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2.5.2 Micro/nano based sub-systems

System for Detection and Indication of Cranial Bones Movements

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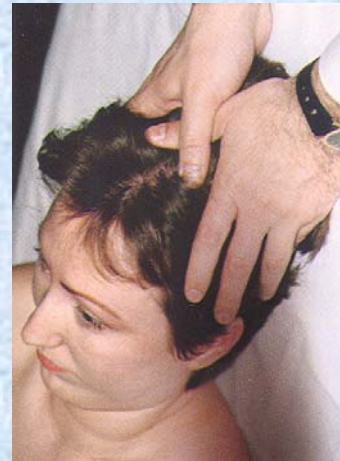
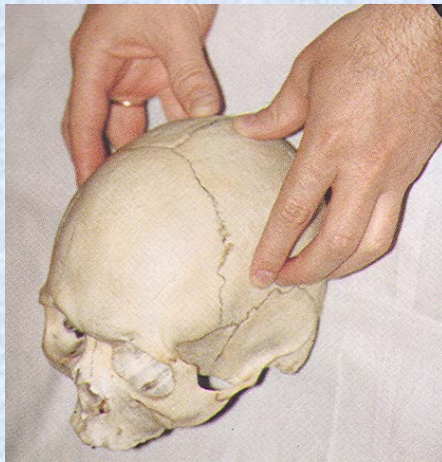


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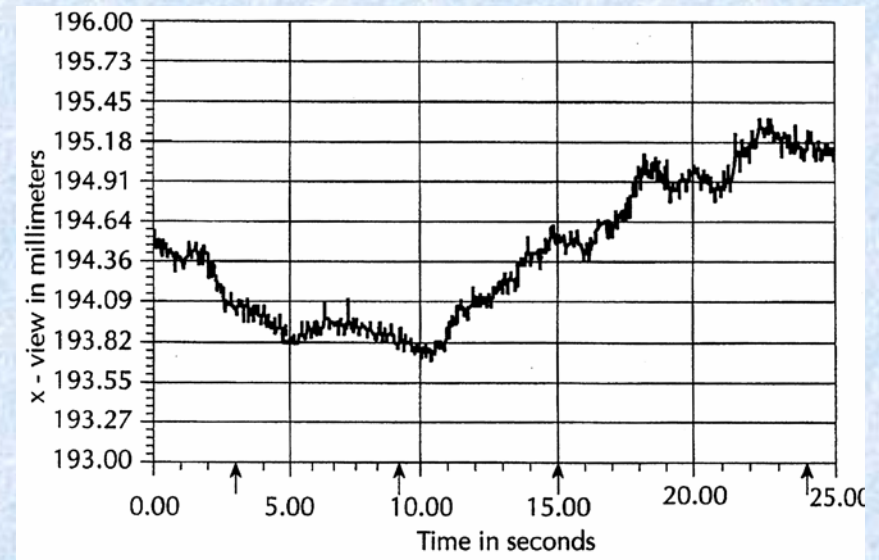
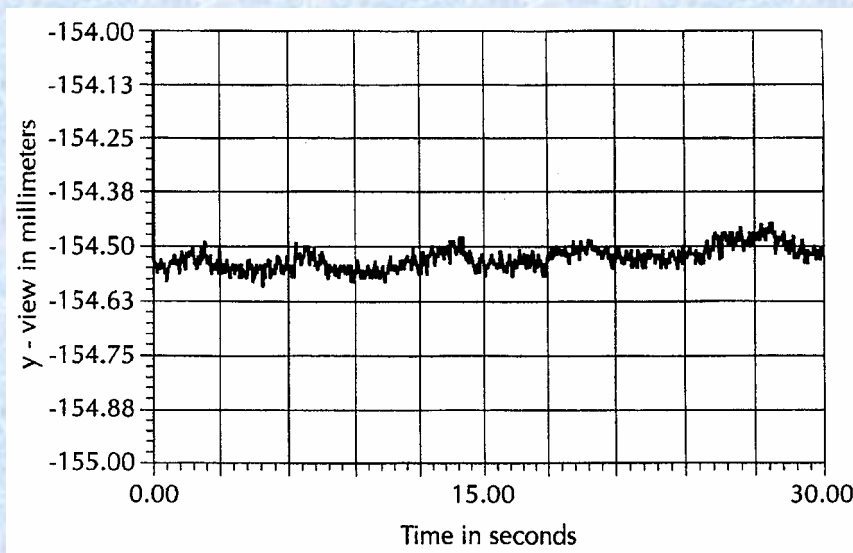
Position of doctor's hands

