

ORTHODONTICS

Classification of orthodontic anomalies

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ORTHODONTICS

Stomatological specialisation dealing with prevention, diagnostics and therapy of irregular tooth position, relationship of tooth arches and jawbones



- **MALOCCLUSION** is a manifestation of genetic and environmental interaction on the development of the orofacial region



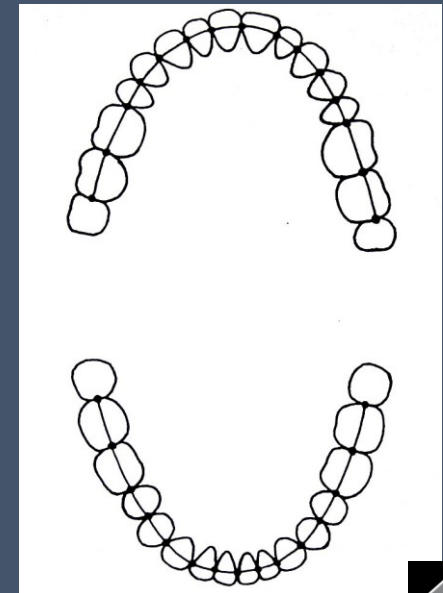
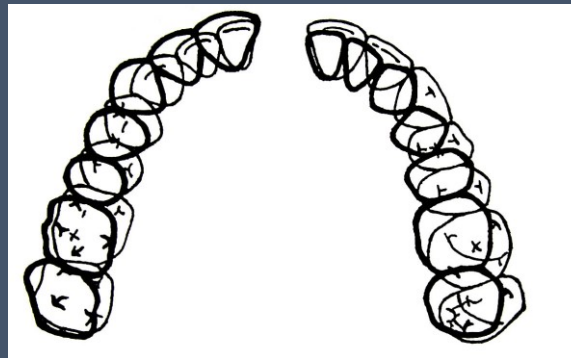
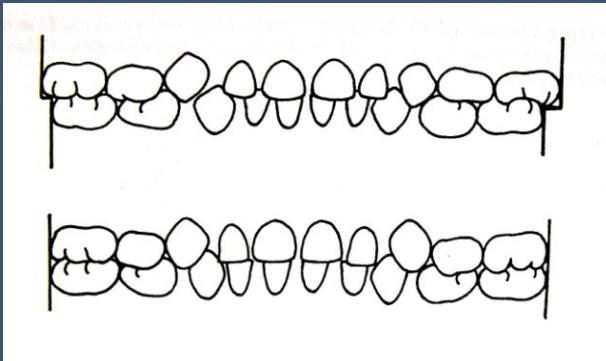
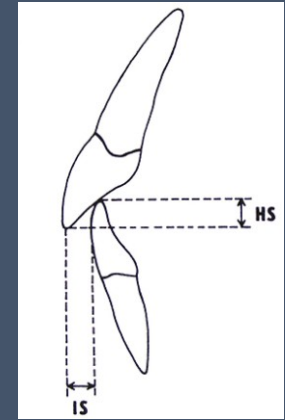
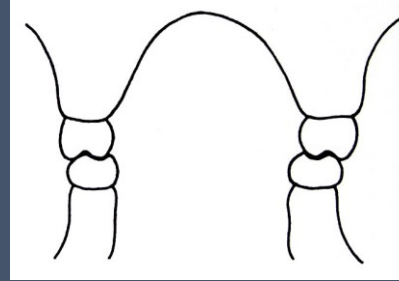
GOALS OF TREATMENT:

- Ideal functional occlusion
- Ideal soft tissue proportions and adaptation
- Ideal jaw, skeletal and dental relationship



Ideal occlusion

- correct relationship of molars
- correct overjet and overbite
- Correct intercuspitation of teeth
- Points of contact are lined in an regular arch
- Deciduous dentition is ended either by a small step or the posterior teeth facets are aligned

