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Cone Beam Computed Tomography

CBCT

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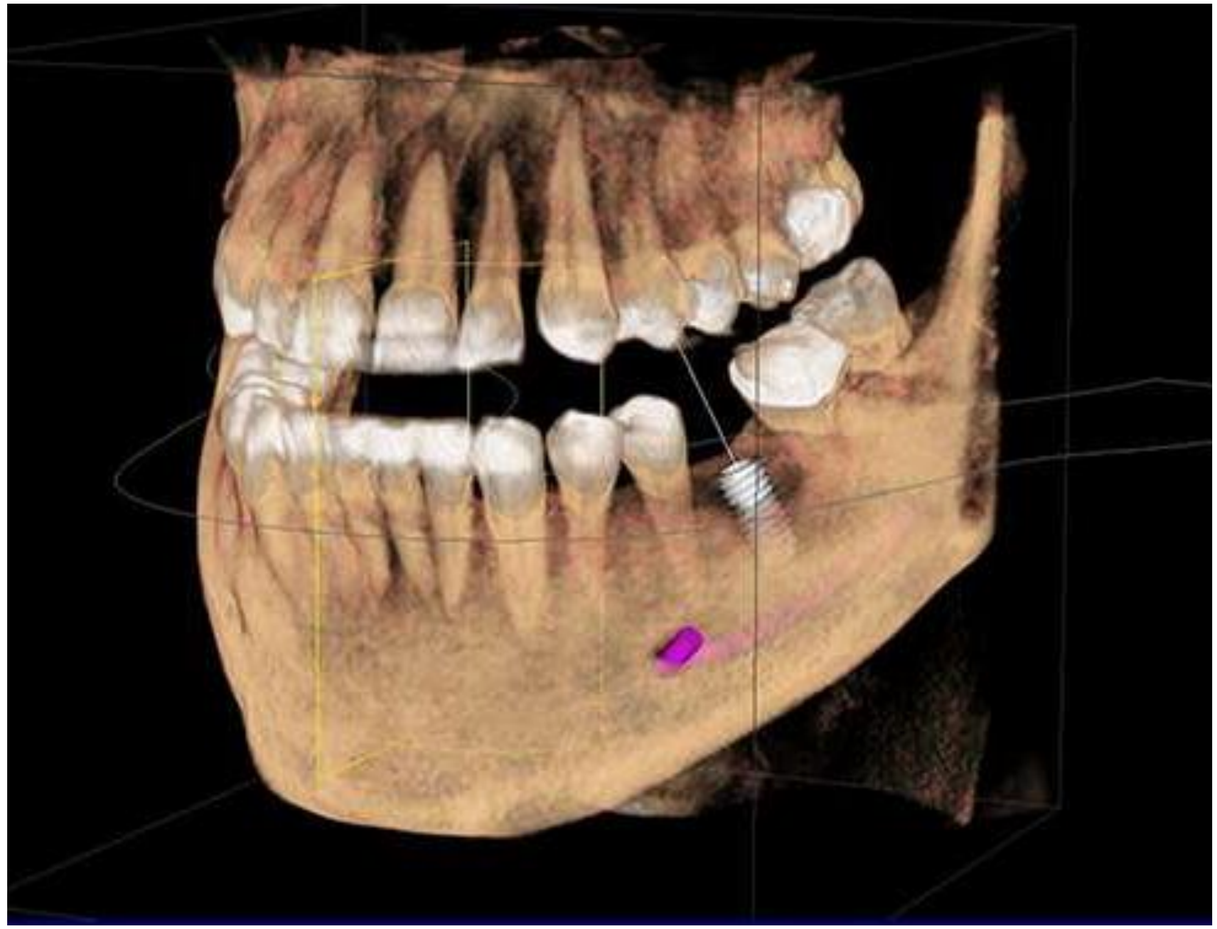
What is the CBCT



It is a technology used to take three dimensional (3-D) images of your teeth, maxillary sinus, nerve pathways, and bone in the maxillofacial region with a single scan.

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What is the CBCT

The CBCT system rotates around the patient in approximately 30 seconds, capturing data using a cone-shaped x-ray beam.

