

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

IN THE NAME OF ALLAH THE MOST
GRACIOUS THE MOST MERCIFUL



Niagra Falls

Geometric Concept of **Crowns Outline**

DR Magdy Alabasiry
Ass. Pro. Of Oral Biology

- **Each tooth type has a specific form.**
- **This tooth form is related to :**
 - 1. The masticatory function of the tooth.**
 - 2. Its role in speech and aesthetics.**

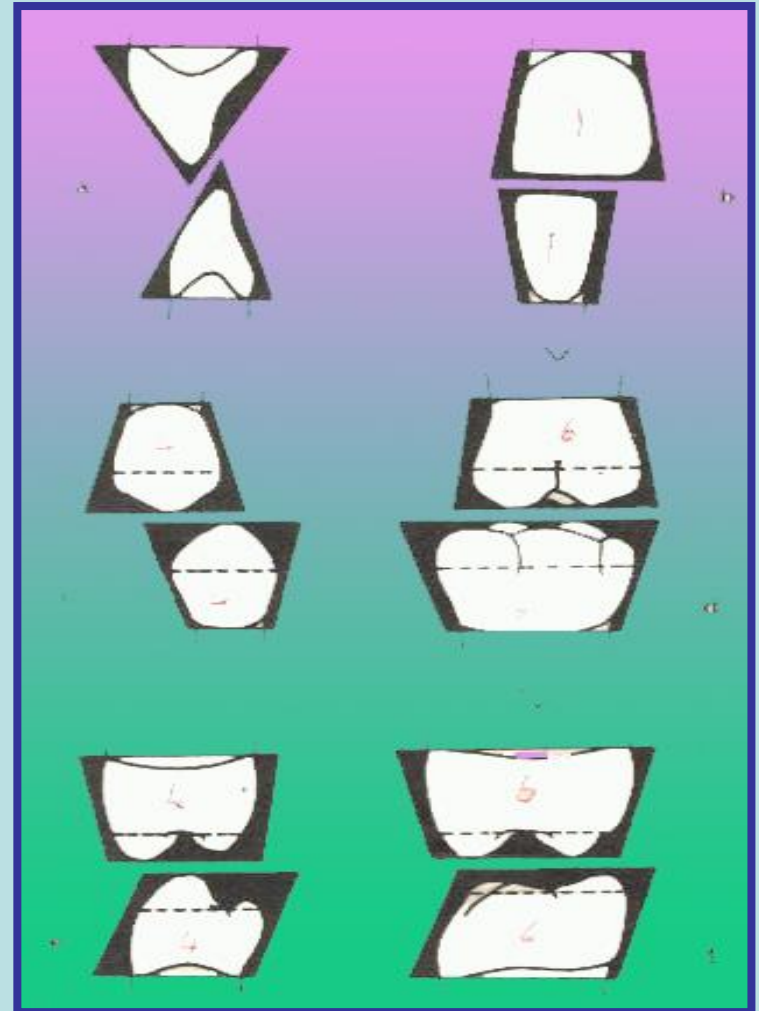
- **The form and function are similar for both the primary and permanent dentition.**

Geometric Concept of Crowns

Outline

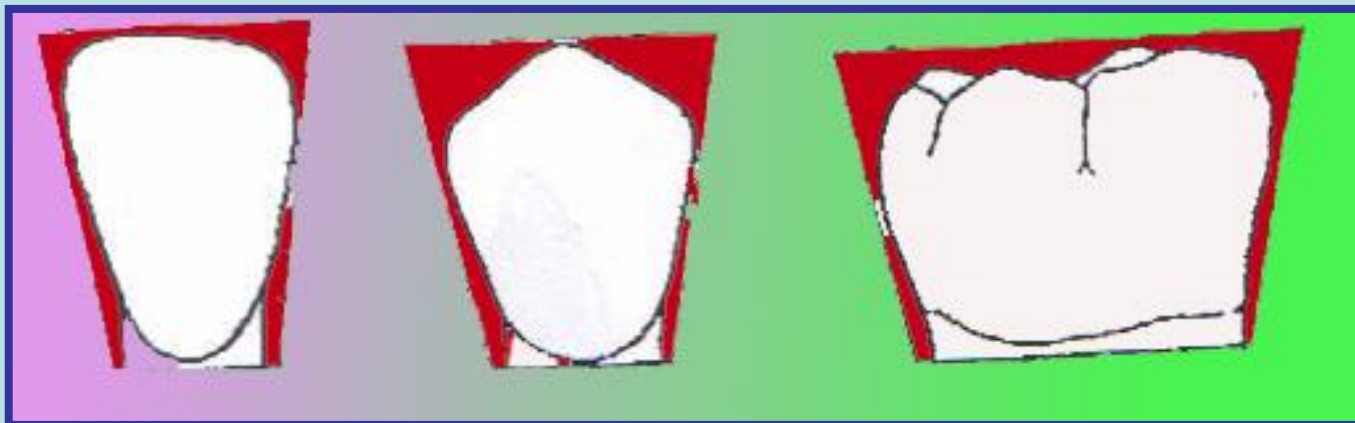
In general, all aspects of tooth crown, except incisal or occlusal, may be described as one of three geometric figures of different dimensions.

