MALOCCLUSION OF TEETH ,DENTAL ARCHES AND BASAL BONES

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MALOCCLUSION OF TEETH

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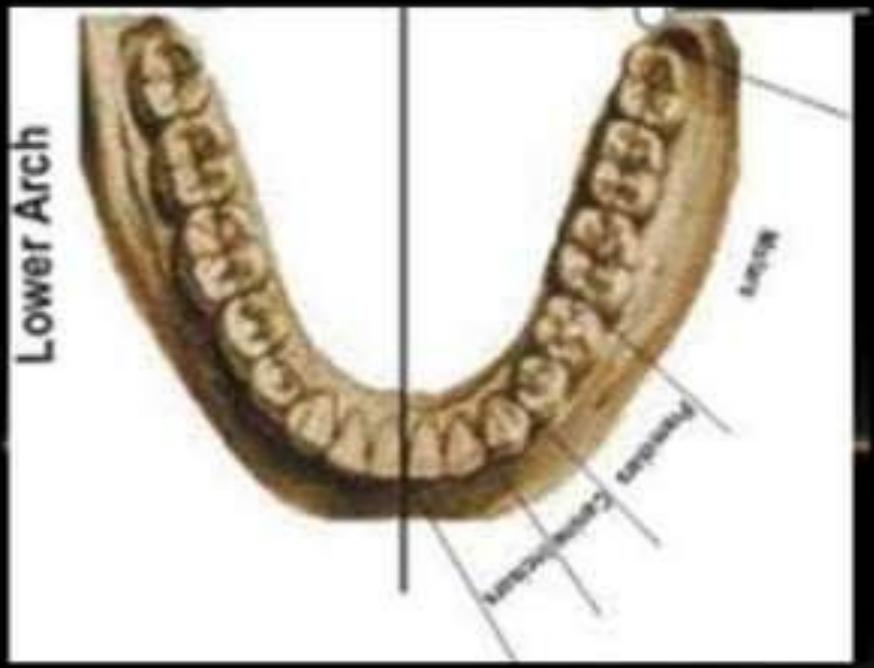
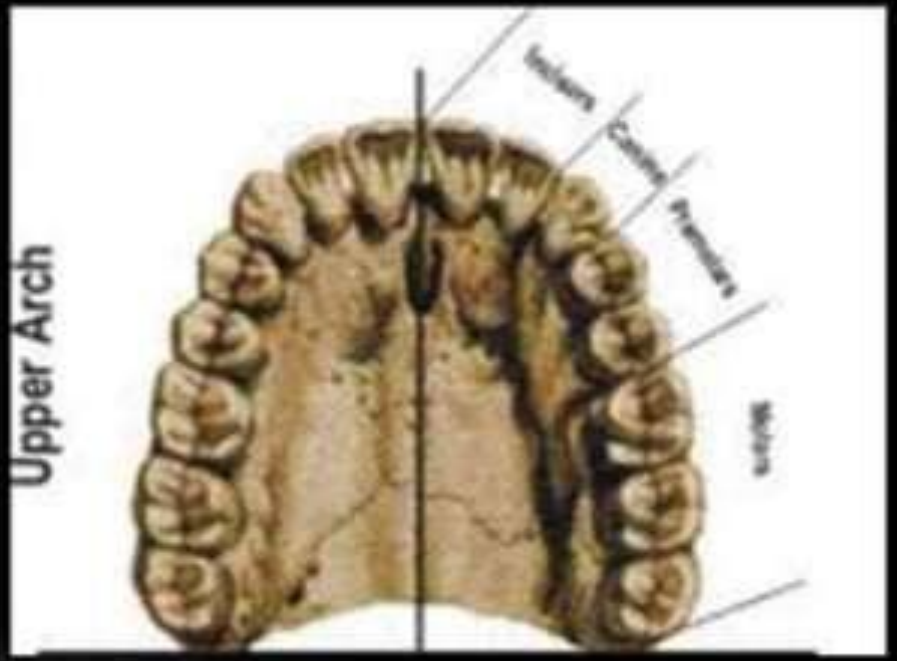
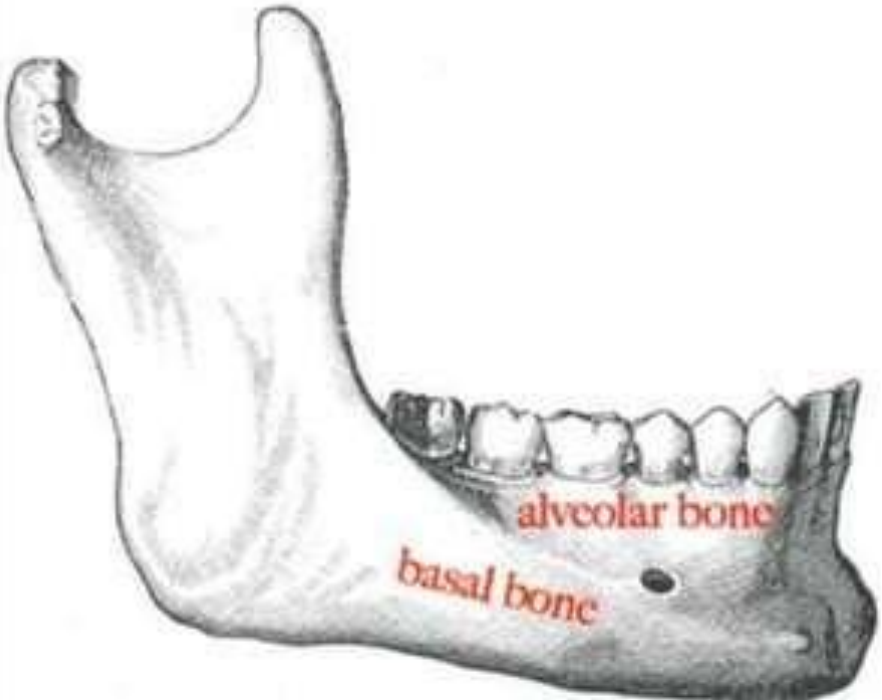
DENTAL ARCH IS THE ARCH FORMED BY THE CROWNS OF THE TEETH