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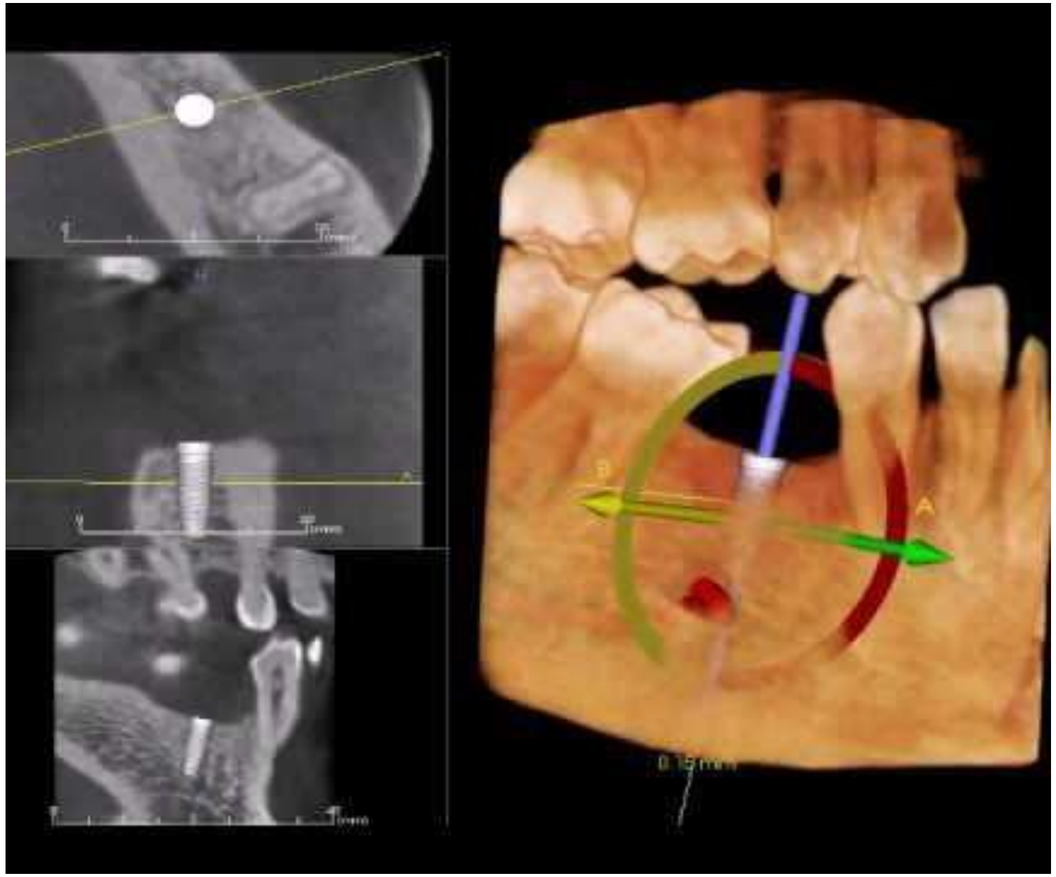
Why CBCT



With CBCT, clinicians can get highly detailed 3-D views of the facial region with lower radiation exposure than a conventional CT scan.

