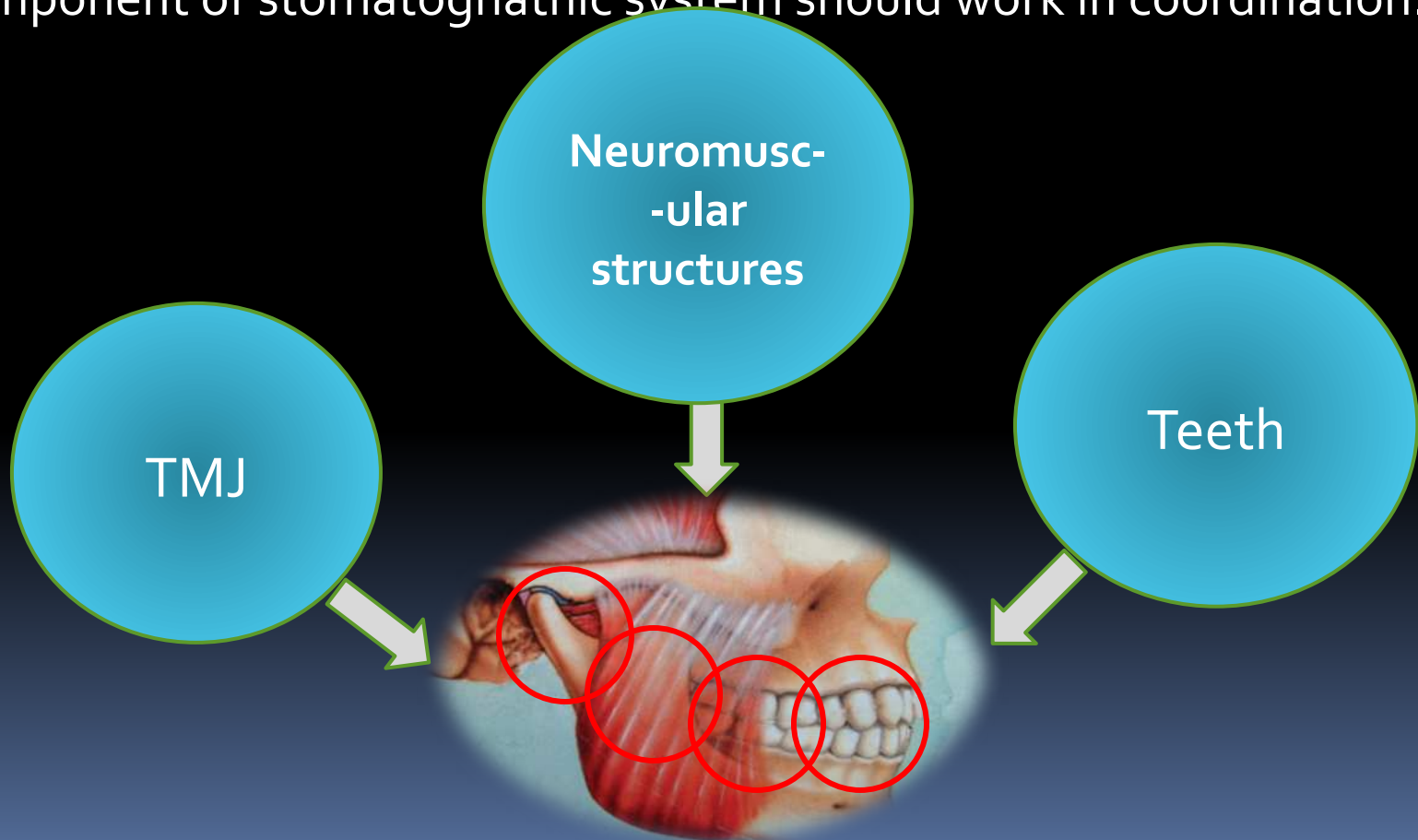


**OCCLUSION
IN
REMOVABLE PARTIAL DENTURE**

INTRODUCTION

- For proper functioning of the masticatory apparatus, each and every component of stomatognathic system should work in coordination.



- When treating a patient with a removable partial denture, the natural and artificial teeth, both **functionally and esthetically**, must coexist in a harmonious relationship.
- Hence restoration of occlusion is a very critical and important step in partially edentulous conditions.