These figures are:
triangle, trapezoid,
and rhomboid



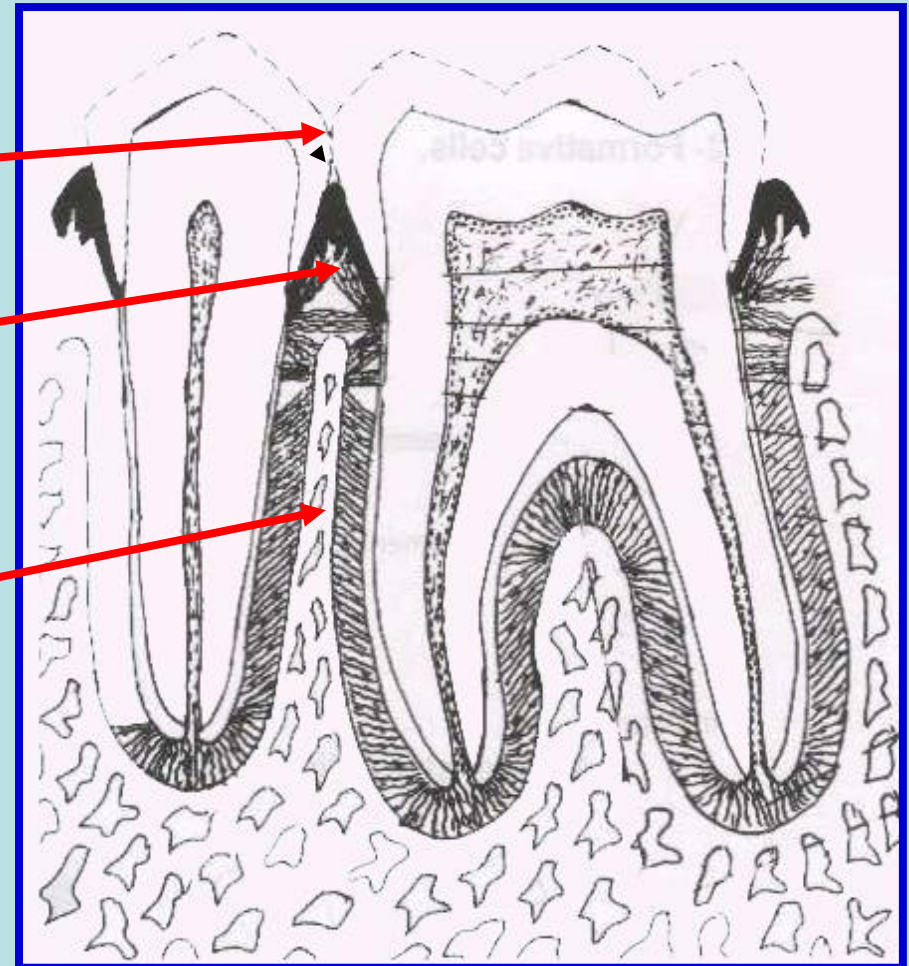
Facial and Lingual Crown Outline of All Teeth

