

# 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



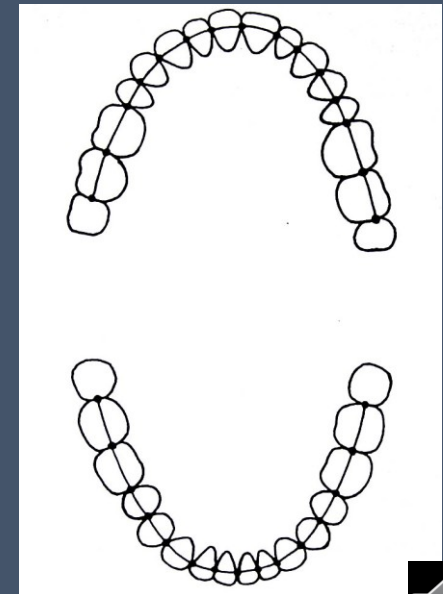
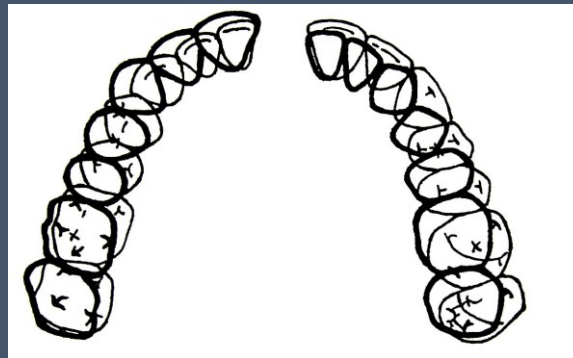
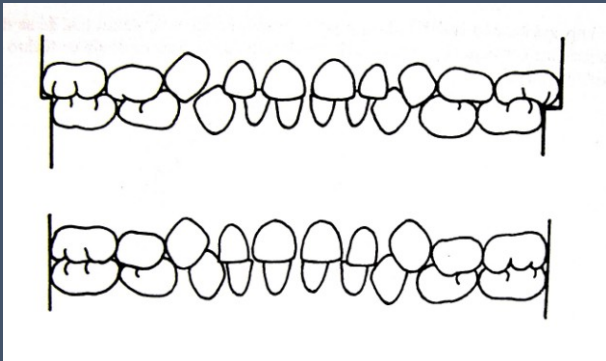
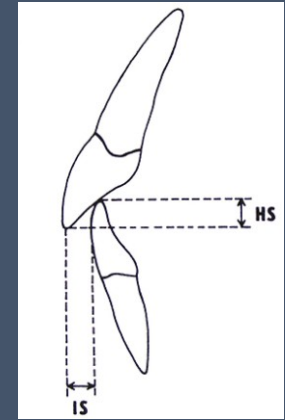
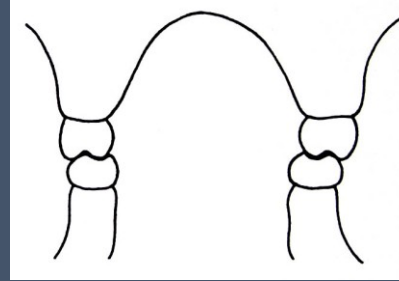
# GOALS OF TREATMENT:

