Occlusal adjustment
1: any change in the occlusion intended to alter the occluding relation

2: any alteration of the occluding surfaces of the teeth or restorations
Occlusal equilibration
the modification of the occlusal form of the teeth with the intent of equalizing occlusal stress, producing simultaneous occlusal contacts or harmonizing cuspal relations.
2– Muscles of Mastication:
3– Occluding surfaces of teeth:
4– Peridontium:
Excessive wear
Fracture
Tooth hypermobility

Determination of
correct physiologic jaw relationship
before
correct alignment and occlusal relationship of the teeth.
Balanced occlusion:
Rules of grinding:

Remember!!
Removable Restorations:

• Complete denture:

  - During impression
  - Jaw relation
  - Denture settling errors
  - Laboratory errors
  - Mounting
A) **Indirect extra oral adjustment (remounting):**

- **Laboratory remounting**
  - After deflasking and before polishing of the dentures.

- **Clinical remounting**
  - After polishing and in the insertion stage when there are changes in occlusion which are difficult to be corrected by intra-oral selective grinding, in which a new records is taken from the patient.
Rules of grinding:

Adjustment Rule:

1-

Maximum intercuspation is adjusted for first, as this is the most frequent position and must be the most stable, and then protrusive and lateral movements are adjusted.

cusp/fossa relationship
upper palatal and lower buccal cusps with the central fossae of the opposing teeth.
When the mandible moves laterally, the aim is to maintain contact between the nonworking side slopes of the cusps as well as the working side slopes. 

In each case, upper palatal and lower buccal cusps are involved.
Adjustment Rule:

- If these cusps were to be adjusted and shortened, then when the mandible returns to centric relation position, there will be no longer contact between these cusps and their opposing fossae.

So, a cusp tip only reduced when it contacts prematurely in all centric and eccentric position & otherwise the opposing fossa should be deepened.
Sequence of adjustment:

1. **Correction of centric position:**

   We must start with **marking** of the **relation between fossae and cusps** on the **buccal** and oral surfaces of the **posterior teeth** from the cusp tip to the tooth equator by a **permanent marker**.

   **If too long opposing teeth** holding other teeth out of contact.  
   So, **deepening of the fossa**.
If insufficient overjet: upper and lower teeth seem to be contacting end-to-end.

Grind the inclines so upper cusps effectively are moved buccally, and the lower cusps moved lingually, so that the cusp tips contact the central fossae. i.e. the central fossae are widened and the cusps appear to become narrower.
If **exaggerated overjet**: (upper teeth too far buccaly)

Once again, the length of the cusps must not be reduced, so the **inclines** are **adjusted** to effectively **move** the **upper palatal cusps palatally** and the **lower buccal cusps buccally**.

The result is again similar, of widening the central fossae and narrowing the offending cusps.
Mesio-distal discrepancy:

Discrepancies in mesio-distal relationships in maximum intercuspation will usually be due to interferences between the mesial slopes of the upper cusps and the distal slopes of the lower cusps. (MUDL)

a) If the discrepancy is less than width of a cusp:

The teeth are adjusted by grinding the appropriate slopes of the cusps involved
b) If the discrepancy is **greater than width** of a cusp:

**Remount** with a check **bite record**.

c) If the discrepancy is **too great to correct** by grinding:

Remove posterior teeth, **Re take jaw relation**, remount and process new teeth in correct position.
Elimination of eccentric relation interferences:

The path that is followed by the lower posterior teeth as they leave centric relation and travel laterally is dictated by two determinants:

a) the border movements of the condyles, which act as the posterior determinant.

b) the anterior guidance, which acts as the anterior determinant.

When the mandible moves sideways, the side to which it moves is called the working side, and the opposite side of the arch, moving now towards the mid-line is the nonworking, or balancing side
2. Correction of lateral excursive movements:

For balanced articulation.

When the mandible moves to the left, the inclines marked **W** must remain in contact on the working side (**WS**),

the inclines marked **NW** must remain in contact on the nonworking side (**NWS**),
• *Working side interferences*: Either due to the **buccal** cusps contacting, or the **lingual** and palatal cusps contacting, or both, thus preventing any contacts on the nonworking side.

**BULL**

*inclines of the cusp from central fossa to cusp tip* not shorting it.
• **Nonworking side interferences:**

Between **inclines** of **supporting cusps** adjust those parts of the inclines that contact, preserving the cusp as **much as possible** specially the upper palatal cusp.
3. Correction of protrusive movements:

Adjustment Rule:

1. Anterior interference:

Either because:

A) incisors have too great an overbite,

So, inciso-labial surfaces of the lowers are adjusted, because presumably the clinician has gone to great lengths to ensure the correct level of the upper incisal edges, for aesthetics and phonetic
B) Too shallow a compensating curve, then a decision must be made as to whether this can be corrected by:

1- Altering cusp angles.

2-change the existing set-up and remount and re-process new teeth with a steeper compensating curve & Correct effective cusp angles.
2. *Posterior interference*: Posterior interferences to protrusive either:

a) No contact at the anteriors.

b) Only a few contacts posteriorly.

In either case, the offending cuspal inclines must be adjusted: the **distal inclines** of the upper *cusps*, thus effectively moving the cusps **mesially**, and the **mesial inclines** of the lower *cusps*, thus effectively moving them **distally**.
Summary:

LUBL rule in:
- Non-working side interferences.

BULL rule in:
- Working side interferences.

DUML rule in:
- Protrusive interferences.
B) Direct intra oral adjustment:

The first thing to check for will be whether maximum intercuspation coincides with centric relation position, and whether the vertical dimension of occlusion is unchanged.

\[ \text{C.R.} = \text{C.O.} \quad \text{V.D} \]

Only small discrepancies in maximum intercuspation, can be adjusted following the same rules as for correcting occlusal errors on the articulator.
Once maximum intercuspation has been established and made coincident with centric relation, then the excursive movements are adjusted.

**It is important**, though, to keep returning to maximum intercuspation, and to ensure a smooth transition between maximum intercuspation and excursive movement.
Extra-oral selective grinding is more preferable than intra-oral selective grinding for the following reasons:

1. Presence of compressible tissue under the denture, that may move with the denture especially in flabby ridge and very resorbed ridges.

2. Lateral excursion (right and left) and protrusive movements are difficult to adjust intra oral.

3. The bad psychological impact on the patient as he will see his teeth ground in front of him.
GOAL ACHIEVED

Thank you