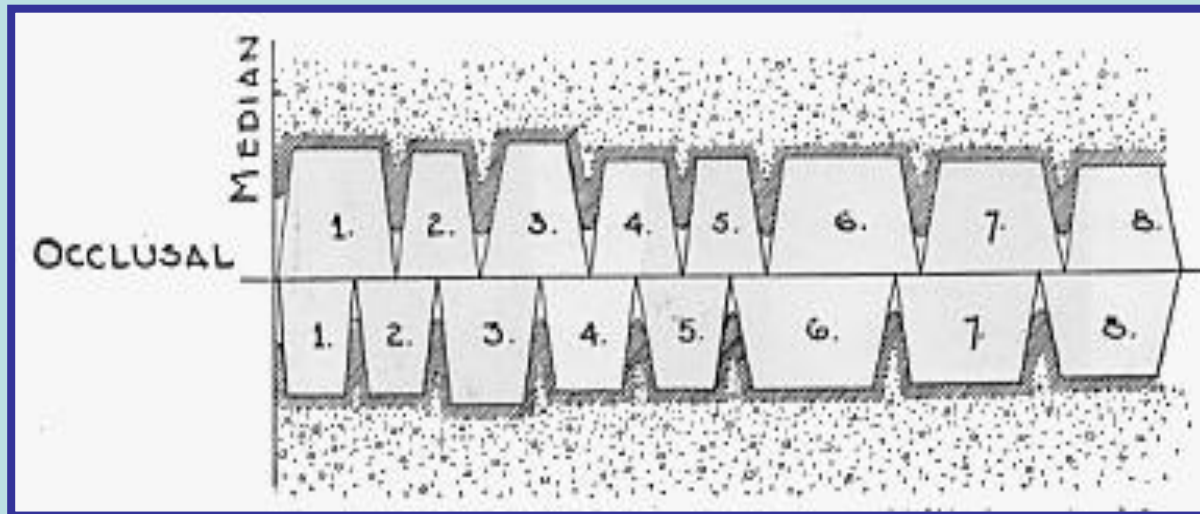
- May be represented by **trapezoids** of various dimensions
- The **shortest** of the uneven sides is toward the tooth **cervix**,
- The **longest** of the uneven sides is toward the **occlusal or incisal aspect**



Significances of the Trapezoid Outline Form of the Crown In Protecting the Periodontium

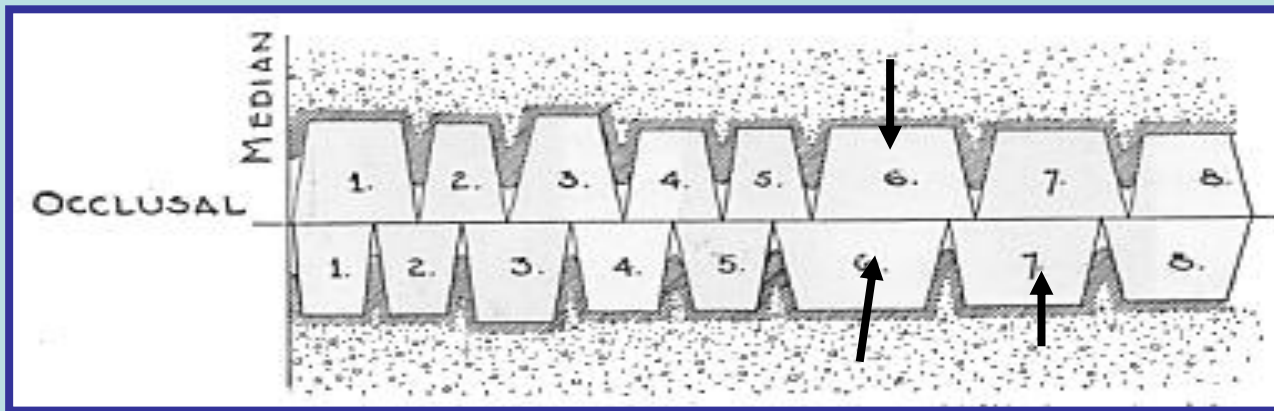
- 1. Provide contact** between the teeth at certain areas
- 2. Provide interproximal spaces**(contain gingival tissue)
- 3. Provide spacing** between the roots of neighboring teeth(allow sufficient supporting alveolar bone and vascular supply)