OCCLUSION

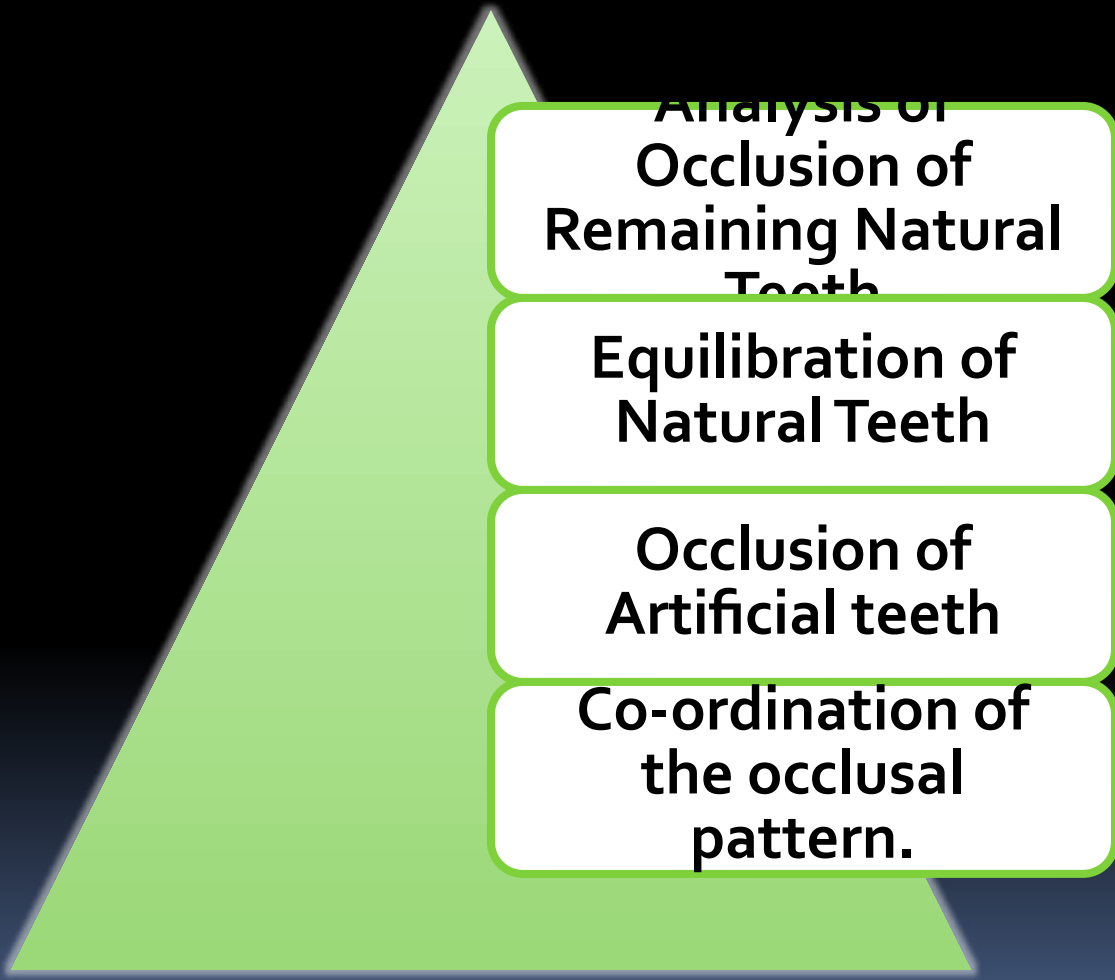
'Occludere' (Latin) – To close

Definition : 'The static relationship between the incising or masticating surfaces of the maxillary or mandibular teeth or tooth analogue'.

-(GPT-8)

“ In removable partial dentures occlusal stresses are directly transmitted to abutment teeth and surrounding structures which may be more damaging than stresses found in complete denture.”