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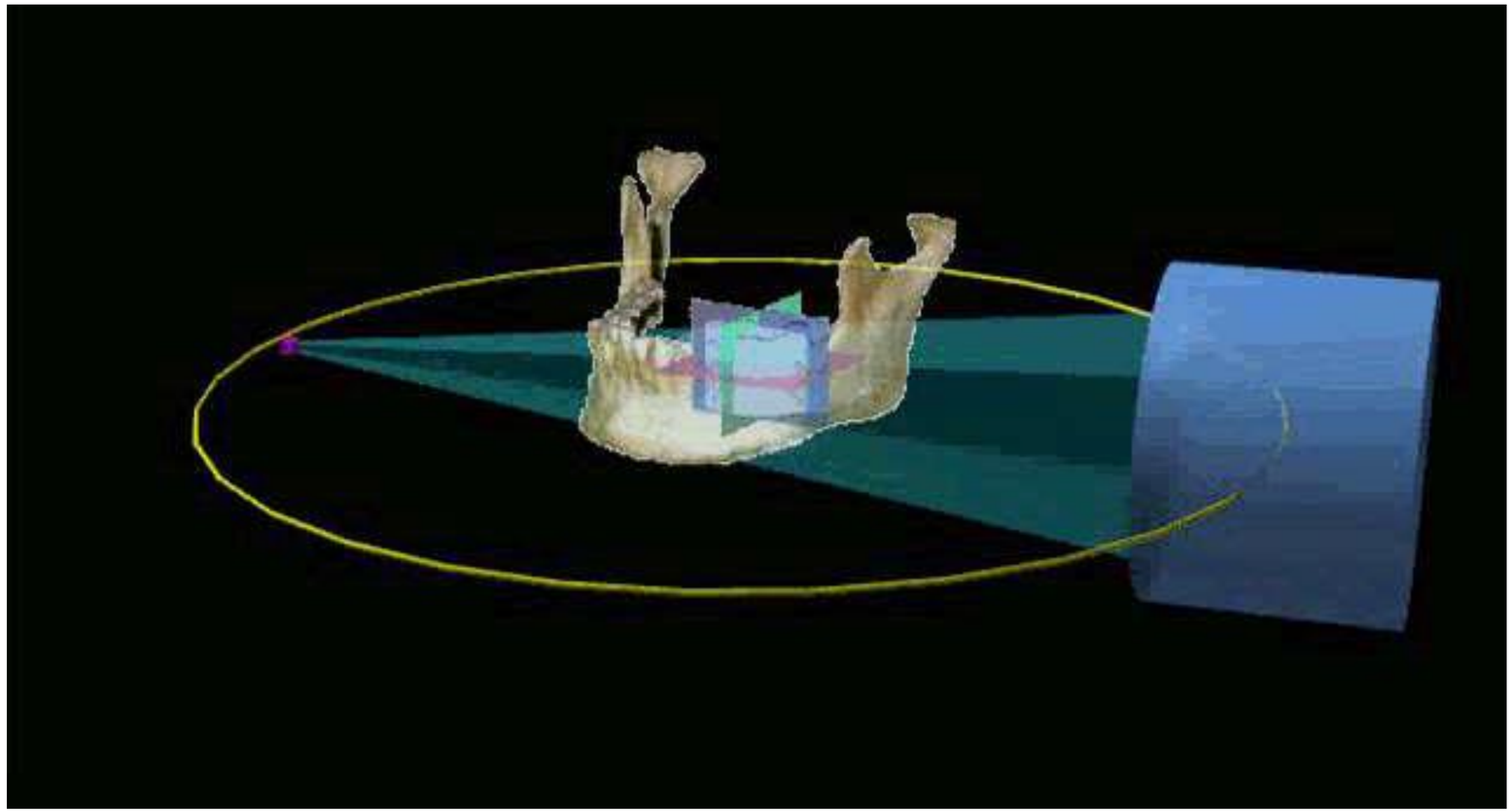
CBCT Volume Capture