- 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

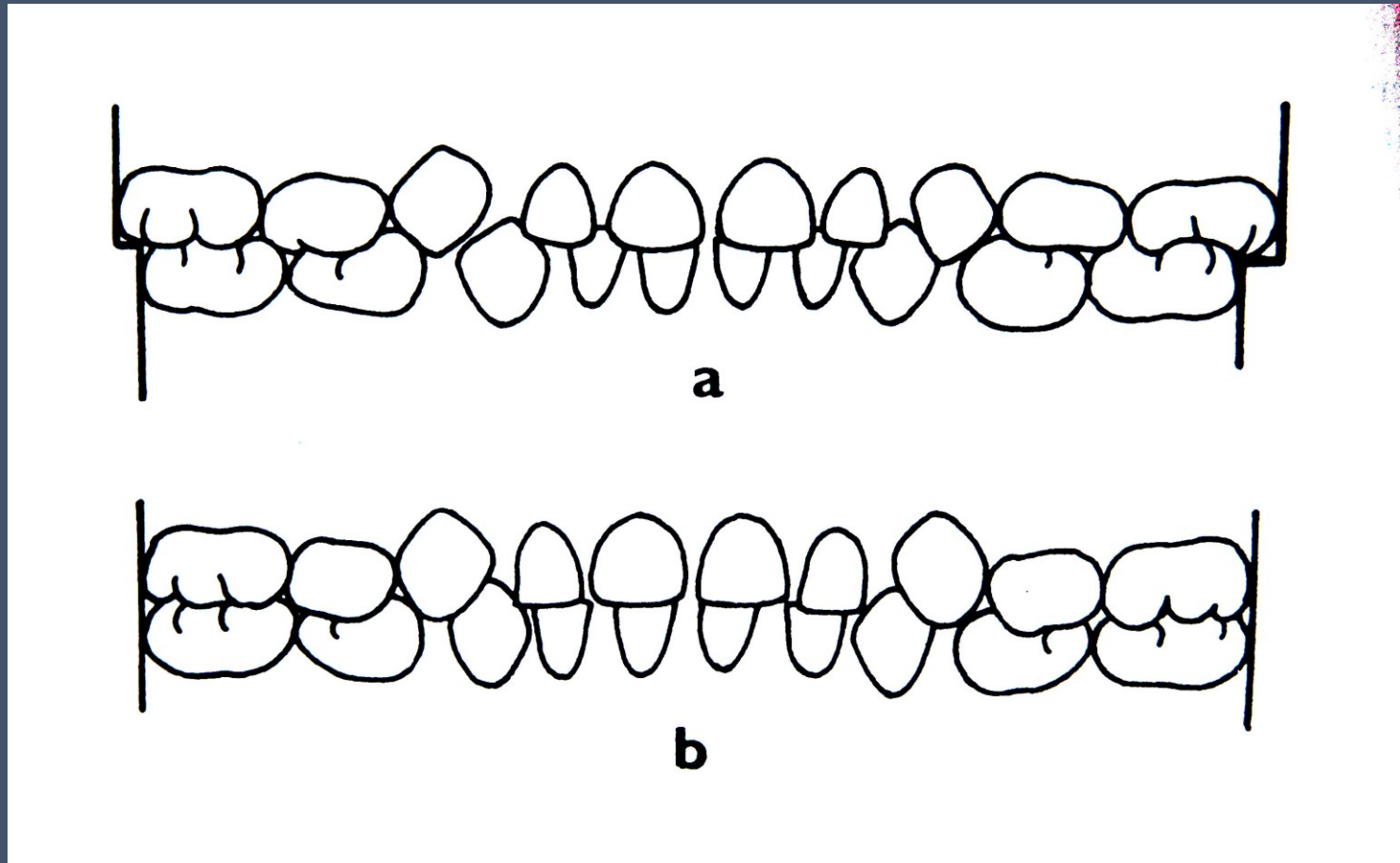


# Ideal occlusion





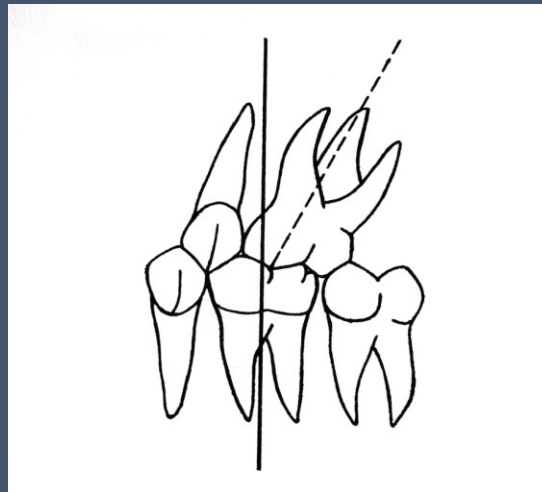
# Deciduous teeth





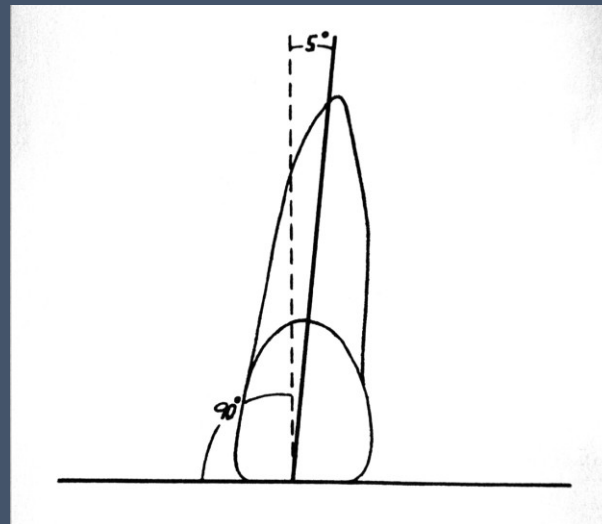
# 6 keys of occlusion according to Adrews

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



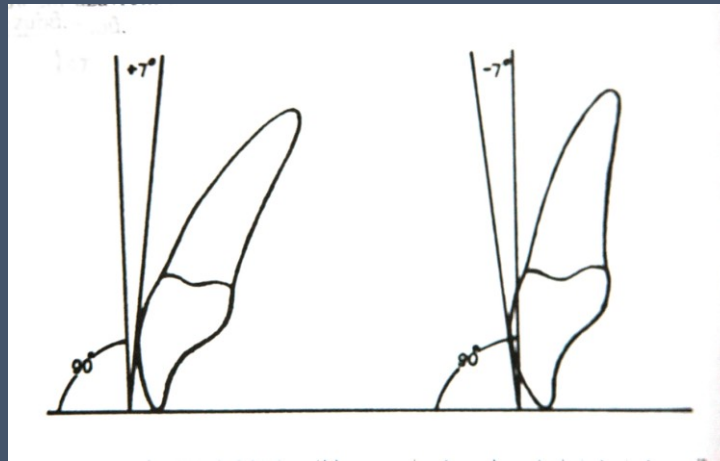
# 6 keys of occlusion according to Adrews

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.

