship, the teeth are forward on their respective bases termed as Bimaxillary protrusion.
- Angle considered Bimaxillary protrusions in class I category.
Angle’s Class II Malocclusion:

- The distobuccal cusp of upper first permanent molar occludes in the buccal groove of the lower first permanent molar
- There are 2 divisions in class II malocclusions
Class II div 1

Extra orally,

- Oval face
- Convex profile
- The upper lip is hypotonic short and fails to form a lip seal
- Everted lower lip, lip trap
- Nasolabial angle
- Deep mentolabial sulcus
- abnormal muscle activity.
  - Hyperactive mentalis

1-Dec-14
Class II div 1

- **Intra orally**
- Proclined U/incisors Increased overjet
  - Deep bite which may be traumatic
  - Exaggerated curve of Spee
  - Lower tongue posture-unrestrained buccinator activity
  - Narrow, V shaped U/arch
  - Deep palatal vault

![Images of dental conditions](Image)
Class II div 2

E/o

• Squarish face
• Straight/mild convex profile
• Orthognathic face
• Normal perioral muscle activity
• Prominent malar process
• Backward path of closure
Class II div 2

- I/O
- Class II molar relation.
- Lingually inclined upper centrals and labially tipped upper lateral incisors.
- Wide maxillary arch.
- Exaggerated curve of spee.
- Closed bite.
When the class II molar relationship occurs on one side of the dental arch only, the other side is class I.

- malocclusion is referred to as a subdivision of its division.

It can be:
- Class II div.1 subdivision
- Class II div.2 subdivision
The most accurate depiction would be to specify which side is class II and which is class I. e.g. Class II div 1, Subdivision; R class II, L class I.

Class III molar relation:

- The MB cusp of the maxillary first molar is situated over the embrasure between the mandibular first and second molar.
Features of Angle’s Class III...

Extra orally

- Straight to concave profile
- Anterior divergence
- Long face
- Obtuse gonial angle
Angle’s Class III Malocclusion

• Mandibular dental arch in **MESIAL** relation to the maxillary dental arch.
• Class III molar relation.
• Maxillary arch constricted
• Mand incisors- crossbite& inclined lingually
True class III malocclusion

- **skeletal class III malocclusion of genetic origin**
  - Excessively large mandible.
  - Forwardly placed mandible.
  - Smaller than normal maxilla.
  - Retropositioned maxilla.
  - Combination of the above causes

- Lower incisors tend to be lingually inclined.
- May present normal overjet, an edge to edge incisor relation or an anterior cross bite.
- The tongue occupies a lower position resulting in a narrow upper arch
Pseudo Class III

- **Habitual/postural class III**

- Mandible protruded anteriorly during final stages of closure
  - premature loss of deciduous posteriors
  - enlarged adenoids
  - occlusal prematurities

- May become true Class III if untreated
Class III subdivision

- Class III molar relation on one side & Class I on the other.
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.
Drawbacks of Angle’s Classification

- U/6 is not a fixed point on the skull
- Missing first molar
- The deciduous or mixed dentition was not directly addressed by Angle
- m/o in A-P plane only
- Individual tooth not considered
- No differentiation b/n skeletal and dental
- Etiology not elaborated
- lack of a numerical quantification of the degree of Class II or Class III.
- Difficulty in applying to malocclusions in between full Class II and full Class III
Modifications of Angle’s classification

- Martin Dewey’s modification
- Lischer’s modification
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

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.
Lischer’s modification of Angle’s Classification (1933)

- *Lischer* substituted *Angle’s classes* by-
  - “Neutroclusion” - 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. Distoverision:
3. Lingversion:

4. Labioversion
5. Infraversion:

6. Supraversion:
7. Axioversion:

8. Transversion:
9. Torsiversion: (rotation)

Mesiolabial or distolingual rotation

Mesiolingual or distolabial rotation
Simon’s classification

- Paul Simon - 1930
- Craniometric classification
- Relates dental arches in three anthropometric planes
  - FH plane
  - Orbital
  - Midsagittal
Basis for classification

- Based on deviation of dental arches from their normal position in relation to these planes
FRANKFORT HORIZONTAL PLANE

Malocclusion in vertical plane
  – Attraction
  – Abstraction
ORBITAL PLANE

Perpendicular to FH plane

– Distal third of the upper canine
– Simon’s Law of canine
– m/o in sagittal plane

• Protraction
• Retraction
- Midsagittal plane
- Malocclusion transverse plane

- Distraction
- Contraction
Drawbacks of Simon’s classification

- Maxillary canines do not coincide with orbital plane
- Clinical application not practical
- Cumbersome and confusing at times
Bennett’s classification

- Norman Bennett
- Based on etiology
- Class I
  - Abnormal position of one or more teeth due to local factors
- Class II
  - Abnormal formation of a part or whole of either arch due to developmental defect of bone
- Class III
  - Abnormal relationship b/n U/and L/ arches and b/n either arch and the facial contour and correlated abnormal formation of either arch
Ackermann-Proffit classification

- Ackerman & Proffit in 1960
- diagrammatic classification of malocclusion
- Takes into consideration Angle’s classification and five characteristics in a Venn diagram
Step 1 (alignment)

- Involves assessment of the alignment and symmetry of the dental arch when seen in the occlusal view
- ideal / crowded / spaced

Step 2 (profile and facial divergence)

- convex / straight / concave
- anterior or posterior divergence
Step 3 (type)

- The transverse skeletal and dental relationship is evaluated.

**cross bites**
- unilateral or bilateral.
- skeletal and dental
Step 4 (class)

- Assessment of the sagittal relationship

- Classified as Angle’s class I / class II / class III

- Differentiation is made between skeletal and dental malocclusions
Step 5 (bite depth)

- Malocclusions in the vertical plane are noted
- Described as
  - anterior or posterior open bite,
  - deep bite
  - posterior collapsed bite
- Skeletal
- dental
THANK YOU