



## *Etiology*

*Hereditary and acquired anomalies*

---



# *Etiologic factors of the development of orthodontic anomalies*

---

---



## ★ Internal factors

- Heredity
- Embryonal injuries  
(e.g. viral disease, hypoxia, prenatal trauma, birth injuries)
- Endocrine disorders



## ★ External factors

- Systemic diseases
- Nutrition
- Nasopharyngeal diseases and disturbed respiratory function
- Deleterious oral habits
- Premature loss of primary teeth





## *Hereditary anomalies*

---

- ★ **Cleft lip and palate**
- ★ **Form and size of the dental arch**
- ★ **Numerical anomalies of teeth**
- ★ **Abnormal position of a germ or a single tooth**
- ★ **Maxillary or mandibular prognathism, deep bite**





# *Hereditary anomalies*

---





# *Cleft lip and palate*

---





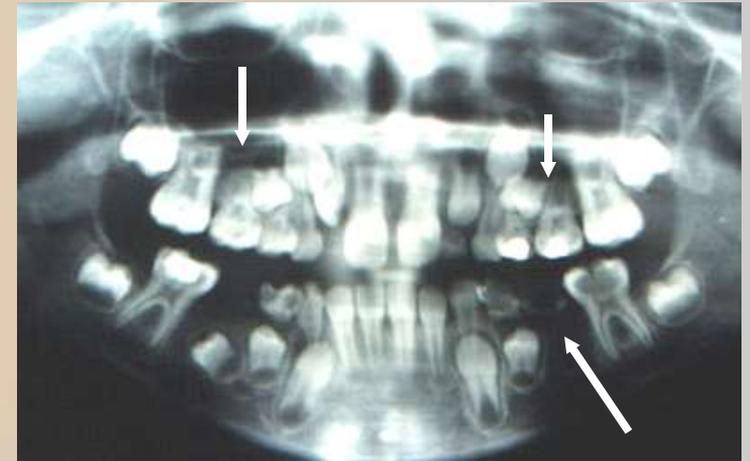
## *Form and size of the dental arch*

---





# *Numerical anomalies of teeth (aplasia)*





# *Numerical anomalies of teeth (aplasia)*





# Dysplasia ectodermalis





# *Hypodontia in a family*

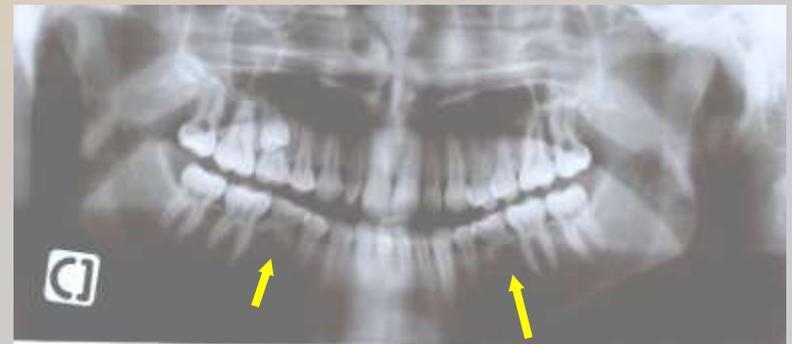
2 | 2



5 4	3 4 5
5 4	5

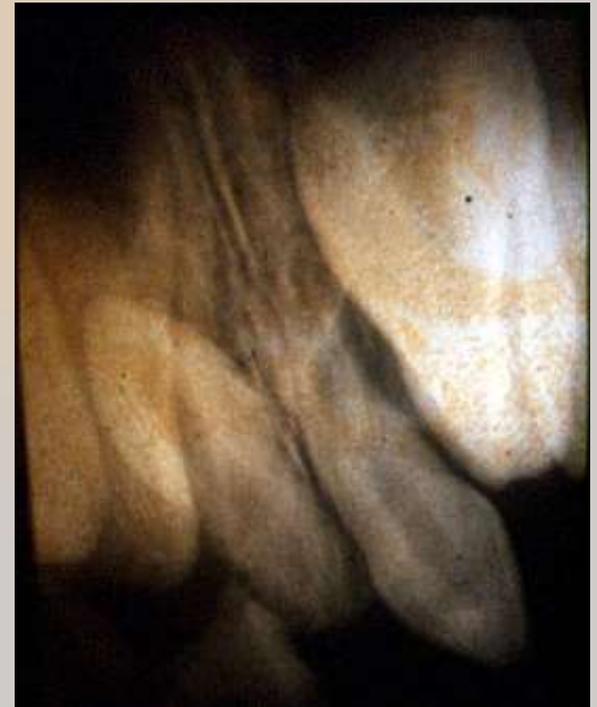
2 5

5 | 5



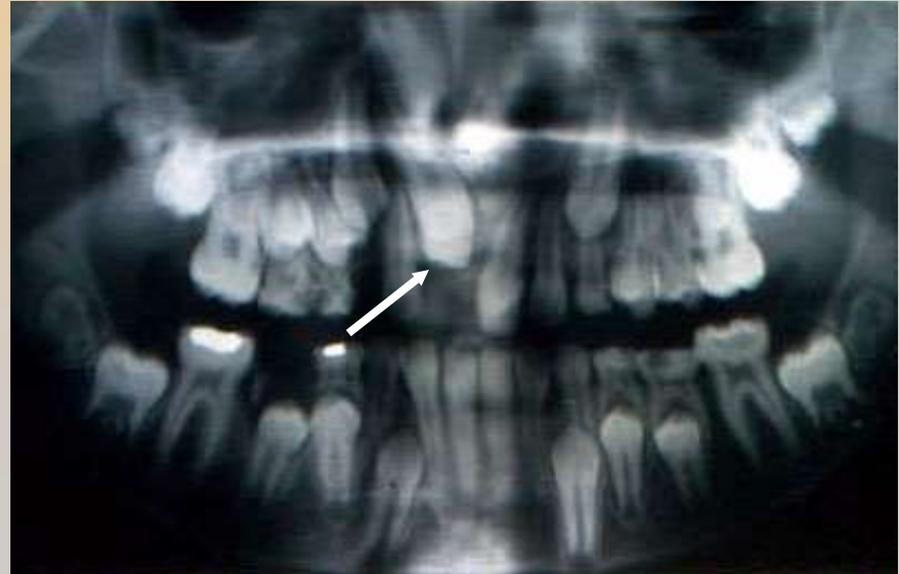
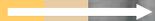
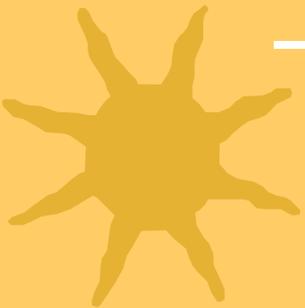


