

FINAL IMPRESSION

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Custom tray or special tray: It is an impression tray made on the diagnostic cast and is designed to make a more accurate and detailed impression.

It is fabricated for a specific impression procedure for the patient and is discarded after use.

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► Ideal Requirement

- It should be **well adapted** to the primary cast.
- It should be **dimensionally stable** on the cast and in the mouth. *(when its adapted on the cast BUT not adapted in the patient mouth. WHY)*
- The tissue surface should be **free of voids** or projections. *(unless otherwise)*
- It should be at least **2 mm thick in the palatal area and lingual flange** for ?????????.
- It should be **rigid even in thin sections**.



► Ideal Requirement

- It **should not bind** to the cast.
- It should be **easy to remove**.
- It **should not react** with the impression material. *(unless otherwise)*
- It should have a **contrasting color** to make its margins appear prominent when placed in the patient's mouth.
- It should have **2 mm relief near the sulcus** so that green stick compound can be used to do border molding



Advantages of special tray:

1- Used less amount of impression materials so that it's economy.

2- More accurate for final impression.

3- It's provide uniform thickness of impression material. *This minimize*

tissue displacement and dimensional

changes of impression material and

produce impression with correct

extension.



Advantages of special tray:

4- It is more accurately adapted to the oral vestibules, *this helps in better retention of denture.*

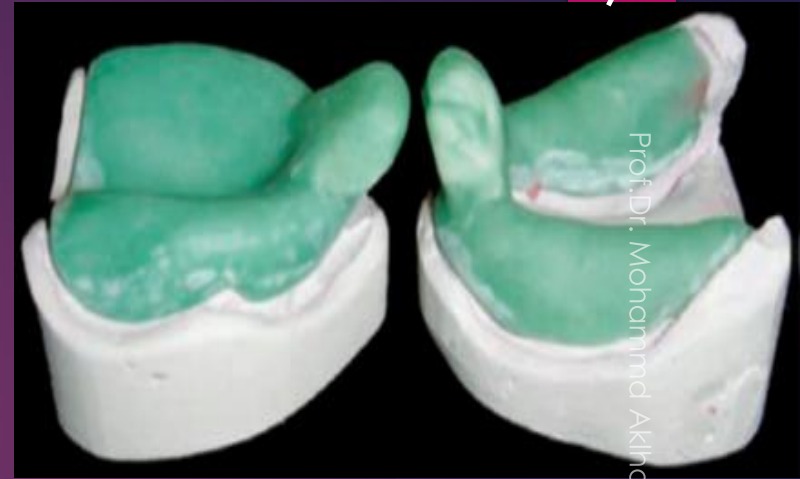
5- The work with special tray is easier and quicker than modifying stock tray to provide accurate impression.

6- It is less bulky than stock tray which is more comfortable for the patient.



Materials used for fabricating of special tray:

a- Cold cure acrylic resin (most common).



b- Visible light cured acrylic resin (VLC).



c- Shellac base plate.



d- Impression compound



e- Heat cure acrylic resin.



Types of special tray:

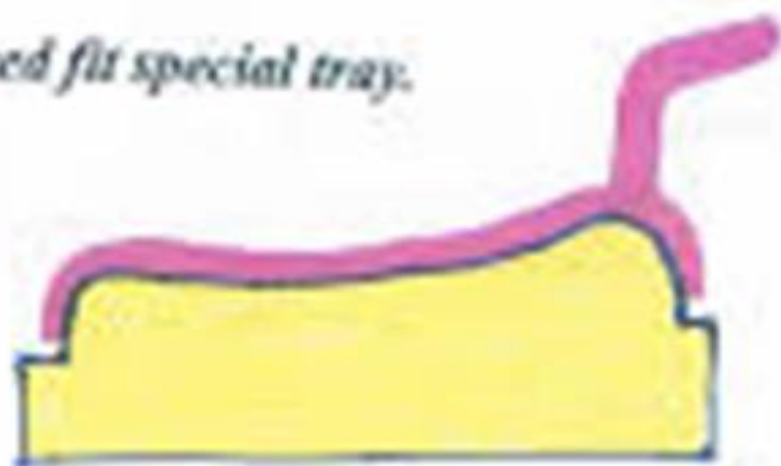
A- Spaced special tray (with stoppers or without stoppers).

B- Closed fitted special tray.



Figure (3-8): Spaced special tray. (A) With stopper. (B) Without stopper.

Figure (3-9): Closed fit special tray.



Techniques of construction of special trays:

1- Finger adapted dough method.



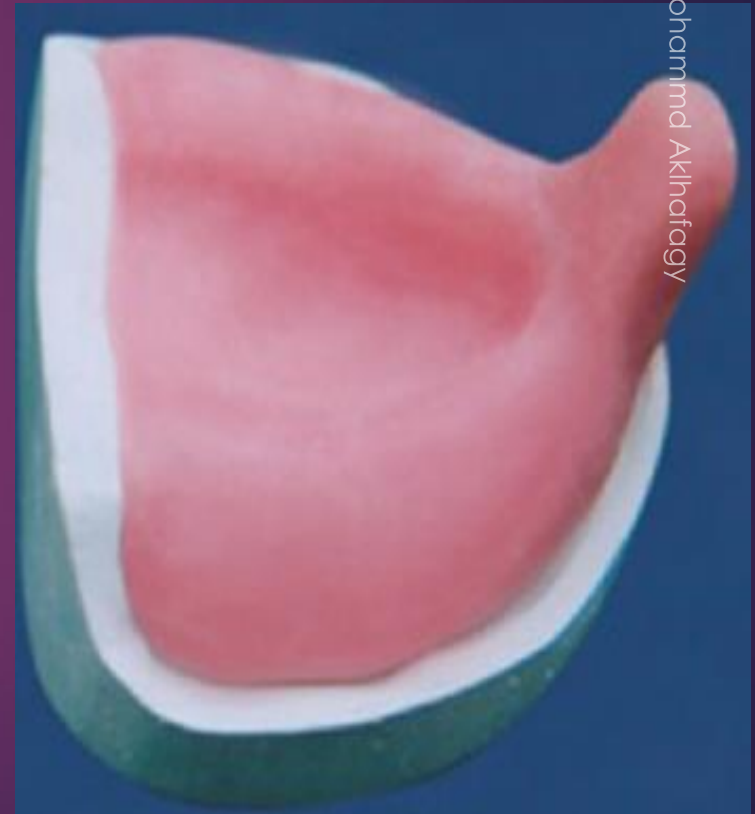
- Spaced special tray with stoppers

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-Spaced special tray without stoppers



- Close fit special



2-Sprinkle-on acrylic method.

