

CRANIOFACIAL NEURO OSTEOLOGY

A NOVEL CONCEPT FOR DIAGNOSIS OF MALFORMATIONS

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INTRODUCTION

The discipline of prenatal and postnatal interrelationships is named as **Neuro-osteology**.

The craniofacial patterning of the fetus involves various developmental fields and any malformation associated with these fields would naturally influence the outcome of facial form and function, and can be seen in orthodontic radiographs.

Neuro osteological evaluation of dentition helps one to decide whether the pathological condition is congenital and hence a Malformation, or acquired as a result of trauma or infection, a Disruption.

ENTI LAVANC E

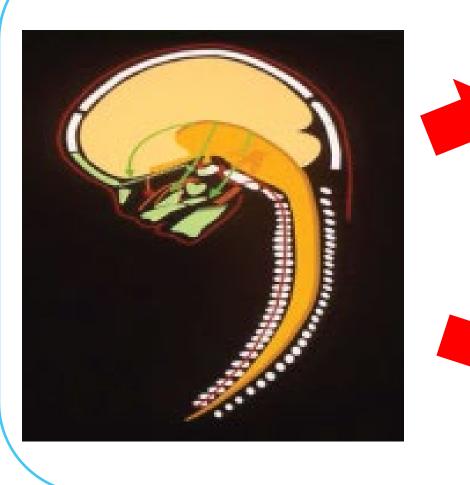
FIELDS REPRE

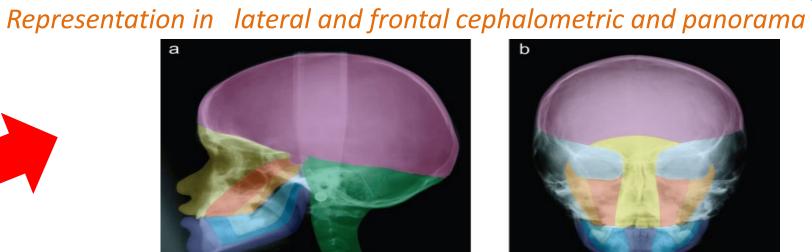


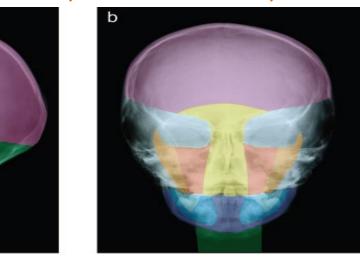


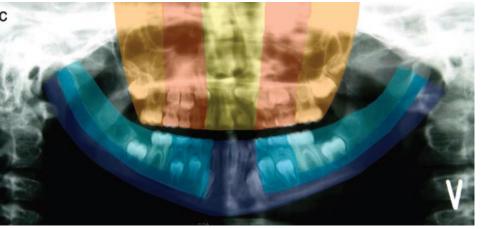
INGER KJAER, Dept of Orthodontics, Copenhagen

Neural crest cell migration





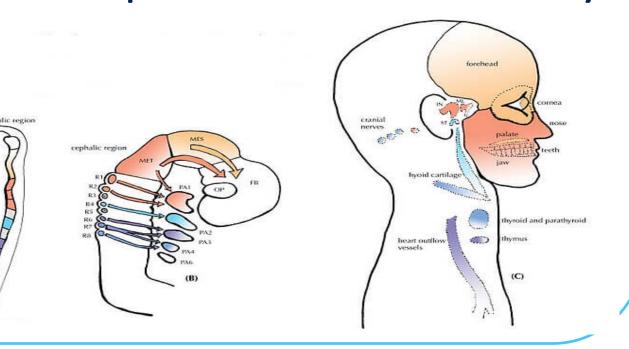




IN ORTHODONTIC RADIOGRAPHS

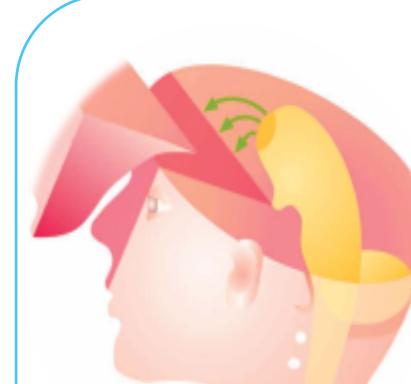
According to Developmental Neuro-osteology, Head and neck regions of the human body can be broadly classified into 5 developmental fields namely

- 1. Frontonasal field
- 2. Cerebellar field
- 3. Maxillary field
- 4. Mandibular field
- 5. Palatine field