# *Numerical anomalies of teeth (supernumerary teeth)*





# *Numerical anomalies of teeth (supernumerary teeth)*



*Abnormal position of a germ or a single tooth*



**Diastema medianum**  
**Midline space**

**Ectopic canine**

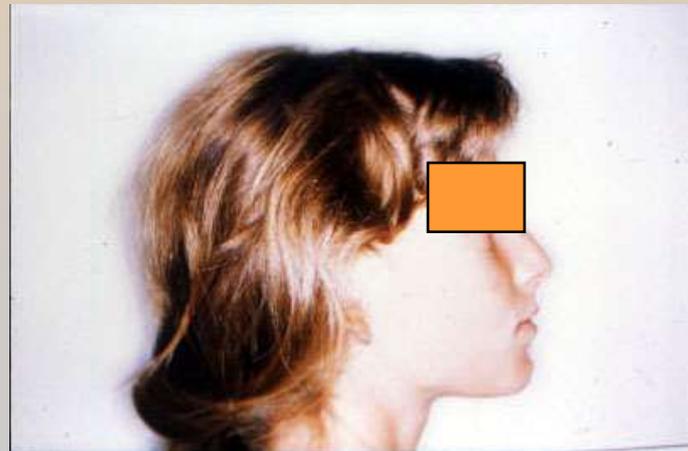
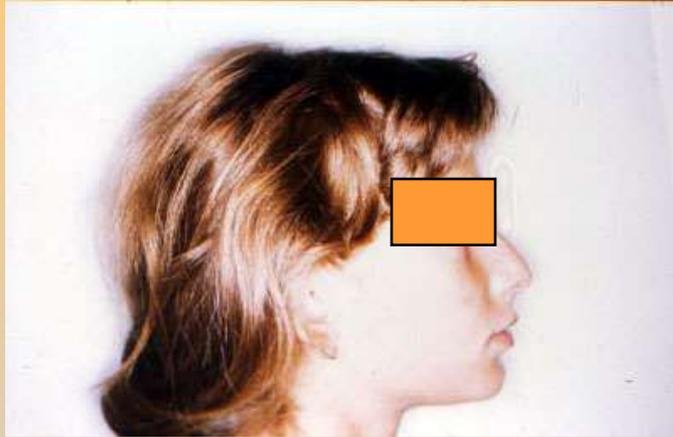


*Abnormal position of a germ or a single tooth*



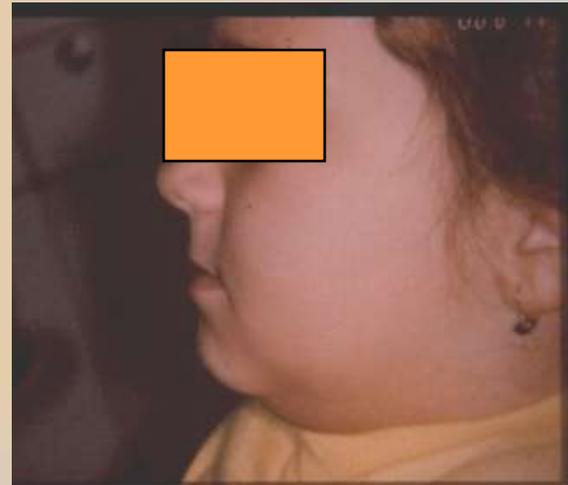


# *Deep bite*





## *Progenia (mandibular prognathism)*





# Habsburg family (1515)

I. Maximilien



V. Charles



# Prognathism





## *Causes of acquired anomalies*

---



- ★ **Embryonal injuries**
- ★ **Endocrine disorders**
- ★ **Systemic diseases**
- ★ **Bottle feeding of baby**
- ★ **Malnutrition (quality and nature of food)**
- ★ **Mouth-breathing**
- ★ **Deleterious oral habits (e.g. thumb- and finger-sucking, tongue-thrusting swallowing)**
- ★ **Premature extraction of primary teeth**
- ★ **Injuries**