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Critical points must be taken for constructing special tray:

- 1- The impression tray must not impinge upon movable structures. **Such as ??????**
- 2- The borders must be under extended (2mm).
- 3- The posterior limits of the impression tray should be slightly over extended to ensure inclusion of the posterior detail for development of the post-dam area in upper tray.



Critical points must be taken for constructing special tray:

4- The tray should be rigid and of sufficient thickness that it will not fracture during its use.

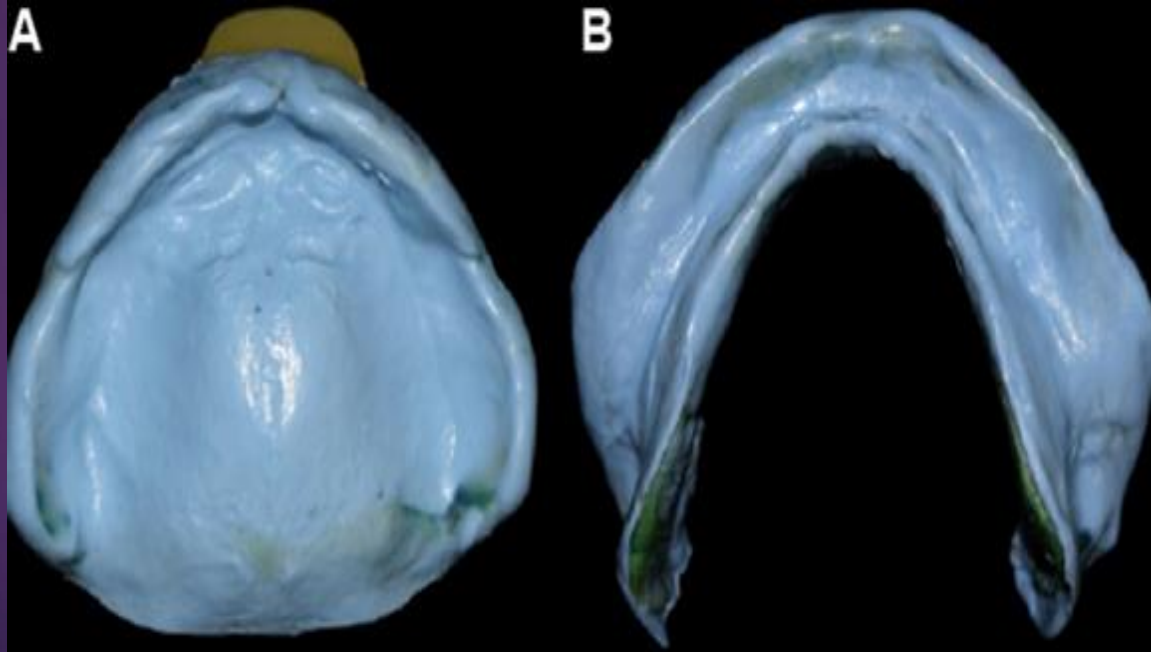
5- The tray must have a handle for manipulation and the handle must not interfere with functional movement of the oral structures.

6- The tray must be smooth on its exposed surfaces, and should have no sharp corner or edges which would injury the patient.



FINAL IMPRESSION

Final impression: is the negative registration of the entire denture foundation (including denture bearing and stabilizing areas) and border seal areas present in the edentulous mouth, which is used for making master cast.



For taking final impression we need correctly constructed special tray:

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1- Laboratory correction: at this stage it must be :

- a- The flange is 2mm away from the mucobuccal fold.
- b- Adequate room must be provided for the frenum.
- c- The border are smooth, rounded and well-polished.

2- Clinical correction: at this stage we need to check the following inside patient mouth:

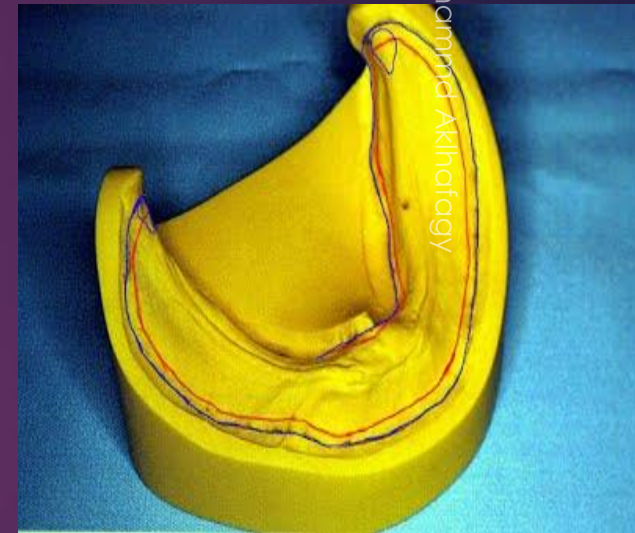
- a- The flange is 2mm away from the mucobuccal fold.
- b- Adequate room must be provided for the frenum.
- c- The border are smooth, rounded and well-polished.



2- Clinical correction: at this stage we need to check the following inside patient mouth:

d- Check over extension of the special tray.

e-For the mandibular special tray it must be no over extension of buccal flange in the buccinators muscle region; lingually it must be no overextension at the site of sublingual region, mylohyoid and retromylohyoid.