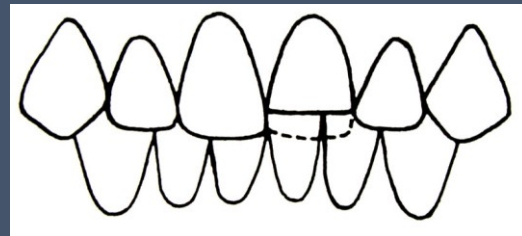


# Classification of orthodontic anomalies

## 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

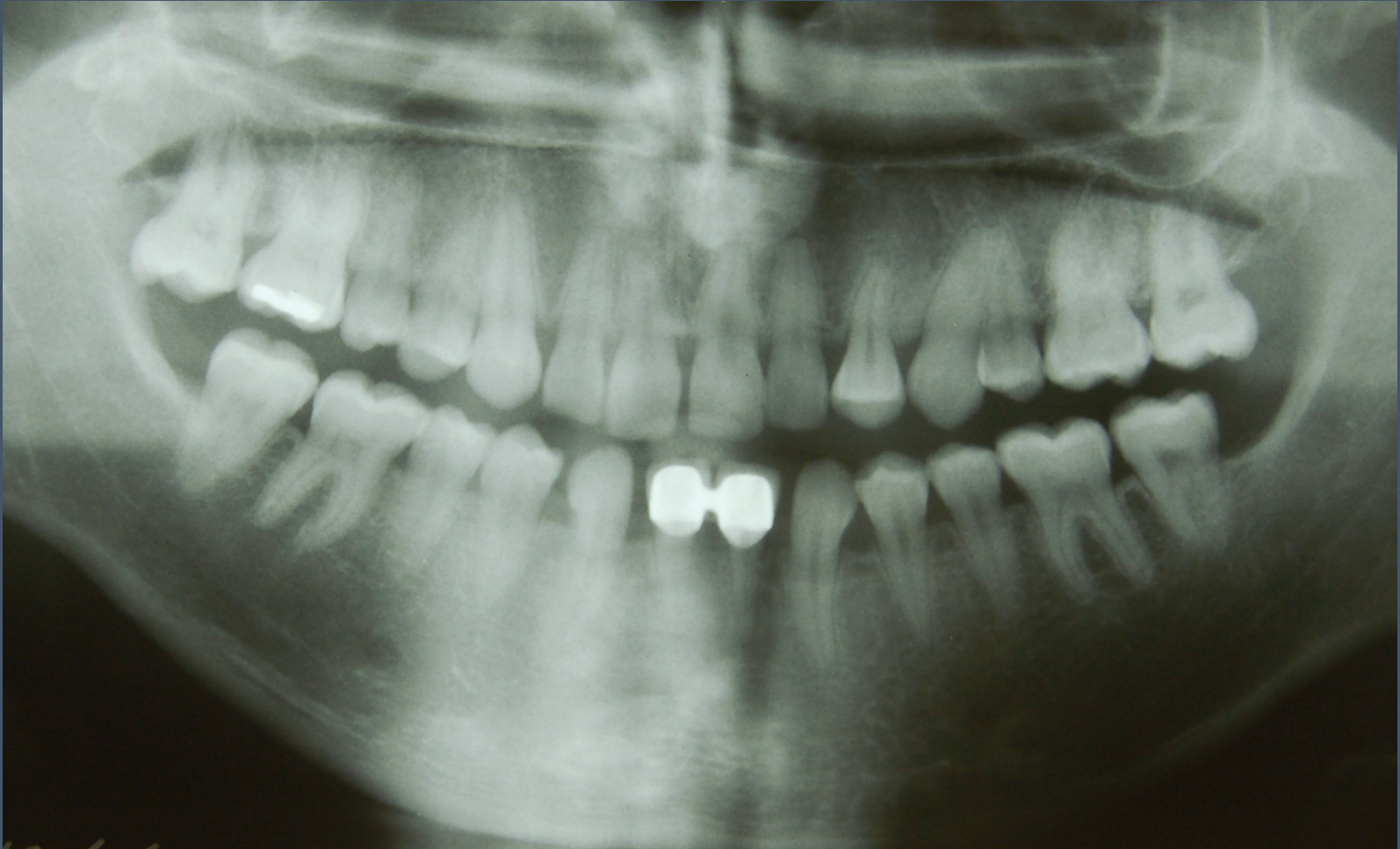
upper teeth are not in contact with lower teeth