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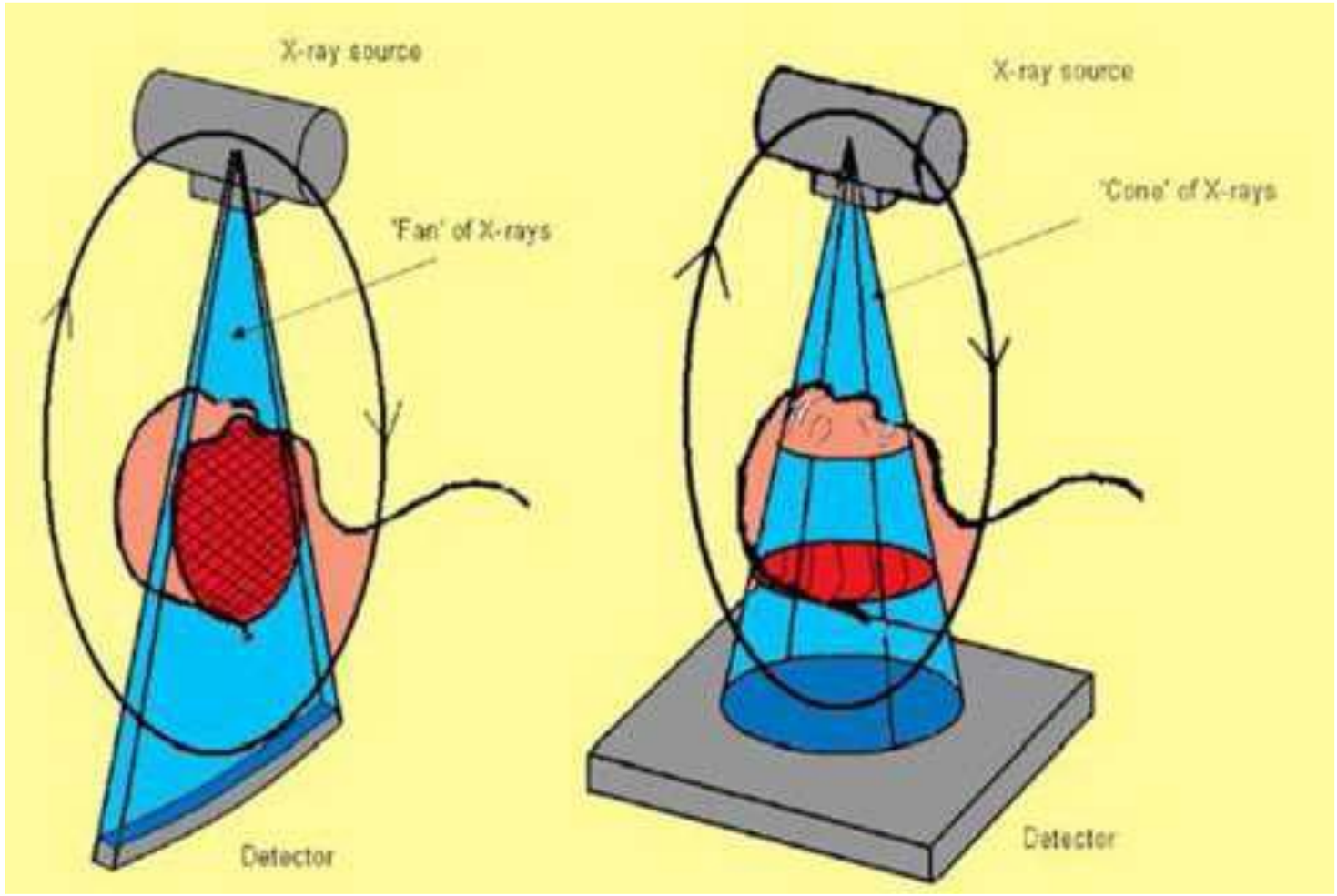
Medical CT
vs .
Dental CBCT