Border molding of the special tray: Tracing compound material used.

1- This can be done by segment start from the left or right side first with the labial flange then the buccal flange.

2- At the end of the border molding the special tray must be retentive and stable.



Thank you

Prosthodontics

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Record base and bite rim

Record Base/Temporary Base/Trial

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Base/Baseplate

It is a temporary form representing the base of a denture which is used for making maxillo-mandibular (jaw) relation records and for the arrangement of artificial teeth.

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Types of Record Bases:

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1- Temporary record bases: they are discarded and replaced by denture base material.

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2- Permanent record base: not discarded and become part of the actual base of the finished complete denture.

Temporary record bases:

1- Shellac base plate: its distortion during the application of heat in the process of correcting the occlusal rims during recording of jaw relation.

2- Self-cure or cold acrylic resin: It is the material of choice because of its easy manipulation and favorable dimensional stability.

3- Visible light cure acrylic resin.



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Permanent record base:

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1- Heat cure acrylic resin:

good dimensional stability
but the fabrication involves
an elaborate procedure.



2- Gold, chromium cobalt or chromium cobalt alloys.



Requirements of Completed Record Base:

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1. It should be rigid, accurate and stable.
2. The borders should be developed like borders of finished denture.
3. The surface that contacts lips, cheeks and tongue should be smooth and polished.

Requirements of Completed Record Base:

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4. The slopes of the base on labial and buccal sides and in the crest area should be thin for placement of teeth.

5. The non-anatomical surface should be smooth for the comfort of the patient during jaw relation-recording procedure.

The accuracy of maxillo-mandibular relation

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record is affected by:

- 1- Rigidity of record base.
- 2- Stability of record base.
- 3- The movability of the record bases.
- 4- The smoothness of the polished surfaces contributes to the comfort of the patient.
- 5- The more comfortable and compatible the record bases are to the tissues, the more normal are the jaw movements.

Occlusal Rim /Record Rim:

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Occluding surfaces built on the temporary or permanent denture bases for the purpose of making *maxillo-mandibular relation records and for arranging the teeth.*



Materials used in construction of occlusal

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rims:

a- Modeling compound.



Materials used in construction of occlusal rims:

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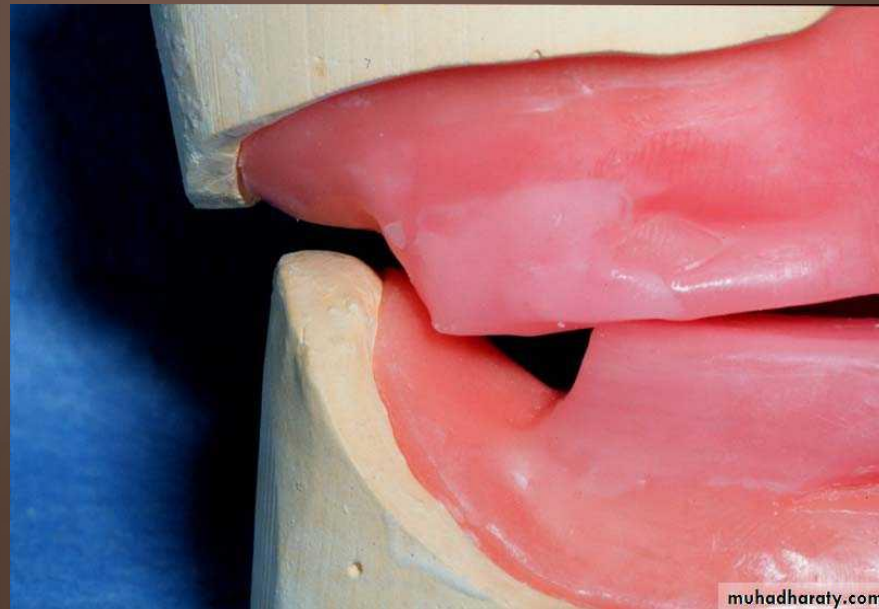
b- Wax:

1- Bite blocks wax (readymade occlusion rim)



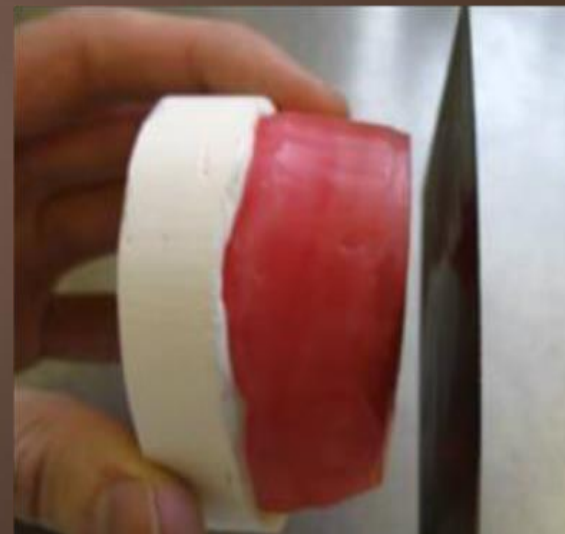
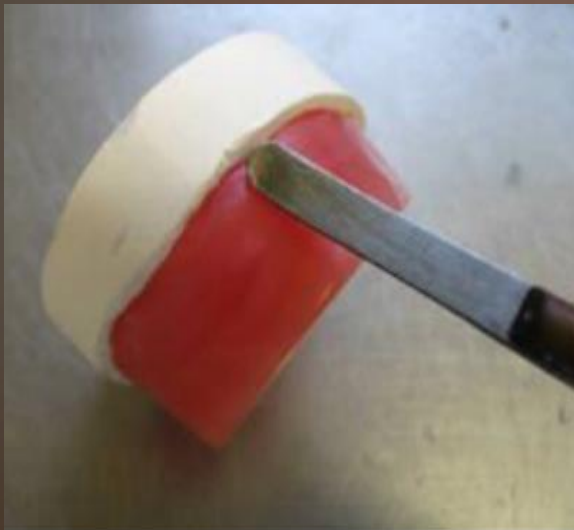
For the upper occlusion rim, the posterior section of the rim should be tapered to avoid contact with the retro-molar bad area

While for lower occlusion rim, the wax rim should be end with posterior 2/3 of retro-molar bad area.