Osteopathic diagnostic of movements of cranial bones

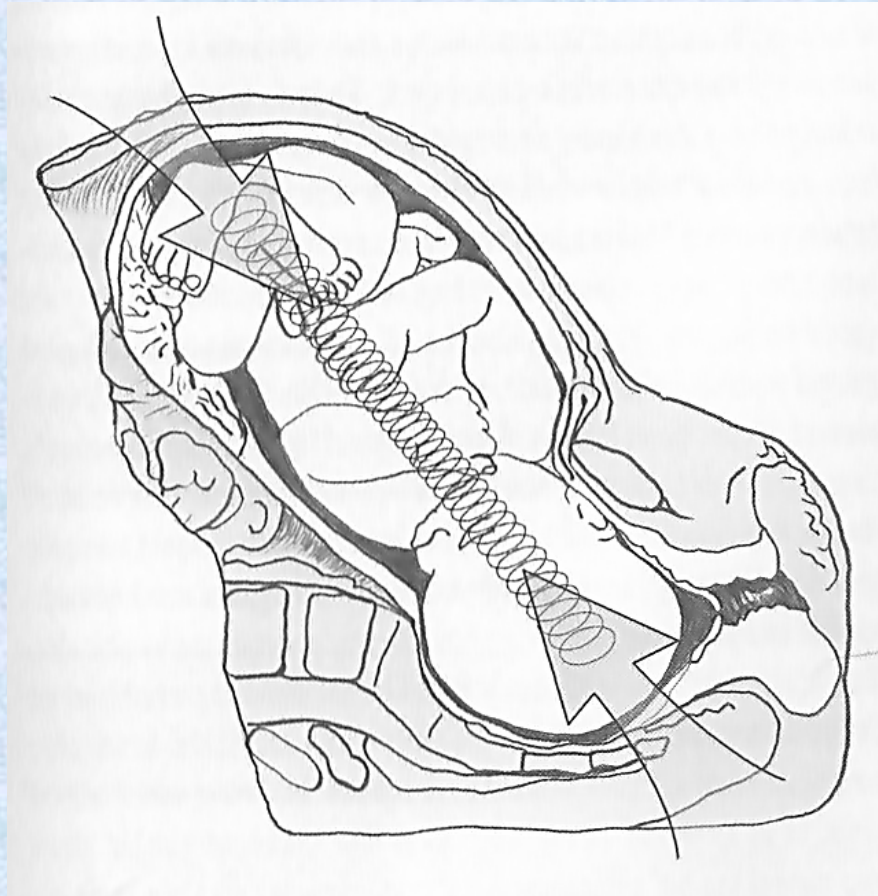




Time dependence of displacements of cranial bones

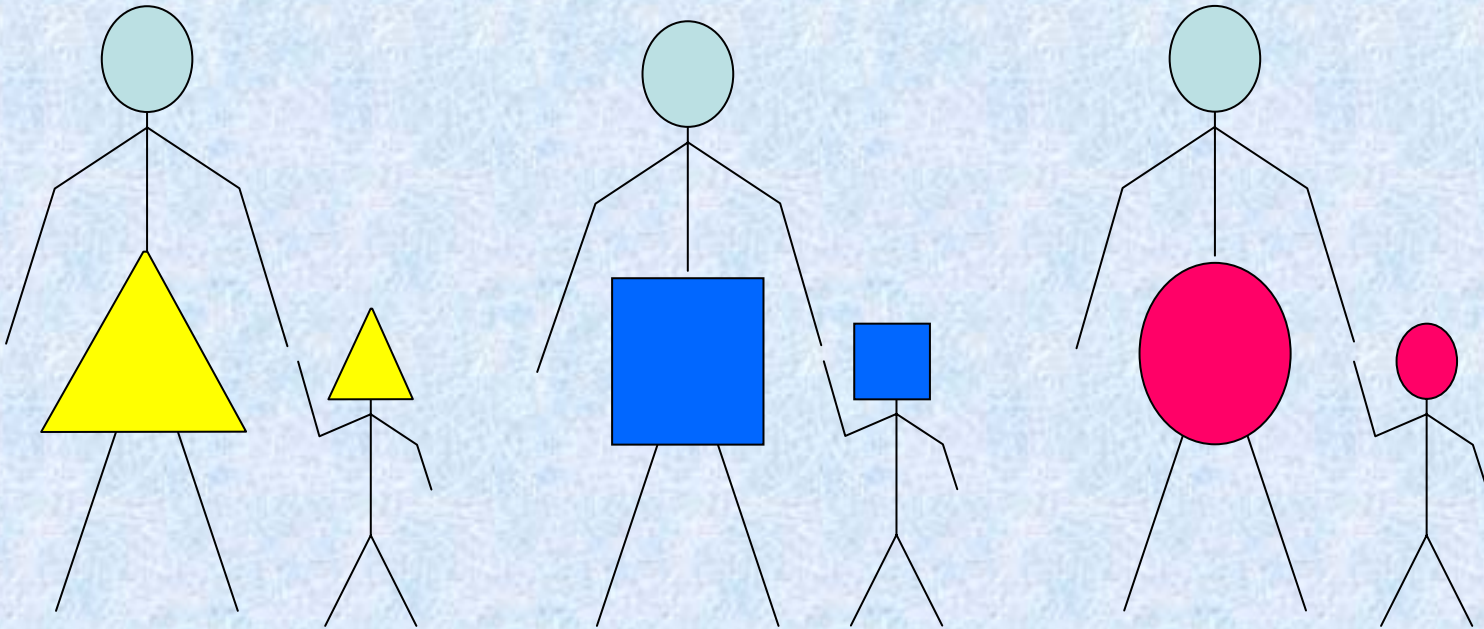


Axial birthing forces





This pelvis can give birth to only this shape of a head

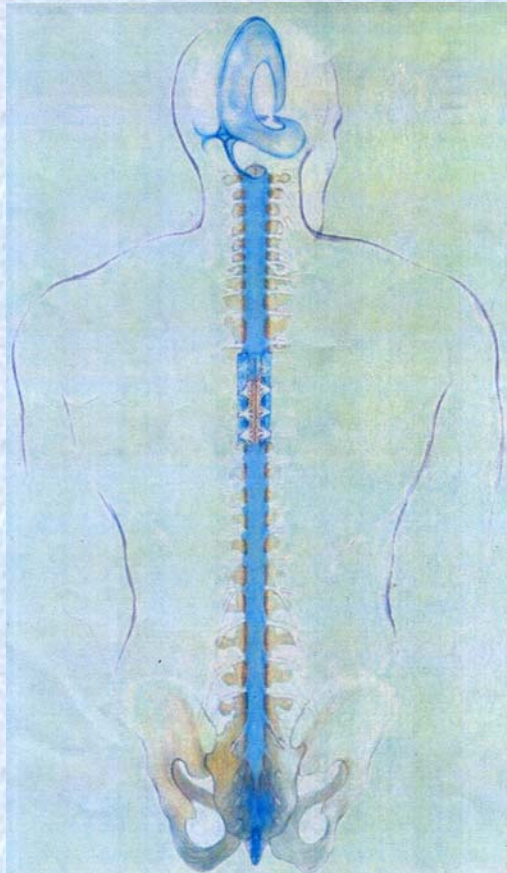




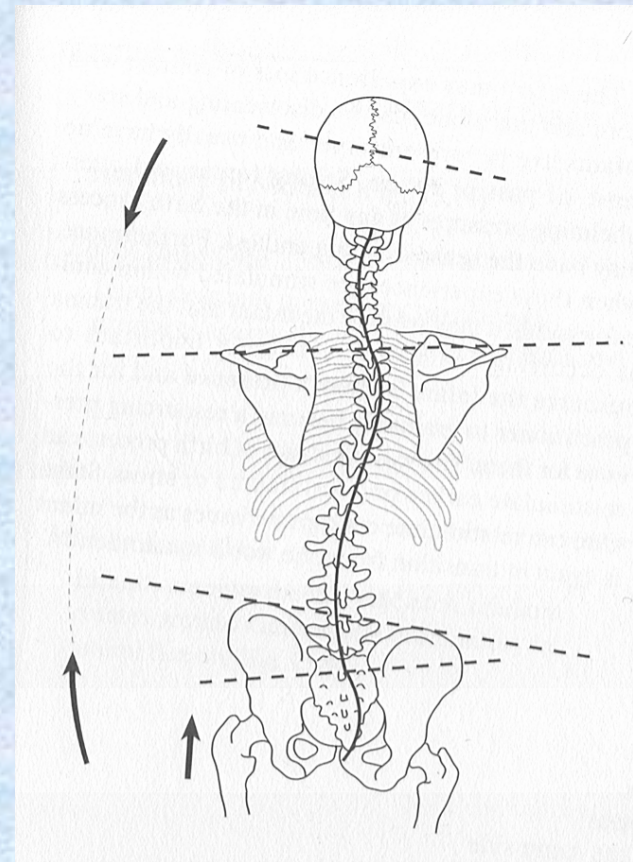
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The dural tube connecting