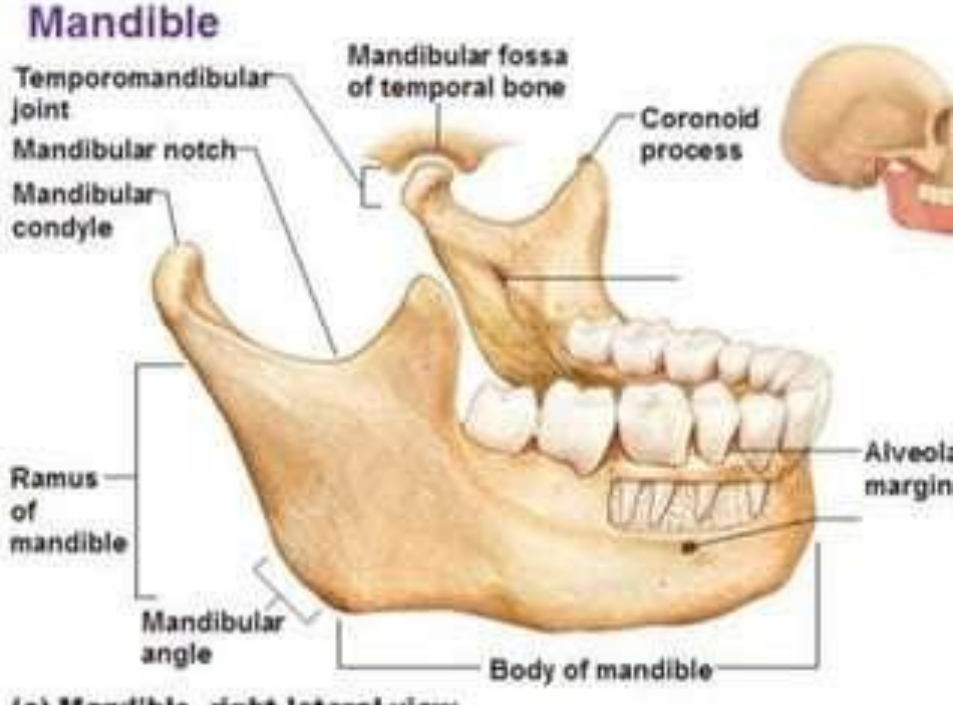




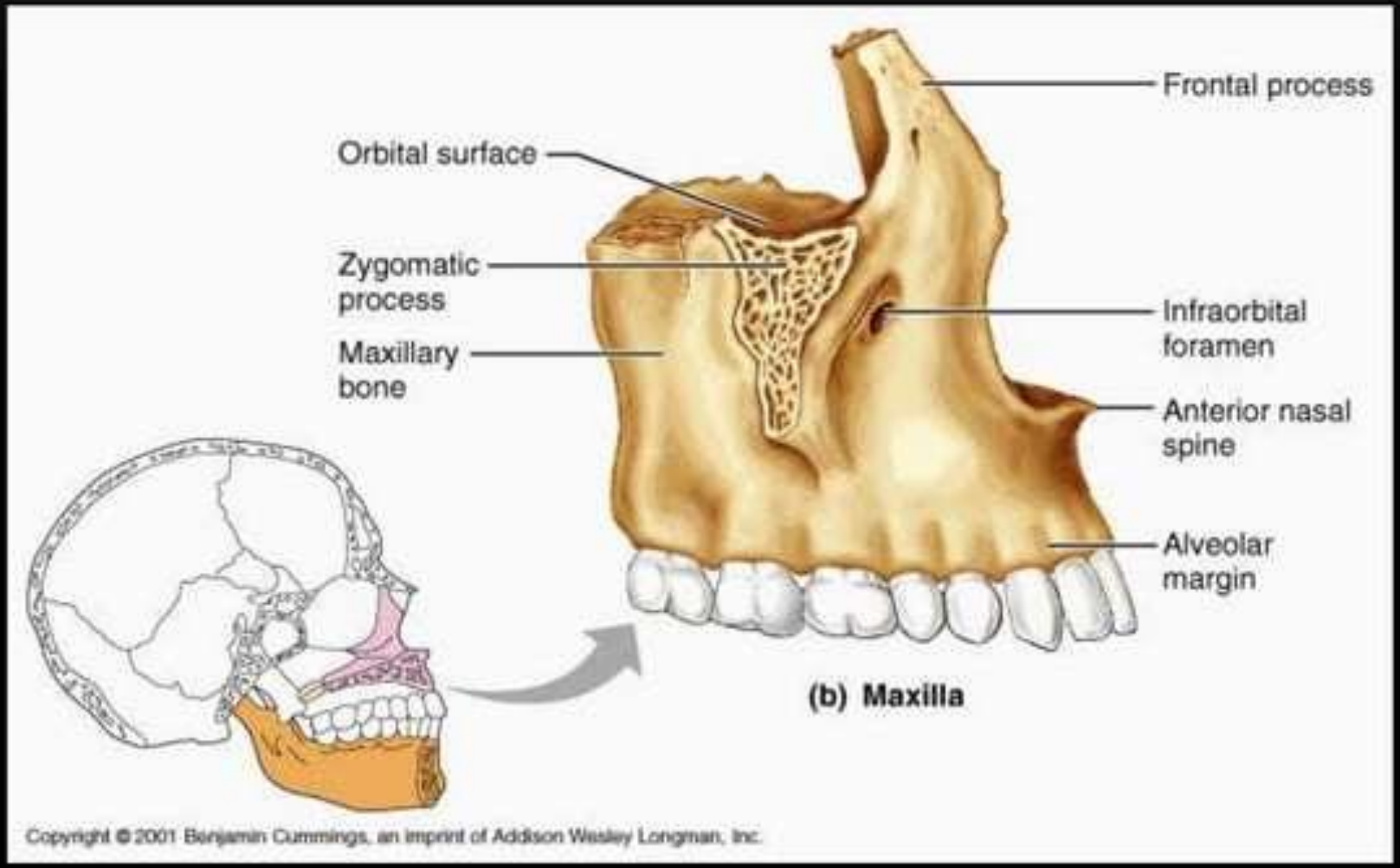
What is alveolar bone ???

- Alveolar bone is defined as the parts of maxilla and mandible that form and support the socket of teeth.





basal bone
the osseous tissue of the mandible and maxillae except the alveolar processes



Malocclusion is defined as a condition where there is a departure from the normal relation of the teeth to other teeth in the same arch and to teeth in the opposing arch .