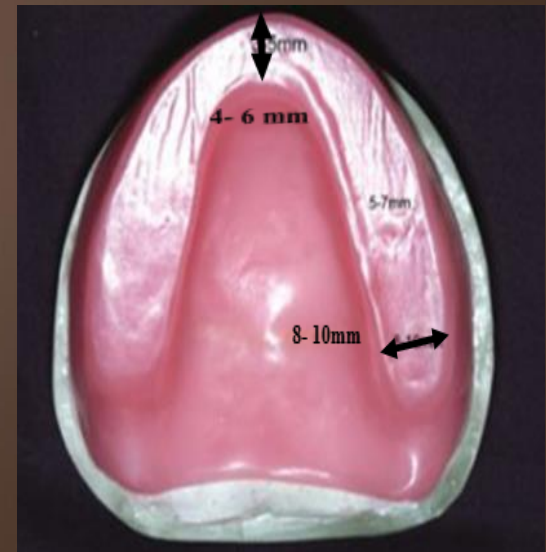
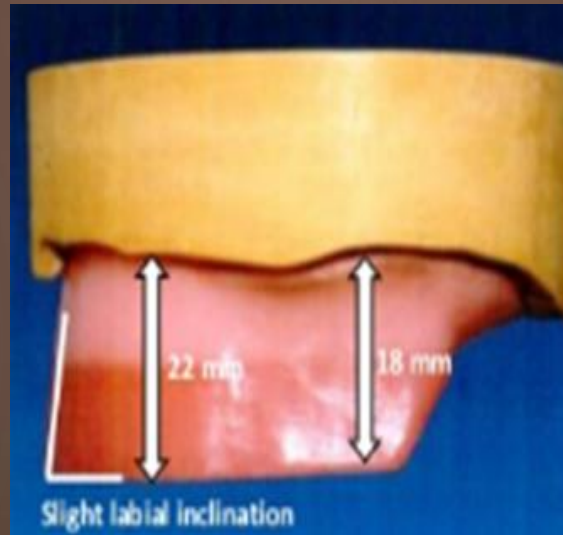
2- Paraffin wax or base plate wax sheets (handmade occlusion rim)

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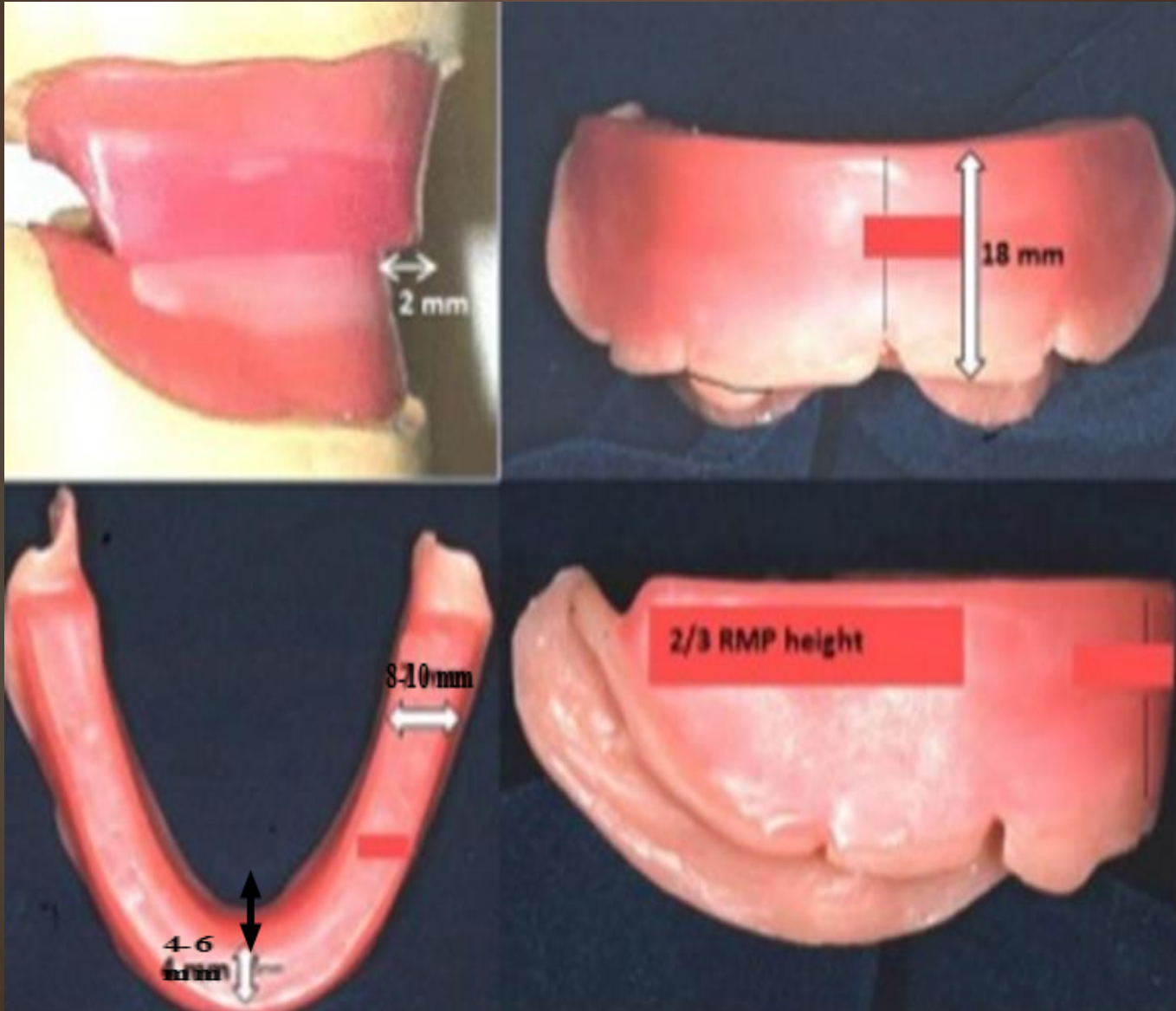
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The ideal dimension of maxillary occlusion rim



