



Complete denture

Maxillo-mandibular relationship

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Lecture 6

Maxillo-mandibular relationship

Jaw relation (Maxillomandibular relationship): any relation of the mandible to the maxilla.

Jaw relation record: It is a registration of any positional relationship of the mandible relative to the maxilla. These records may be made at any vertical, horizontal, or lateral orientation; it is also known as: Maxillomandibular record or maxillomandibular registration.

The aim of recording the jaw relation

facilitate the adaptation of the complete denture to the masticatory system to give them an optimal and comfortable function.

Types of Jaw Relations:

1- Orientation jaw relation

2- Vertical jaw relation:

- a. Rest Vertical dimension (RVD).
- b. Occlusion Vertical dimension (OVD).

3- Horizontal jaw relation:

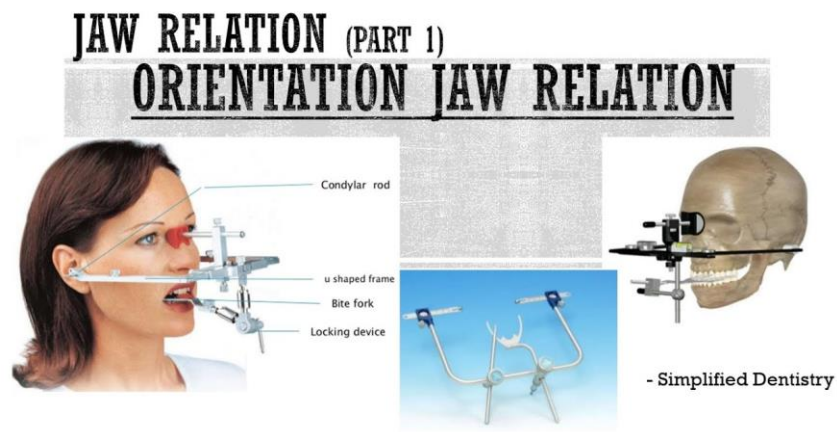
- a. Centric jaw relation.
- b. Eccentric jaw relation:
 - I- Protrusive relation
 - II- Lateral relation (right and left)

Orientation jaw relation

It is defined as the jaw relation when the mandible is kept in its most posterior position, it can rotate in the sagittal plane around an imaginary transverse axis passing through or near the condyles. This

record gives the angulation of the maxilla in relation to the base of skull (opening and closing axis).

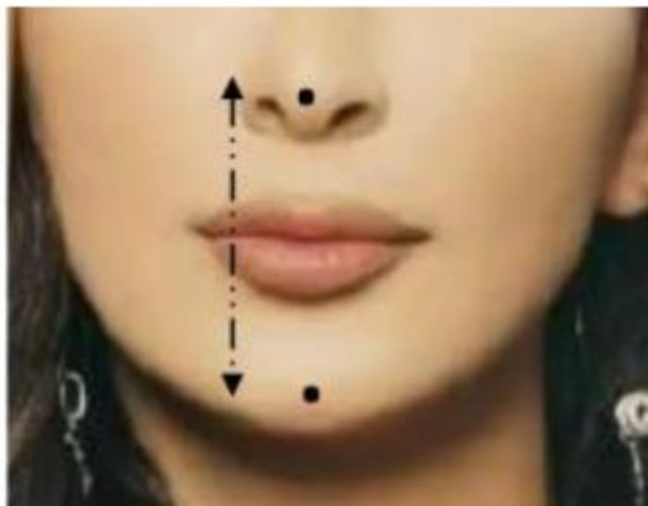
- It is necessary to do orientation jaw relation before carrying out other jaw relation. This relation can be recorded by the **face-bow**.



Vertical Jaw Relation

It is the amount of separation between the maxilla and the mandible in a frontal plane.

Vertical Dimensions: It's the distance between two selected points, one on the fixed (maxilla) and one on the movable member (mandible) usually one on the tip of the nose and the other on the chin (in the midline).