Normal occlusion

Malocclusion

Malocclusion : may be simple or it may be complex. It may be considered in the following groups :-

Teeth

Dental arch

Dental bases(skeletal)

Teeth

Malpositioning of individual teeth or groups of teeth in normally related dental arches and jaws. An erupted or partially erupted tooth may occupy a position other than normal by being inclined ,i.e. the crown of the tooth may occupy an abnormal position while its apex is normally placed .

On other hand, the crown and the root of the tooth may be bodily displaced in the same direction . In addition ,a tooth may be rotated around its long axis.

Teeth

The various anomalies are designed according to the direction and nature of the malposition:

Mesial displacement: describes a tooth which is bodily displaced toward the mid-line of the arch.

mesial displacement of the canines

Distal displacement: describes a tooth which is bodily displaced in direction away from the mid-line of the arch.

distal displacement of the centrals

Teeth

Mesial inclination: describes a tooth which is abnormally tilted so that its crown leans along the line of the dental arch toward the mid-line of the arch.

mesial inclination

Distal inclination: the opposite of mesial inclination- where a tooth is tilted along the line of the dental arch so that its crown is too far away from the mid-line of the arch .

distal inclination

MESIAL INCLINATION OF THE CROWNS OF THE CENTRAL INCISORS AND CONGENITAL MISSING OF THE LATERALS .

DISTAL INCLINATION OF THE CROWNS OF THE CENTRALS AND PEG –SHAPED RIGHT LATERAL INCISOR

Teeth

Lingual inclination : refers to a tooth so tilted that its crown leans towards the tongue.

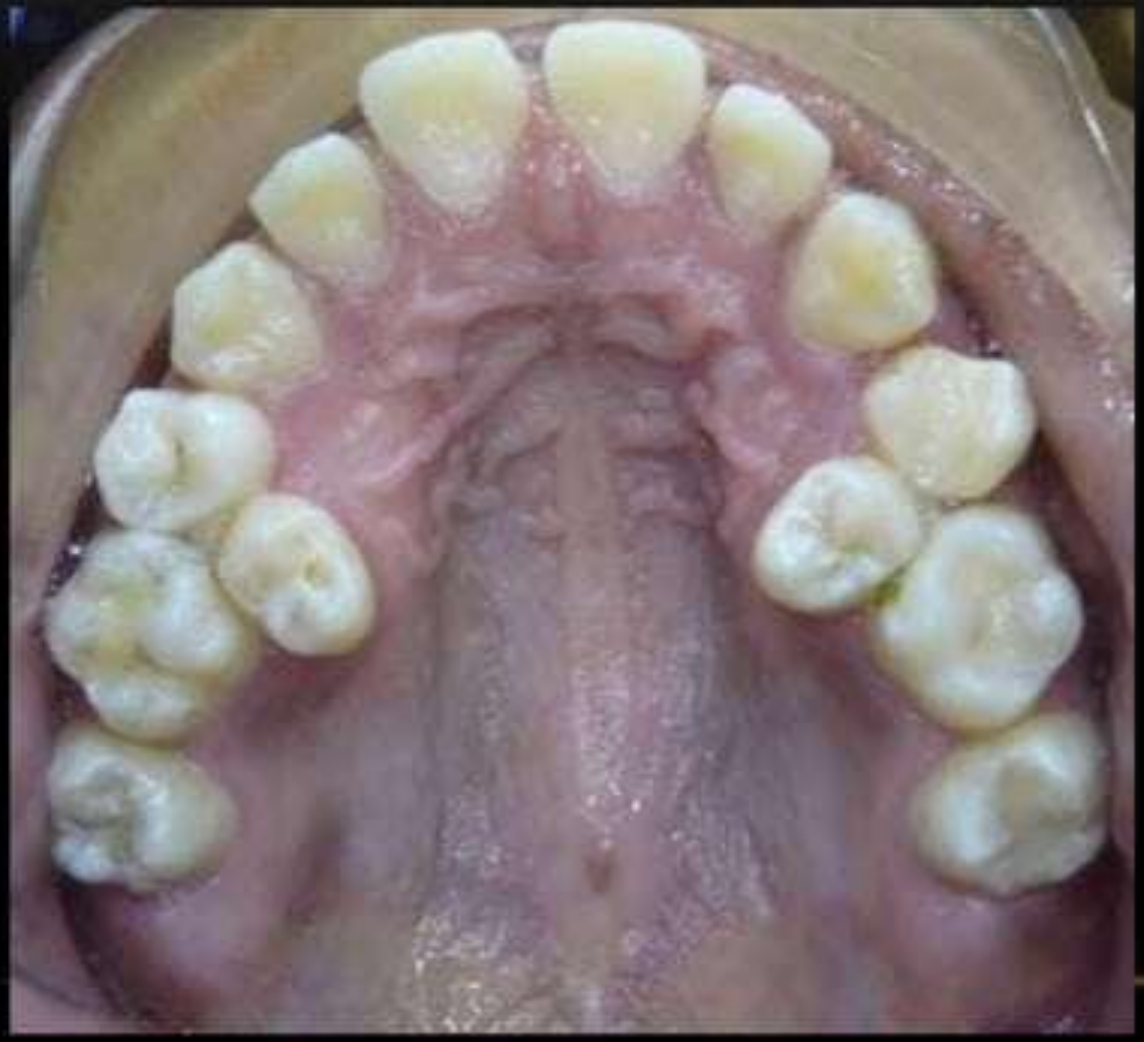
Retroclination is a term frequently used also to refer to the lingual tilting of the anterior teeth .

