

Spinal Alignment

Goals of Care

Development of an Impact-based Classification



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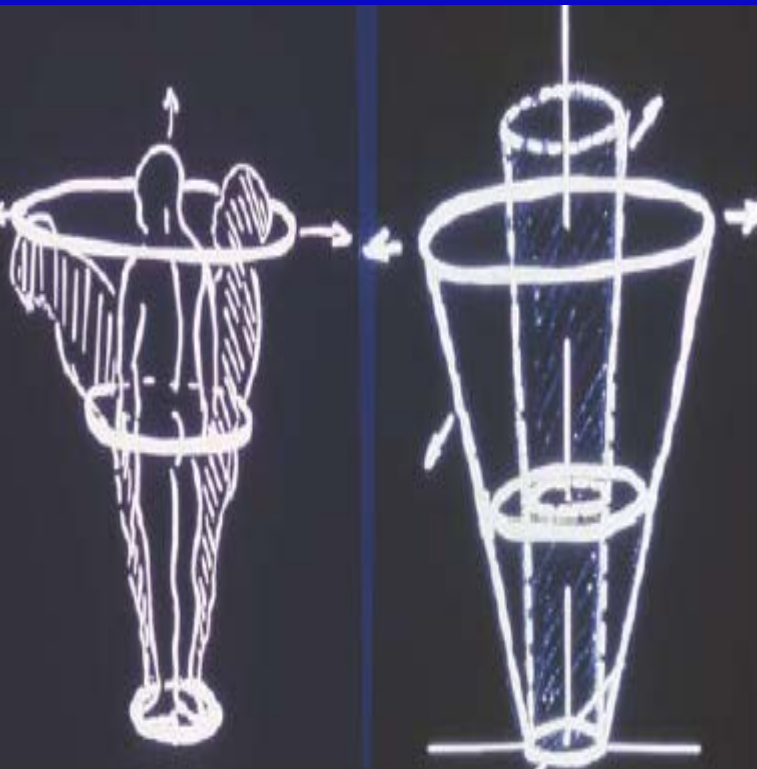
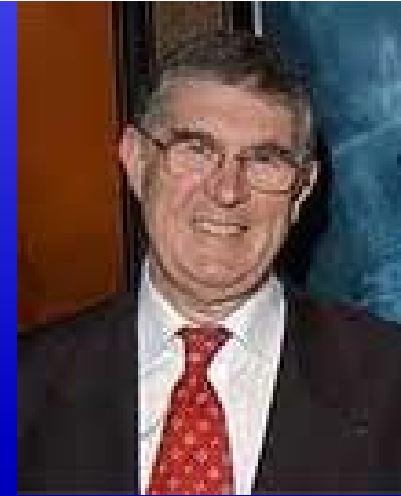
Overview

- Sagittal Alignment, Balance, Harmony
- Etiologies of Sagittal Plane Deformity
 - Historical Perspective on Flatback Deformity- Lagrone
- Surgical goals and appropriate alignment
 - Thoracolumbar- Tortolani
 - Cervicothoracic- Protopsaits
 - Degenerative Pathology
- Case Discussions

Reflections of an Orthopaedic Surgeon on Patient Care and Research Into the Condition of Scoliosis

Jean Dubousset, MD

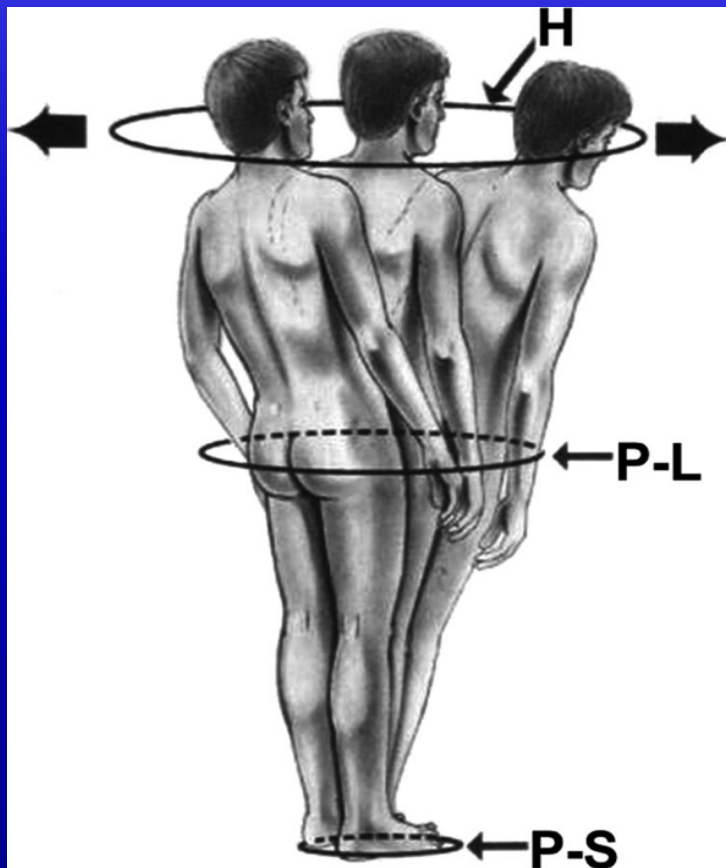
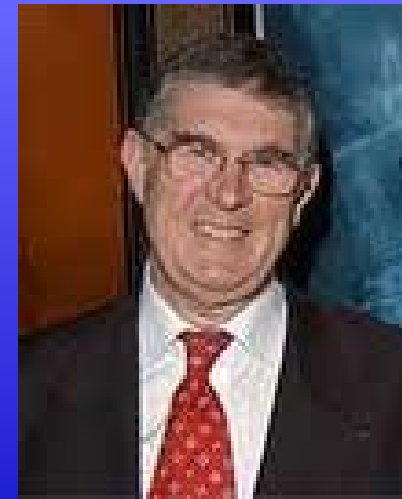
J Pediatr Orthop 2011;31:S1-S8



- Cone of Economy
- Minimum muscular energy is required to maintain balance between the heavy cephalic vertebrae (the head) and the polygon of support (both feet).

Sagittal Alignment

Cone of economy



- Muscle demand
- Fatigue
- Pain/Disability
- Loss of forward gaze
- Loss of head over pelvis

Jean Dubouset

Spinal Alignment, Balance, and Harmony through the ages

Jean Dubousset Académie Nationale de Médecine Paris France

- Conclusion and summary : Alignment, Balance and Harmony are always linked to achieve in the human spine the best economical function as in a static posture as during movements. This was acquired progressively during growth thanks to a genetic, biomechanical, and neurological control giving a fluid and harmonious function. Pathological or degenerative insults may destroy this beautiful arrangement, but the numerous possibilities of compensation mechanisms often suffice to maintain an acceptable function. When a surgical treatment requiring fusion is decided the goal must look to re-establish the harmony of the spinal organ leaving as much as possible the sources of compensation and flexibility above and below the fused area.

Alignment, Balance and Harmony

- Alignment- Static
- Balance- Dynamic
- Harmony- Functional interplay of Alignment and Balance



Adult Spinal Deformity



Goals of Care

- Safety
- Improve Neural Compression
- Improve Back Pain
- Improve Sagittal and Coronal Alignment
- Effective Arthrodesis
- Improve Self-Assessment of Health-related Quality of Life
- Optimize Value of Care



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