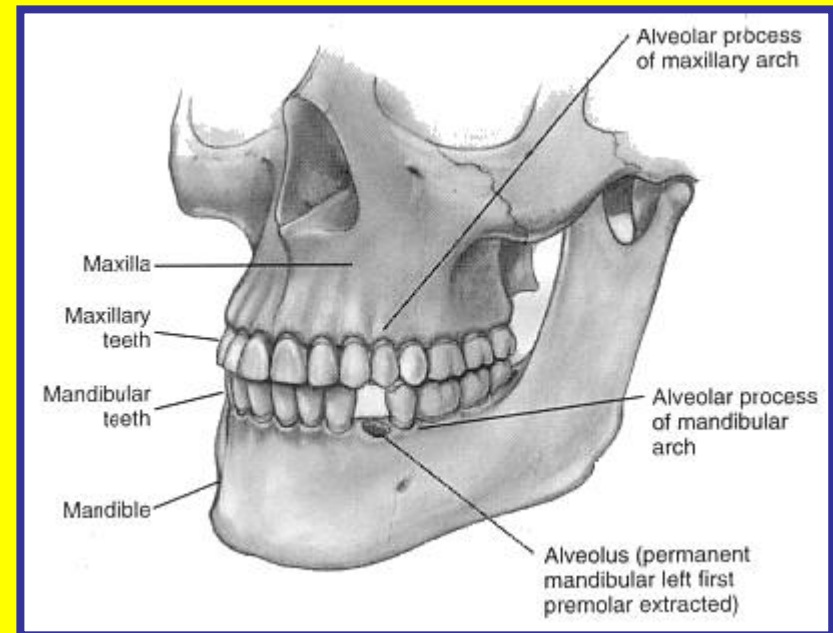


4. The outline of the crowns in **trapezoid form**, allows for **off set relation of opposing teeth** . That is, each tooth in either dental arch occludes with two adjacent teeth in the opposing arch **except the lower central incisor and the upper third molar**.

5. This arrangement **distributes and reduces** the forces exerted on the teeth and those transmitted to the periodontium

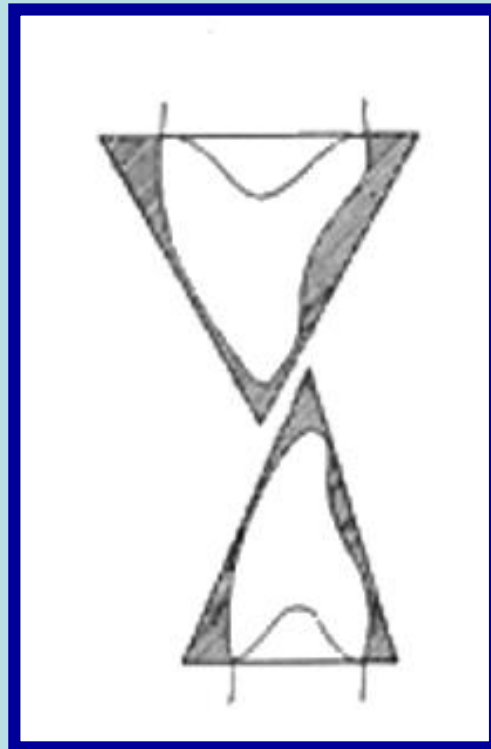


6. If a tooth is missed this arrangement prevents elongation of antagonists and helps to stabilize the remaining teeth for a longer period than if the tooth has a single antagonist.



Proximal Crown Outline of Anterior Teeth

- The schematic outline of the crown from the proximal aspect can be **triangular** in form. The **base** of this triangle is toward the **cervix**, while its **apex** is toward the **incisal ridge**



Greater labiolingual measurement cervically at the base of the triangle than at its apex

