1 **The Straw that Broke the Child's Back**

2017 SPORTS Symposium

E. John Stanley PT,SCS

2 **Learning Objectives:**

1. Identify 3 characteristics of kids at risk for back injuries.
2. Describe the impact of flexibility, strength, and neuromuscular control in back pain.
3. Outline a basic program to eliminate back pain in children and adolescents.

3 **Disclosures:**

Nothing to Disclose

4 **My Child Has Back Pain…**

5 **My Child Has Back Pain…**

6 **Back Pain: Where, When and Why**

7 **Back Pain: Where, When and Why**

8 **Back Pain: Where, When and Why**

When does the back hurt?

-

At rest?

9 **Back Pain: Where, When and Why**

10 **Back Pain: Where, When and Why**

11 **X-rays, CTs and MRI's Oh my!**

12 **Poking and Prodding**

13 **Treatment options: Duct Tape & Hammers**

The role of the physical therapy is one of guided education and not one of fixing…Educate to empower the patient.

14 **Treatment options: Duct Tape & Hammers**

-

Typical treatment begins with by addressing any specific muscular spasms and tightness.

-

15 **Treatment options: Duct Tape & Hammers**

Progress with mobilization of hypomobile segments and alignment of any malpositioned segments.

-

16 **Treatment options: Duct Tape & Hammers**

-

17 **Treatment options: Duct Tape & Hammers**

-

Simultaneous strengthening of support musculature and addressing any particular muscular imbalance(s).

-

18 **Treatment options: Duct Tape & Hammers**

Reintroduction of sport-specific or activity specific demands

▪

19 **Enough is Enough … Or is it?**

Increased irritation or inflammation may require episodic bracing to allow for healing

-

20 **Enough is Enough … Or is it?**

21 **Enough is Enough … Or is it?**

If location, nature, and/or intensity of pain change significantly… then there is increased concern that you are no longer treating the original source of the pain. More diagnostics may be warranted.

22 **Case Study #1: Spondylolis**

14yo female who was playing soccer and attempted a header when another player collided with her in May. She had pain but was able to finish the game. She is a year-round soccer player but will also participate in volleyball, cross-country and track.

Parents and coach decide to rest her 6 weeks after which she is essentially pain free. She attempts to participate in a soccer camp but begins having significant pain.

X-rays in late July were negative but bone scan in early August showed stress reaction. She is placed in TLSO at that time – full time wearing schedule. She wears brace for 1month and then is referred to therapy.

Presents for evaluation early October and has been wearing brace and full activity restrictions since since July.

23 **Case Study #1: Spondylolis**

Exam Findings:

- Noted at evaluation are continued pain 3-4/10 and which increases as she moves into hip extension. She is able to demonstrate standing active motions without pain (extension is not tested however).
-
- Limitations in both lumbar and thoracic segment mobility - hinge point noted at L2-3 segments with lateral flexion.
-
- Limitations in lower extremity flexibility noted in bilateral hip flexors, quadriceps, hamstrings
-
- Weakness noted in core musculature and proximal hip musculature especially for hip abduction and extension.

24 **Case Study #1: Spondylolis**

Treatment:

- Consists of 21 visits over 12 weeks.
-
- She is pain free with therapy and home exercise program in addition to continued brace wear at

reduced schedule by 4 weeks – early October

-
- She is able to begin jogging out of the brace by early November – physician gave her the option to discharge from therapy but patient/family would like to continue.
-
- She is self-progressing running distance and speed and performing plyometrics in therapy by early December and is transitioned to consult model of care.

At time of discharge she is noted to continue to have hypomobility in the lumbar spine that limits forward flexion – hamstring tightness has resolved.

She is able to fully return to her prior level of activities. However… she does sustain additional injuries including re-injury of L5 facet.

-

25 **Case study #2: Segmental Malalignment**

13yo male diagnosed with scoliosis. X-rays show 15deg right convex curve from T6-T10 .

Presents to therapy with right periscapular pain rated baseline of 3/10 and worst of 6/10.

26 **Case study #2: Segmental Malalignment**

13yo male diagnosed with scoliosis. X-rays show 15deg right convex curve from T6-T10 .

Presents to therapy with right periscapular pain rated baseline of 3/10 and worst of 6/10.

Patient goal is to return to high level of hip-hop dancing – specifically to be able to perform head spins without pain.

27 **Case study #2: Segmental Malalignment**

Exam findings:

- Noted left body rotation of T9 segment.
- Paraspinal spasms and pain to palpation along the right medial scapular border.
- Trigger points throughout bilateral upper traps.

28 **Case study #2: Segmental Malalignment**

Treatment:

- Attends 6 weeks of PT 1x/week
- Initially given HEP for basic supine core activation, general spine and lower extremity stretching.
- Initial treatments addressed scapular mobility, periscapular spasms and neuromuscular control of core and scapulae moving from supine and prone positions to seated.
- Updated HEP for advancement of core and scapular strengthening after 2 weeks
-
-

29 **Case study #2: Segmental Malalignment**

Treatment: Cont'd

- Week 3 he begins a progressive return to dance.
-
- Week 4 no longer having shoulder / thoracic pain but now with neck pain. Noted rotation in T1 segment which is addressed using muscle energy techniques with good resolution.
-

- Continues to improve control of core and scapular control as we increase challenges in terms of resistance, weight bearing and change of position (inverted).
-
- Able to return fully to all dance moves at week 6 and transitioned to consult model of care.
-
-