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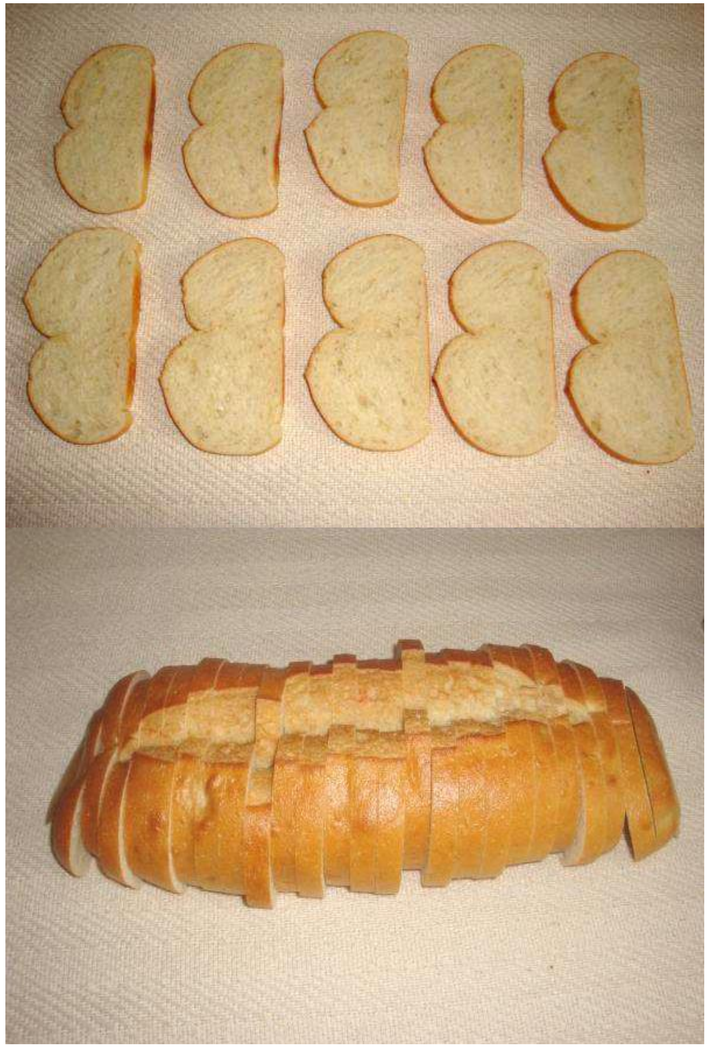
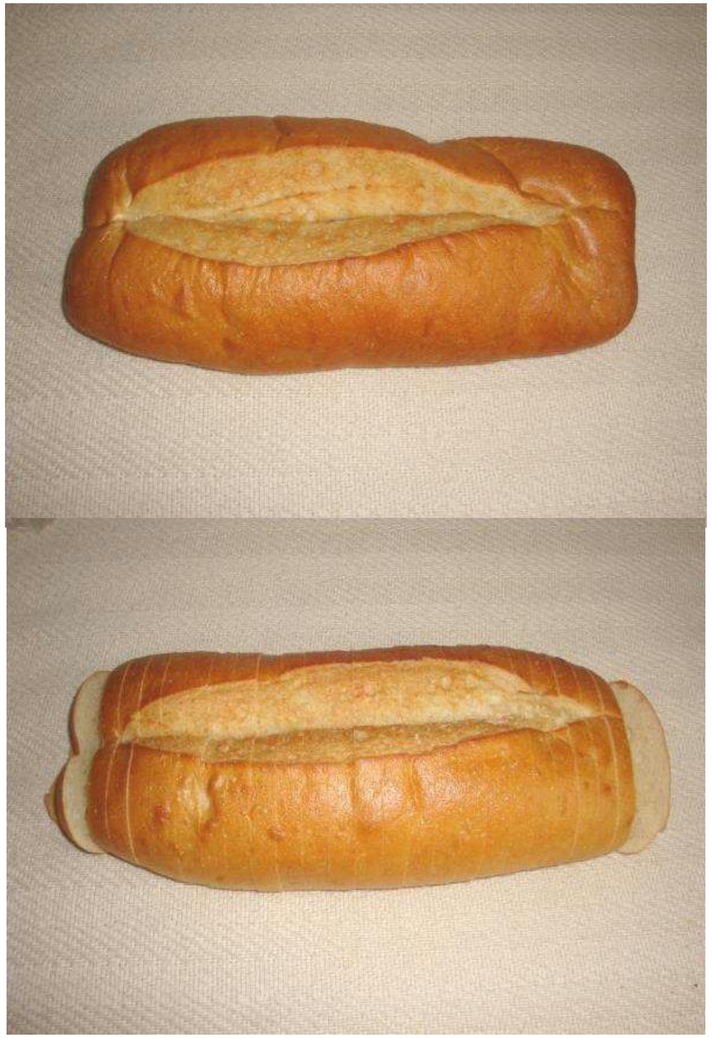
Medical CT vs. Dental CBCT



