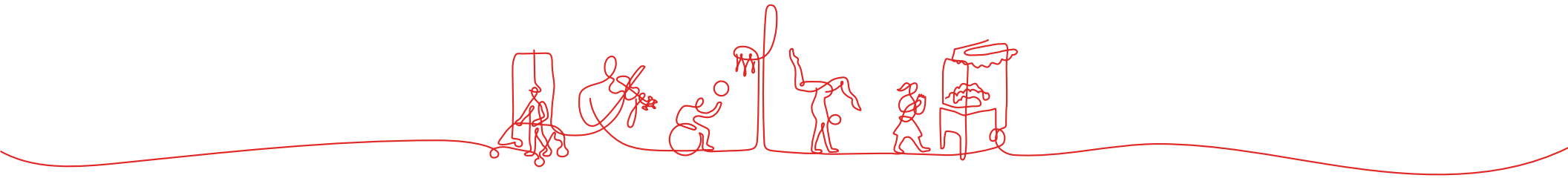
Chronic Pain in Early Onset Scoliosis

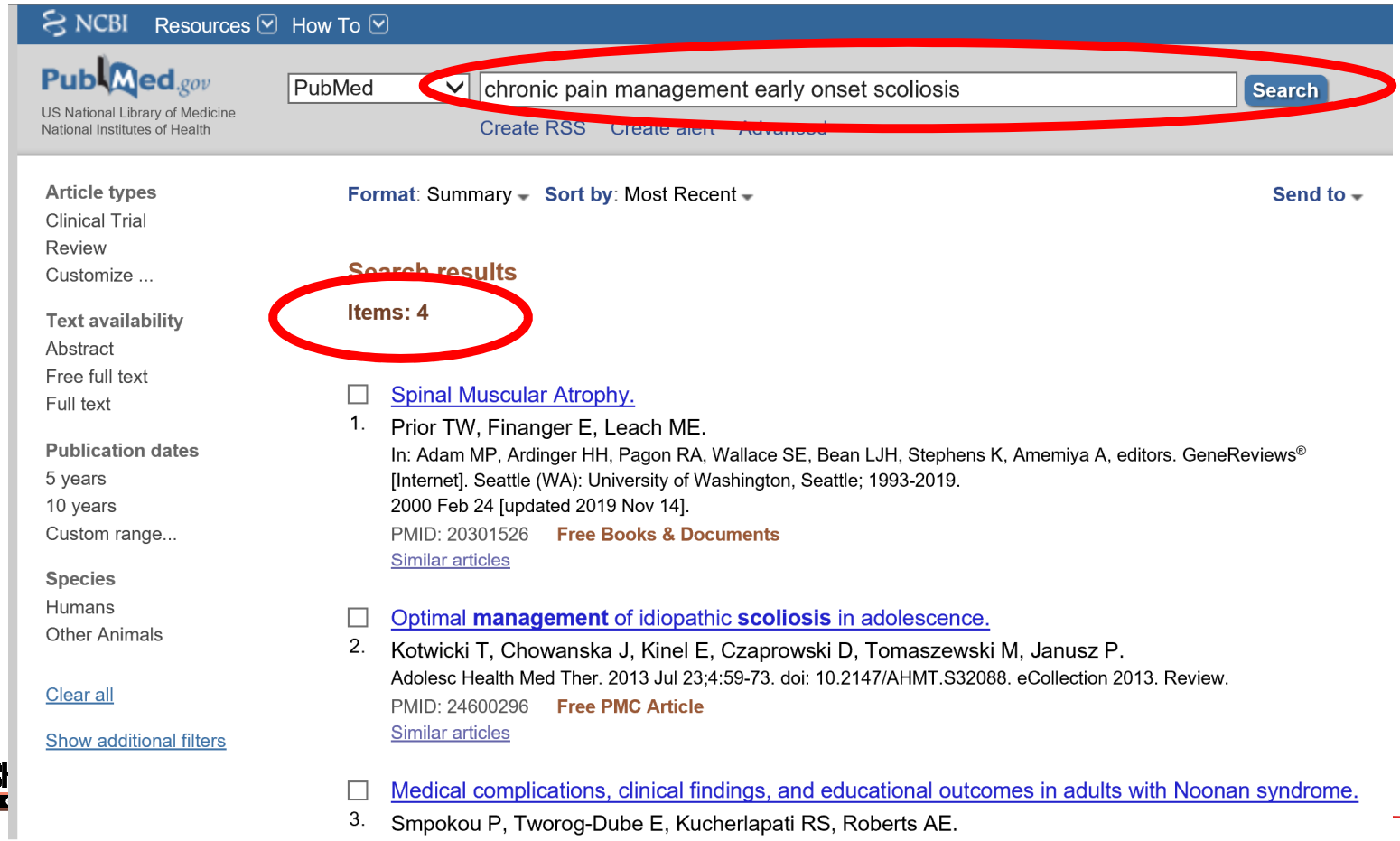
Brandon A Ramo, MD



Outline

- Evidence based Literature – hmmm
  - Extrapolation from other forms of scoliosis
- My anecdotal kids with EOS and pain: proving pain is weird
- What is pain and Psychological implications of pain – normal developmental pain processes
- Resources for Bone Doctors:
  - Extrapolate from other sources of knowledge
  - Resources for Patients

Evidence – Based Literature



"Scoliosis Doesn't Cause Pain…"

Spine
DEFORMITY

SPINE Volume 36, Number 10, pp 825–829

Prevalence and Predictors of Pain in Surgical Treatment of Adolescent Idiopathic Scoliosis

Zachary Landman, BA,* Timothy Oswald, MD,† James Sanders, MD,‡ Mohammad Diab, MD,* and Members of the Spinal Deformity Study Group

Conclusion. Back pain affects three-quarters of adolescents with idiopathic scoliosis and is reduced after posterior fusion.

Patients who are overweight, older, and have larger proximal thoracic curve magnitudes report more preoperative pain.

Patients who view themselves as more deformed tend to have more absolute pain, and less reduction in pain after operation.