The ideal dimension of mandibular occlusion rim

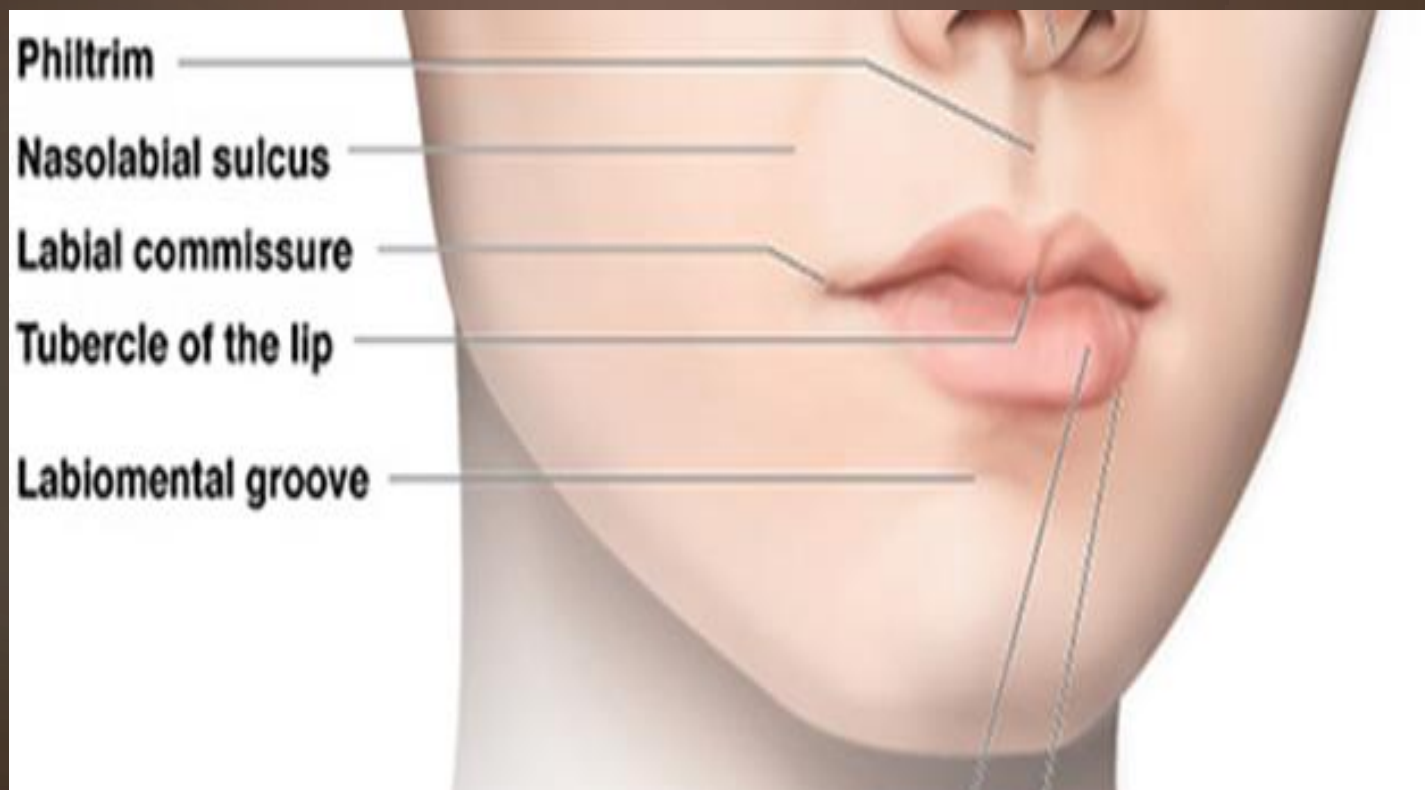
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***Rest for 10 min
only***

All previous points' deals with laboratory work;

In the *patient mouth*, there are other guides used in construction occlusal rims aid in determining the contour of anterior region of upper and lower occlusion rim:

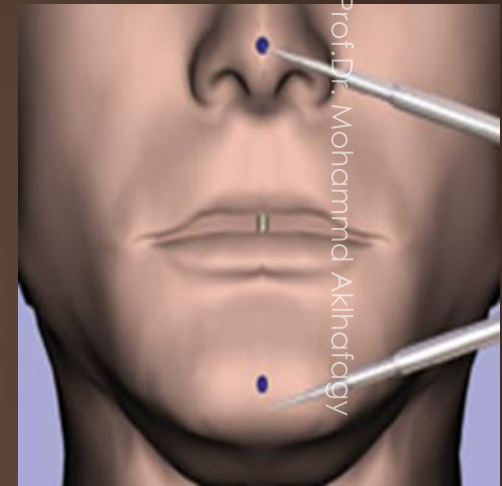


Uses of occlusion rims:

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a- In determining of jaw relation which include:

1- Determining of the vertical dimension.