Slices are acquired then reconstructed to create the volume



The volume is acquired then slices are reconstructed from the volume

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Advantages

Rapid scan time

Beam limitation

Image accuracy

Reduction in patient radiation dose when compared to medical ct (10 times less (

Economical comfortable and safe

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Disadvantages

Scatter

Motion artifacts due to increased scan time

Poor contrast resolution, thus soft tissue cannot be reviewed

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Use in dentistry

Implantology and prosthodontics

Oral and maxillofacial surgery

Endodontics

Periodontics

Orthodontics

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Radiographic Doses

Typical doses of various dental radiological procedures

Intra-oral 0.001 mSv up to 0.004 mSv

Full-mouth set 0.080 mSv

Lateral cephalogram 0.002 mSv

Dental panoramic technique 0.015 mSv

CBCT (both jaws) 0.068 mSv

Hospital CT scan (both jaws) 0.6 mSv

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Thank You

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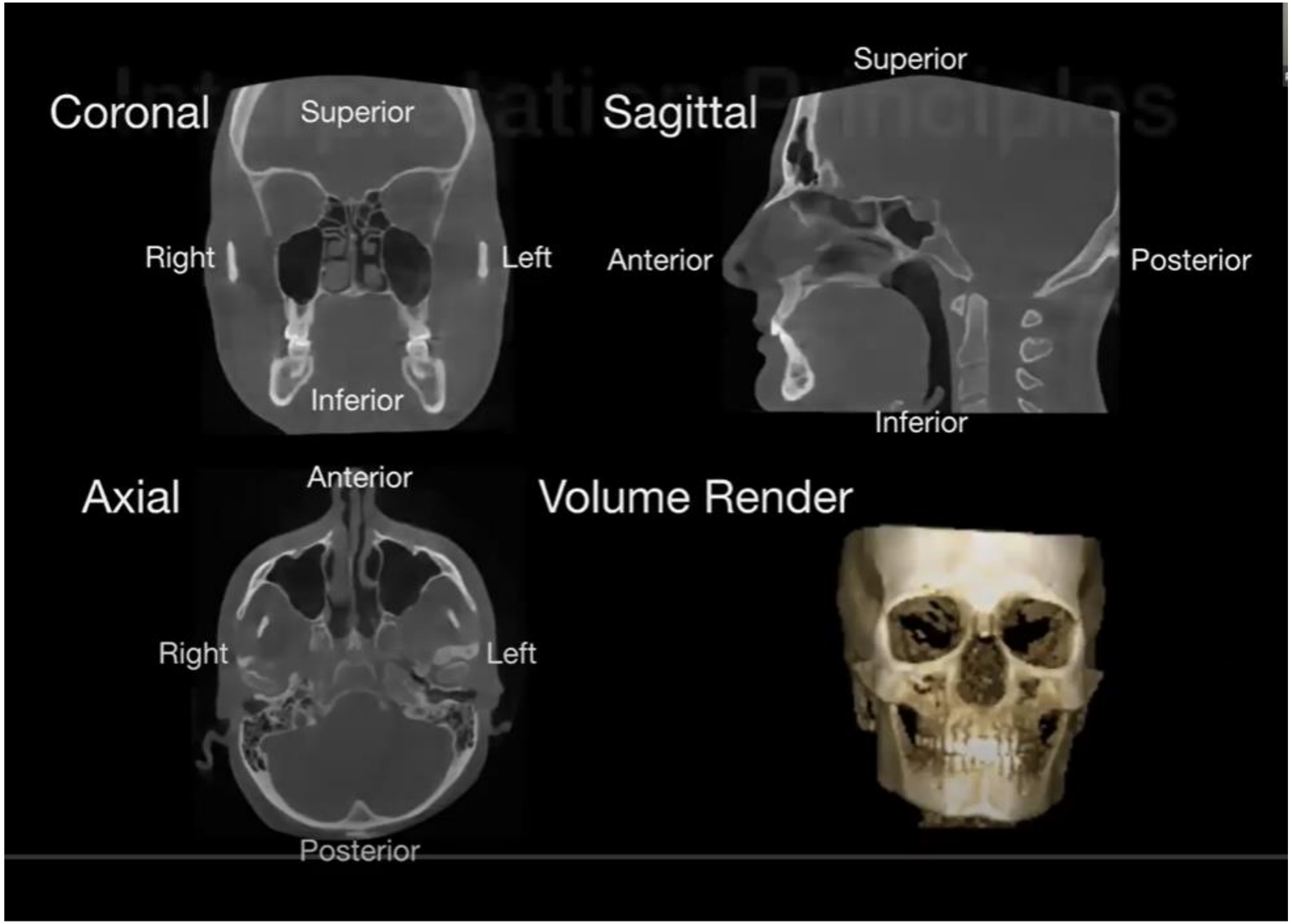
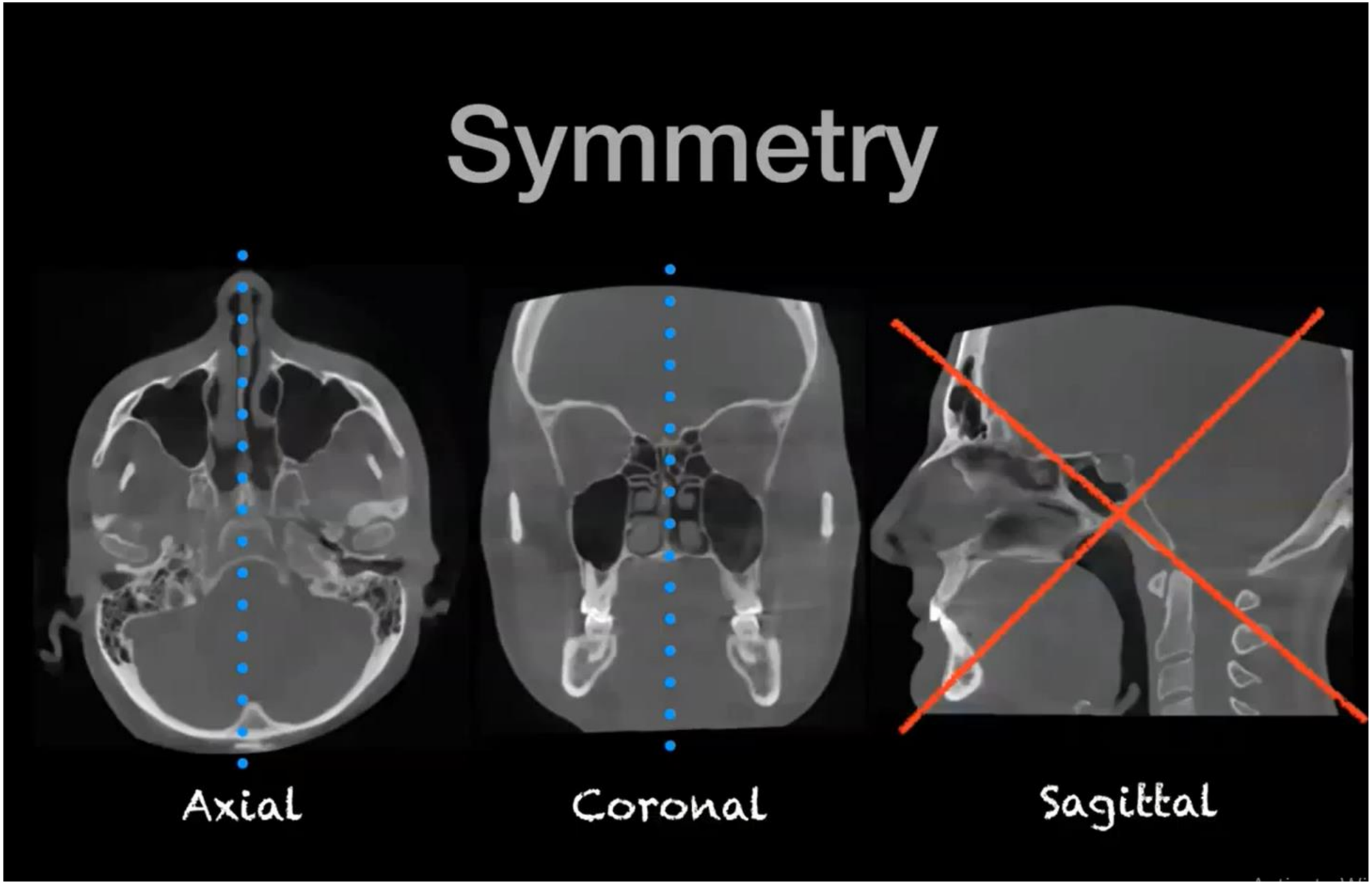
CBCT vs OPG

