Bracing in EOS and NF

M. Timothy Hresko, MD Associate Professor Department of Orthopaedic Surgery Harvard Medical School Boston Children's Hospital





Orthotic in Congenital Scoliosis

- Limited value
- May cause severe harm to the chest wall





Operational Bias

- Non-operative treatments (casting or bracing) are the preferable treatment
- Can be effective in moderate idiopathic early onset deformity
- Case series
 - Bias population- no intent to treat
 - No compliance
- AIS > 30 degree and < 10 yo- high risk to surgery
- BrAIST- best evidence available





7 yo(30°)

18 yo (25°)



Set Realistic Goals

- Complete correction rare
- Prevent worsening deformity
- Slow progression to delay Surgery
- Acknowledging that surgery will eventually be needed





3.5 yo Full Time bracing





Boston Children's Hospital Orthopedic Center



Brace classification study group (BCSG) report



Brace types



- "Modified" Standard Boston
 - Cast or scanned
 - Capture anterior rib cage
 - Accommodate sagittal profile
 - Custom shape thoracic pad







Brace RX

- 18-20 hours
- Reduce if curve <15°
- Temperature Data recorder









- Rib deformity
- Effect of early bracing on subsequent surgery





3 yr 8 yr **5 yr**





























Key Points Bracing EOS

 Orthotic treatment is a useful adjunct to cast treatment of early onset scoliosis.

 Orthotic treatment is most successful in idiopathic early onset scoliosis, particularly in single curves in the middle of the spine.





Key Points Bracing EOS

 Successful brace treatment of EOS requires: effective brace committed multidisciplinary team an involved family.

• Bracing can cause irrevocable harm to the growing thorax if pressure is inappropriately applied or continued too long in spite of worsening thoracic deformity.





Thank You!

Timothy.Hresko@
childrens.harvard.edu





