

# USE OF CBCT IN PEDIATRICS

ARE GUIDELINES NECESSARY FOR THE USE  
OF CONE BEAM COMPUTED TOMOGRAPHY IN  
THE PEDIATRIC POPULATION?

**Docteur Milicevic Mladen**  
**Radiologist, University Hospital of Liege – BELGIUM**  
**E-mail: [mladen.milicevic@chuliege.be](mailto:mladen.milicevic@chuliege.be)**

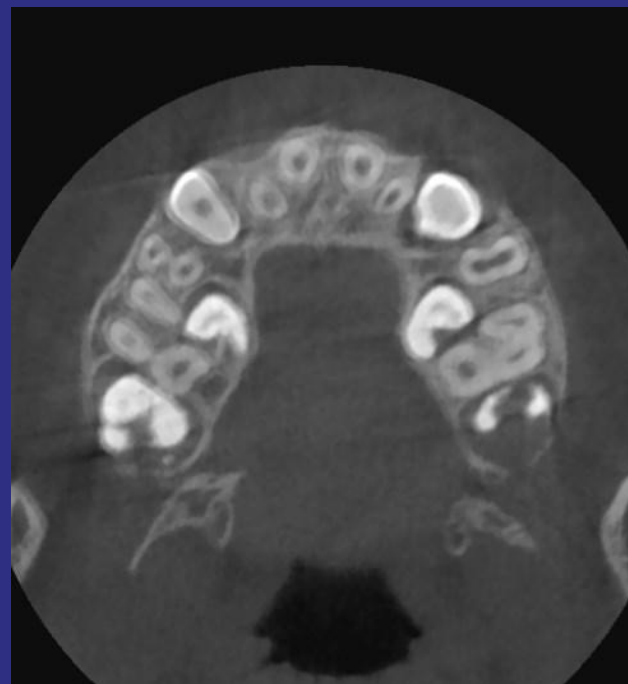
- In the last years significant increase of CBCT examinations in pediatric population
- In DMFR, pediatric population was rarely in collimation of pediatric radiologists
- Delivered doses in extra hospital dentistry were never been counted with doses delivered in imaging departments

- Bad understanding of the risk implications of higher doses than panoramic X-ray or intra oral X-ray
- Size of the region, bone and soft tissues pathologies
- Lack of standardization of Radiation Dosimetry for CBCT
- Only by effective dose (mSv) !!!



