Lec. 6  Record Base & Occlusion Rims

*Record bases:* Is a temporary form representing the base of a denture, it's used in recording maxilla-mandibular relations & in the arrangement of teeth.

*Requirements of record base:*

1- The record base must have rigidity.
2- The record base must have accuracy & stability.
3- The borders should be developed in the same manner as borders of finished denture.
4- All surfaces that contact lips, cheek & tongue should be smooth, round & polished.
5- The crest, labial &/or buccal slopes should be thin to provide space for tooth arrangement.

* The accuracy of maxillo-mandibular relation record is affected by:
  1) rigidity  2) stability 3) the movability of the record bases.

* The smoothness of the polished surfaces contributes to the comfort of the patient, the more comfortable & compatible the record bases are to the tissues, the more normal are the jaw movements.

*Materials used in construction of record bases:*

1- Shellac record base.
2- Self curing acrylic resin.
3- Hot curing acrylic resin.
4- Light curing acrylic resin.

*Occlusion Rims(record or bite rim):* The occlusal surfaces fabricated on a record bases to be used in recording jaw relation & for arranging teeth.

*(Wax) is used more frequently in the registrations and in the arrangement of teeth.

* The position of the lip & cheeks are important in the recording of maxillo-mandibular relation. The proper contouring of the occlusion
rims for lip & cheek support allows the muscles of facial expression to act in a normal manner.

* The borders of the record bases & the polished surfaces of the occlusion rims should be smooth & round, since smooth, round surfaces are conductive to patient comfort & relaxation.

The best **anatomic guides** to aid in determining the proper contouring of anterior section of upper & lower occlusion rims:-

1- The naso-labial sulcus.
2- The mento-labial sulcus.
3- The philtrum.
4- The commissure of the lips

![Diagram of facial features](image)

**Materials used in construction of occlusion rims :-**

1- Base plate wax, Bite blocks wax.
2- Modeling compound.

Wax is used more frequently. Since it is easier to manage in the registrations & in the arranging of the teeth.

**Uses of occlusion rims:**

1- In determining of jaw relation which include:
   a- Determination of the vertical dimension.
   b- Determination of the centric & eccentric jaw relation.
2- In selection of teeth :-
   a- The position of midline can be determine
   b- Canine line ( cuspid line):- are drawn at the corner of mouth on each side.
   c- Width of 6 ant. teeth is equal to distance between the 2 canine lines.
d- The width of post. Teeth is equal to distance between the canine line & end of wax rim post.
e- The high length of anterior teeth is determined by drawing high lip line when patient smiling, the whole of anterior incisor should be seen.
f- The low lip line is a line drawn on wax rim when lip is relax, in this case 2mm of anterior teeth should be seen.

3- Setting up of teeth.
4- Orientation of occlusal plane.
5- Determination of shape of arch.
6- Support of the facial musclator.

**Measurements of maxillary occlusion rims:**

1- The maxillary rim should have a slight labial inclination & the maxillary labial surface should be 7mm ant. to the line bisecting the incisive papillae.
2- The final wax rims should be 4mm wide ant. & gradually, become wider posterior to measure 7mm.
3- They should be directly over the crest of the residual ridges.
4- The occlusal height of maxillary rim should be 22 mm from the labial flange lateral to the labial frenum & 18 mm from the buccal flange to the tuberosity area.
**Measurement of mandibular occlusion rims:**

1- It should occupy the space over the crest of the residual ridge.
2- The occlusal height should be 18 mm from the flange lateral to the labial frenum & should be level with the acrylic base posteriorly.
3- The labio- lingual thickness should approximately 4mm anteriorly & also increase posteriorly to be 7mm in molars area.

All above points regards in the laboratory work, while in patient mouth we have other guides used in occlusion rims construction.

**Occlusal plane:-**

It's an imaginary surface which is related anatomically to the cranium & theoretically attached the incisal edges of the incisors & the tips of the occluding surfaces of posterior teeth.

The height of the occlusal plane should be 1-2 mm below the upper lip & this will be different from patient to other & affected by the age of the patient and type of the lip. Generally there are 1-2 mm showing from the incisors in the average dentulous patient but each case should
be considered separately in relation to the height of the lip, age of the patient and sex of the patient, e.g. for the patient that have long lip the height of the occlusal plane should be with the border of the upper lip, while for the patient with short lip there is more than 2 mm showing from upper lip. So each case should be considered separately for best appearance.

**Fox bite:**

An appliance used to check the parallism of the wax occlusal rim anteriorly and posteriorly.

The anterior part of the wax rim should be parallel to the the **inter-pupillary line** (this is an imaginary line running between the center of the 2 pupils of the eyes when the patient is looking straight forward).

The occlusal plane starting from the canine region backward should be parallel to the **Camper's line**, this is a line running from the ala nose to the superior border of the tragus of the ear (ala-tragus line).