Illka Helenius data

Back Pain and Quality of Life After Surgical Treatment for Adolescent Idiopathic Scoliosis at 5-Year Follow-up

Comparison with Healthy Controls and Patients with Untreated Idiopathic Scoliosis

Linda Helenius, MD, Elias Diarbakerli, PT, MSc, Anna Grauers, MD, PhD, Markus Lastikka, MD, Hanna Oksanen, RN, Olli Pajulo, MD, PhD, Eliisa Löyttyniemi, MSc, Tuula Manner, MD, PhD, Paul Gerdhem, MD, PhD, and Ilkka Helenius, MD, PhD

Investigation performed at Turku University Hospital, Turku, Finland

JBJS 2019

TABLE III Comparison of SRS Domain Scores Across Groups*

SRS Domain	Surgical Treatment Group at 5-Year FU (N = 49)	Untreated AIS Group (N = 49)	P Value	Healthy Control Group (N = 49)	P Value†
Pain‡	4.56 ± 0.48	3.79 ± 0.78	<0.001	4.73 ± 0.48	0.306
Self-image	4.17 ± 0.80	3.81 ± 0.79	0.014	4.47 ± 0.51	0.109
Function	4.26 ± 0.25	4.52 ± 0.85	0.261	4.85 ± 0.29	<0.001
Activity	4.84 ± 0.31	4.00 ± 0.94	<0.001	4.65 ± 0.40	0.449
Total of 8 same questions	4.49 ± 0.41	3.81 ± 0.70	<0.001	4.60 ± 0.45	0.526

*Values are given as the mean and SD. FU = follow-up. †Comparison of surgical treatment group with healthy control group. ‡Pain domain does not include the postoperative pain question.