Lingual inclination

RETROCLINATION OF UPPER ANTERIOR TEETH

Class II Division II Malocclusion

Lingual displacement : describes a tooth that bodily displaced towards the tongue.



Lingual displacement

Teeth

Labial inclination: a term used to describe the outward tilting of incisor and canine teeth towards the lips (proclination may be used also to describe this condition). direction.

Labial inclination

In the case of the molars and premolars, the term' buccal' inclination is used. The composite term 'vestibular' may be used to embrace both' labial ' and buccal ' when indicating the outer side of the dental arch.

Labial and buccal displacement are used similarly to describe bodily displacement of teeth in an outward

Labial displacement

Infraocclusion : a term used to describe a tooth of which the occlusal surface or incisal edge has not reached the same level as the rest of the teeth in the arch, i.e., it does not appear to have erupted sufficiently.

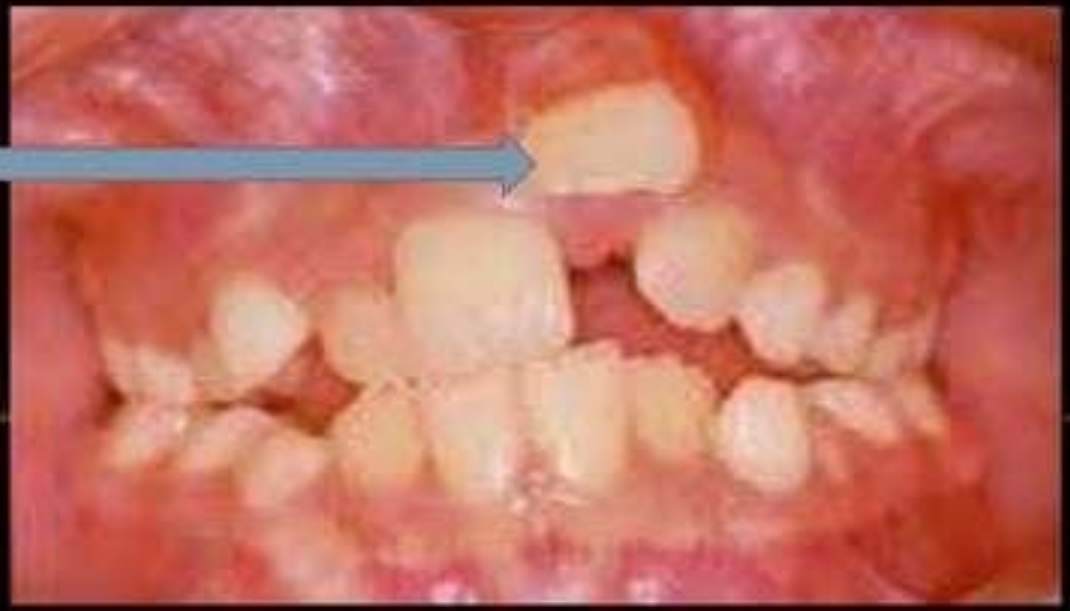
Infra-occlusion

Supraocclusion : the opposite of infraocclusion, i.e., the tooth appears to have "over-erupted".

