

Prosthodontics

Lec. 12

د. غسان الطائي

SELECTION OF POSTERIOR TEETH

Posterior teeth are selected for color, bucco-lingual width, mesio-distal length, vertical height (occlusogingival length) and occlusal form.

- 1. Color (shade):-** Posterior teeth should be harmonize to the shade of anterior teeth, maxillary first premolars are sometimes used for esthetic more than function, so it's advisable to select premolar teeth with lighter color than other posterior teeth. Generally the shade of posterior teeth are slightly darker than anterior teeth.
- 2. Bucco-lingual width:-** The bucco-lingual width of posterior teeth should be narrower than natural teeth to decrease occlusal surface which direct less stress to the supporting tissue, and also enhance the development of the correct form of polished surfaces of the denture.
- 3. Mesio-distal length:-** The mesio-distal length of upper posterior teeth should be equal to distance between canine line and anterior border of maxillary tuberosity (**Figure 1**). For lower teeth equal to distance between canine line and

anterior border of retromolar pad area. If the residual ridge anterior to retromolar pad area slopes upward, smaller teeth or even fewer in number must be used. Placing a tooth on an inclined plane should be avoided, otherwise dislodgment of denture occur.

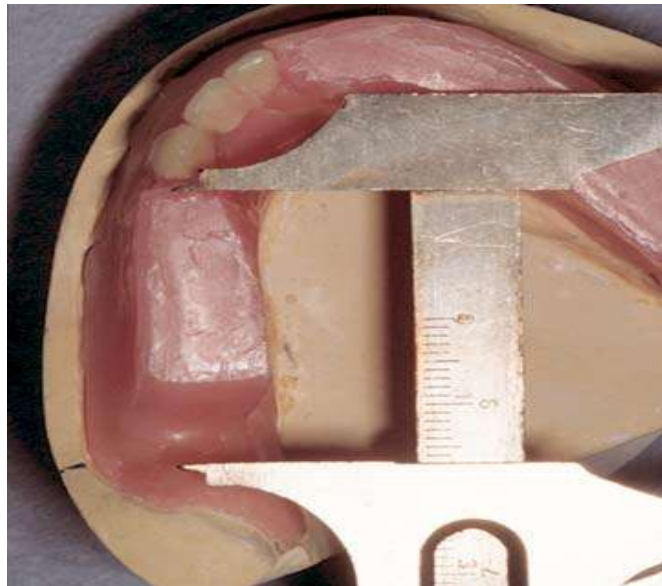


Figure 1: The mesio-distal length of upper posterior teeth.

4. Vertical height (occlusogingival length):-

The occlusogingival height or length is controlled by the available inter-arch distance.

The length of the maxillary first premolar should be comparable to that of maxillary canine to have the proper esthetic effect. The height of posterior teeth usually divided into long, short, medium. Long posterior teeth are generally more esthetic in appearance than are shorter teeth.

5. Occlusal form:-

There are two forms:

- a) Cusp form (anatomical) teeth:- Anatomical teeth have cusp angles 33, 20, 5 degrees.
- b) Non cusp or (cusplless) form teeth: Also called monoplane or zero degree teeth (**Figure 2**).



Figure 2: Different occlusal forms of artificial teeth based on cusp angles.

***Advantages of *cusp form* teeth:-**

- 1- More efficient.
- 2- Can be arranged in balanced occlusion in eccentric position.
- 3- The cusp-fossa relation provide definite return to centric occlusion.
- 4- Esthetically more acceptable.
- 5- More compatible with surrounding environment.

***Advantages of *non-cusp form* teeth**

- 1- Offer less resistance to non-masticatory movement like bruxism, therefore less damaging to supporting tissue.
- 2- More comfortable.
- 3- Offer less resistance to lateral forces, therefore they are indicated in excessively resorped ridges.
- 4- Allow greater range for movement which is necessary in patient with mal-related jaw.
- 5- Can be used with less in damaging effect than cusp form teeth in patients with uncoordinated neuromuscular control in which jaw relation records are not repeatable.

*** Materials of anterior teeth:**

There are two main types: Porcelain, Acrylic teeth.

Porcelain teeth:- we have vacuum fired and air fired. The vacuum is better because they are harder and have luster. Generally porcelain teeth preferred for young person because they look more vital, very smooth and difficult to abrade.

Acrylic teeth:- They are made from acrylic resin, indicated when there is insufficient inter-occlusal distance, also in situation where there is opposing natural teeth, partial denture and gold bridge. They can not maintain luster for long time and abraded easily.

*** Comparison between acrylic and porcelain teeth:**

No.	Acrylic teeth	Porcelain teeth
1	Not brittle, but poor abrasion resistance.	Brittle, more resistance to abrasion.
2	Esthetic very good.	Excellent (does not stain).
3	Chemical bonding with denture base.	Mechanical bonding by pins or undercuts holes.
4	Easily ground and polish.	Difficult to grind and polish.
5	Transmit less forces to the mucosa.	More forces to the mucosa.
6	No clicking on contact.	Clicking on contact.
7	Thermal expansion same as acrylic denture base.	Much lower than acrylic denture base.