## *Embryonal injuries*

---

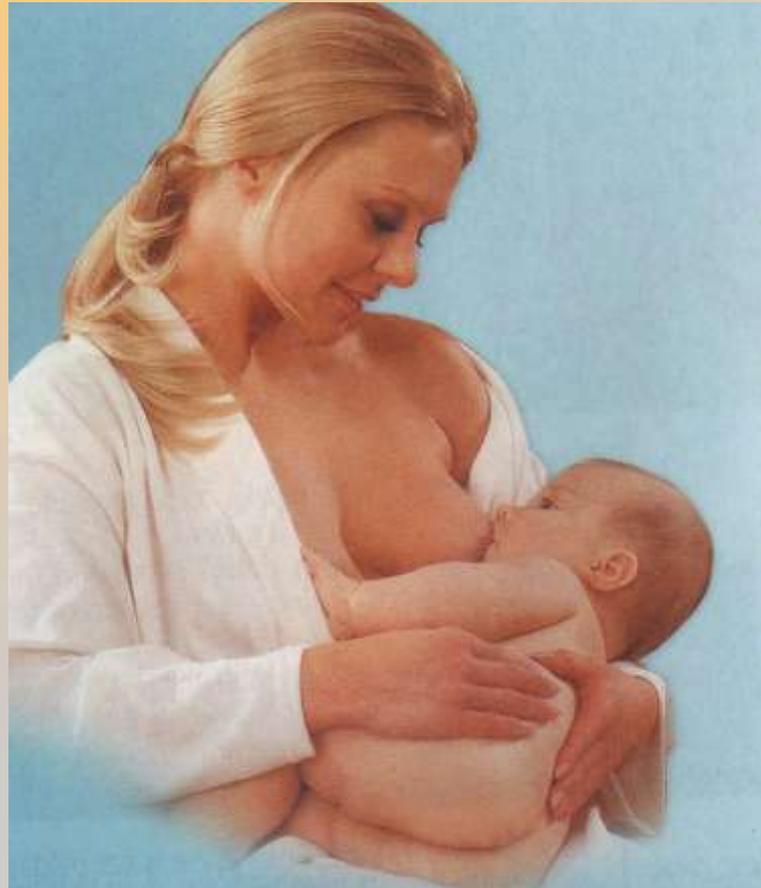


**Micrognathia**



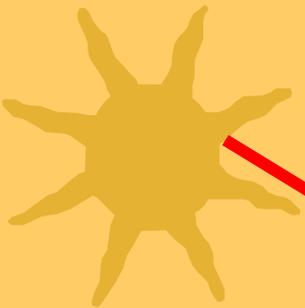
## *Bottle feeding of baby*

---



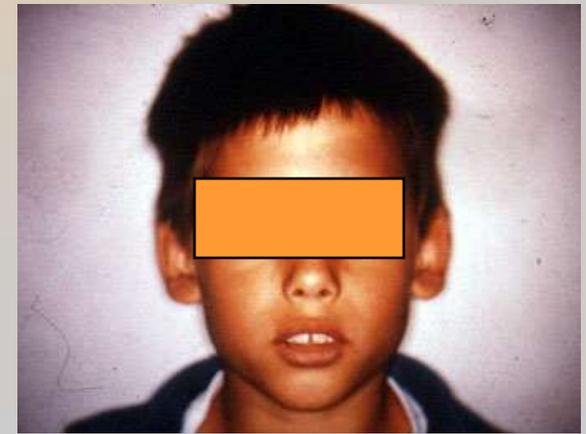
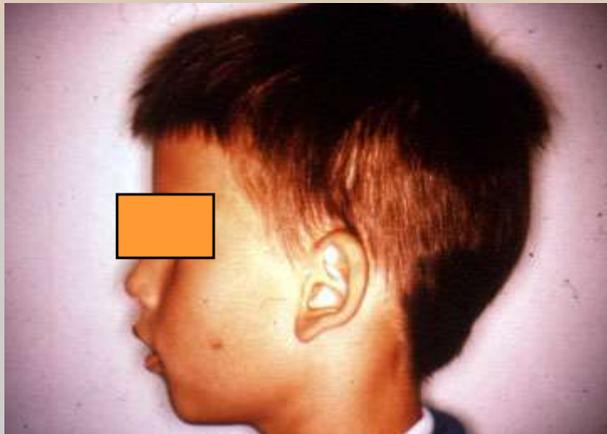


