04/05/2021



■ All parameters do not progress at the same speed





unilateral deformity of the spine or the thorax induces both scoliosis and thoracic cage deformity with asymmetric lung volumes.

Karol JBJS A. 2008 and Emans (Boston)

Early arthrodesis reduces the AP diameter and shortens the T1 -T12 index. Fusion is a cause of respiratory insufficiency

## 54

In a growing rabbit model, there is an interaction between growth of the spine and thorax: a unilateral deformity of the spine or the thorax induces both scoliosis and thoracic cage deformity with asymmetric lung volumes.

Early arthrodesis reduces the AP diameter and shortens the T1 -T12 index. Fusion is a cause of respiratory insufficiency and adds to the spinal deformity the loss of pulmonary function.

## 55 Where are we going ?

■ 1 There is a normal interaction between the spine, the thoracic cage and the lungs.

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57 Where are we going ?
<ul> <li>1 There is a normal interaction between the spine, the thoracic cage and the lungs.</li> </ul>
<ul> <li>2 Deformities of the spine adversely affect the development of the thorax by changing its shape and reducing its normal mobility.</li> </ul>
3 The rib-vertebral-lung complex should be considered as a whole, it constitutes an elastic structural model that in the presence of scoliosis it becomes rigid thus preventing the from normal development lungs.
58 Where are we going ?
<ul> <li>4 Early posterior arthrodesis in the proximal portion of the spine disturbs significantly the morphology of the thorax and blocks the thoracic volume.</li> </ul>
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<ul> <li>4 Early posterior arthrodesis in the proximal portion of the spine disturbs significantly the morphology of the thorax and blocks the thoracic volume.</li> </ul>
<ul> <li>5 Challenging the growing spine means how to maintain the spinal growth, the thoracic growth the lung growth and to keep the spine supple.</li> </ul>
60 Where are we going ?
6 Before the age of five years, treat the deformities of the thorax to preserve the pulmonary growth.
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7 Innovative techniques such as expansion thoracoplasty and dual rod distraction offer the possibility of preventing thoracic insufficiency for spinal deformity.

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■ 6 Before the age of five years, treat the deformities of the thorax to preserve the pulmonary

growth.

7 Innovative techniques such as expansion thoracoplasty and dual rod distraction offer the possibility of preventing thoracic insufficiency for spinal deformity.

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8 The principle that a short spine produced by early fusion is better than a long curved spine is no longer generally accepted (charles Johnston).

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The final dream?

- Avoid arthrodesis

The final goal

- Weight : 40 Kg - T1 – T12: 22 cm - VC: 50 %