****Increases** the teeth strength

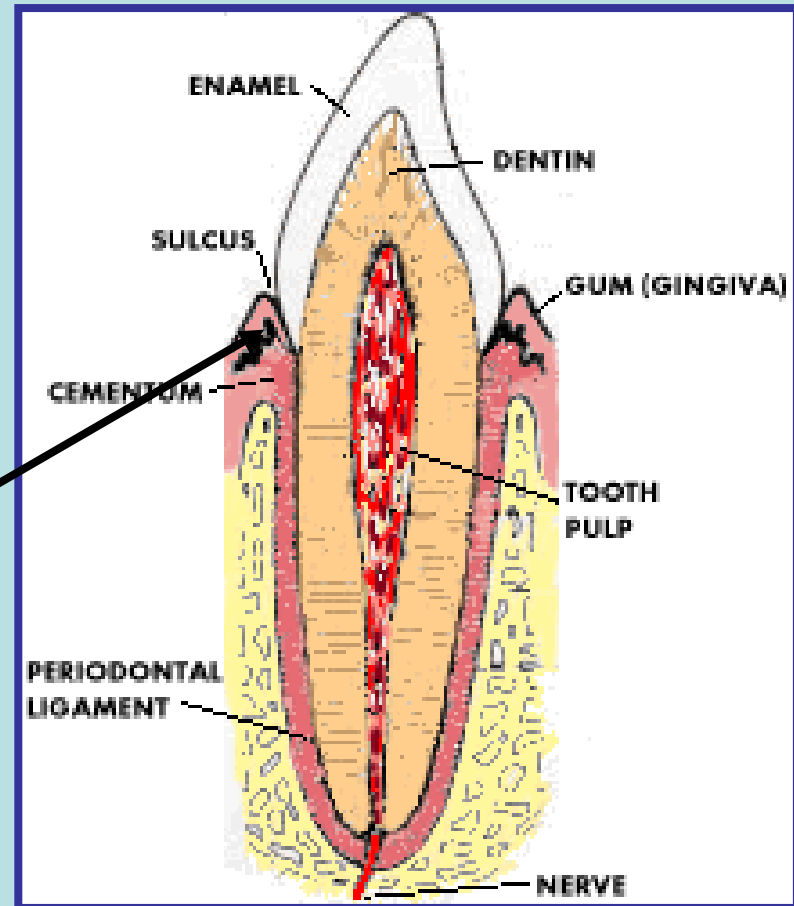
****Increases** the stability of teeth in the jaw

****Increases** the efficient resistance against masticatory forces

***** This is important for the reduction of forces transmitted to the investing periodontium**

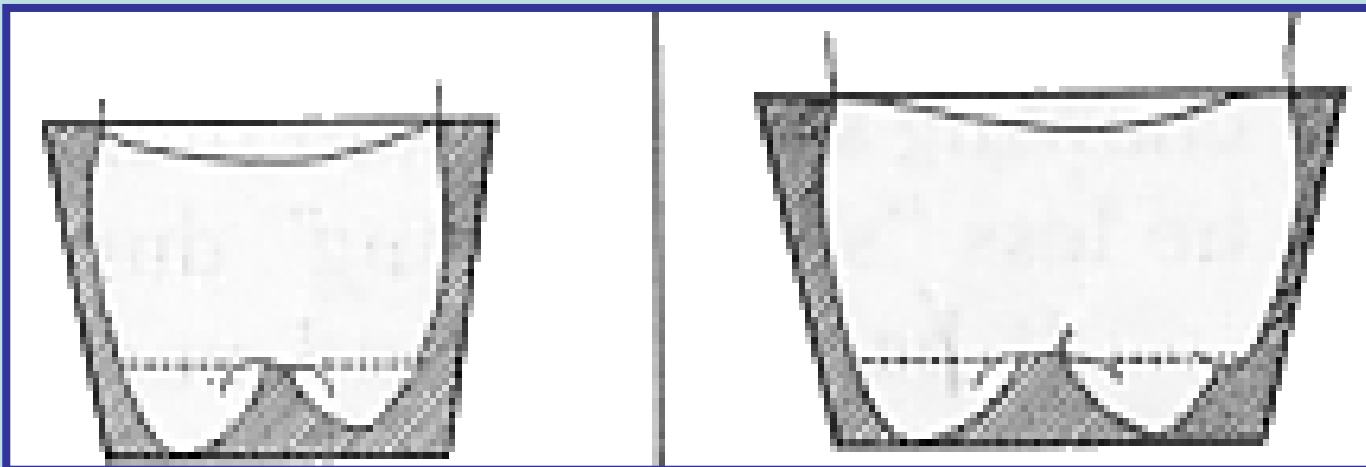
Progressive incisal constriction

- **Facilitates penetration and incising food** without elaborating excessive trauma to the **marginal gingiva** as food slides over the cervical tooth surface

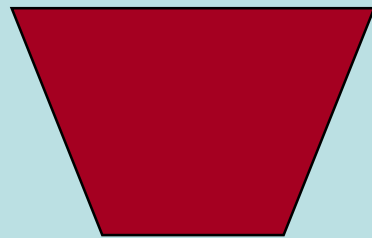
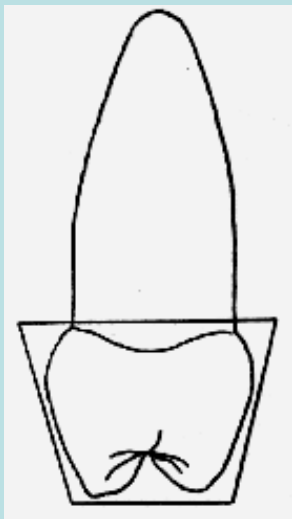