cranium and sacrum



Scoliosis and bearing
disorders



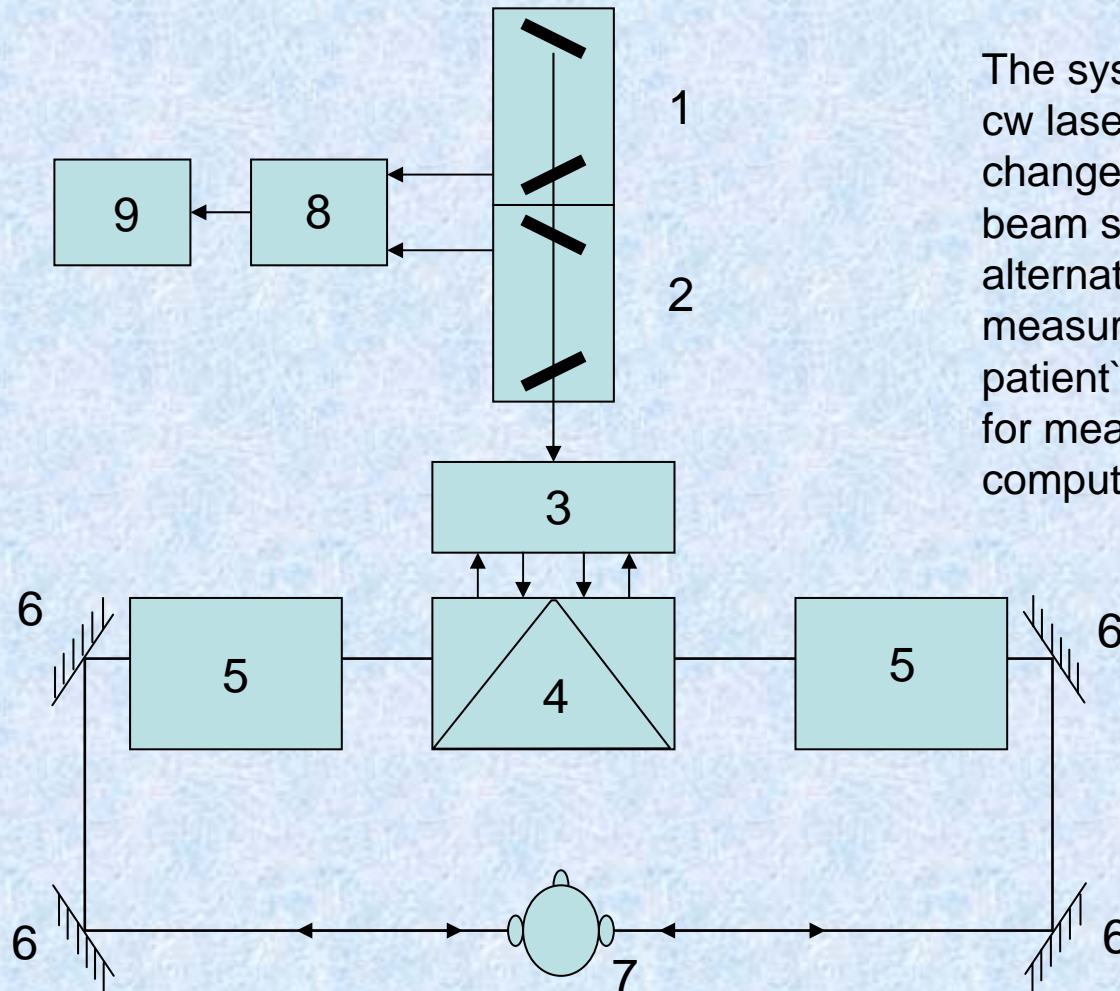


Research and development objectives

- **Development of a system for detection and indication movements of cranial bones with the use of optical or ultrasound sensors**
- **Computer visualization of movements of cranial bones for a patient**
- **Mastering and using of the craniosacral therapy by doctors of other specialities**