STAGES OF INCORPORATION OF OCCLUSION IN PARTIAL DENTURES



**Analysis of
Occlusion of
Remaining Natural
Teeth**

**Equilibration of
Natural Teeth**

**Occlusion of
Artificial teeth**

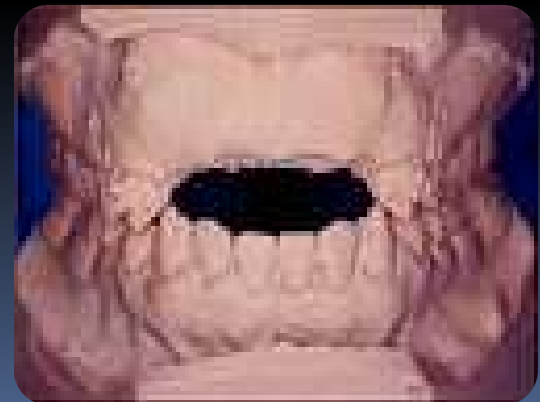
**Co-ordination of
the occlusal
pattern.**

DIAGNOSIS AND TREATMENT PLANNING

- ❑ Medical and Dental History
- ❑ Complete Clinical Examination
- ❑ Radiographs and Diagnostic Casts

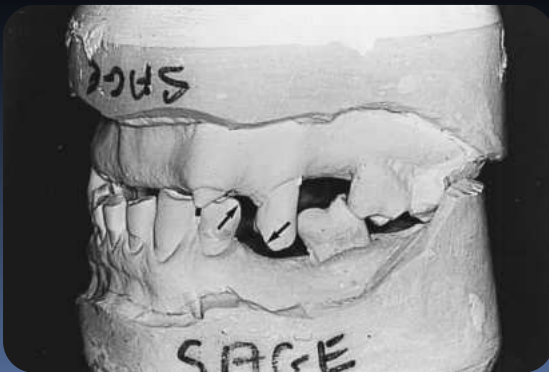
Provides the information regarding:

- *Condition of existing teeth*
- *Existing occlusal status.*
- *Correction of occlusal dysfunction*



MOUNTED DIAGNOSTIC CASTS

1. Type of occlusion
2. Centric relation and maximum intercuspation
3. Plane of occlusion
4. Compensating curves
5. Inter-ridge distance



PLANE OF OCCLUSION

If alteration is required;

- Selective occlusal adjustment
- A fixed partial denture
- Intentional De-vitalization
- Clinical crown lengthening
- Extraction



ESTABLISHING OCCLUSAL RELATIONSHIP

Five methods -

1. Direct opposition of casts :

When only a few teeth are to be replaced on short denture bases and there is no evidence of occlusal abnormalities



2. Inter occlusal records with posterior teeth remaining.

When sufficient natural teeth remain to support the removable partial denture but the relation of opposing natural teeth does not permit the occluding of cast by hand.



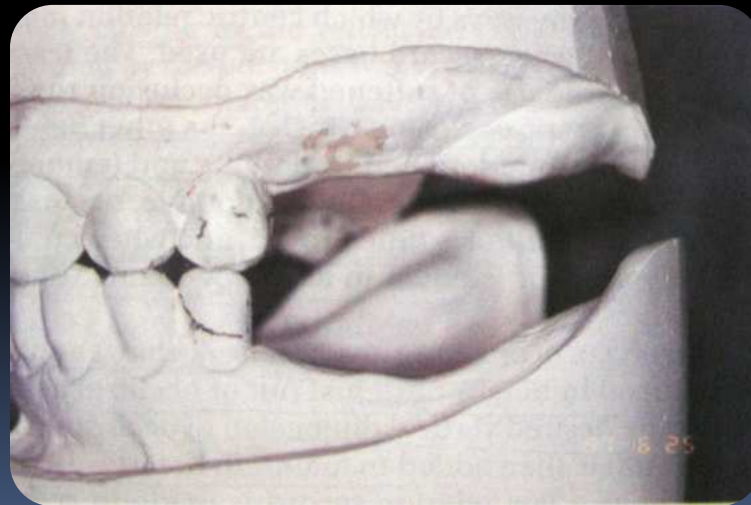
3. Occlusal relation using occlusal rims on record base.

1. When one or more distal extension areas are present.
2. When a tooth supported edentulous space is large .
3. When opposing teeth do not meet.



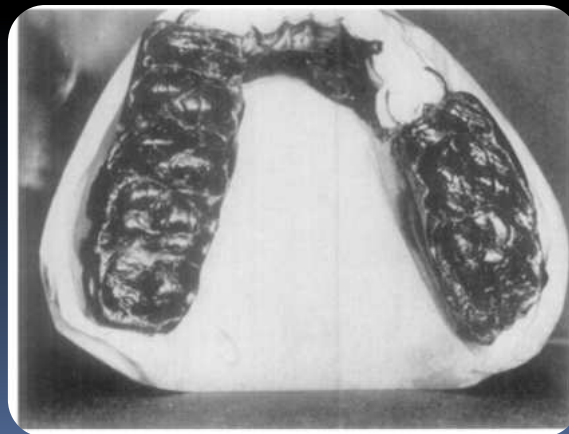
4. Jaw relation records made entirely on occlusal rims.