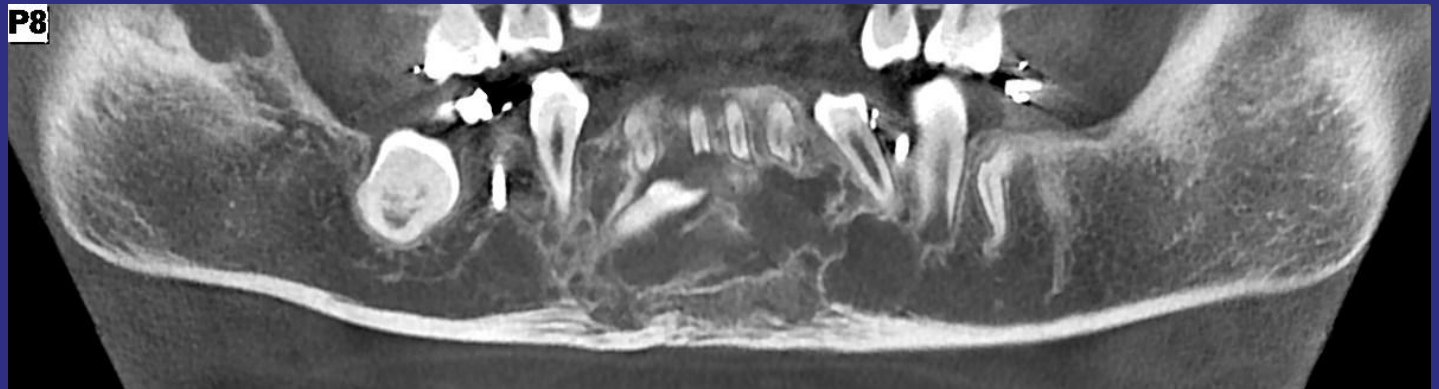
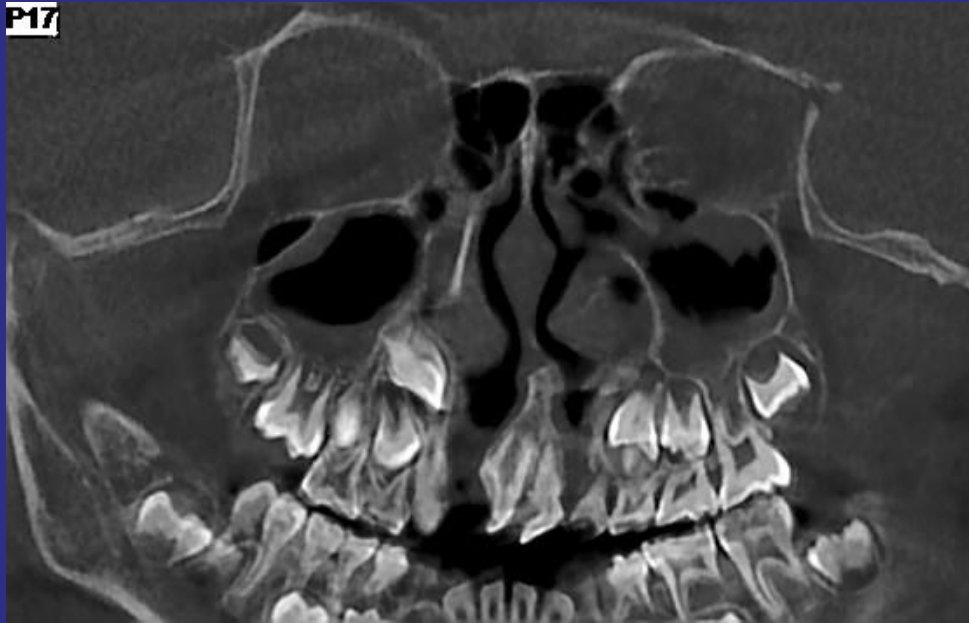
- Indications – Dentistry and DMF Surgery
  - Teeth development evaluation
  - Assessment of craniofacial morphology
  - Sleep disordered breathing symptoms
  - Fractures, TMJ bone disorders, cleft lip and palate evaluation, neoplastic lesions

Odontoma mesiodens.



Hyperdontia.

Bilateral nasopalatine cleft.



Central giant cell granuloma.

- Paranasal sinuses imaging

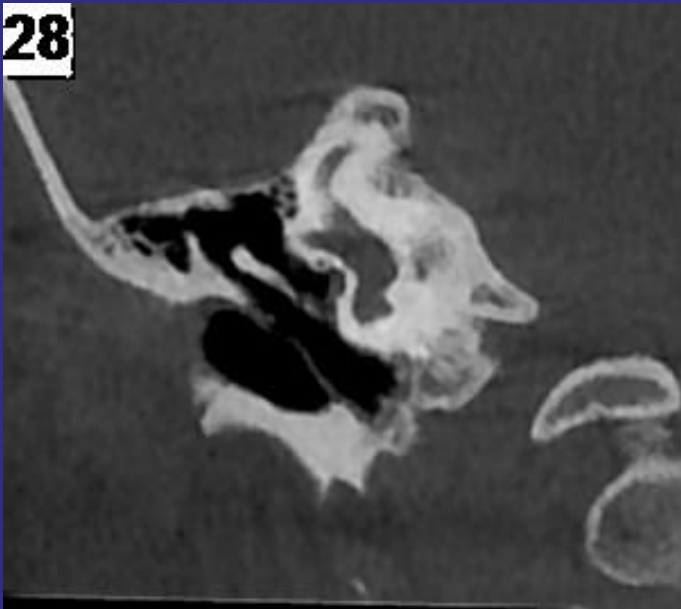
- Atypical presentation of acute sinusitis
- Neurologic or ophthalmologic complications
- Chronic sinusitis without recovery despite multiple treatments