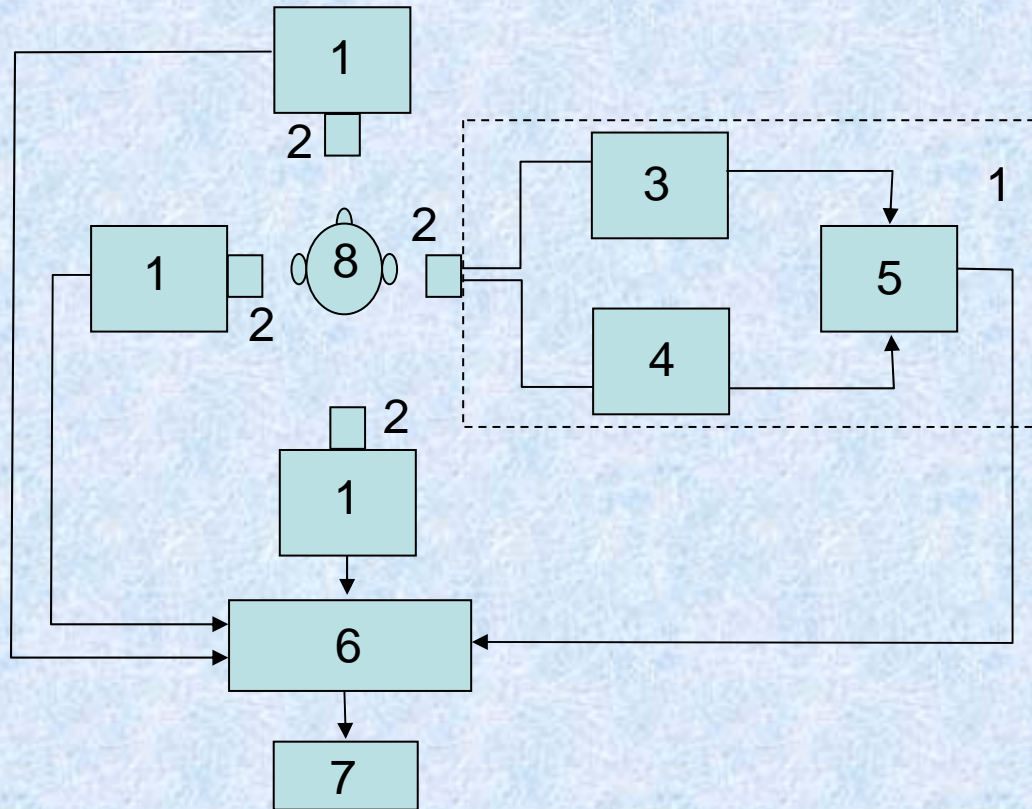
Block diagram of a diagnostic system for detection and indication movements of cranial bones using laser sensors



The system comprizes cw laser section 1, pulse laser section 2, changeable neutral light filters 3, laser beam splitter 4, optical shutters for alternate triggering of the left and right measuring channels 5, mirrors 6, patient`s head 7, interferometric system for measuring displacements 8 and computer 9.



Block diagram of a diagnostic system for detection and indication movements of cranial bones using ultrasound sensors