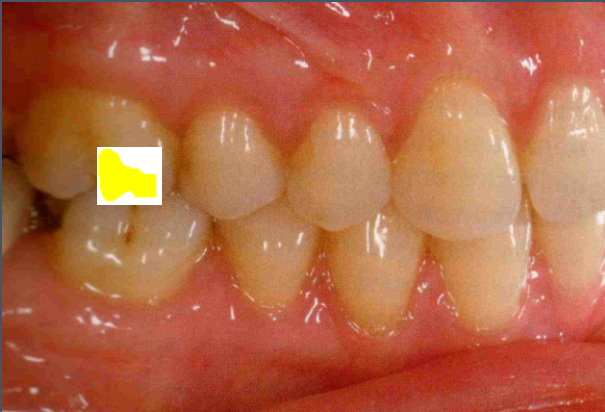


Correct dentition has 6 keys of correct occlusion- Andrews

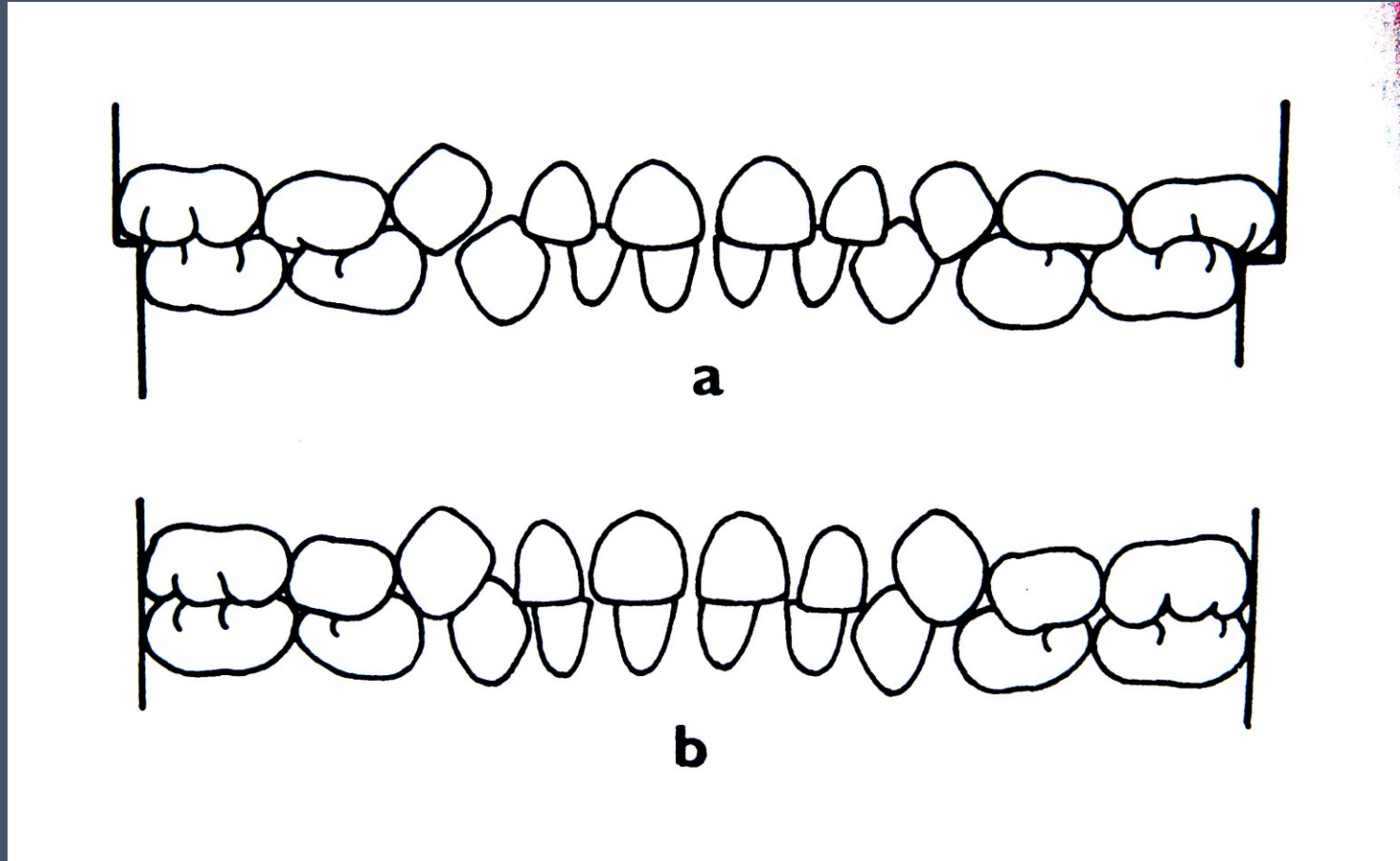


Ideal occlusion



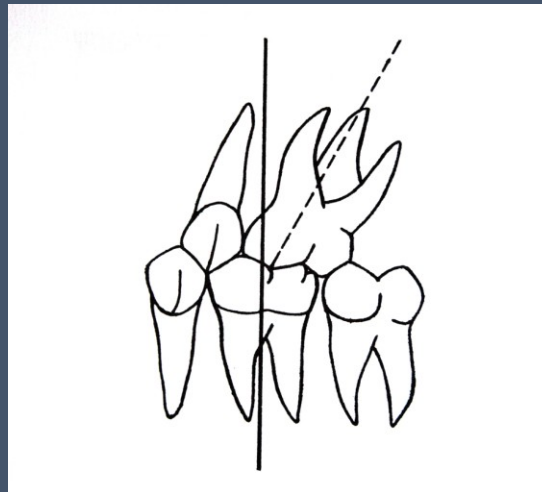


Deciduous teeth



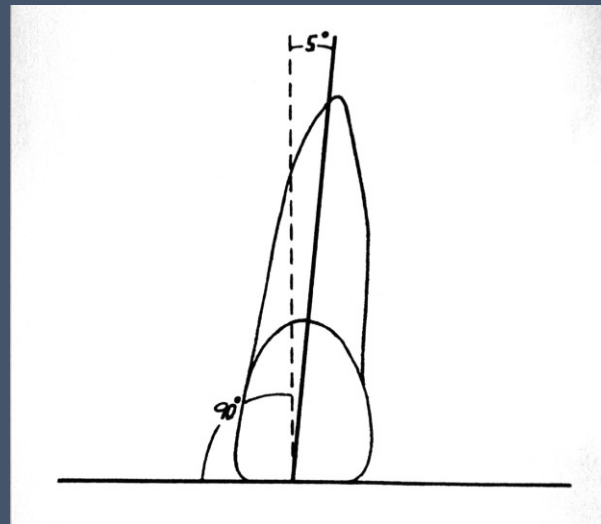
6 keys of occlusion according to Adrews

1. **Correct relationship of molars** – mesiobuccal cuspid of first upper molar is projected between buccal cuspids of first lower molar. Distal facet of distobuccal cuspid of first upper molar is in contact with mesial facet of mesiobuccal cuspid of second lower molar



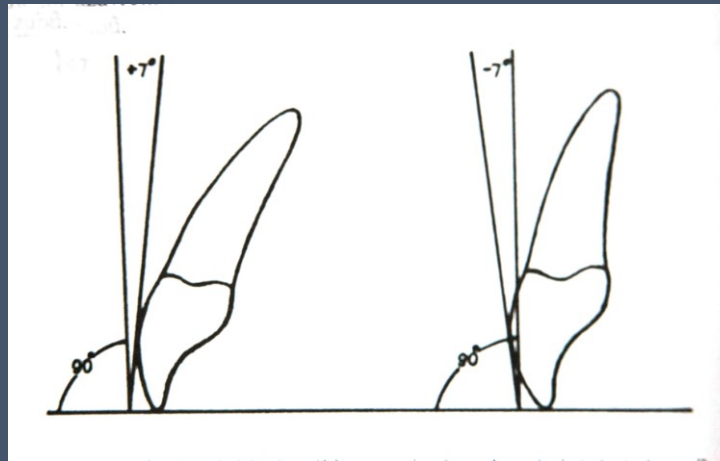
6 keys of occlusion according to Adrews

2. **Crown angulation** – gingival parts of long axis of all crowns are more distal than the occlusional parts. All teeth are slightly tipped mesially



6 keys of occlusion according to Adrews

3. **vestibulo-oral inclination of crowns** –it is measured with the angle between a tangent to middle third of vestibular facet and the line vertical to the occlusion plane. This angle is positive by upper incisors and negative by all other teeth.



6 keys of occlusion according to Adrews

4. **No rotated teeth** – rotated molar and premolar occupies more space than regular one, rotated incisors and canine occupies less space than regular one.