Spine
DEFORMITY
SPINE Volume 43, Number 2, pp 127–132

Improvement in Scoliosis Research Society-22R Pain Scores After Surgery for Adolescent Idiopathic Scoliosis

Mladen Djurasovic, MD,* Steven D. Glassman, MD,* Daniel J. Sucato, MD, MS,† Lawrence G. Lenke, MD,‡ Charles H. Crawford III, MD,* and Leah Y. Carreon, MD, MSc*

1,005 AIS patients
2 groups: pain less than or greater than 4.
Same age, sex, and scoliosis Cobb angles

	Nonpainful	Painful
Preoperative		
Pain	4.54	3.29
Total	4.06	3.49
Postoperative		
Pain	4.47	4.03
Total	4.35	4.11

Spine
SPINE Volume 43, Number 2, pp 127–132

DEFORMITY

Improvement in Scoliosis Research Society-22R Pain Scores After Surgery for Adolescent Idiopathic Scoliosis

Mladen Djurasovic, MD,* Steven D. Glassman, MD,* Daniel J. Sucato, MD, MS,† Lawrence G. Lenke, MD,‡ Charles H. Crawford III, MD,* and Leah Y. Carreon, MD, MSc*

- Two- e nonpainful group comp
- Two- en the two groups.
- A gre ups achieved the MCID

Spine
SPINE Volume 43, Number 22, pp 1566–1571

DEFORMITY

Health-related Quality of Life and Body Image Disturbance of Adolescents With Severe Untreated Idiopathic Early-onset Scoliosis in a Developing Country

Hany Abdel Gawwad Soliman, MD

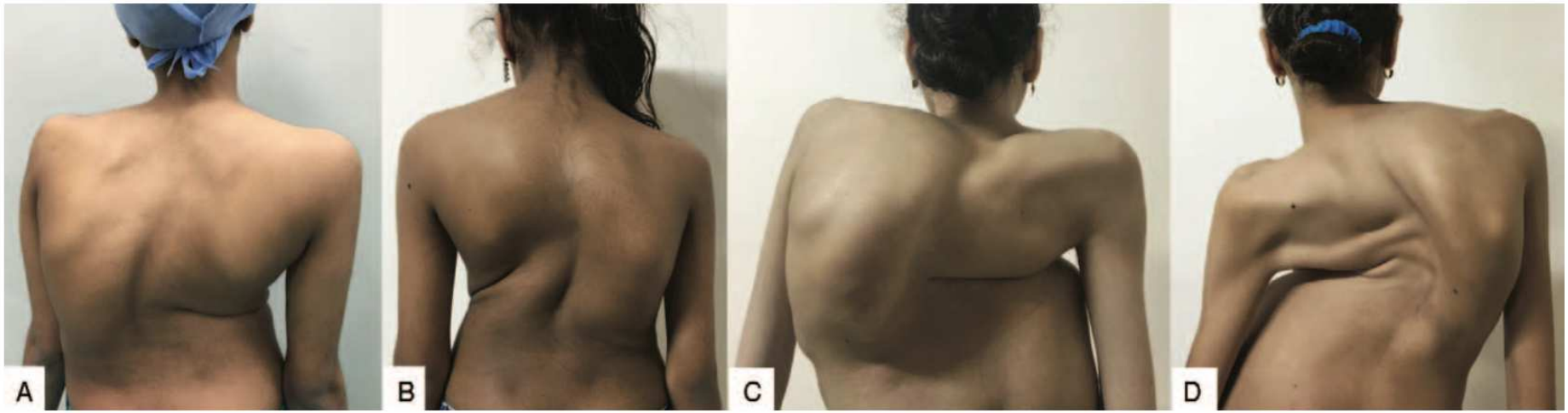


Figure 2. (**A** and B) Physical image changes in group 1 patients caused by major curve angles of 105° and 95°. (**C** and **D**) Physical image changes in group 2 patients caused by major curve angles of 170° and 158°.