1. When an opposing maxillary complete denture with a mandibular removable partial denture.
2. Few remaining teeth do not occlude and will not influence eccentric jaw movements.



5. Establishing occlusion by recording of occlusal pathway

According to Thompson *"Observing the occlusion with the teeth in static relation and then moving the mandible into various eccentric positions is not sufficient. A dynamic concept is necessary to produce an occlusion that is in functional harmony with facial skeleton , the musculature , and the TMJ "*



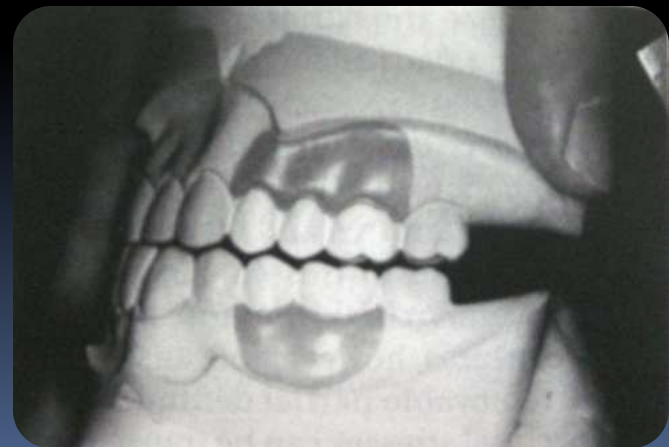
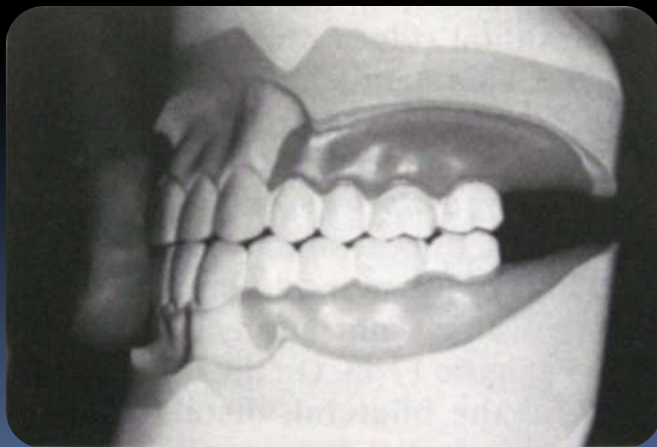
OCCLUSAL SCHEMES

1. Balanced occlusion
2. Mutually protected occlusion
3. Canine protected occlusion
4. Lingualized occlusion
5. Monoplane occlusion



DESIRABLE OCCLUSAL CONTACT RELATIONSHIP FOR REMOVABLE PARTIAL DENTURES

1. Simultaneously bilateral contacts of posterior teeth in centric occlusion
2. Occlusion for tooth supported removable partial denture is arranged similar to occlusion seen in natural dentition