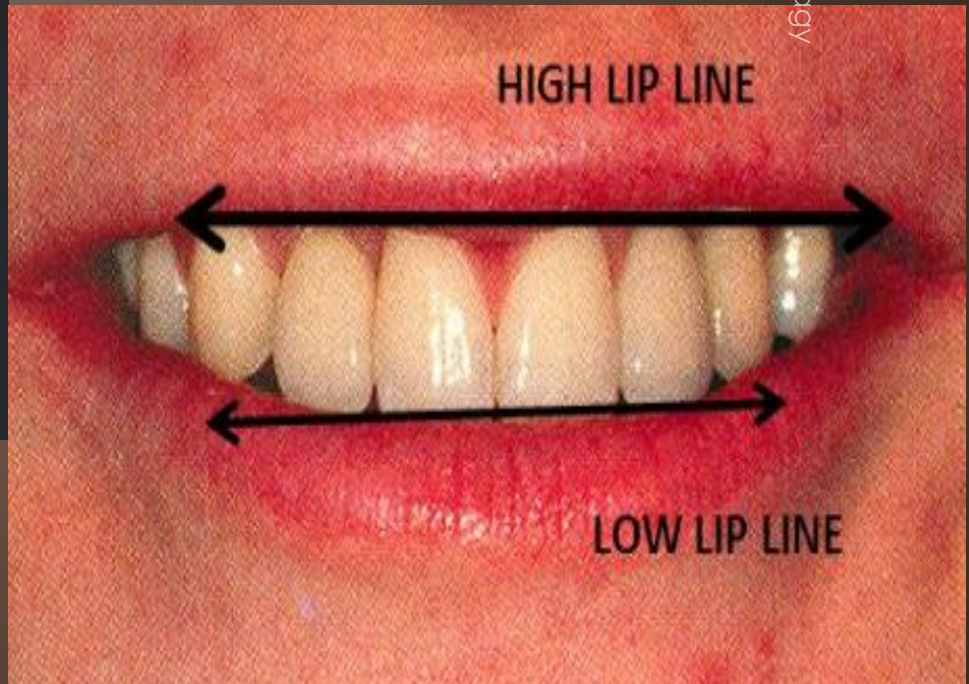
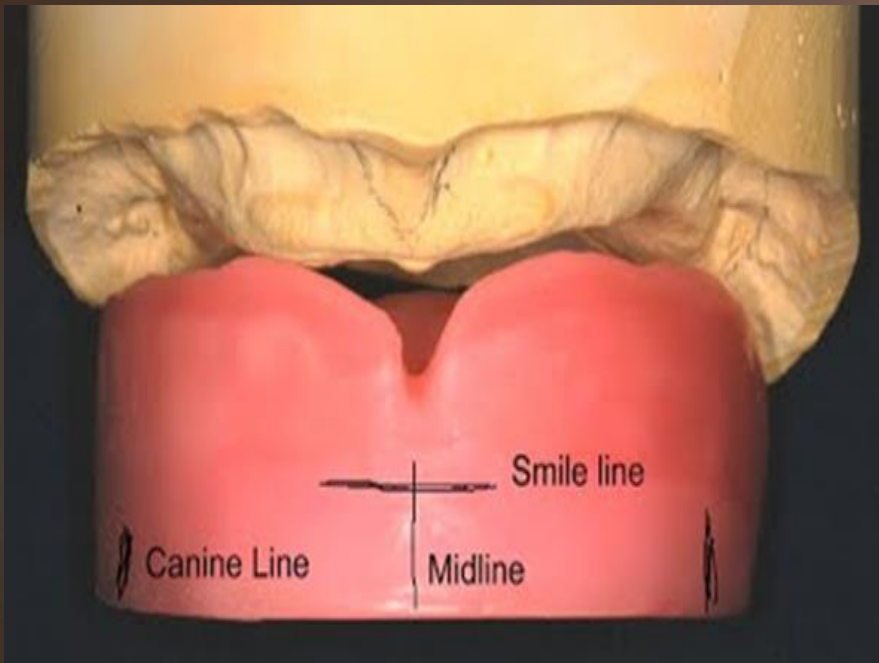


2- Determining of the centric and eccentric jaw relation.



Uses of occlusion rims:

b- In selecting of artificial teeth



Uses of occlusion rims:

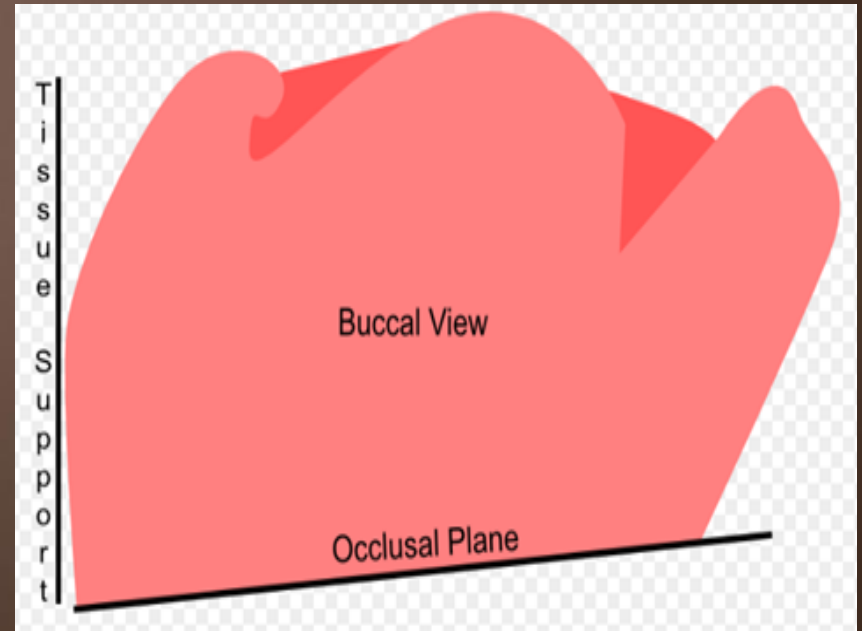
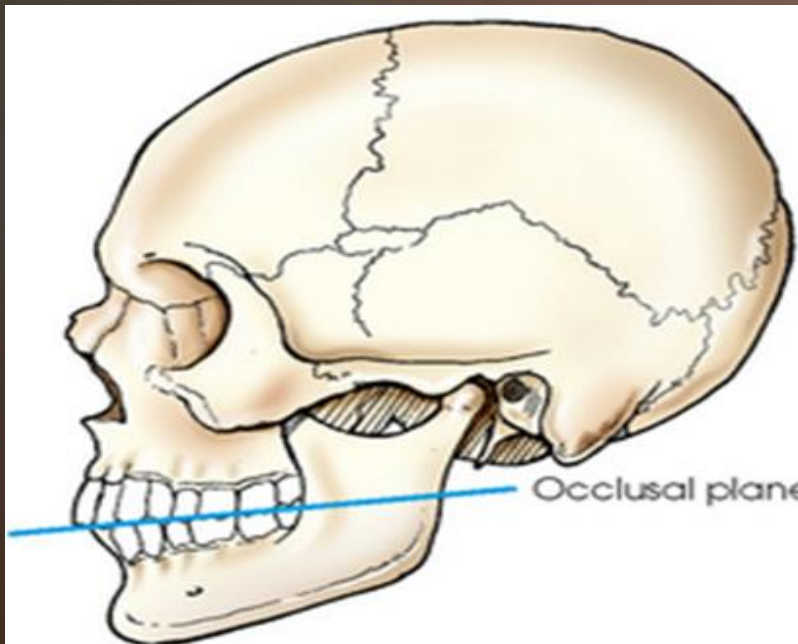
- c- Setting up of artificial teeth.
- d- Orientation of occlusal plane.
- e- Determination of shape of arch.
- f- Support of the facial musculature.