It also does not allow correct intercuspitation



6 keys of occlusion according to Adrews

5. No spacing

It also does not allow correct intercuspitation



6 keys of occlusion according to Adrews

6. **Plane of occlusion** – it is almost flat or slightly deformed according to the curve of Spee. Significantly deformed occlusal plane disallows correct articulation and changes also the sagittal relationship of arches.

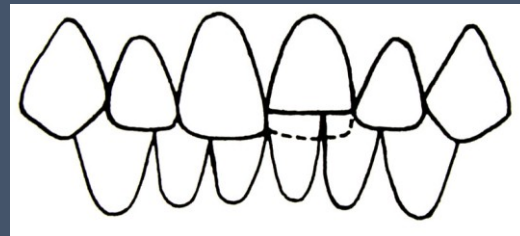


Classification of orthodontic anomalies

1. Anomalies of single tooth

Inclination – tooth tipping mesially, distally,
vestibular = protrusion, oral = retrusion, vestibular,
lingual, palatal eruption

Vertical anomalies - supraocclusion, infraocclusion



Classification of orthodontic anomalies

1. Anomalies of single tooth

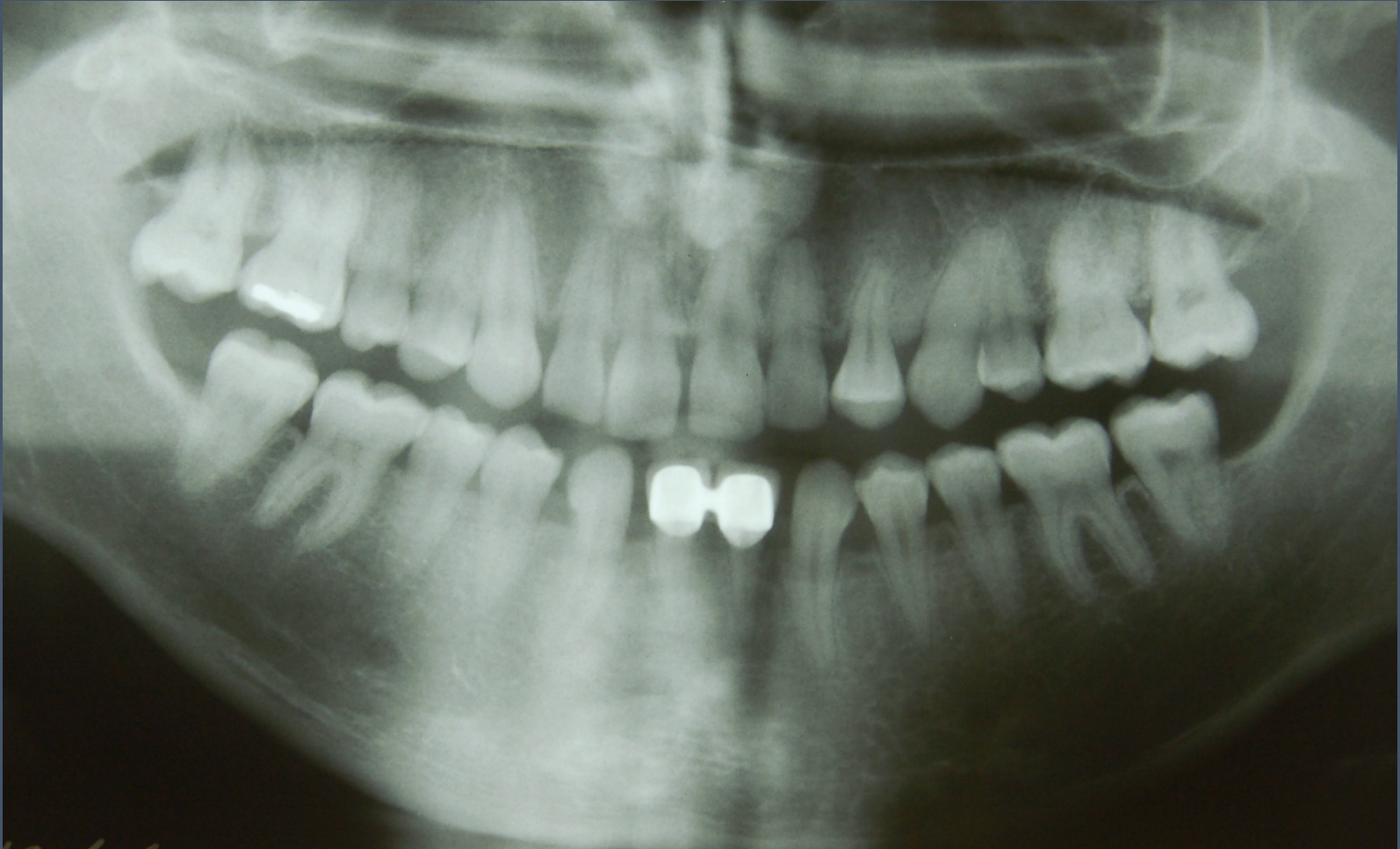
Nonocclusion – buccal, lingual, palatal

upper teeth are not in contact with lower teeth

Transposition – change of sequence of teeth in one arch, eg. the canine and first premolar or canine and lateral incisor



transposition



Classification of orthodontic anomalies

1. Anomalies of single tooth

Rotation - mesial, distal

Retention – the teeth is developed, but not erupted, most often:
wisdom teeth, upper canine

Hyperodontia – the number of permanent teeth is higher
[supernumerary teeth, most frequently- mesiodens, upper
incisors]

Hypodontia – the correct number of teeth is reduced because
some teeth are absent due to agenesis of their germs [most
frequently- upper lateral incisors, third permanent molars,
premolars]