# *Malnutrition (quality and nature of food)*



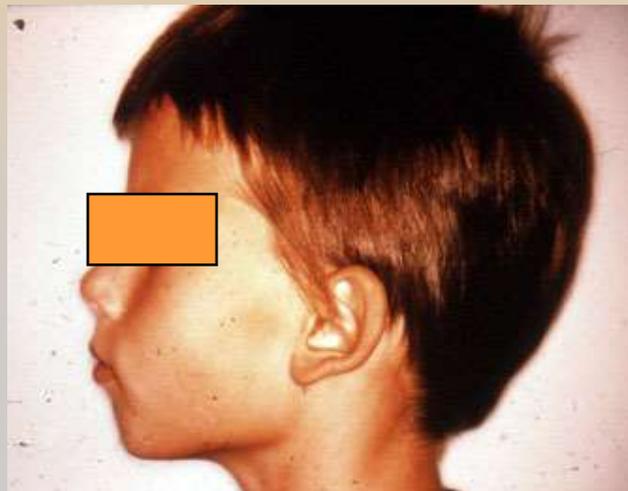


**Disturbed respiratory function →  
→ mouth-breathing**



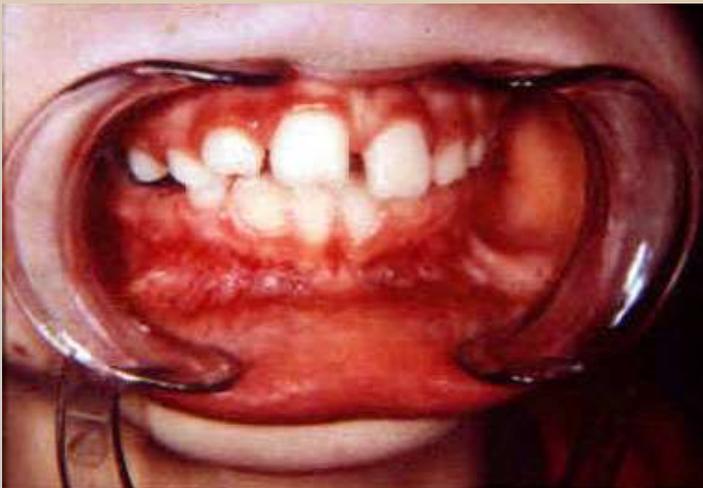


*Disturbed respiratory function →  
→ mouth-breathing*





# *Thumb-sucking*





# *Finger sucking*

---



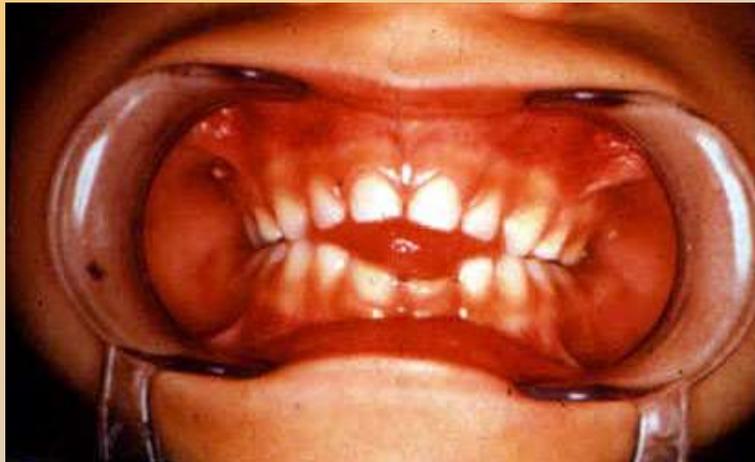


# Thumb-sucking





## *Tongue-thrusting swallowing*



**Malposition of the  
lower lip**



## *Premature extraction of primary teeth*

---





# Space maintainer





# *Injuries*



# Dilaceratio

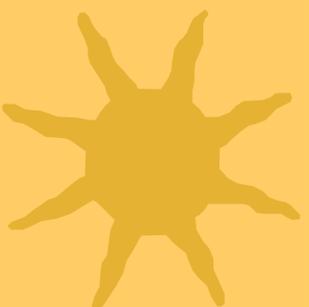




# *Etiology of malocclusion*

---

---



- ★ **Etiologic factors contribute to the variance more often than they simply „cause” it**
- ★ **The „causes” of malocclusion are usually grouped because they are usually nonspecific and our knowledge is often imprecise**
- ★ **The same etiologic factor may have a different effect at different ages and in different persons**
- ★ **Malocclusion may result from the combination of minor variations from the normal; each is too minor to be classed as abnormal but their combination summates to produce a clinical problem**
- ★ **Different problems, although bearing the same name, may have different primary etiologic sites, so they are entirely different in their beginnings, their treatment and their prognosis**

*Thank you for your attention!*

---