**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



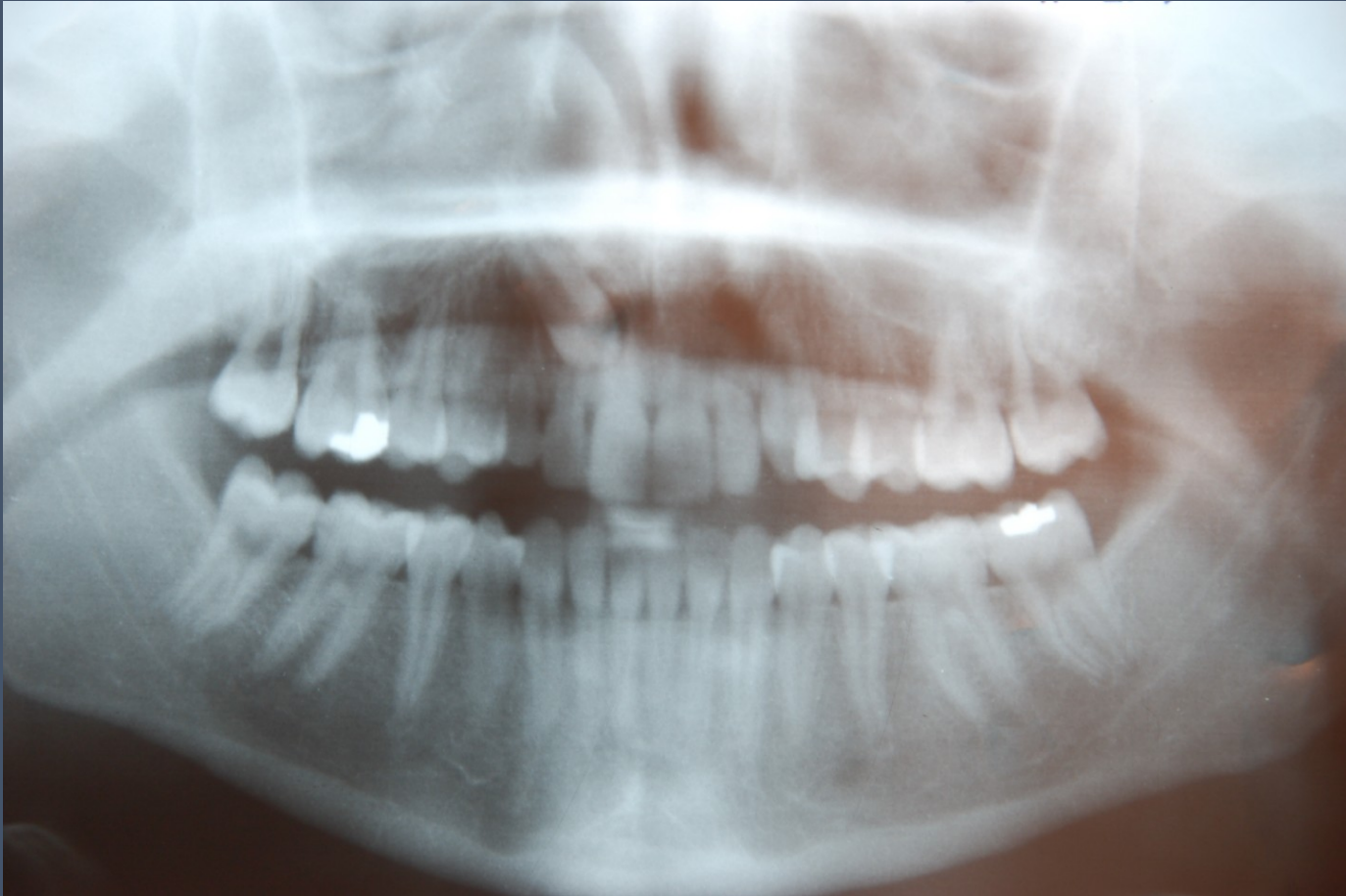
# Palatal eruption



# Retention of canine



# Retention of canine





# Infraocclusion



# Buccal nonocclusion

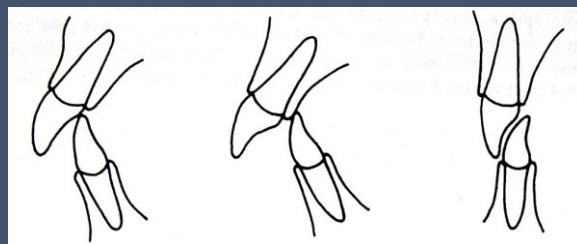


# Classification of orthodontic anomalies

## 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





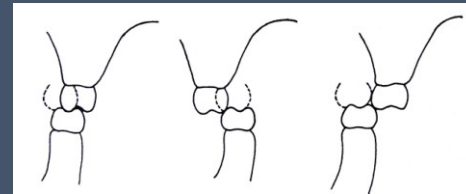
# Inverted bite, cross bite



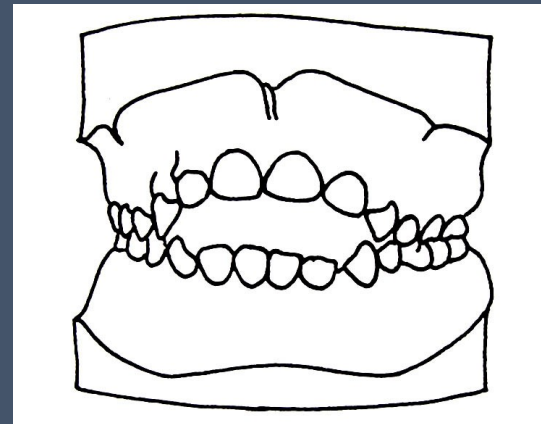
# Classification of orthodontic anomalies

## 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**

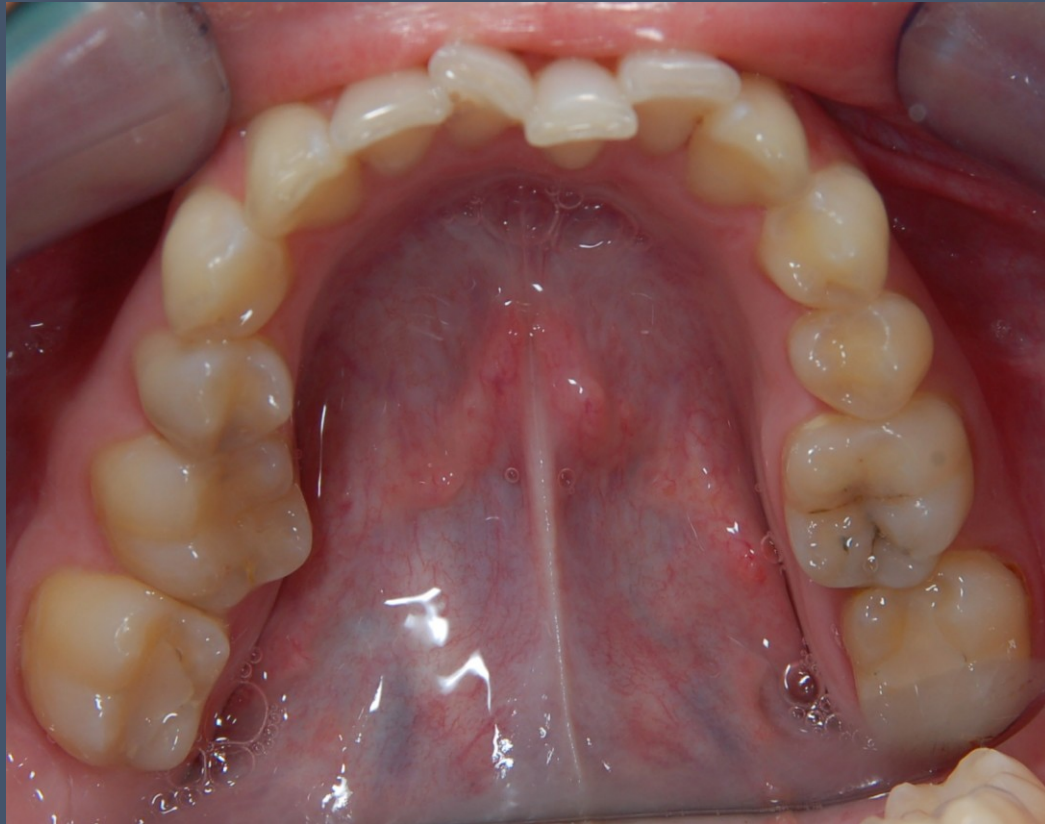
**Crowding** – primary, secondary, tertiary