Importance of Vertical Dimension:

1. functional role (mastication and phonetic).
2. esthetic role.
3. physiological role (health of the tissue).
4. psychological role (individual personality)

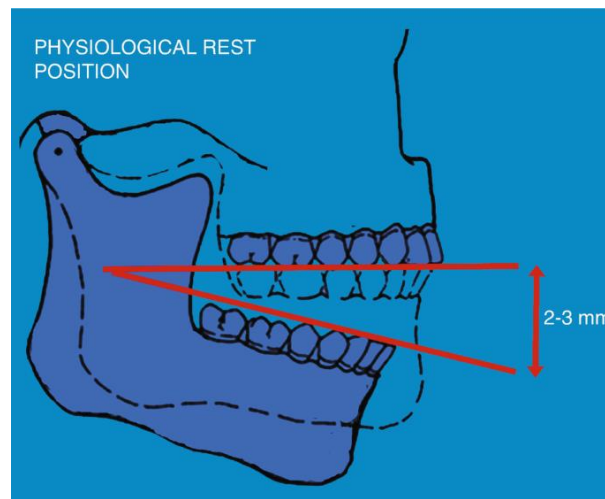
Classification of vertical dimension

a. Rest Vertical dimension (RVD): It is the distance measured between two selected points when the mandible is in the physiologic rest position.

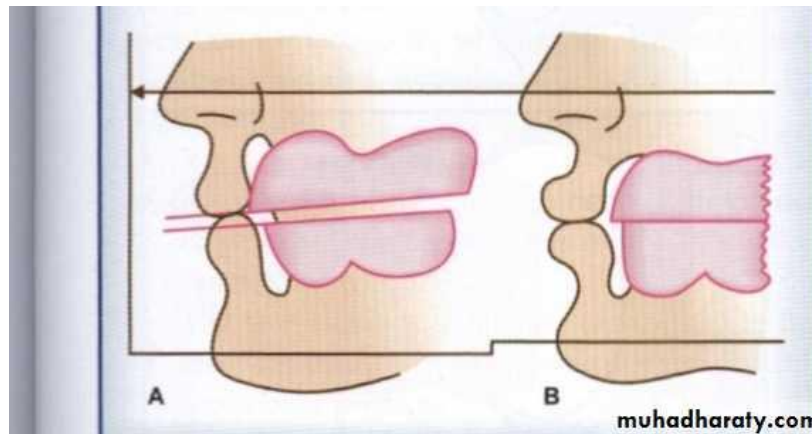
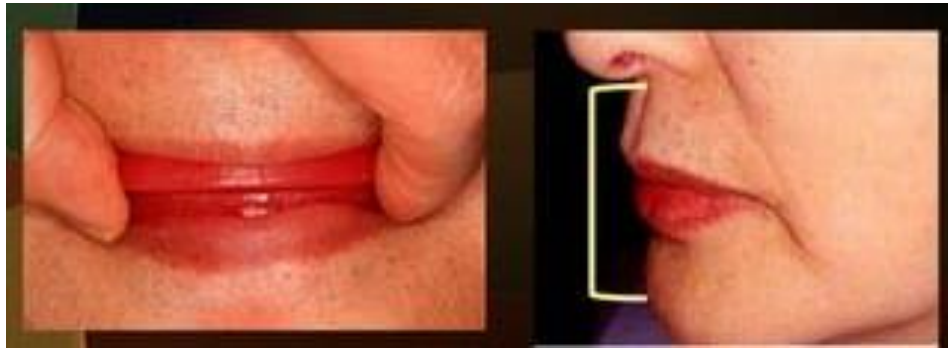
Physiological Rest Position: it is a postural position of the mandible when individual is resting in an upright position and associated muscles are in a state of minimal contraction activity.

It controlled by:

- o the muscles that open, close, protrude and retrude the mandible.
- o position of the head (upright position).