Proximal Crown Outline of Maxillary Posterior Teeth

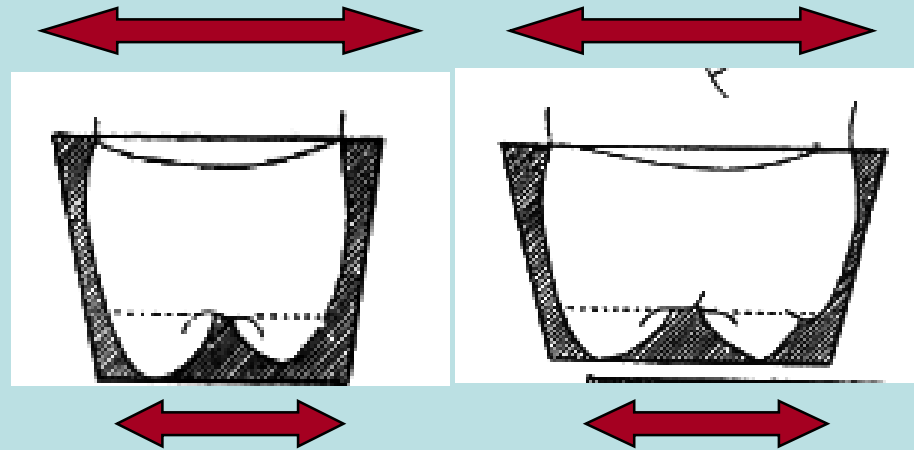
- They are **trapezoidal** in outline.
- The **largest** of the uneven sides is toward the tooth **cervix**
- while the **shortest** of the uneven sides is toward the **occlusal surface**.