# Deep bite

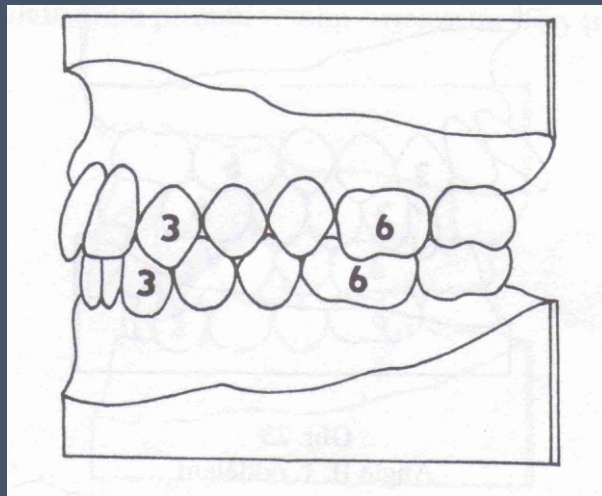


# Crowding



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

#### Class I . normoocclusion

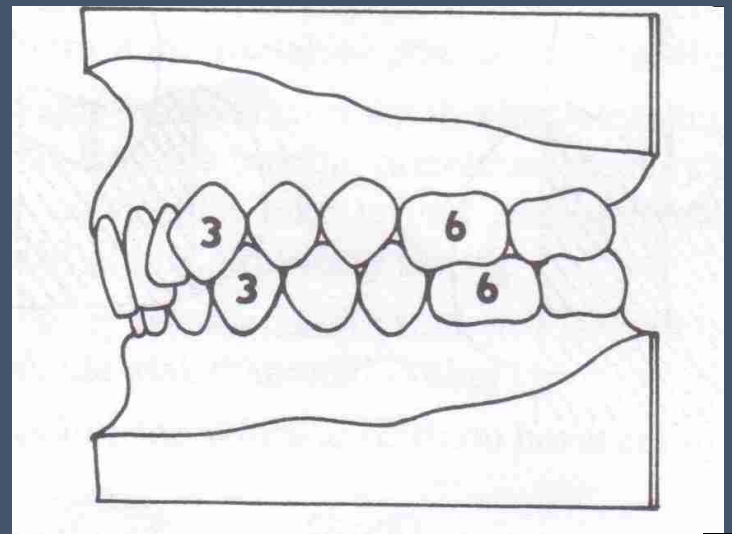
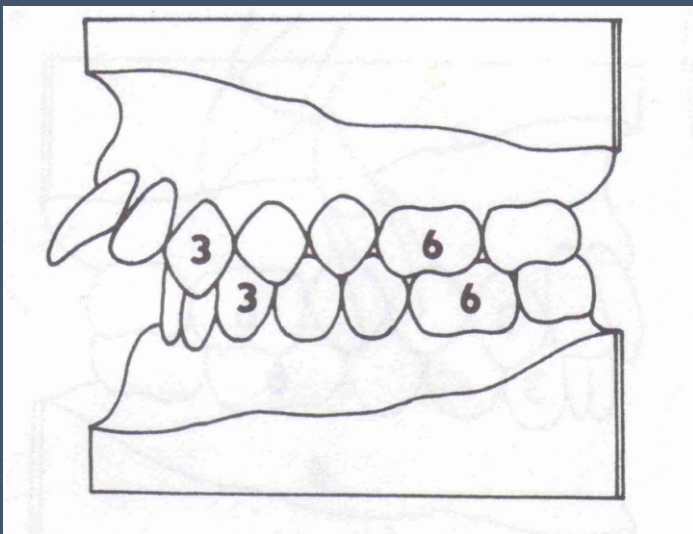