Occlusal plane

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

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The height of the occlusal plane: (the vertical length of maxillary occlusion rim anteriorly) should be 1-2 mm below the relaxed upper lip and this will be different from patient to other and **affected by the** age of the patient and type of the lip.

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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,



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 2mm showing from upper incisors.

So each case should be considered separately for best appearance.



Establishment of occlusion plane using Fox

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bite (Fox plane guide):

Fox plane: an appliance used to check the parallelism of the wax occlusal rim anteriorly and posteriorly.

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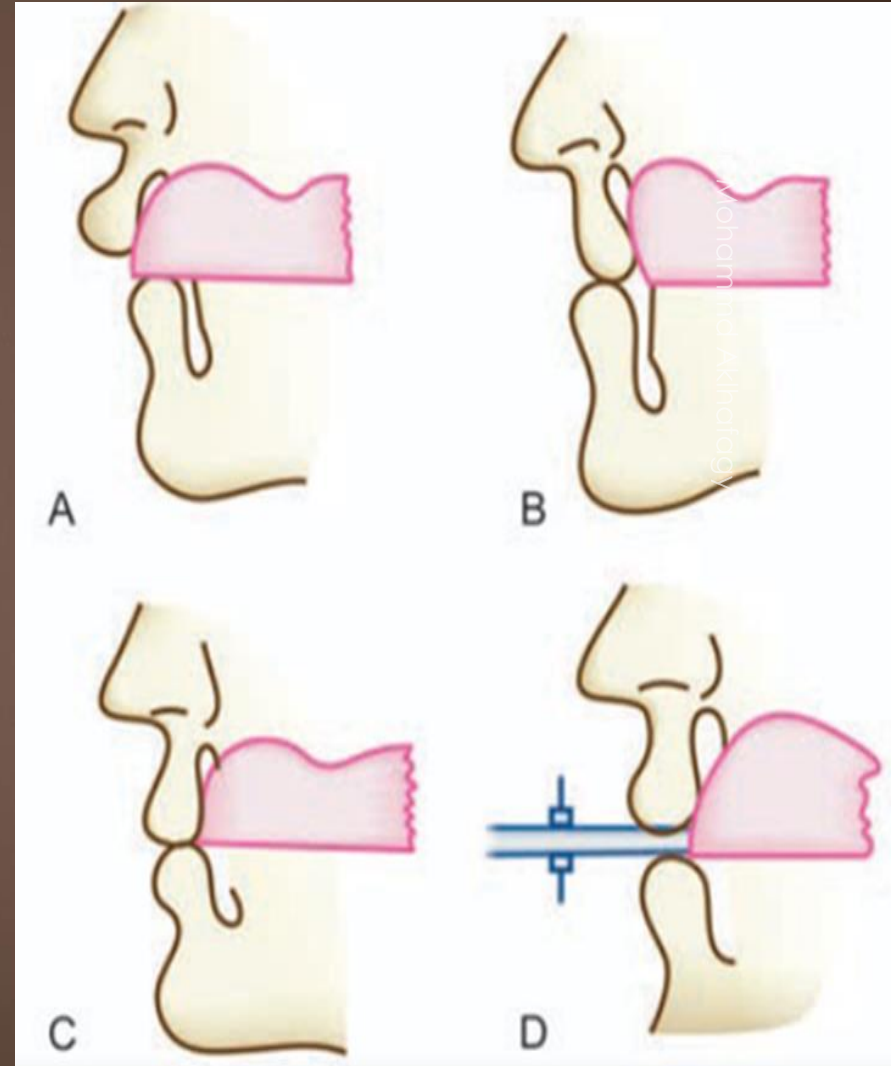
The facial surface of the maxillary occlusal rim is contoured to provide proper lip support.