Hypodontia





Palatal eruption



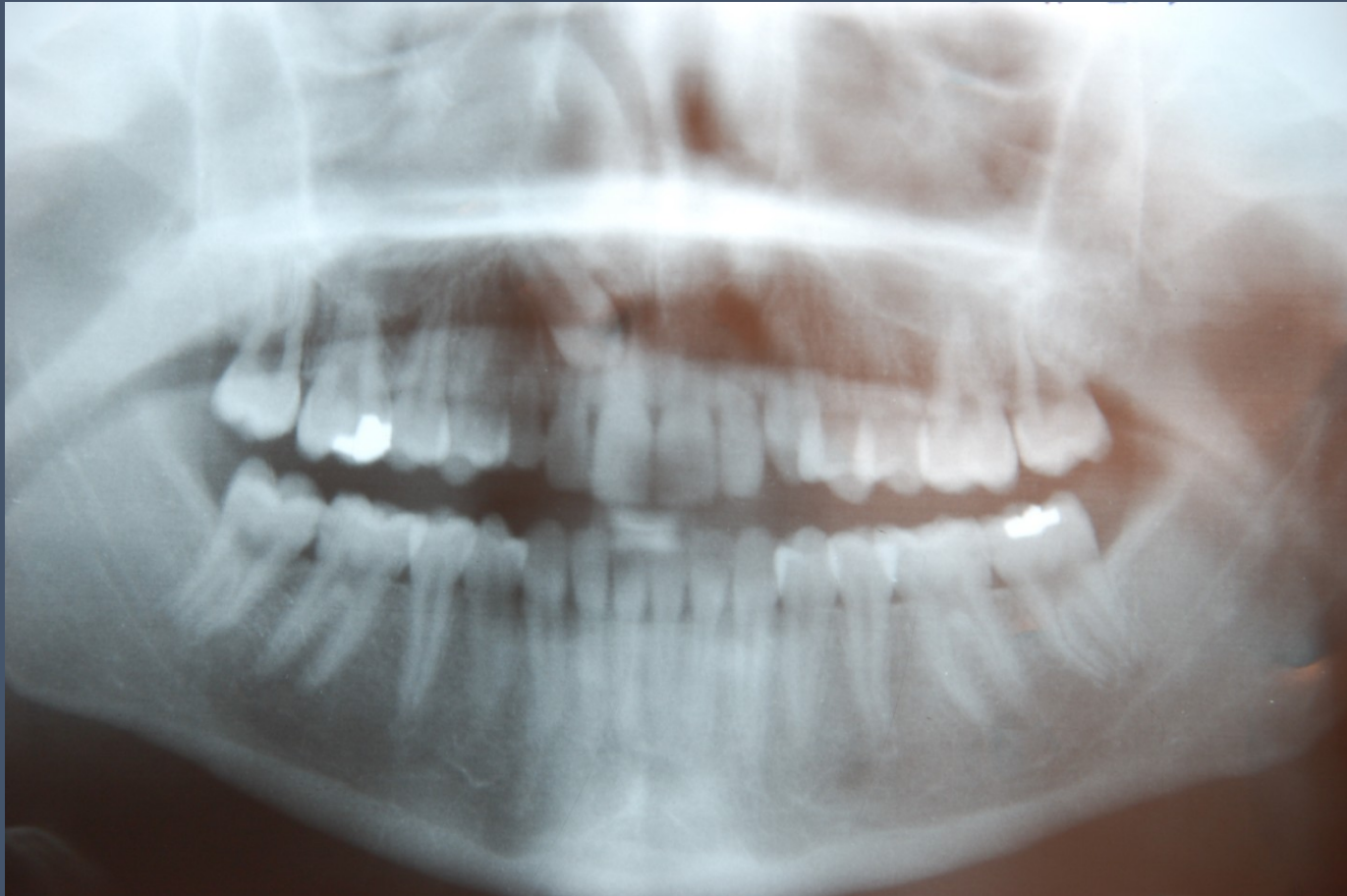
Palatal eruption



Retention of canine



Retention of canine



Infraocclusion



Buccal nonocclusion

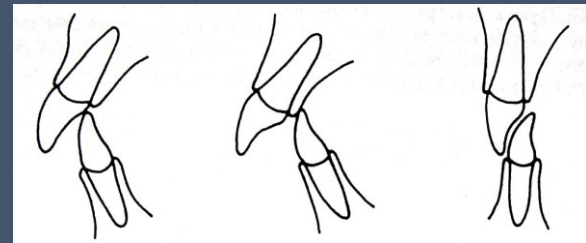


Classification of orthodontic anomalies

2. Anomalies of groups of teeth

- groups of teeth are in irregular position

Protrusion, retrusion



Inverted bite – is in the frontal part – lower tooth is more anteriorly than the upper tooth





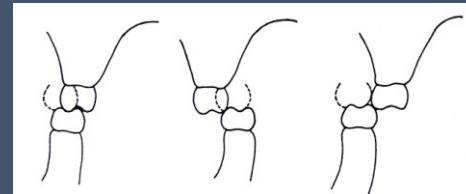
Inverted bite, cross bite



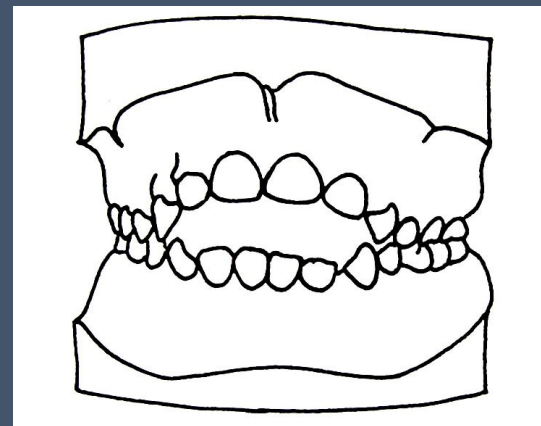
Classification of orthodontic anomalies

2. Anomalies of groups of teeth

Cross bite – in lateral part the buccal cuspids of lower molars are more buccally



Open bite - negative overbite



Cross bite



Open bite



Classification of orthodontic anomalies

2. Anomalies of groups of teeth

Deep bite – the overbite is increased, the upper incisors cover more than the incisal third of the lower incisors