# Angle I



# Classification of orthodontic anomalies

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

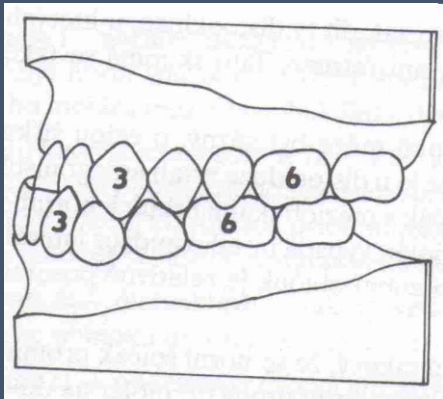


# Angle II



# Classification of orthodontic anomalies

- Class III : mesial occlusion



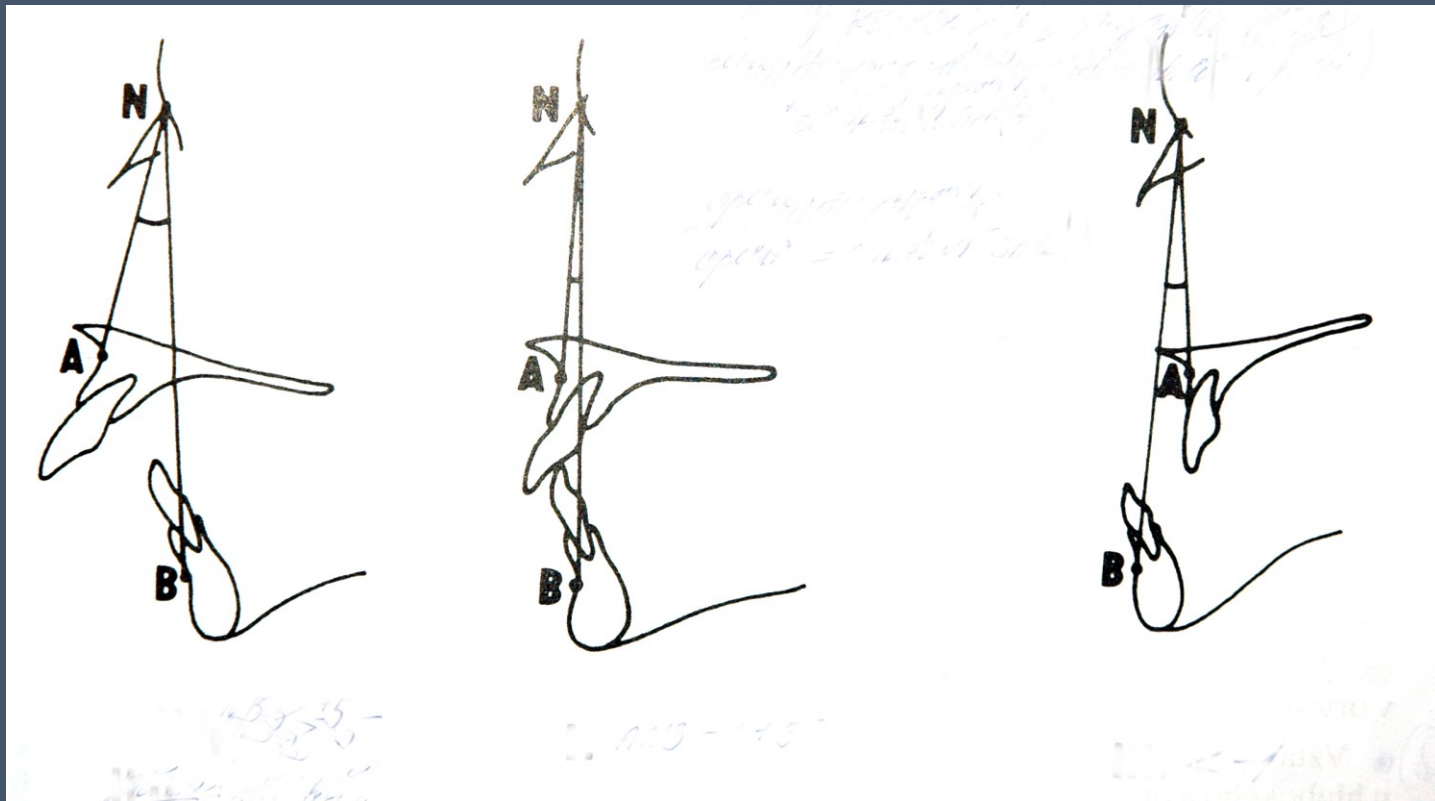


# Angle III



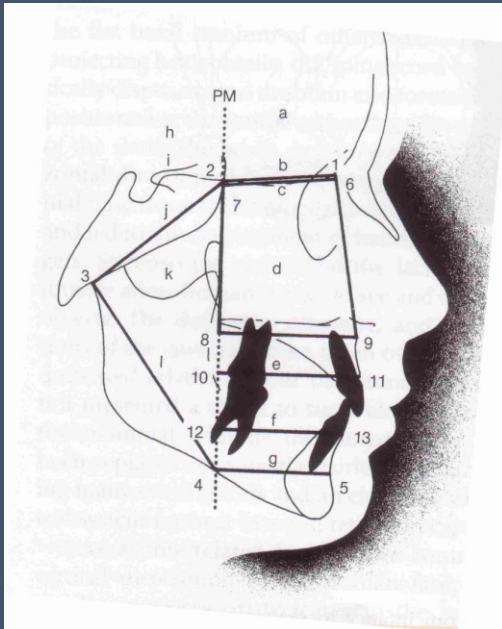
# Classification of orthodontic anomalies

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



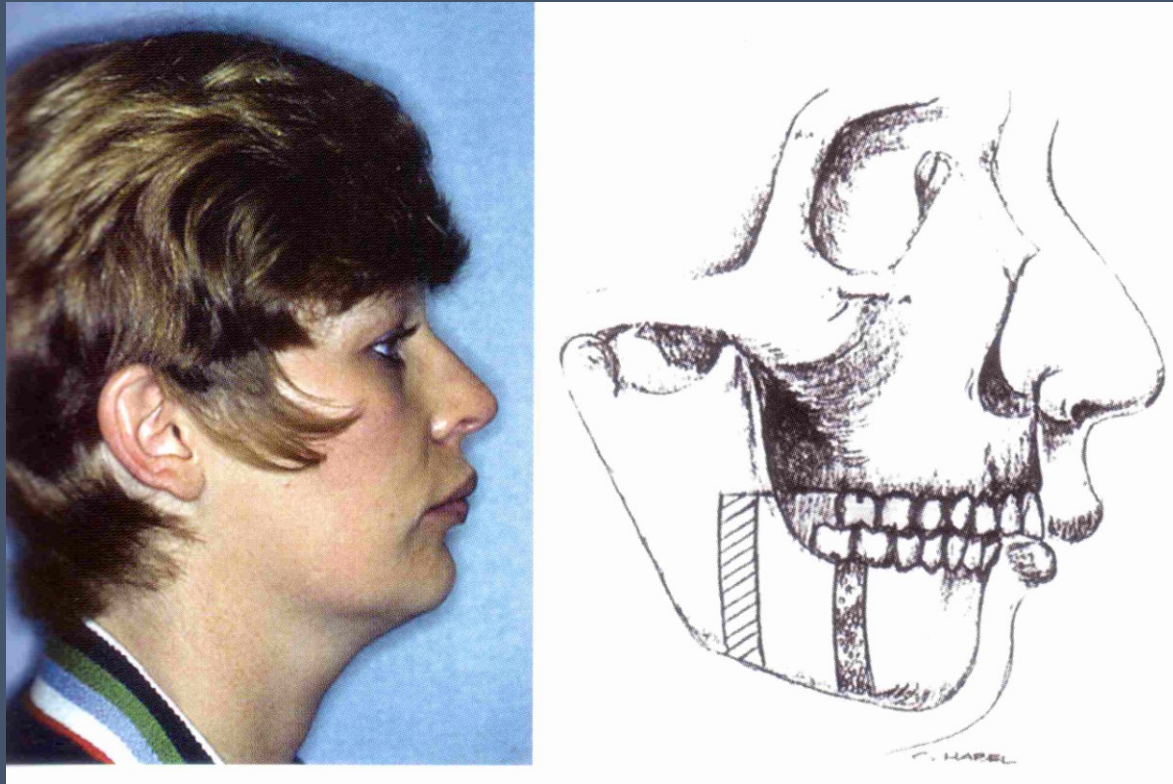
## 4. Anomalies of position, size and relationship of the jaws-bones