Supra-occlusion

SUPRAOCCLUSION

INFRAOCCLUSION



Teeth

1) Mesio-lingual rotation describes a tooth which is rotated around its long axis so that its mesial aspect is turned towards the tongue.
2) Disto-lingual rotation describes a rotation in the opposite direction.

Mesio-lingual rotation

Disto-lingual rotation

Teeth

1) imbrication describe teeth (especially lower incisors) which are irregularly arranged within the arch due to lack o f space for them.

imbrication

Transposition is a term used to describe a condition where two teeth appear to have exchanged places during the development of occlusion. perhaps this is most often seen where an upper canine and an upper first premolar or lateral incisor on the same side o f the arch are transposed.

Transposition

CROWDING

Crowding Of Teeth. Crowding is the lack of space for all the teeth to fit normally within the jaws. The teeth may be rotated or displaced.

Crowding occurs when there is disharmony in the tooth- to-jaw size relationship or when the teeth are larger than the available space

Teeth

- Combinations of these individual malpositions may occur,

e.g. an upper canine tooth may be in infra-labial inclination where it has erupted high in the sulcus and outside the dental arch, a position not infrequently assumed by the upper canine tooth .

Dental arch

- Mal-relation of the dental arches to one another upon bony bases which are them-selves normally related.

Bimaxillary protrusion

PRE NORMAL OCCLUSION

POST NORMAL OCCLUSION

- Mal-relation of the dental arches can take place in all dimensions; antero-posteriorly, laterally and vertically.

The following terms are used to describe variations from the normal relations of the dental arches, or segments of the arches, to one another, the mobile body, i.e., the mandible, being described relative to the fixed body, i.e., the maxilla

post-normal occlusion

Pre--normal occlusion

Bimaxillary protrusion:

Crossbite

open-bite :

Incomplete overbite

Complete overbite :

Increased interocclusal clearance :

Dental arch

post-normal occlusion :

- This is used to describe a condition where the lower dental arch appears to be too far-back in relation to the upper arch when the teeth are closed in centric occlusion and the mandibular condyles are in their normal position within the glenoid fossae.

Dental arch

Pre--normal occlusion :

- this is used to describe a condition where the lower dental arch is in advance of the upper when the teeth are closed in centric occlusion and the condyles are in their normal position within the glenoid fossae.

Dental arch

Crossbite : In the transverse direction, on one or both sides, the occlusion may be such that buccal cusps of one or more upper posterior teeth may occlude within the fossae of the lowers. In such cases the upper arch may appear rather narrower than normal while the lower arch may appear correspondingly wider .

Posterior Crossbite

Posterior Crossbite

Where the discrepancy is mild it is likely that a cusp to cusp relationship of the teeth will cause premature contact of the affected cusps as the jaws close. In order to avoid this the mandible may assume a position other than centric occlusion by deviation to one side. This will give false impression that one side alone is affected.

UNILATERAL POSTERIOR CROSSBITE

BILATERAL POSTERIOR CROSSBITE

UNILATERAL POSTERIOR CROSSBITE

Scissor bite

Situation in which posterior teeth overlap vertically in habitual occlusion with their antagonists without contact of their occlusal surfaces

Scissor bite

The deviation of the affected teeth from their ideal positions could occur either in a buccal or a lingual direction.

Dental arch

Anterior crossbite is used occasionally to describe a condition whore one or more upper incisors occlude lingually to the lowers . This is more usually described by the term lingual occlusion of upper incisors

Anterior crossbite

Dental arch

Anterior and posterior open-bite :

In these cases only the most distal teeth in the arches may occlude when the jaw are closed a space existing between the rest of the teeth in upper jaw and those in the lower, such space progressively increasing anteriorly. Open-bite may be localized to a section of the arch only .

posterior openbite

Anterior openbite

LATERAL OPEN BITE

Generalized open bite

Anterior open bite

Dental arch

Bimaxillary protrusion:

This is a forward or mesial position in the skull of both dental arches . Malocclusion of individual teeth may or may not be present; in fact frequently the arches are of good form , the teeth even , and the occlusion normal.