Spacing, diastema

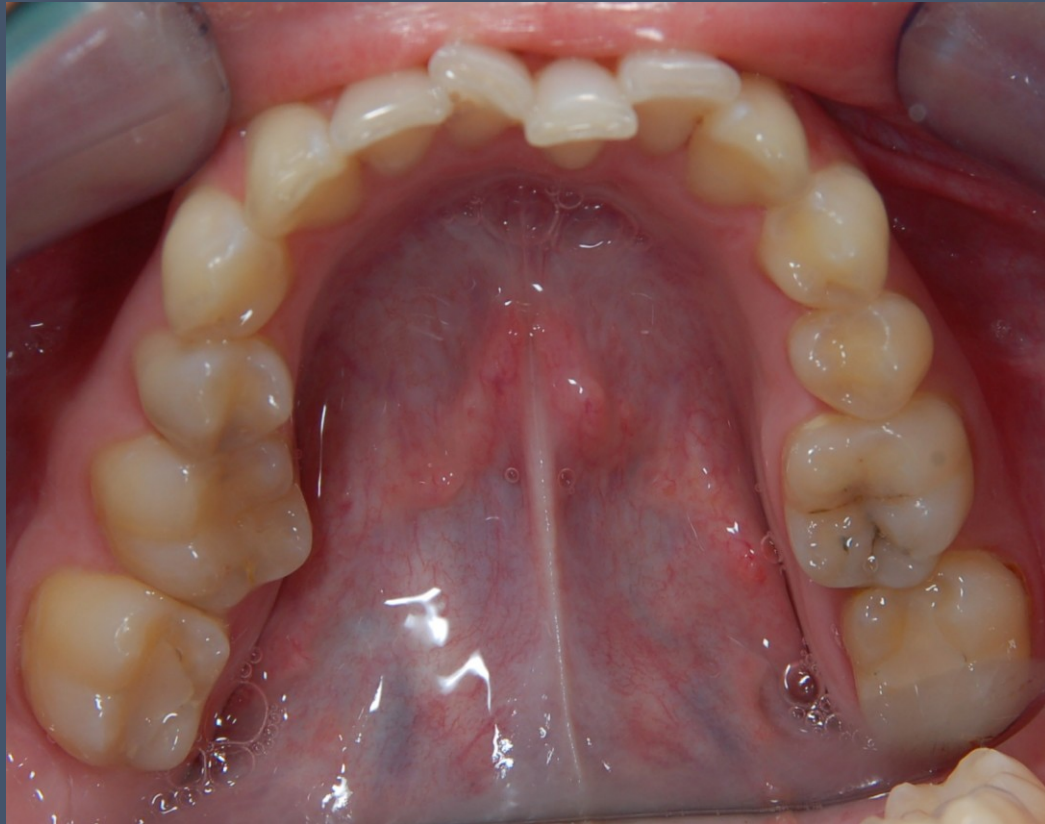
Crowding – primary, secondary, tertiary



Deep bite

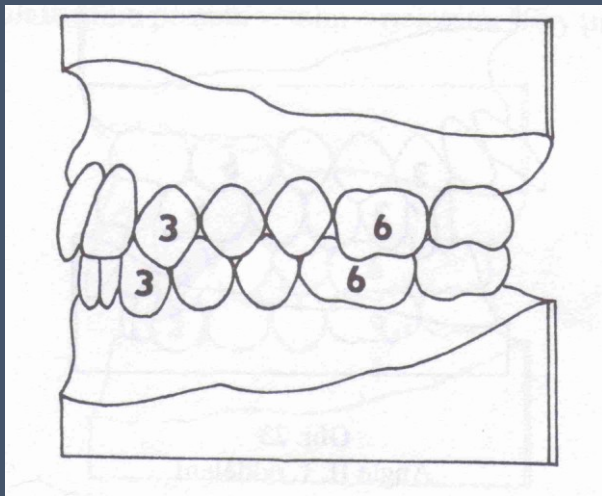


Crowding



3. Anomalies of the relationship of dental arches = Angles classification

Class I . normoocclusion

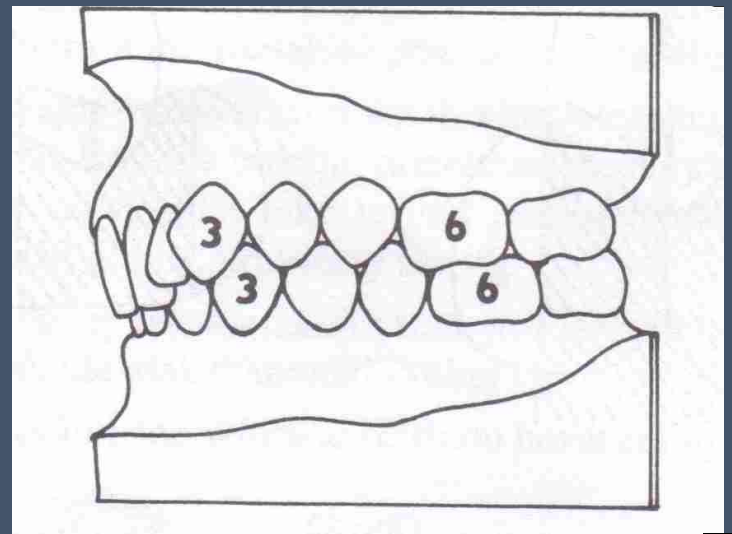
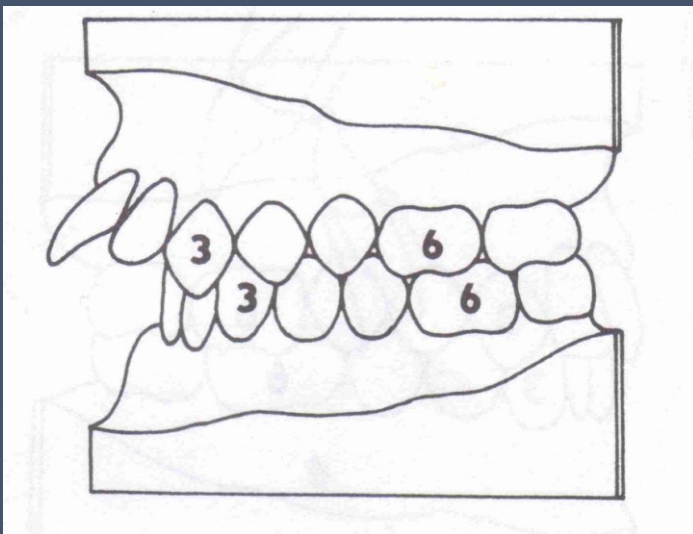


Angle I



Classification of orthodontic anomalies

- **Class II** : distal occlusion
 - with protrusion of upper incisors
 - with retrusion of upper incisors