**Skeletal class I** : relationship of jaws without any deviation

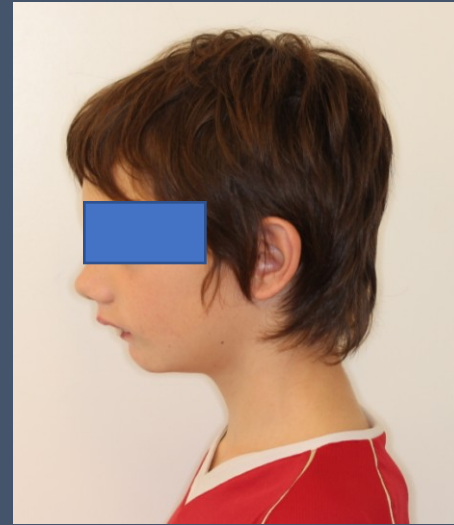


# Classification of orthodontic anomalies

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





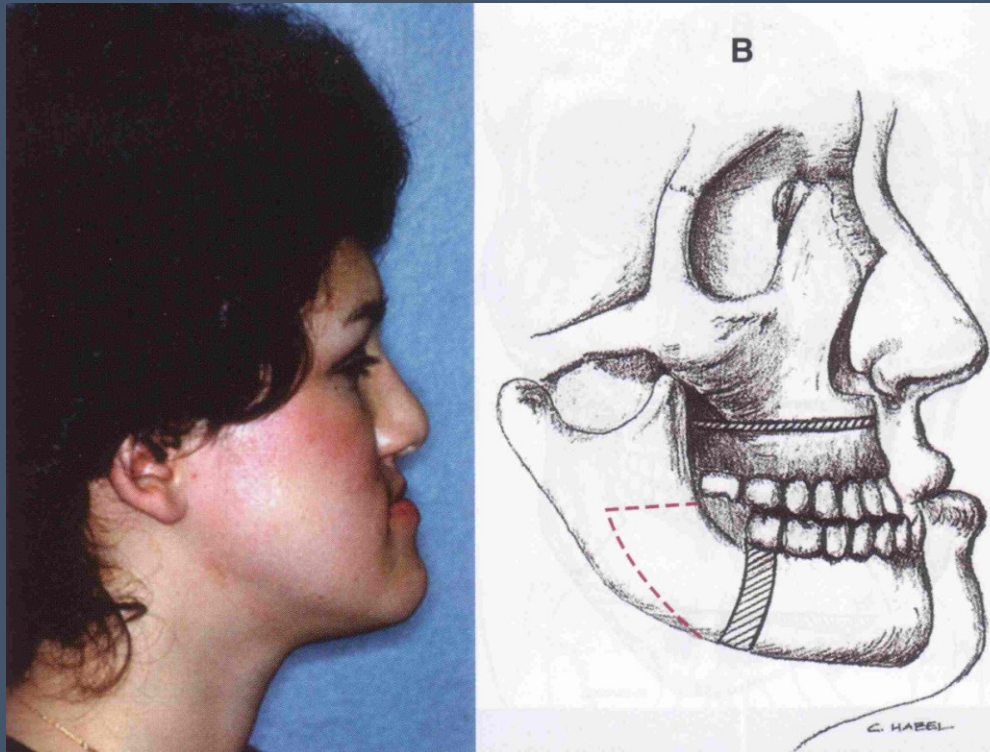


# Angle II



# Classification of orthodontic anomalies

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

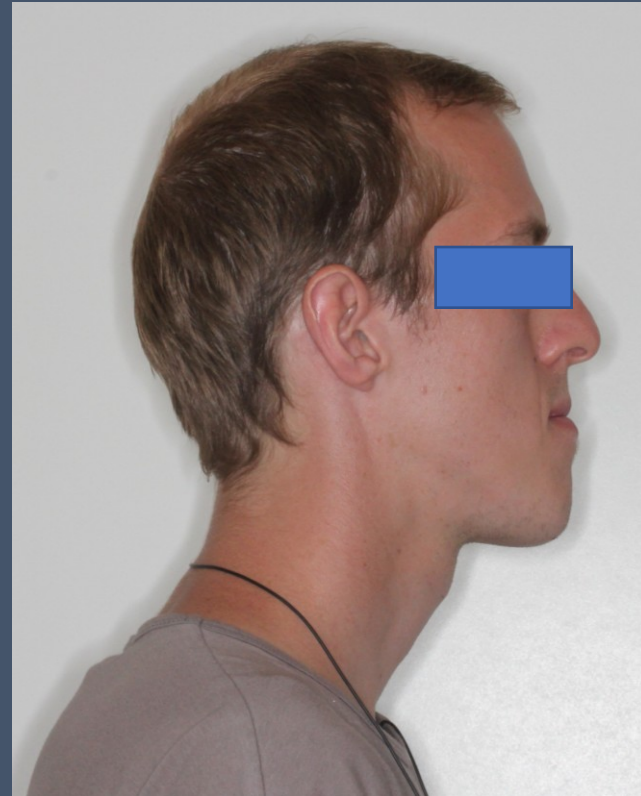