Spine
SPINE Volume 43, Number 22, pp 1566–1571

DEFORMITY

Health-related Quality of Life and Body Image Disturbance of Adolescents With Severe Untreated Idiopathic Early-onset Scoliosis in a Developing Country

Hany Abdel Gawwad Soliman, MD

TABLE 2. SRS-22r Scores of All Groups

SRS-22r Domains	Group 1 N = 76 IEOS 90°–120° Mean ± SD (Range)	Group 2 N = 61 IEOS >120° Mean ± SD (Range)	Group 3 N = 50 Normal Controls Mean ± SD (Range)	*P* Overall Group Differences
Function	2.5 ± 0.55 (2 – 3)	2.1 ± 0.32 (1.6 – 2.6)	4.8 ± 0.3 (4.4–5)	<0.001
Pain	3.28 ± 0.26 (2.8–3.8)	2.7 ± 0.31 (2.2–3.6)	4.6 ± 0.5 (4.4–5)	<0.001
Self-image	1.93 ± 0.3 (1.4–2.6)	1.45 ± 0.3 (1–2)	4.1 ± 0.6 (3.6–5)	<0.001
Mental health	2.5 ± 0.3 (2.2–3.2)	1.9 ± 0.26 (1.4–2.4)	4.2 ± 0.4 (3.5–5)	<0.001
Satisfaction	1 ± 0	1 ± 0	–	–
Total	2.33 ± 0.16 (2–2.6)	1.9 ± 0.14 (1.63–2.2)		

SRS 22r scores: 1= worst and 5= best.
IEOS, idiopathic early-onset scoliosis; SD, standard deviation.

What about EOS? Can we “fix it” with surgery?

Pain in EOS?... uh oh

The Final 24-Item Early Onset Scoliosis Questionnaires (EOSQ-24): Validity, Reliability and Responsiveness

Hiroko Matsumoto, MA,† Brendan Williams, MD,‡ Howard Y. Park, MD,§ Julie Y. Yoshimachi, BA,* Benjamin D. Roye, MD, MPH,* David P. Roye, Jr, MD,* Behrooz A. Akbarnia, MD,‖ John Emans, MD,¶ David Skaggs, MD,§# John T. Smith, MD,** and Michael G. Vitale, MD, MPH**

(*J Pediatr Orthop* 2018;38:144–151)

TABLE 3. Responsiveness: The EOSQ-24 Domain Scores Significantly Different Between Preoperative and Postoperative Assessments

		Mean (95% CI)					
Cohort	**Domain**	**Preoperative**	**Postoperative**	**Norm**	***P* (Pre vs. Post)**	***P* (Norm vs. Pre)**	***P* (Norm vs. Post)**
Neuromuscular	General health	61 (53-72)	71 (62-79)	87 (85-89)	0.204	**< 0.001**	**< 0.001**
	Fatigue	53 (41-65)	68 (54-78)	92 (91-93)	0.083	**< 0.001**	**< 0.001**
	Pulmonary function	77 (64-90)	87 (73-101)	98 (97-99)	0.131	**0.003**	0.110
	Transfer	59 (48-73)	69 (55-82)	98 (98-99)	0.367	**< 0.001**	**< 0.001**
	Emotion	67 (57-78)	80 (69-91)	94 (93-95)	**0.046**	**< 0.001**	**0.010**
	Parental burden	49 (41-59)	59 (50-68)	92 (91-93)	**0.020**	**< 0.001**	**< 0.001**
Spinal muscular atrophy	General health	56 (34-79)	75 (66-84)	87 (82-92)	0.256	**0.013**	**0.007**
	Pulmonary function	61 (31-91)	80 (48-113)	98 (98-99)	0.093	**0.022**	0.222
	Transfer	34 (15-54)	61 (28-93)	99 (98-100)	**0.045**	**< 0.001**	**0.028**
	Physical function	33 (−19 to 86)	13 (−4 to 29)	98 (96-99)	0.482	**0.023**	**< 0.001**
	Daily living	28 (6-50)	18 (3-33)	88 (82-94)	0.476	**< 0.001**	**< 0.001**
	Fatigue	36 (19-53)	52 (35-69)	93 (90-95)	0.078	**< 0.001**	**0.001**
	Emotion	50 (37-63)	63 (41-84)	94 (92-97)	0.286	**< 0.001**	**0.011**
	Parental burden	42 (30-54)	51 (33-70)	94 (92-97)	0.428	**< 0.001**	**0.002**
	Financial burden	78 (57-99)	64 (42-87)	98 (96-99)	0.407	0.065	**0.010**
Idiopathic	Physical function	94 (84-105)	84 (70-98)	98 (96-99)	**0.048**	0.417	0.096
	Emotion	83 (72-95)	61 (48-75)	95 (93-97)	**0.006**	**0.048**	**< 0.001**
	Financial burden	46 (22-71)	36 (3-68)	98 (96-100)	0.141	**0.003**	**0.004**
With intraoperative complication	Pain	76 (66-79)	59 (40-78)	92 (86-97)	0.092	0.165	**0.013**