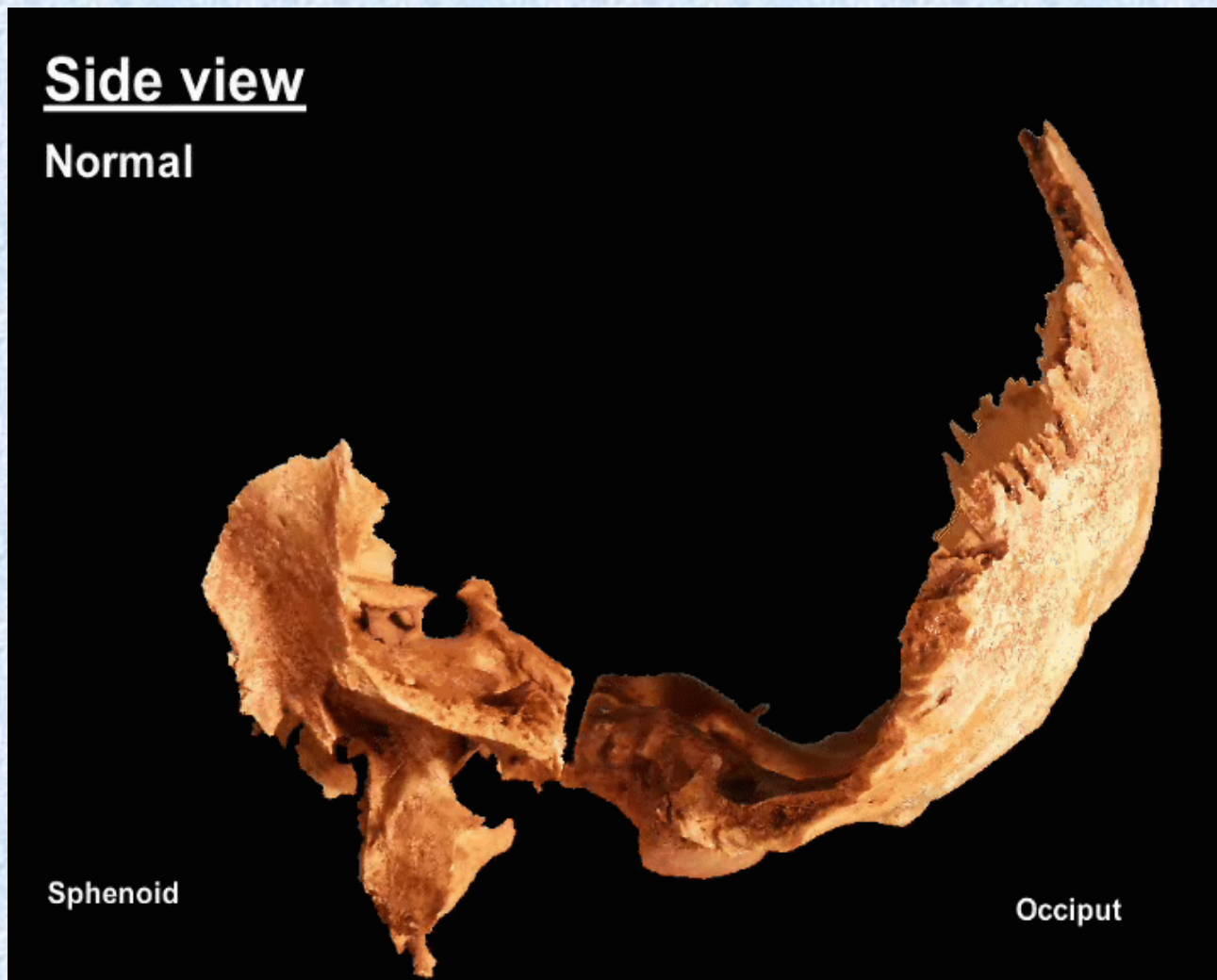
The system comprizes sensor 1, electroacoustic transducer 2, transmitter 3, receiver 4, data processing system 5, control unit 6, computer 7, patient`s head 8.