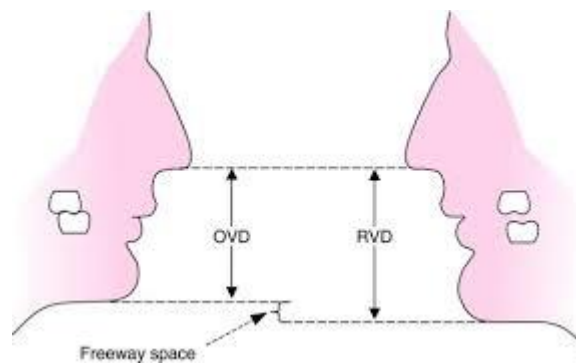


b. Occlusion Vertical dimension (OVD): It is the distance measured between two points when the occluding members (teeth or occlusal rims) are in contact.



Interocclusal rest space: the difference between the vertical dimension of rest and the vertical dimension while in occlusion.

$RVD - OVD = \text{Freeway space or the interocclusal rest space}$ (It ranges from 2-4 mm).



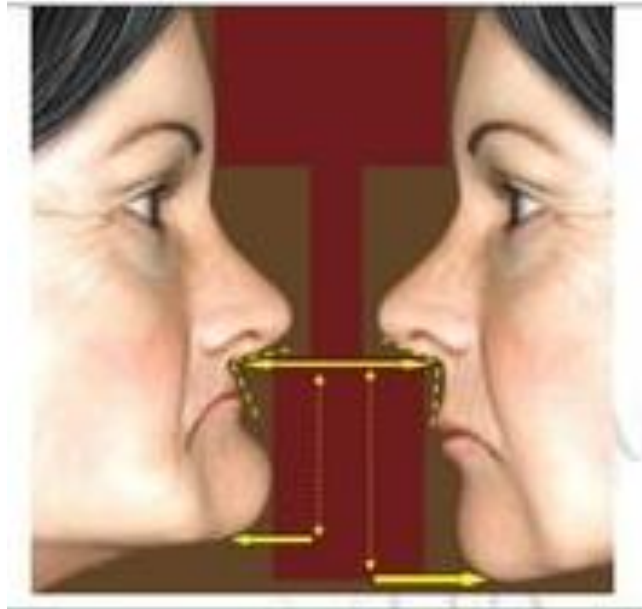
Consequences of Increased vertical dimension:

1. Discomfort
2. Trauma: caused by constant pressure on the mucous membrane.
3. Loss of freeway space
4. Clicking of teeth during speech & mastication.
5. Appearance: over opening may cause elongation of the face and at rest the lips are separated.



Consequences of Decreased vertical dimension:

1. Reduced action of muscles lead to loss of muscles tone, reduction of biting force and presence of wrinkles.
2. Cheek biting.
3. Dropping the corner of the mouth cause dribbling of saliva and angular cheilitis.
4. Poor esthetic (the chin closer to the nose).
5. T.M.J problem.
6. Decreased space of the oral cavity reduce the tongue space.



Horizontal jaw relation

It's the relationship of the mandible to the maxilla in a horizontal plane. Horizontal jaw relation can be of two types centric and eccentric jaw relations.

- **Centric relation:** it is the relationship of the mandible to the maxilla when the mandible is at its most posterior position.
- **Eccentric relation:** it is the relationship of the mandible to the maxilla when the mandible is at any position other than the centric relation position.

Eccentric jaw relation classified into:

1. Protrusive jaw relation.
2. Lateral jaw relation:
 - a) left lateral jaw relation
 - b) right lateral jaw relation

protrusive jaw relation: it's a relation when the mandible move in protrusive direction.



lateral jaw relation: it's the relation of the mandible to the maxilla when the lower jaw is in a position to either side (right or left).



Occlusion: It is any contact between the incisal or mastication surface of upper and lower teeth in static position.

Centric occlusion: it is the occlusion of opposing teeth when the mandible is in centric relation that provides the maximum intercuspation.



Difference between centric relation and centric occlusion

- **centric relation:** it is a bone to bone relationship.
- **centric occlusion:** It is a tooth to tooth relationship.

Difference between occlusion and articulation

- **Occlusion:** it is defined as static contact between the maxillary and mandibular teeth.
- **Articulation:** it is defined as dynamic contact between the occlusal surfaces of the teeth during function.

Importance of centric relation

1. the only position which a patient is able to repeat when loss all his teeth.
2. It is considered the starting point in any mandibular movement