EOSQ Scores	4/27/2018	8/17/2018	1/11/2019	8/19/2019	11/15/2019
General Health	37.5	37.5	62.5	87.5	50
Pain/Discomfort	62.5	62.5	62.5	37.5	50
Pulmonary Function	87.5	75	62.5	100	87.5
Transfer	50	100	100	50	75
Physical Function	58.33	100	66.66	75	83.33
Daily Living	75	25	25	62.5	25
Fatigue/Energy Level	62.5	75	100	100	75
Emotion	50	75	100	100	75
Parental Impact	60	75	70	60	75
Financial Impact	50	75	25	25	75
Satisfaction	75	75	62.5	75	75
Total Score	61.45	70.83	67.7	71.87	68.75

Findings:

Spine Radiographic measures

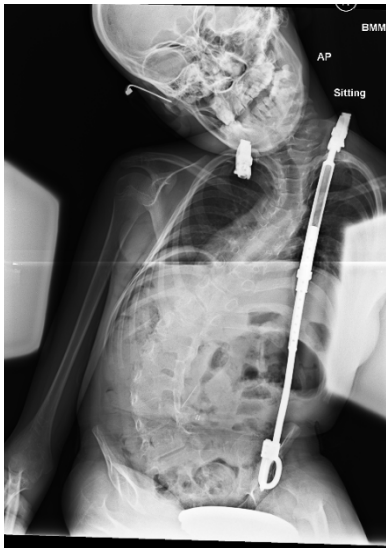
Date	Xray Date	Left attempted	Right attempted	Left total	Right total
09/15/2017	09/15/2017	2 mm	2 mm	4 mm	3 mm
1/19/18	1/19/18	3 mm	3 mm		
4/27/2018	4/27/18	3 mm (centrally)	3 mm (centrally)	11mm	10mm
8/17/2018		3 mm (centrally)	3 mm (centrally)		
1/11/2019	1/11/2019	5.5 mm	3 mm	10.6 mm	14mm
4/19/2019	4/19/2019	3 mm	3 mm	17 mm	18 mm
08/19/2019		3 mm	3 mm		