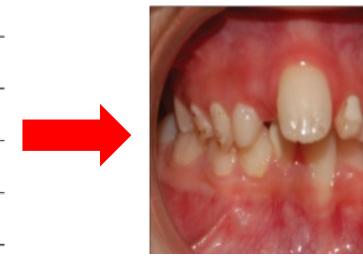


1. Frontonasal field

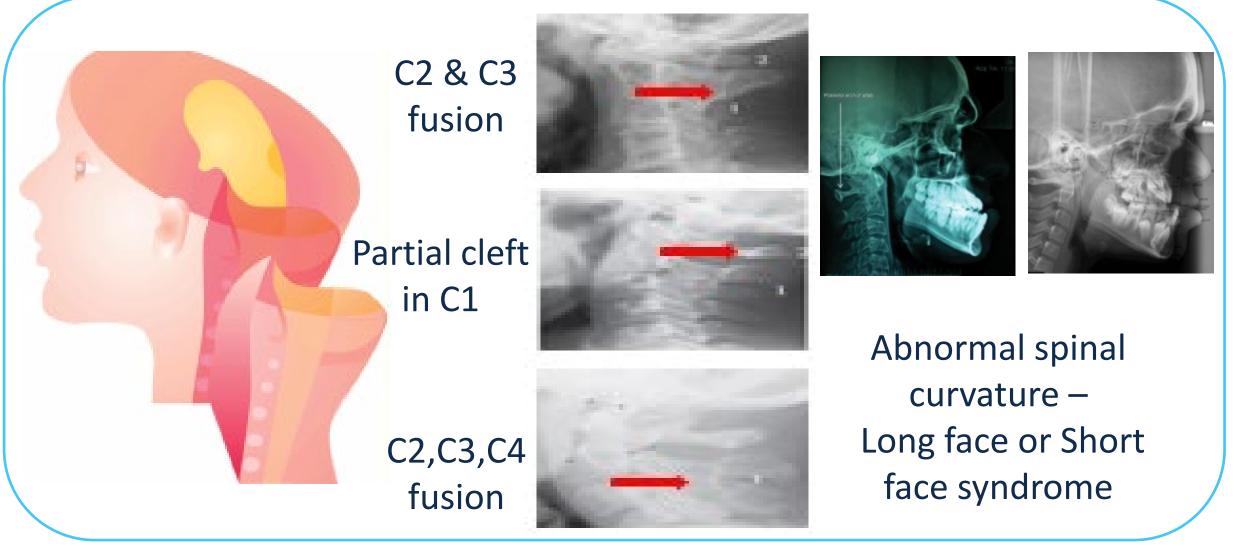
2. Cerebellar field



Abnormal Sella Tursica



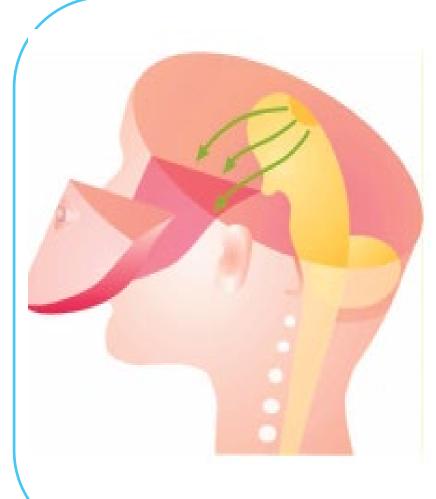
Single maxillary median central incisor,

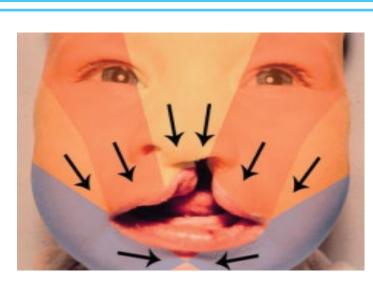




Absence of labial frenum & incisive papilla, Short nasal bones

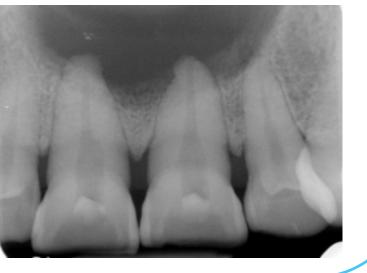
3. Maxillary field







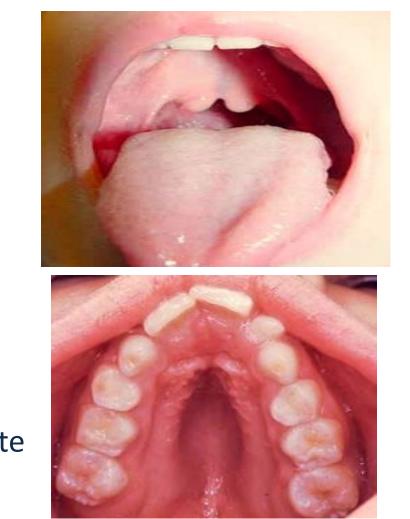
Cleft lip Agenesis of teeth- missing lateral incisors, II premolars or III molars Misshaped teeth- peg laterals, dwarfed teeth, taurodont teeth Juvenile periodontitis



5. Palatine field







4. Mandibular field







Absence of mandibular canal, Agenesis of teeth-missing central or lateral incisors, II premolars or III molars, dwarfed teeth, taurodont teeth Juvenile periodontitis

CONCLUSION

For dentistry, neuro-osteological fields concept has meant that cranial development cannot be





Cleft of hard palate, Cleft of soft palate, Narrow and high arched palate

considered in isolation from the axial skeleton. Studies in progress indicate that not only are different axial regions affected in different genetic disorders, but also that these regions are associated with different craniofacial malformations.

"Hoarding knowledge ultimately erodes your power. If you know something very important, the way to get power is by actually sharing it"-Joseph Badaracco

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