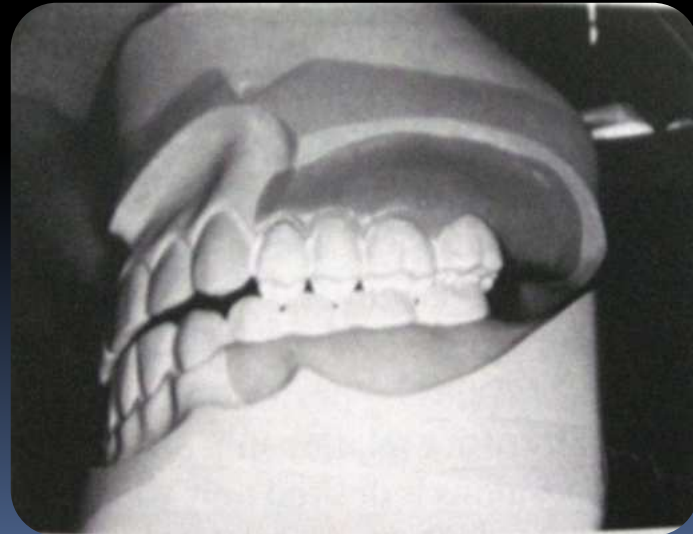
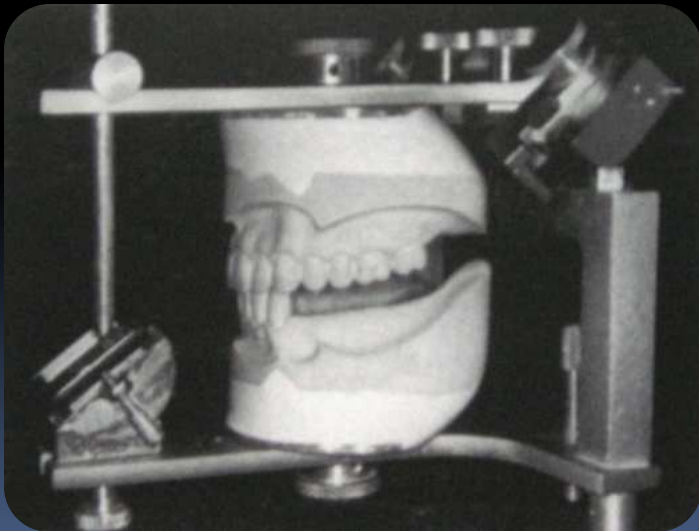


3. Maxillary complete denture opposing RPD:
Bilateral balanced occlusion in eccentric position

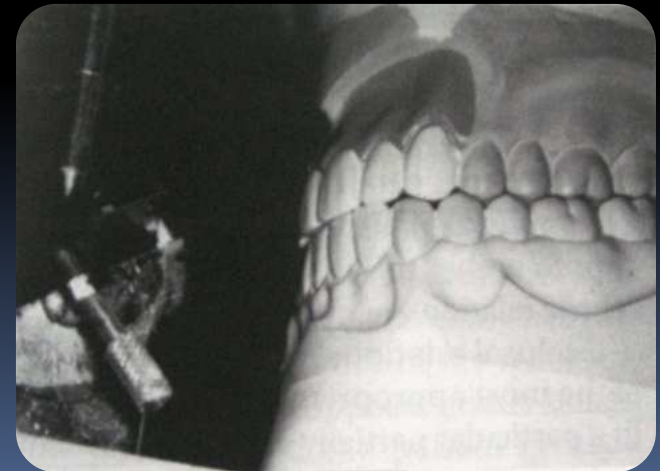
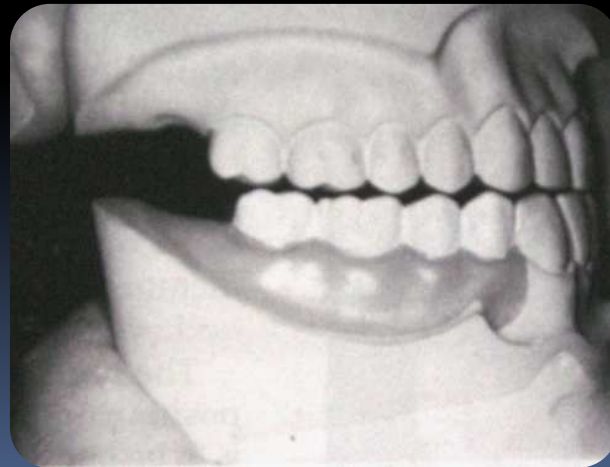