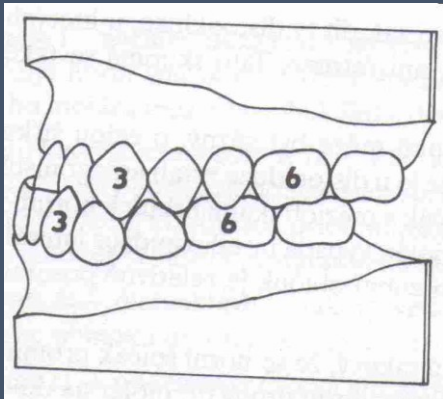


Angle II



Classification of orthodontic anomalies

- Class III : mesial occlusion

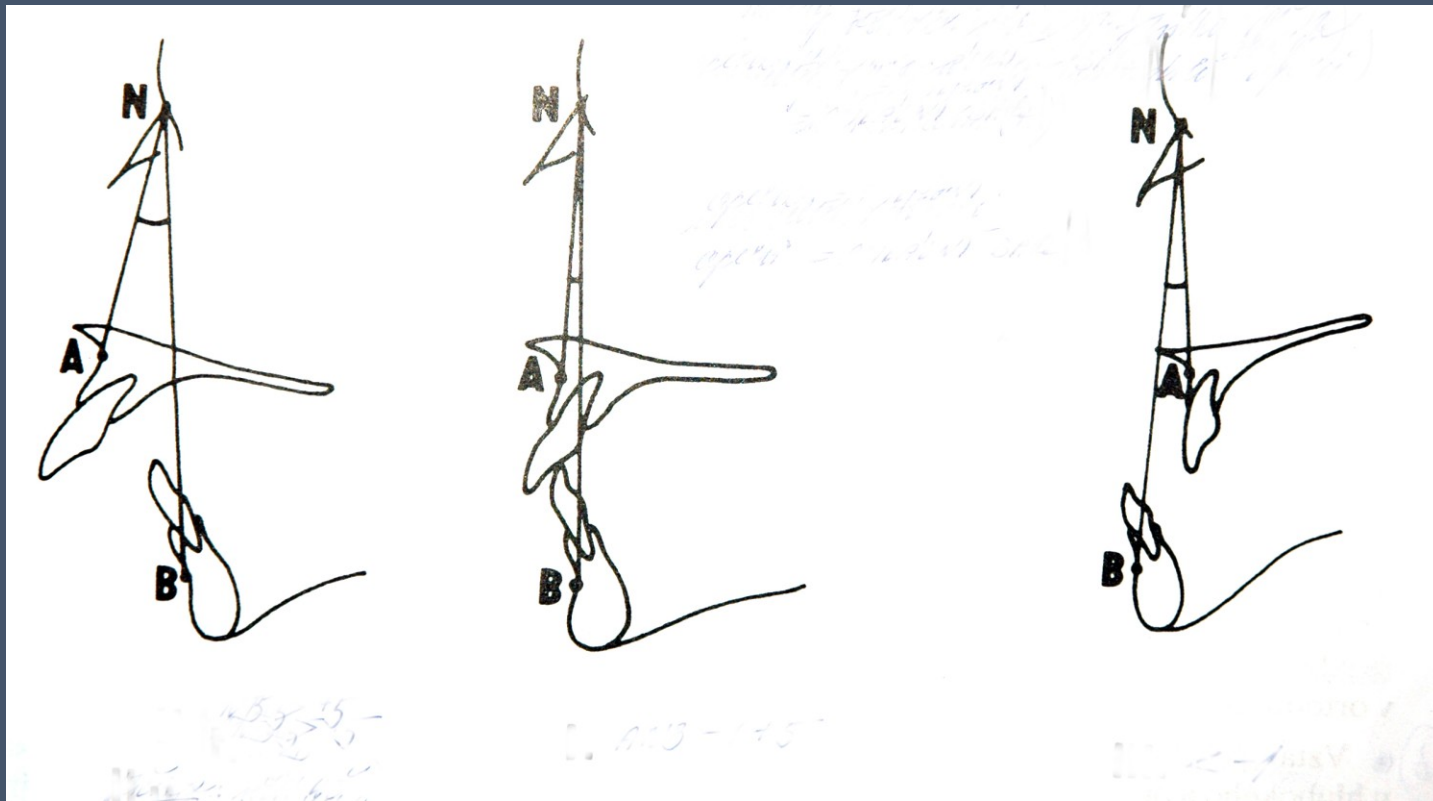


Angle III



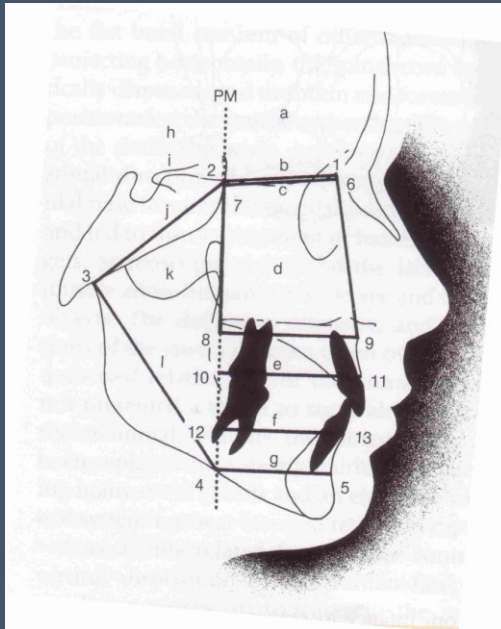
Classification of orthodontic anomalies

- 4. Anomalies of position, size and relationship of the jaws-bones



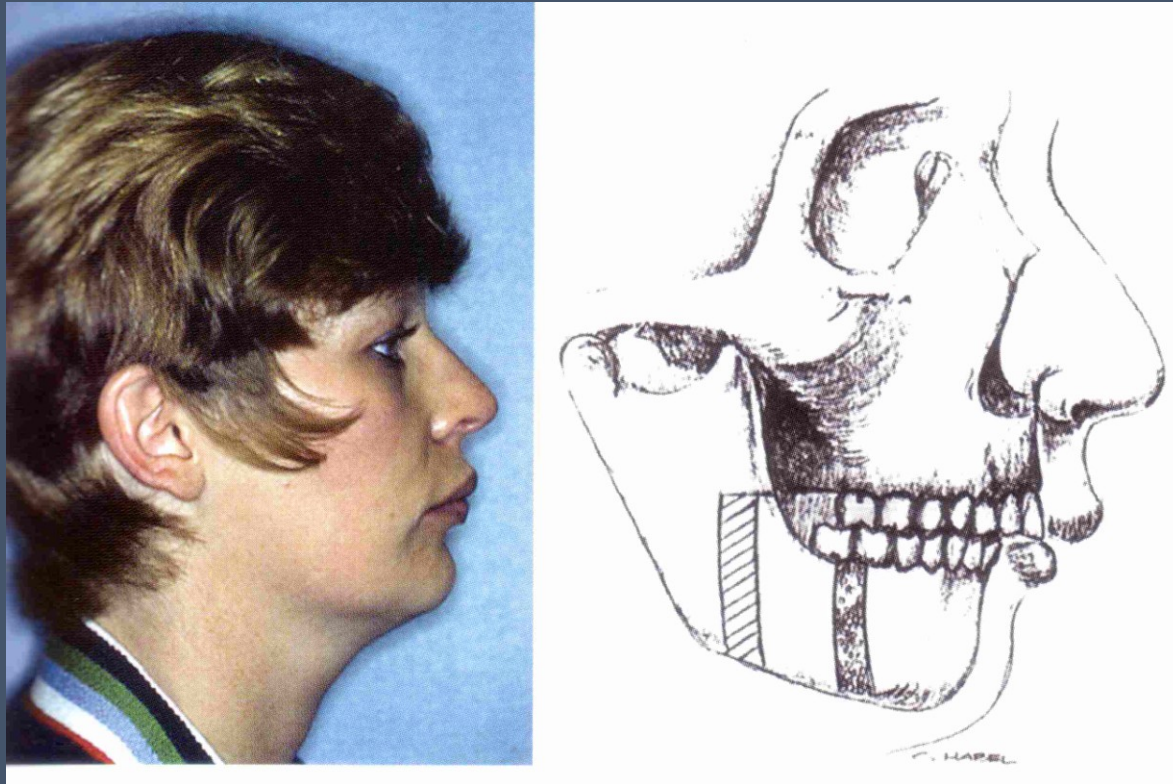
4. Anomalies of position, size and relationship of the jaws-bones