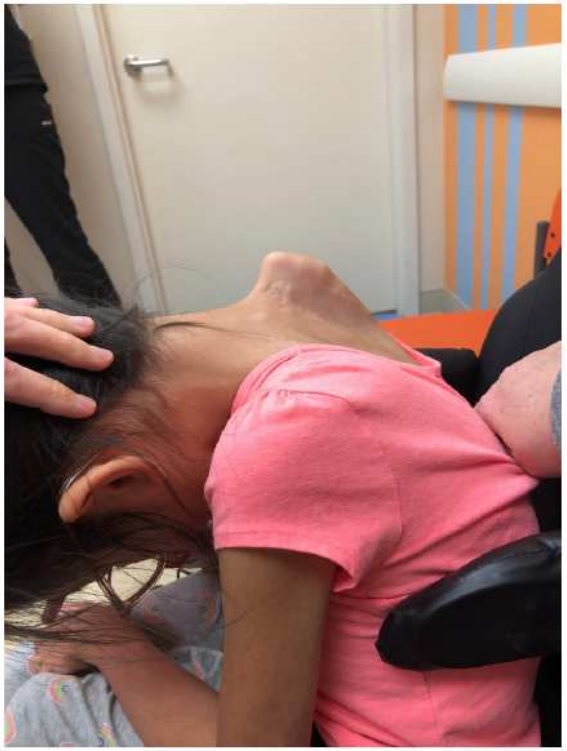
Experience-Based Context

- Pain is present
- Appears to be random

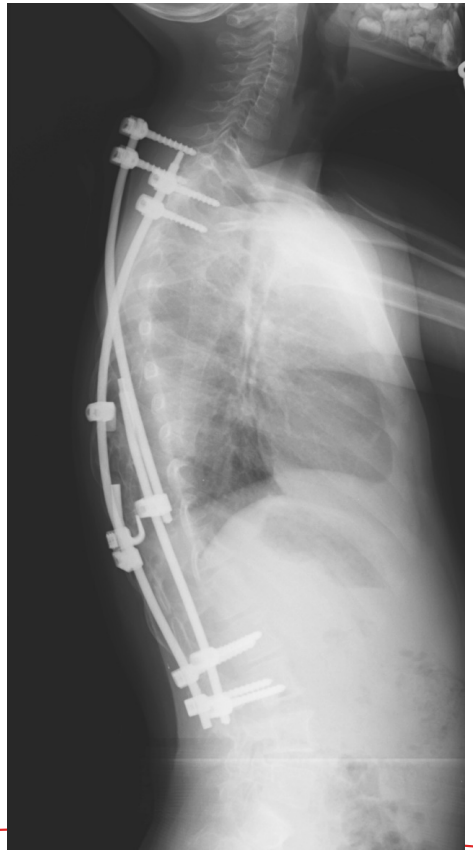
  - Let's play a game? Guess which EOS kid is painful?!