# Angle III, skeletal cl. III



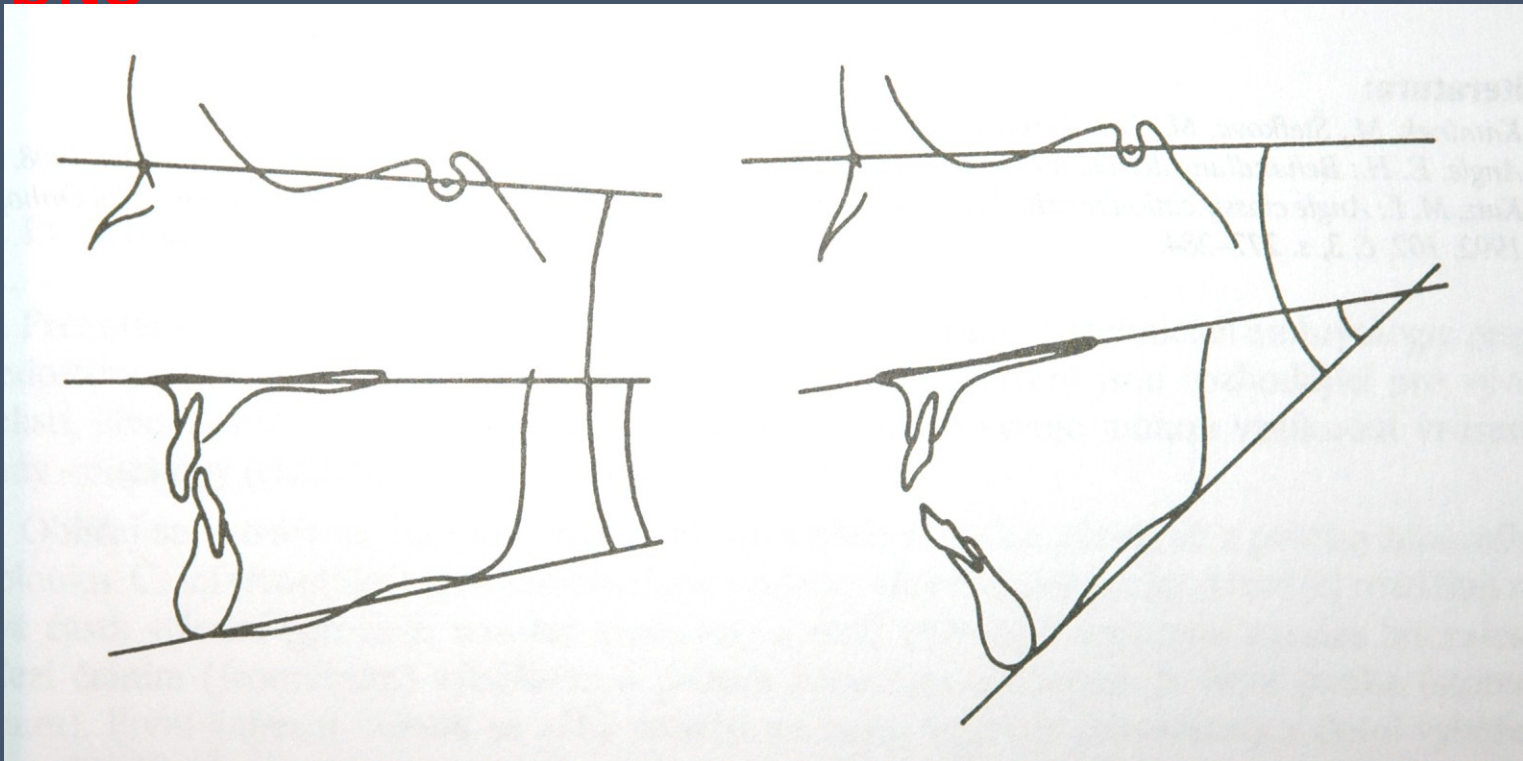
# Skeletal class III



# Classification of orthodontic anomalies

skeletal deep bite

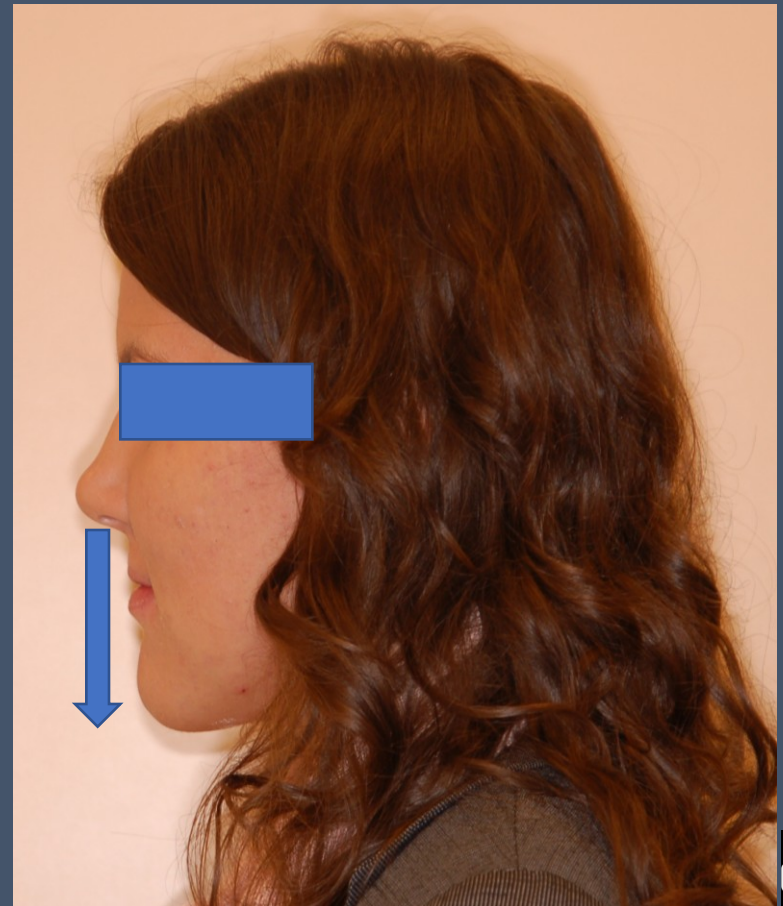
skeletal open bite



skeletal deep bite  
bite



skeletal open  
bite



# Thank You for Your attention

Questions – email – [alena.brysova@fnusa.cz](mailto:alena.brysova@fnusa.cz)

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