1. Nasal cavity	8. Genial tubercles	15. Maxillary sinus
2. Air space/oropharynx	9. Hard palate	16. Maxillary tuberosity
3. Angle of mandible	10. Hyoid bone	17. Mental foramen
4. Anterior nasal spine	11. Incisive foramen	18. Orbit
5. Condylar head	12. Infraorbital rim	19. Pterygomaxillary fissure
6. Coronoid process	13. Nasal Septum	20. Styloid process
7. Mandibular canal	14. Mandibular notch	21. Zygomatic arch

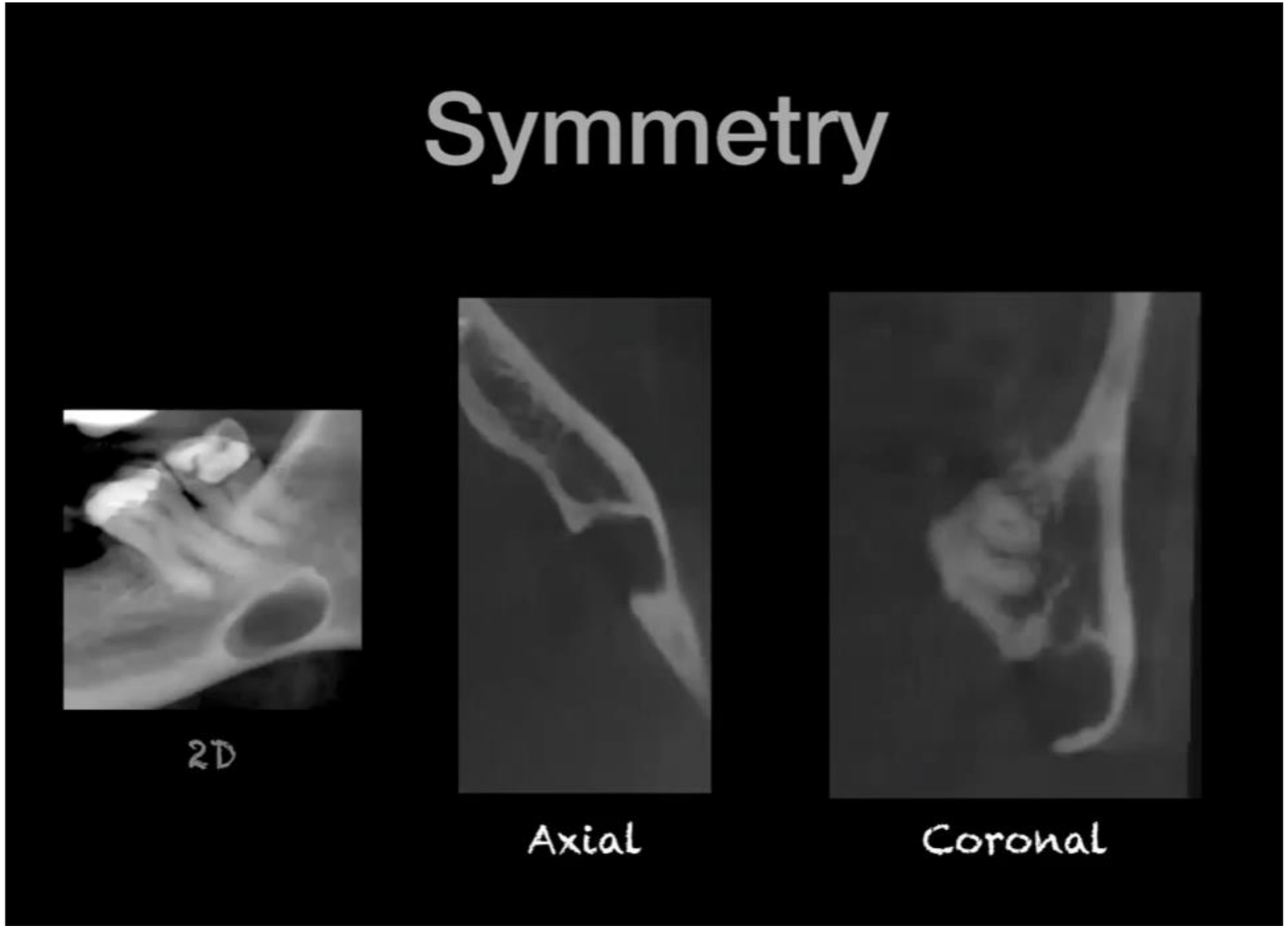
CBCT views


Coronal
Superior
Right
Left
Inferior
Sagittal
Superior
Anterior
Posterior
Inferior
Axial
Anterior
Right
Left
Posterior
Volume Render

Symmetry



Symmetry



Syst

Systematic Approach

Review patient information

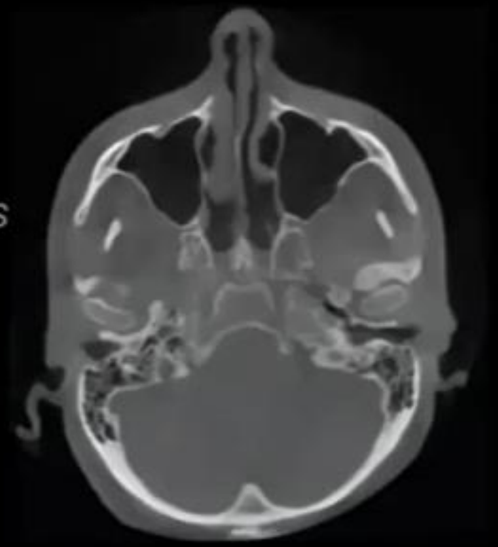
Age, gender, med hx, clinical findings

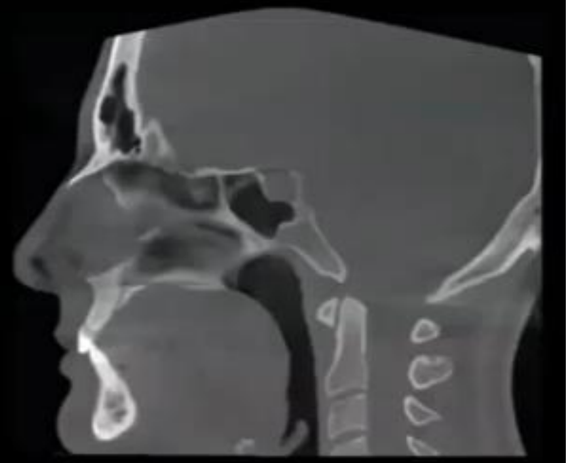
Review CBCT

Global to Local

Search pattern

Axial, coronal, sagittal





Where to Start?