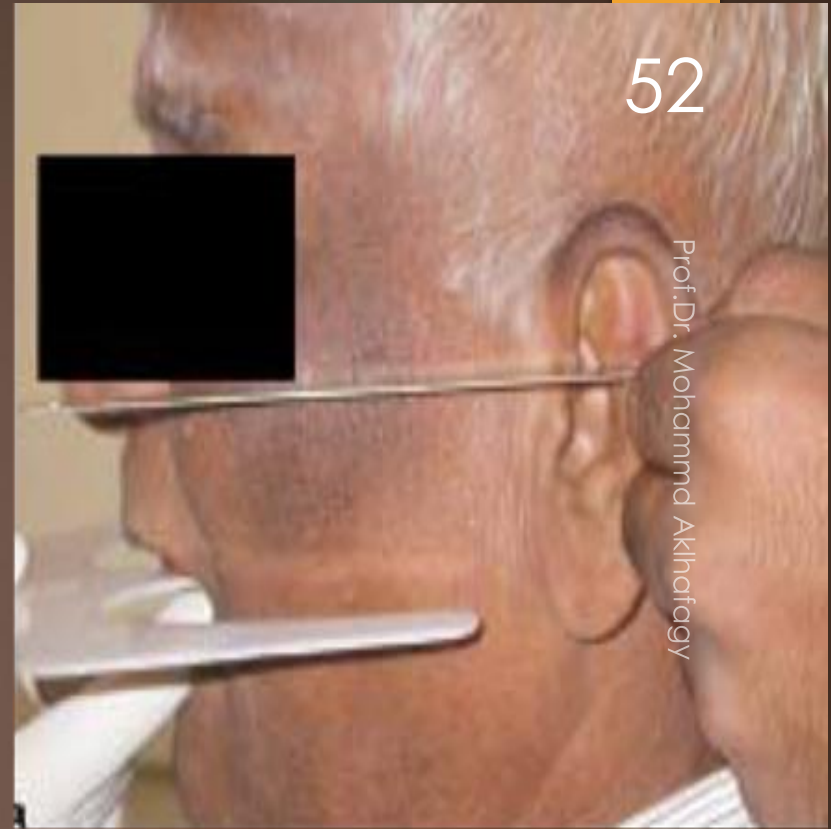
The rims should support the lips and normal amount of vermillion border should be visible.

The face should have a relaxed appearance.

Effects of labial bulk of upper occlusal rim on the position of upper lip

- (A) Increased lip support
- (B) Insufficient lip support
- (C) Correct lip support
- (D) Correct amount of wax of the upper occlusal rim visible below the upper lip

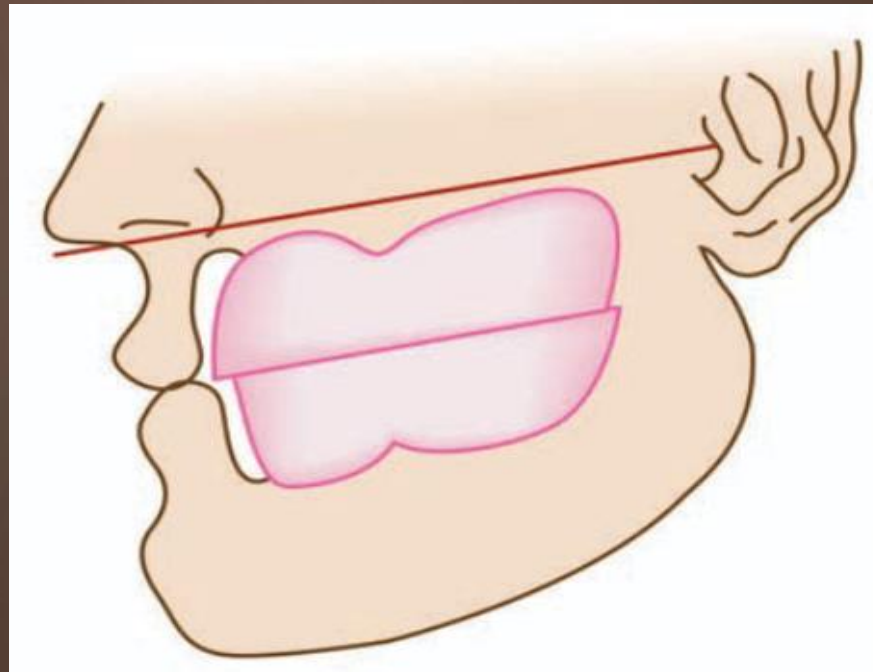




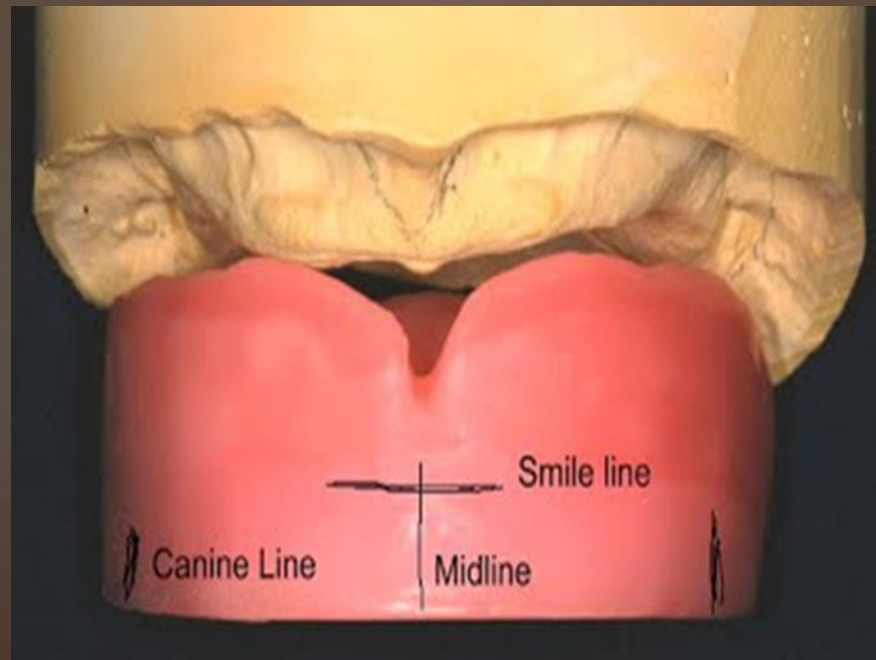
Adjustment of occlusal plane using Fox—plane

- (A) Anterior plane made parallel to the interpupillary line
- (B) Posterior plane made parallel to the ala-tragal line.

C- The mandibular anterior teeth and the anterior 2/3 of the retro molar pads posteriorly will ultimately determine the location of the occlusal plane.



D- After the anticipated location of the incisal edge of maxillary anterior teeth, the mid line, high lip line and the canine lines are marked.



Thank you