Skeletal class I : relationship of jaws without any deviation



Classification of orthodontic anomalies

- **Skeletal class II** : the lower jaw is more distally to the upper jaw (small lower jaw, large upper jaw)





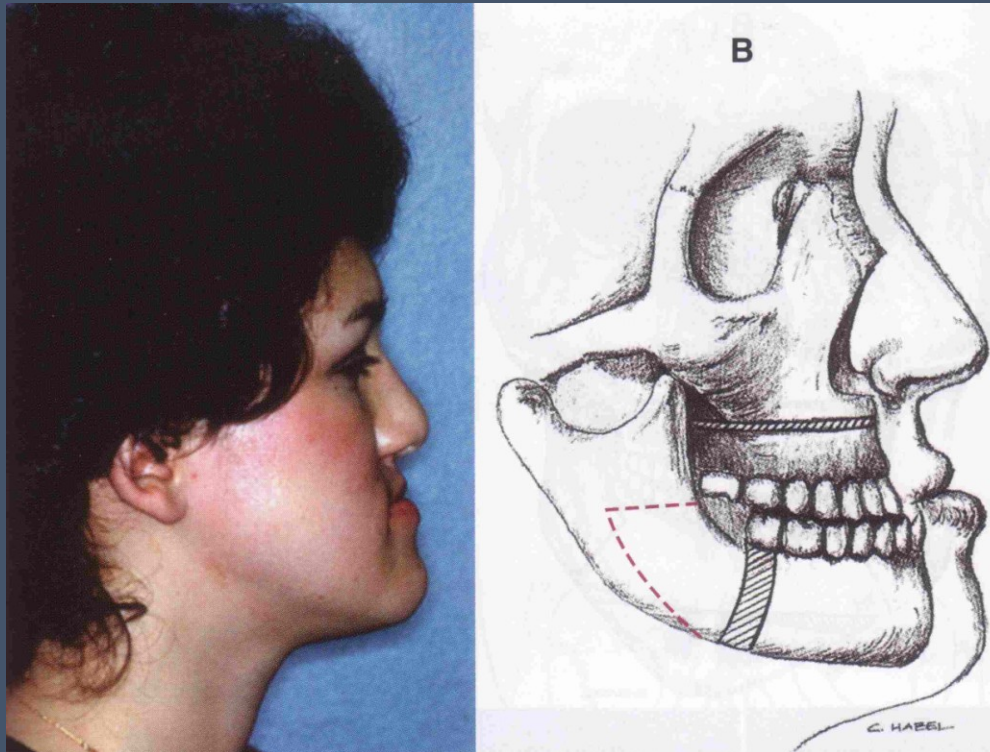


Angle II



Classification of orthodontic anomalies

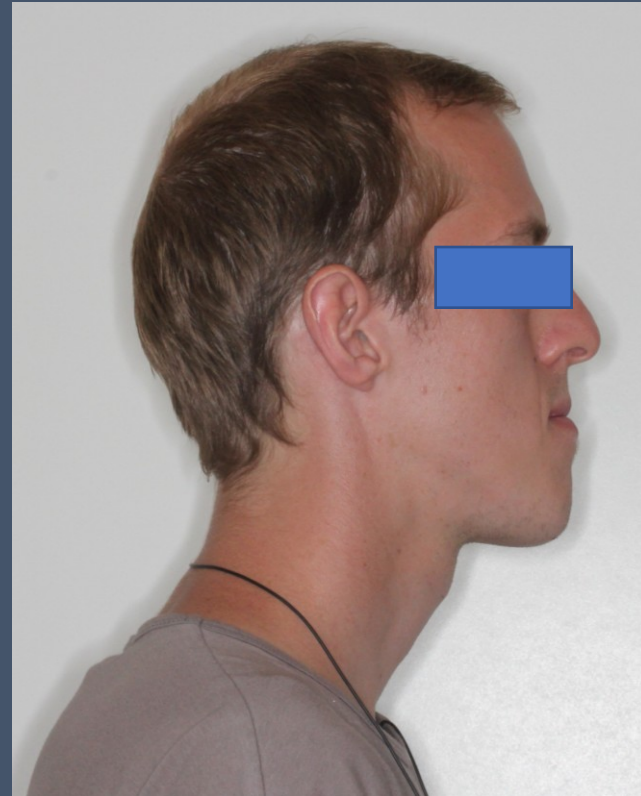
- **Skeletal class III** : the lower jaw is ventral to the upper jaw (progenia – large mandible, pseudoprogenia – small maxilla)