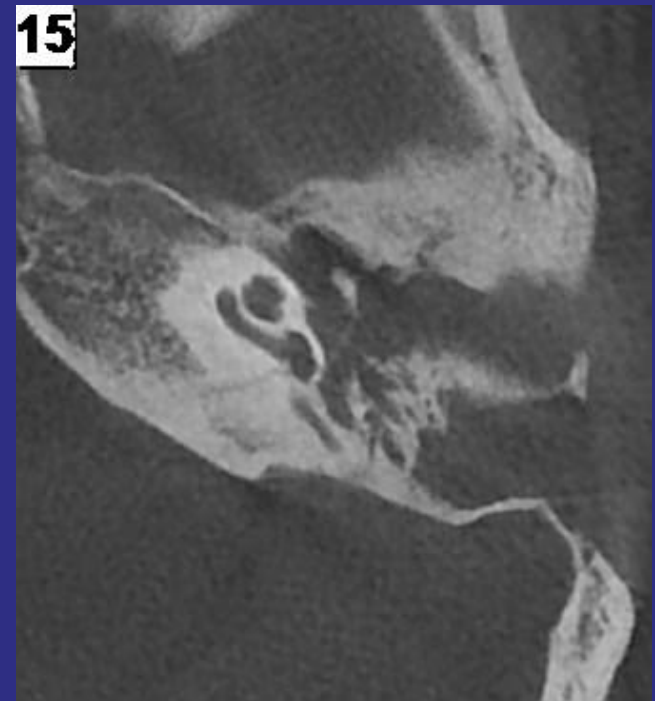
Recurrent sinusitis.

- Temporal bone imaging

- Congenital cholesteatoma, relapsing cholesteatoma
- Cochlear implant, ossicular replacement
- Otosclerosis work-up



Stapes agenesis, atresia of the oval window.

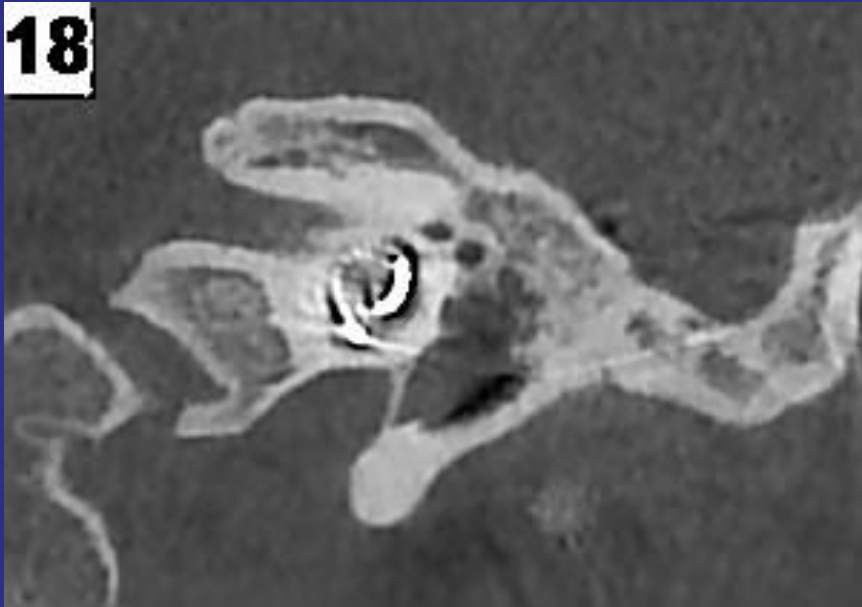


Recurrence of congenital cholesteatoma.



# Cochlear prosthesis.

**18**



**16**



Total ossicular replacement prosthesis.

- Osteoarticular radiology

- Trauma and neoplastic pathology

- Radiation oncology

- Motion evaluation of abdominal organs and reduction of

- Planning Target Volume in neuroblastoma therapy

- Interventional radiology

- Biplane angiographic system for cardiac procedures

- Needle biopsies of lung, liver and kidney

- Conclusions

- Strict observation of Justification and Optimization
- If MDCT indicated → to replace with a CBCT
- ALARA: as low as reasonably achievable
- ALADA: as low as diagnostically acceptable
- A good clinical practice → no need evidence based guidelines