The face seems full of teeth, especially with a smile, and it is evident that esthetics will be improved if the denture could be less obvious. It is a classification itself , diagnosis indicating that therapy will have to include tooth extraction in both arches .

Bimaxillary protrusion

Dental arch

Incomplete overbite :

It is a term used to indicate that a vertical space exists between the lower incisors and the palatal aspect of upper incisors when the teeth are in centric occlusion..

This space may be penetrated by the tip of the tongue at rest, and during swallowing

Incomplete overbite :

Dental arch

Complete overbite :

Is used to indicate that the lower incisors have erupted into contact with either the upper incisors or the palate leaving no space when the teeth are in centric occlusion .

DEEP IMPINGING OVERBITE

DEEP IMPINGING OVERBITE

Dental arch

8) Increased interocclusal clearance : (or increased free-way space).

- when a child closes his jaws into centric occlusion there may be an increased incisor overbite which is brought about by an excessive distance between the occlusal surfaces of the upper and lower posterior teeth when the mandible is in the rest position .

Dental arch

- When the posterior teeth are occluded the anterior teeth will present an increased incisor overbite . When this condition is associated with a post-normal occlusion, with an accompanying lack of contact with the palatal surfaces of the upper incisors, the lower incisors tend to elevate until they find an antagonist which may even be the palatal mucosa .

Dental bases

Certain inherited bone shapes and forms may not permit the production of normal occlusion. A pre-normal occlusion not infrequently accompanies a large and prominent mandible, especially if it is associated with antero-posterior shortness of the maxilla..

Such a condition of mandibular prognathism may appear in several generations of the family .

Daughter having the same skeletal problem

Mother having mandibular prognathism

Daughter having the same skeletal problem

Developing class III should be treated early to avoid the severeity of the case by time

Certain conditions may affect the shape and size o f either or both jaws and also their relationship to each other and to the rest of the skull as in cases of underdeveloped mandible and cleft palate

UNDER DEVELOPED MANDIBLE

CLEFT LIP AND PALATE

Dental bases

- In these cases the development of normal occlusion is impossible . Dental bases relations can be classified into terms skeletal Class 1 , 2 or 3 in the antero-posterior direction when the jaws are closed and the teeth are in full occlusion .
- This skeletal classification takes into consideration the facial skeletal pattern and the relationship of the teeth .



Dental bases

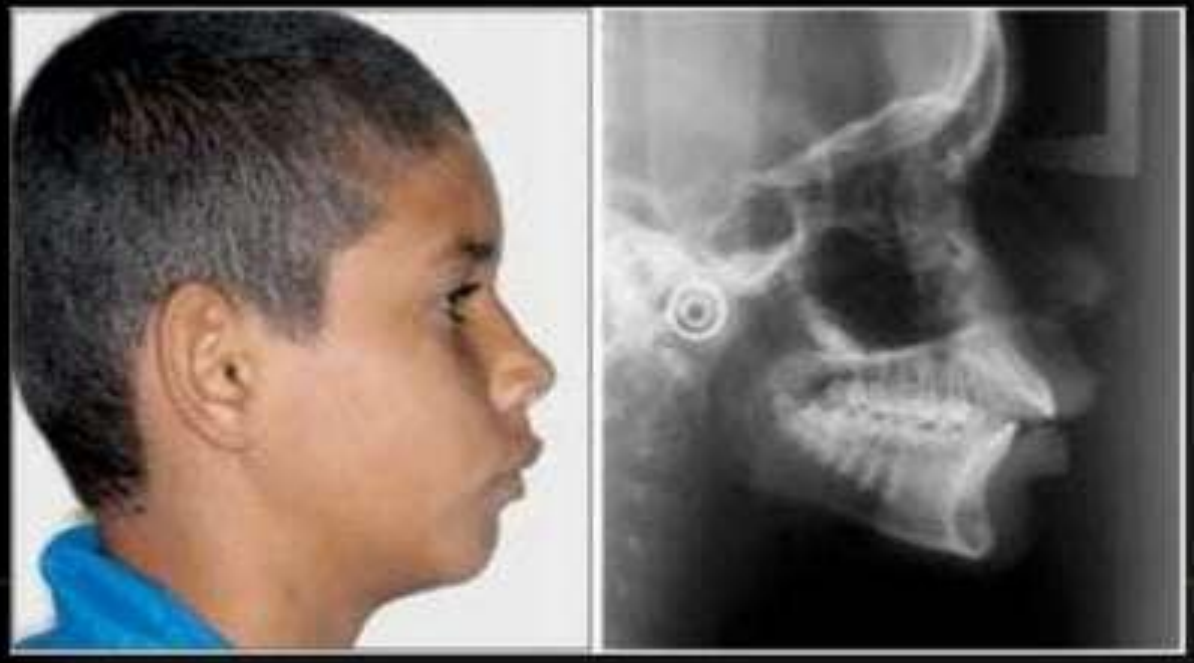
Class 1 :