Angle III, skeletal cl. III



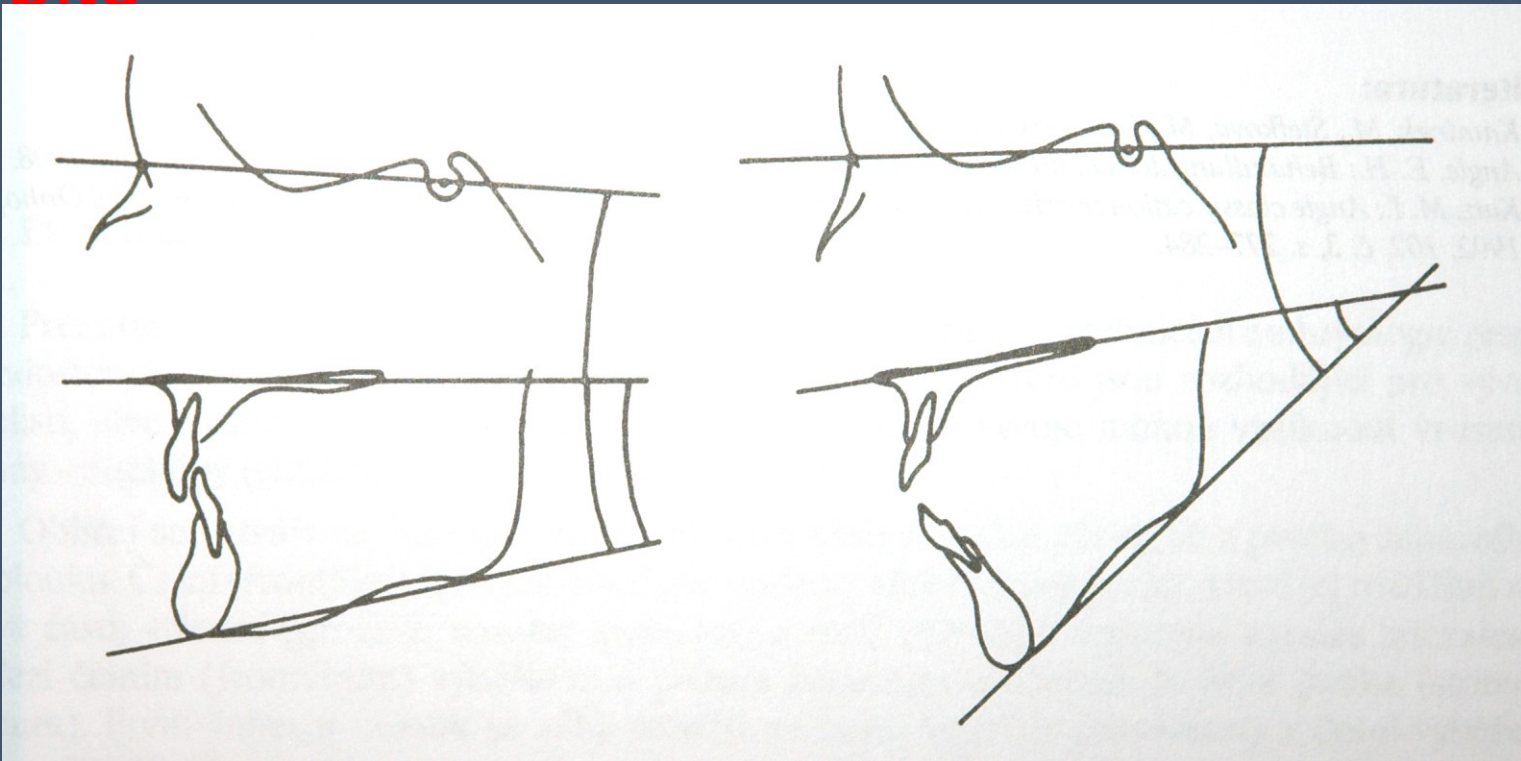
Skeletal class III



Classification of orthodontic anomalies

skeletal deep bite

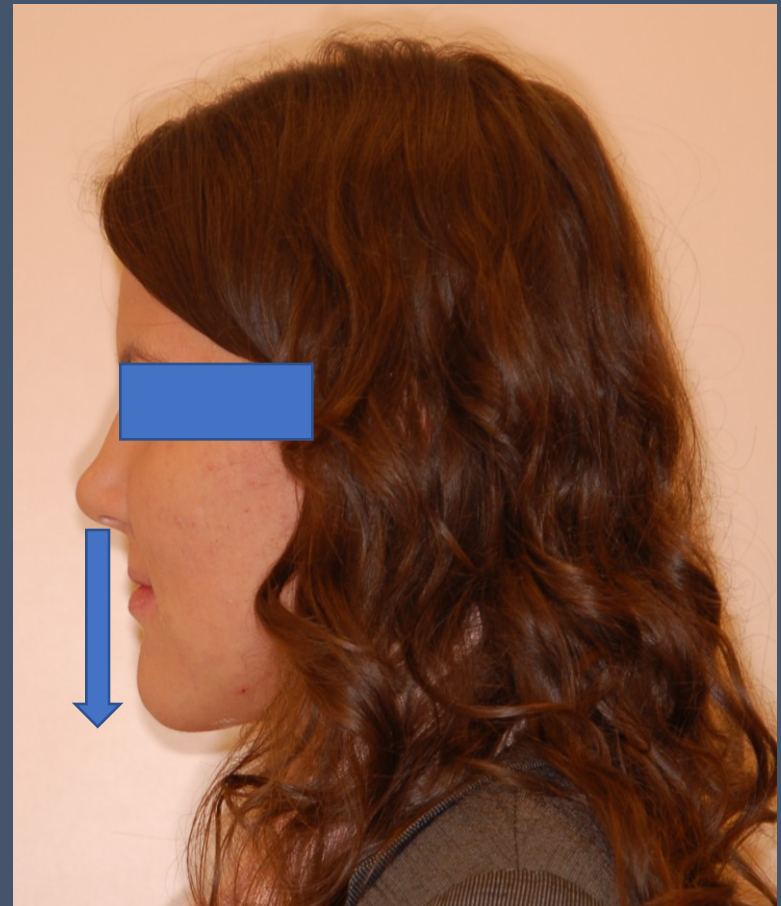
skeletal open bite



skeletal deep bite
bite



skeletal open
bite



Thank You for Your attention

Questions – email – alena.brysova@fnusa.cz

Consultation – Orthodontic department - St. Anne's Hospital, building D2b – Thursday 1-2 p.m.