Normal

Side view

Normal



Sphenoid

Occiput



Pathology ESBS

Side view

Pathology



Sphenoid

Occiput



Pathology FSBS

Side view

Pathology



Sphenoid

Occiput



Pathology CRSBS

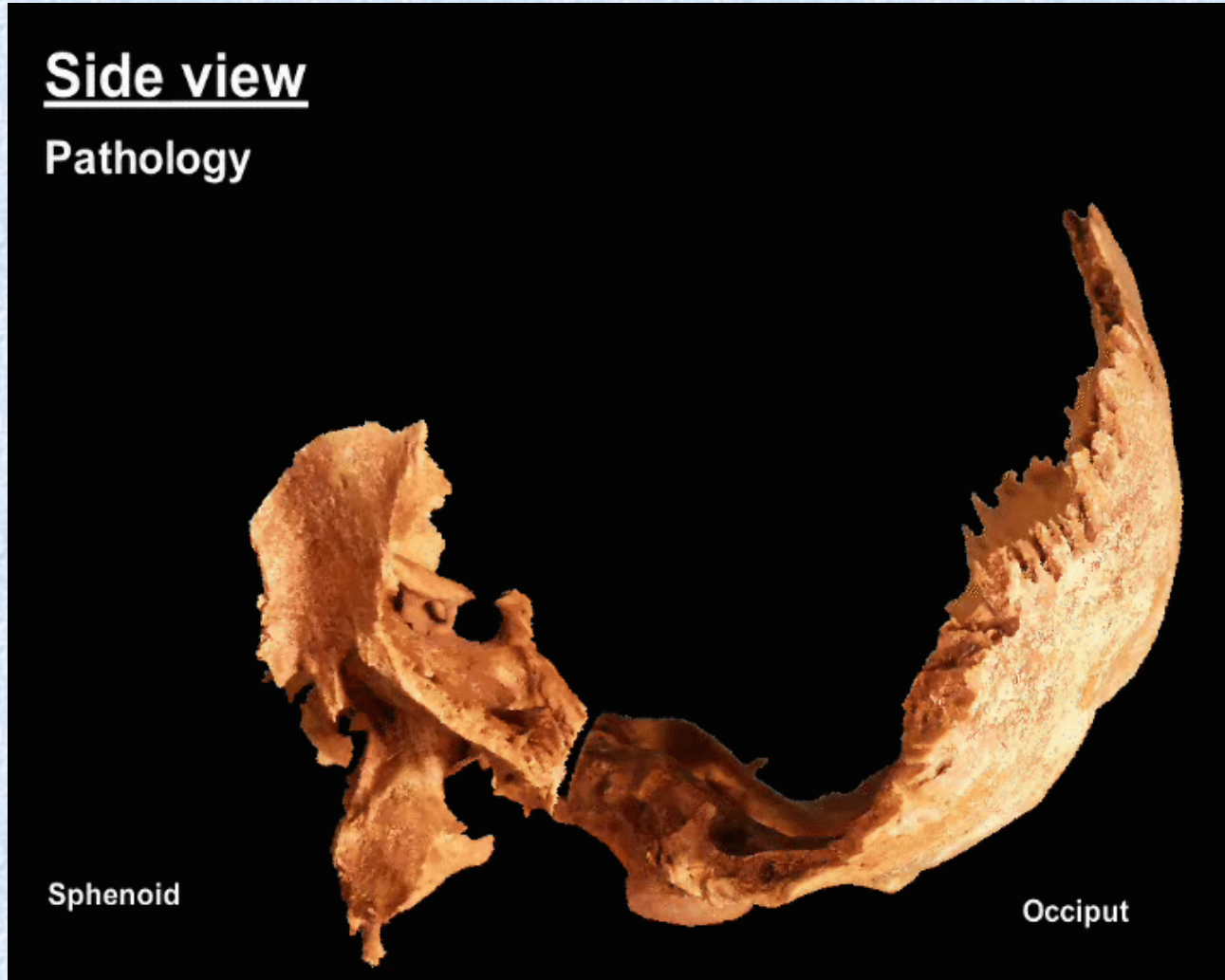




Pathology CDSBS

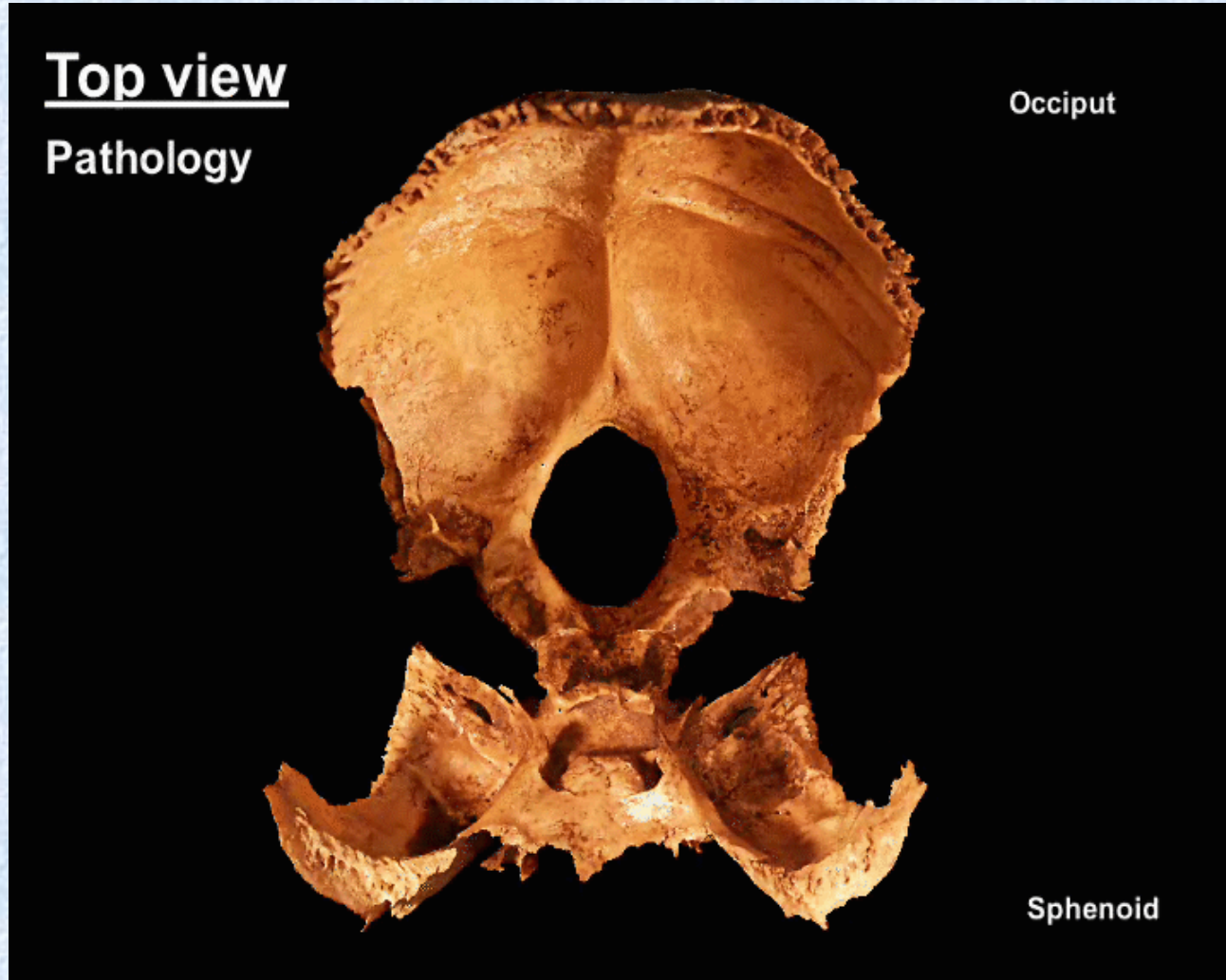
Side view