The bones of the face and jaws are in harmony with one another and with the rest of the head, the profile is orthognathic.

Dental bases

Class 2 :

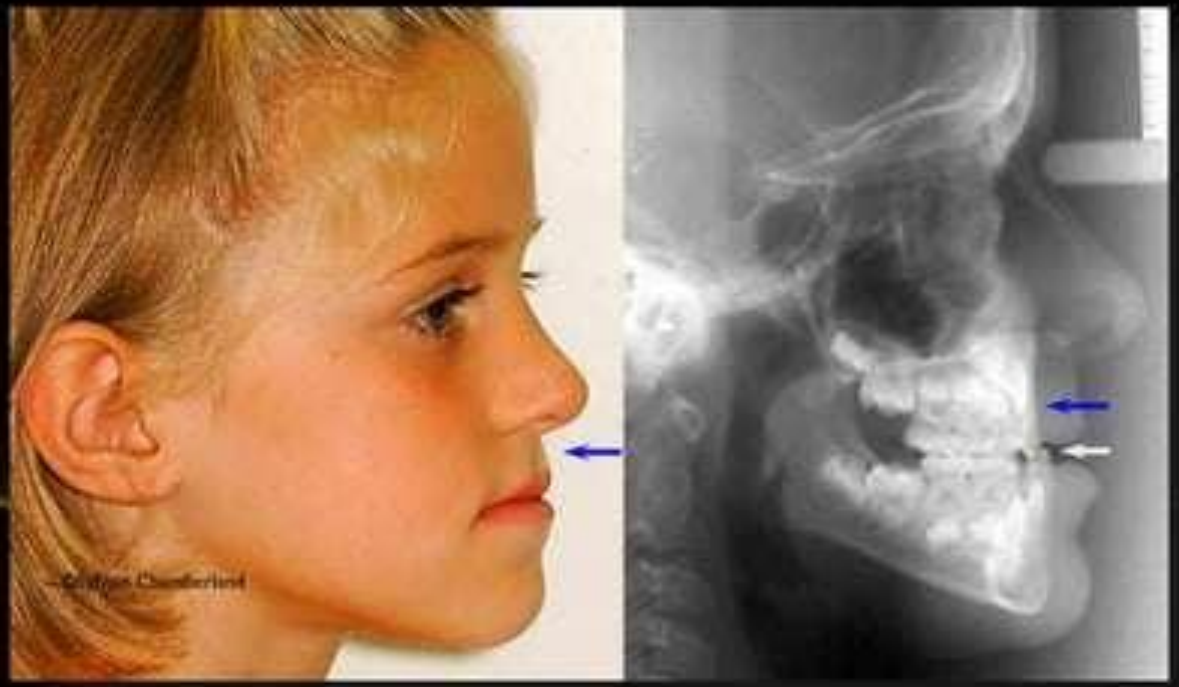
Subnormal, distal mandibular development in relation to the maxilla or post-normal relation of the dental bases .
The profile is retrognathic .



Dental bases

Class 3 :

Overgrowth of the mandible and obtuse mandibular angle, the profile is prognathic at the mandible or a pre-normal relation of the dental base . A case, for example, may be described as having a Class III dental arch relation upon a skeletal Class 1 base . Normal occlusion may be present in face which is not orthognathic .




Thank You