Debate:
Growth Guidance in EOS

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Disclosures

• Speaker’s Bureau
  – Medtronic
  – Stryker Spine
  – Orthopaediatrics

• Consultant
  – Medtronic
  – Stryker Spine
  – Orthopaediatrics
  – Wishbone Medical

• Royalties
  – Wolters Kluwer
  – Globus
  – Medtronic
  – Stryker Spine
(Growth Guidance)

← Right Way
Wrong Way →

(Distraction-based)
Need a variety of tools in the toolbox for optimal EOS management
Goals of EOS treatment

- Maximal T1-T12, T1-S1 distance
- Permit radial expansion of the ribs/chest
- Minimize 3D spinal deformity
- Maximize spinal motion and function
- Fewest # of anesthetic episodes possible
- Low complication rate
- Fewest number of outpatient care episodes
- Minimize pain and psychological stress
- Low imaging radiation exposure
- Minimize cost
18 in each group

Matched by age, preoperative curve magnitude and diagnosis
• Overall mean number surgeries
  – GGS 3.1
  – TGR 9.3 (5.8 lengthenings)
• Curve correction: =
• T1-T12 “growth” and final height: =
• T1-S1 “growth” and final height: =
• Complications: =
What are some of the other advantages of Growth Guidance over Distraction-based constructs?

• Low reoperation rate
  – No “scheduled” GGS surgeries
  – GGS << TGR but = to MCGR?
• Infrequent outpatient care episodes: 6-12 m
• Low imaging radiation exposure
• Fewer surgeries + Fewer outpatient care episodes = less pain and psychological stress?
Cost analysis of a growth guidance system compared with traditional and magnetically controlled growing rods for early-onset scoliosis: a US-based integrated health care delivery system perspective.

Luhmann SJ, McAughey EM, Ackerman SJ, Bumpass DB, McCarthy RE.
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6-year episode of care thru definitive PSF
GGS = Distraction-based

- Radial expansion of chest (?
able impact of rib-based fixation)
- Spinal motion: fusion length and implant removals
- 3D spinal deformity: GGS controlled apical derotation and fusion
- Metal debris
9.5 y/o male, JIS
3 years s/p GGS procedure
T3-L3

3 level apical fusion
Blockers
**Goals of EOS treatment**

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<th>TGR</th>
<th>MC GR</th>
<th>GGS</th>
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Conclusion

When GGS is an option:

Similar T1-T12 and T1-S1 growth & height

Similar coronal deformity correction

Surgeries: <TGR, =MCGR?

Lower healthcare costs

Lesser impact on child and caregivers
Thank you