Pathology



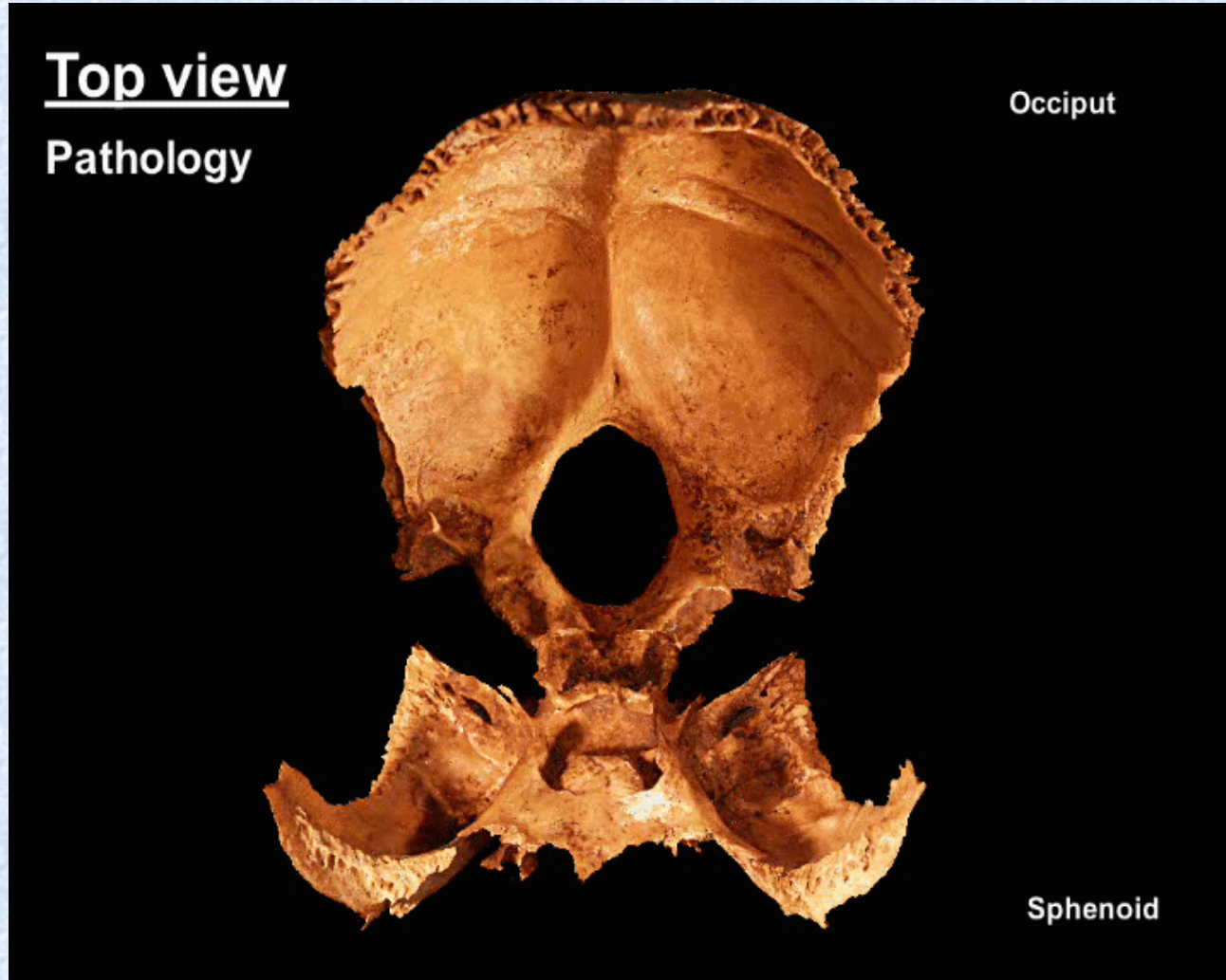


Pathology SBSBS





Pathology L-LSBS





Pathology Torsion SBS

Front view

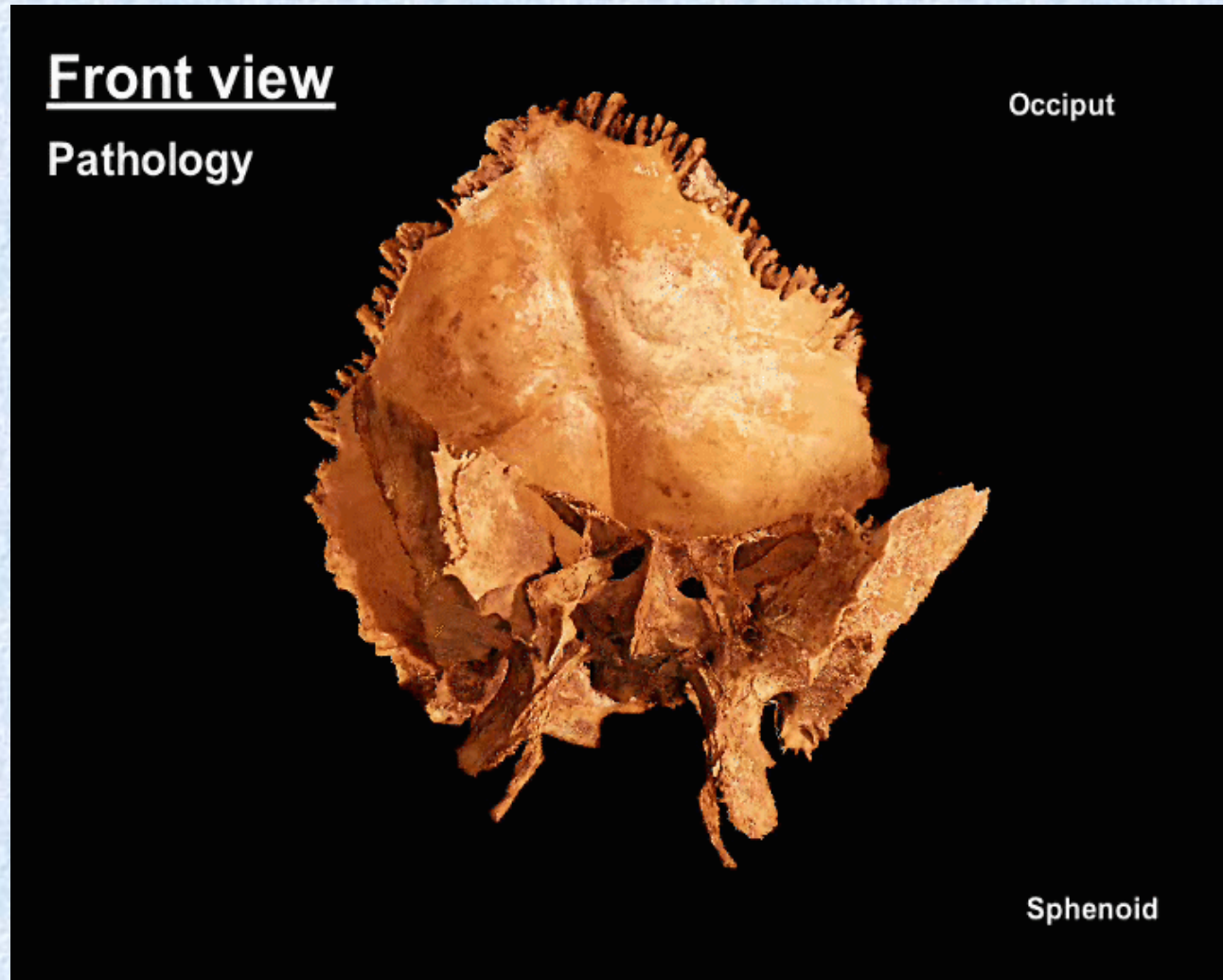
Pathology

Occiput



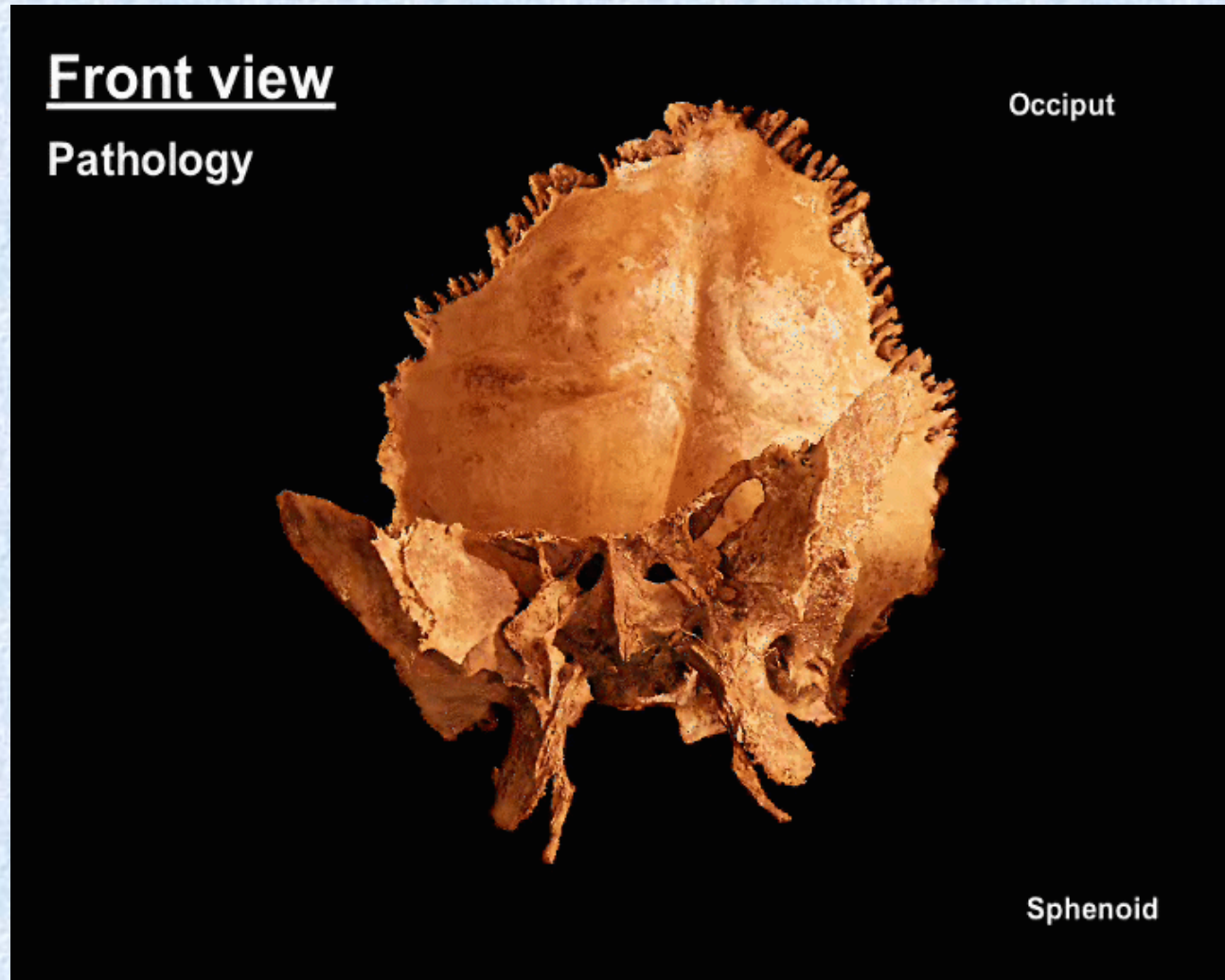
Sphenoid

Pathology Torsion SBS





Pathology Torsion SBS





Partner expertise required

- ***Marketing Companies for Project Idea Promotion***
- ***Clinics and Hospitals for System Approbation***
- ***Manufacturers of Laser and Ultrasonic Radiation Sources and Receivers and Software Developers***
- ***Project Coordinator***



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