4. Mandibular distal extension denture: **Working side contact.**

5. Maxillary bilateral distal extension RPD: **Simultaneous working and balancing contact**

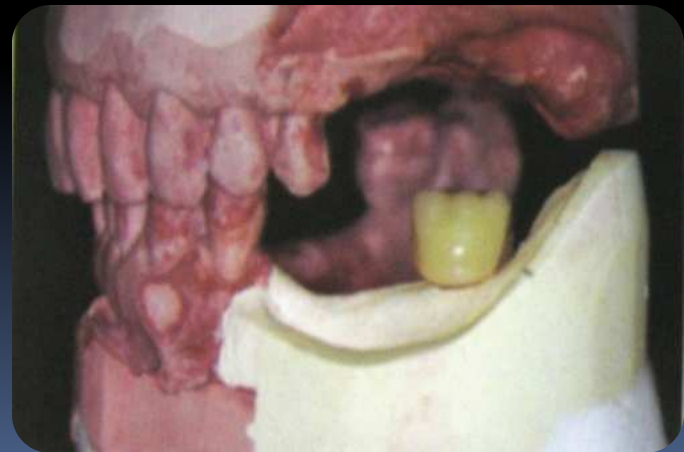
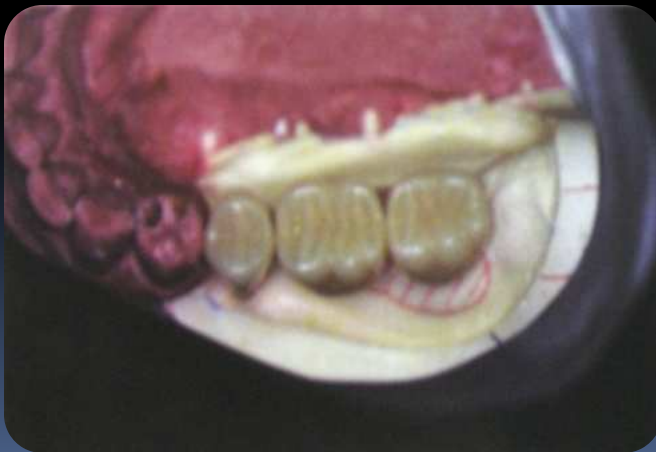


6. Maxillary or Mandibular unilateral distal extension removable partial dentures :**Only working contacts** .
7. In the **Kennedy Class IV** removable partial denture configuration contact of opposing anterior teeth in the planned intercuspal position should **prevent a continuous eruption of the opposing natural incisors**.



8. Opposing CD or bilateral distal extension maxillary RPD :**Balanced contact in a protrusive relationship and excursive position .**

9. **Artificial posterior teeth** should not be arranged further distally than the beginning of an **upward incline of the mandibular residual ridge** or over the **retromolar pad**.



INTEROCCLUSAL RELATION RECORD

1. Made in either the centric relation or maximum intercuspation position at the correct vertical dimension of occlusion
2. Allow accurate and positive alignment of the casts
3. Dimensionally stable
4. Made with a soft material to minimize the displacement of tissues
5. Easily used by both the clinician and the technician



CHOICE OF AN ARTICULATOR

Used to :

- Relate casts in static positions to the condyles
- To simulate paths of mandibular movements.

Choice depends on :

- Complexity of the treatment.
- Requirements dictated by patient's current condition.



CENTRIC RELATION OR CENTRIC OCCLUSION?

1. If natural posterior teeth in one arch are able to provide occlusion with tooth supported RPD.

- centric occlusion



2. In cases where few posterior teeth and one or more extension bases are present.

- centric occlusion



3. In case only anterior teeth remains: **centric relation**
4. In cases where complete denture is present opposite to tooth supported or extension base RPD – **Bilateral balanced occlusion and centric relation.**
5. In anterior extension RPD – **Centric occlusion.**



ARTIFICIAL TEETH

FORMS

- Monoplane form
- Semi-anatomic form
- Anatomic form

MATERIALS

- Acrylic teeth
- Porcelain teeth
- Cast gold occlusal surface
- Cast ceramic surface.



DETERMINING OCCLUSAL SCHEME

KENNEDY'S CLASS I

Balanced articulation is recommended for patients for increased denture stability.



KENNEDY CLASS II

- a. **Canine-protected** articulation reduces the destructive lateral forces.
- b. Except when opposing a complete denture, **a balanced articulation should be avoided to prevent nonworking contacts on natural teeth.**



KENNEDY CLASS III

1. Occlusal morphology of artificial teeth is same as opposing teeth.
2. Existing occlusal scheme is followed.
3. A group function articulation is recommended if the natural canine is missing or periodontally compromised.
4. Balanced occlusion when opposing a complete denture.



KENNEDY CLASS IV

1. During excursive movements an anterior artificial tooth should either **disocclude** or have a **passive contact**.
2. **Balanced occlusion** when opposing complete denture.



To Summarize...

- Natural posterior teeth present – Existing occlusal scheme
- Opposing complete denture – Bilateral balance
- Unilateral distal extension – Working side contact
- Bilateral distal extension – Balancing and Working contact

CONCLUSION

- No single occlusal morphology, scheme or material will successfully treat all patients.
- Skills in diagnosis and treatment planning are of utmost importance in treating patients, for whom the clinician's goal is not only an esthetic and functional restoration but also a lasting harmonious state.

Thank You