Mesial & Distal Aspects of Maxillary Posterior Teeth



trapezoid



Wide base
cervically



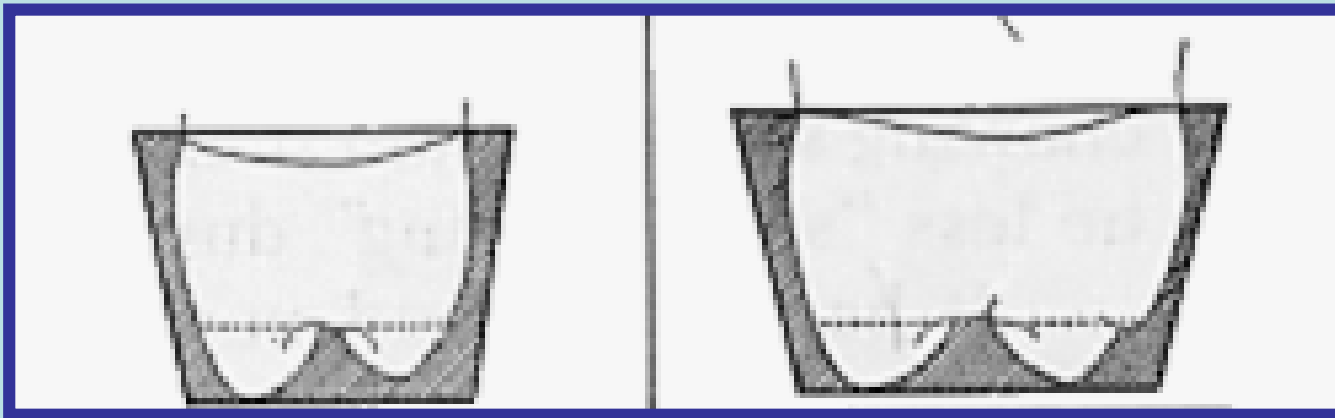
Reduce forces
on root

Constricted
occlusally



Easily forced
into food

Helps self cleansing of the teeth



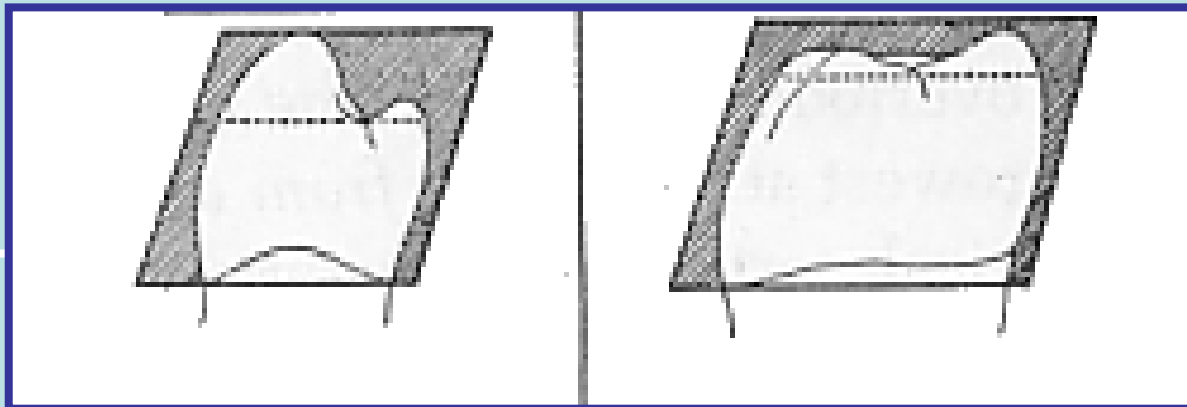
- **This form** allows the tooth to be **self-cleansing** by allowing sliding of the food material along the inclined planes of facial and lingual crown surfaces

The narrow occlusal surface

- *Facilitates the initial penetration of food material
- *Reduces the masticatory forces when transmitted to wide cervical base

Proximal Crown Outline of Mandibular Posterior Teeth

- Are **rhomboidal** in outline.
- ** Due to **lingual inclination** of the long axis of the crown to the axis of the root of mandibular posterior teeth ,the acute angles of the rhomboid forms is pointed out to the **occlusolingual** and **buccocervical** line angles

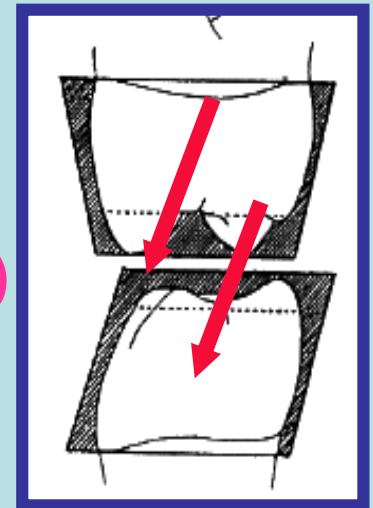
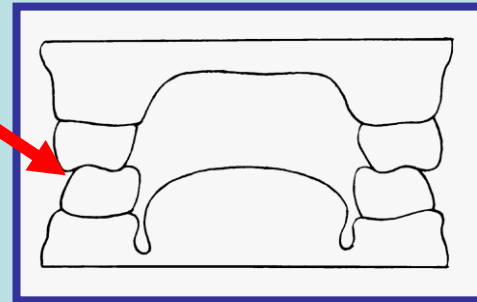


Significance of the Rhomboid Outline Form of the Crown In Protecting the Periodontium

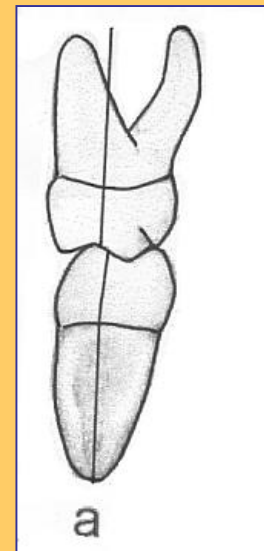
are:

- Allows for establishment of the **intercusp relation** between the opposing teeth when they are brought in to centric occlusal relation
- This arrangement **prevents traumatic occlusion** and its periodontium degenerative sequelae.

(Prevent clashing of cusps during function)



- ***To** keep the axis of roots of the mandibular and maxillary teeth parallel. If the mandibular crowns and roots have the same relation as the maxillary ones, the **cusps would hit and clash** during function and would not be in proper intercusp relation.
- * **Permits the** prominence of the cervical ridge. This physiologic form permits **protection of gingival contour.**



***The individual tooth form can be lost as a result of caries, attrition, or trauma.**



Change in form can affect **mastication**, especially in older patients who may change to a soft but poor diet.

Functional tooth form that has been lost can be approximated by restorative treatment in many cases.
Restorations, crowns, bridges, partial or complete dentures or implants may be used



THANK YOU



ANY QUESTION ?