Not painful…

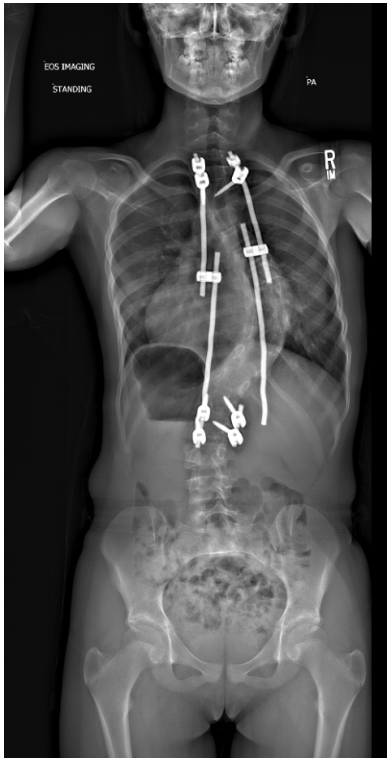




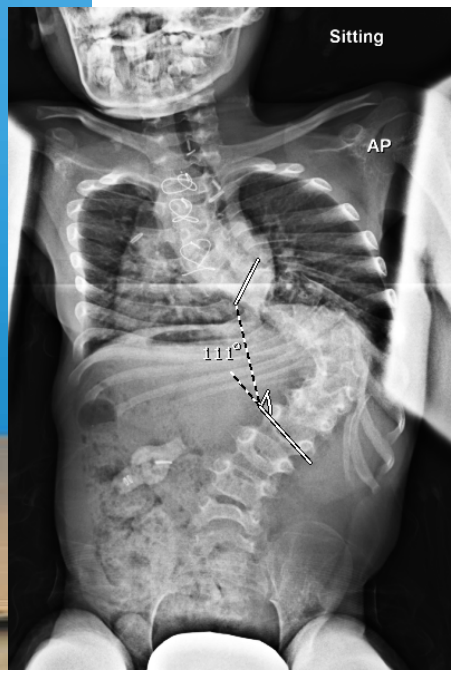
Also not painful



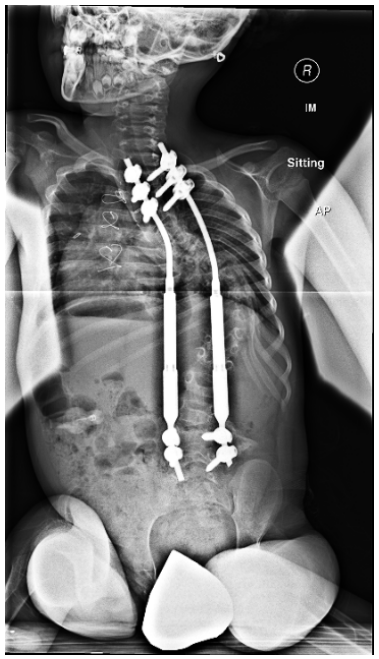
Painful… for one day, then pain resolved, and they didn't bother to call. Found this 2 months later incidentally.



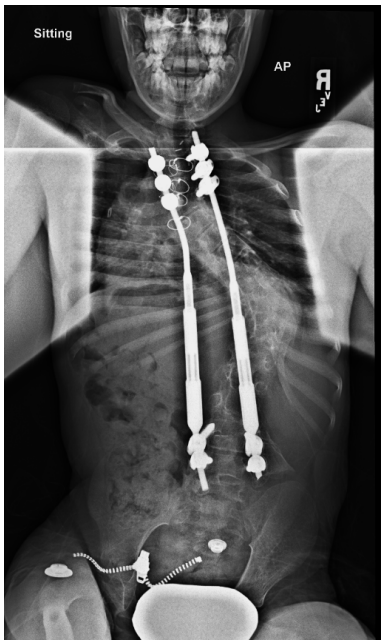
Paralytic Scoliosis: Painful!

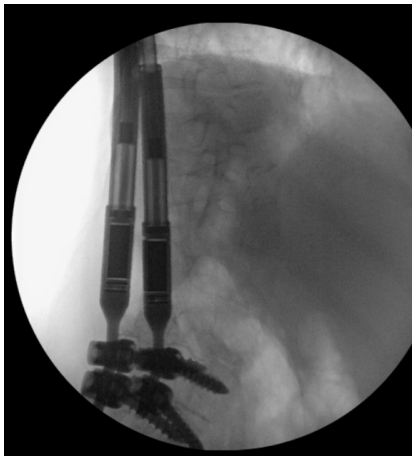


Age 6



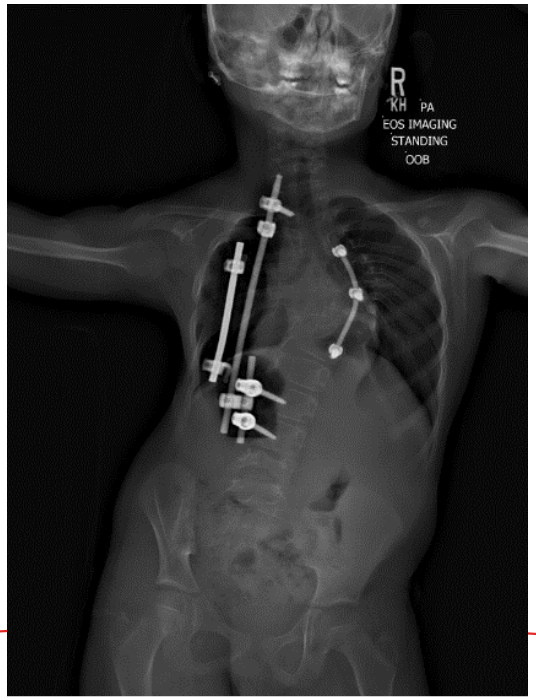
Age 10





New factors like with magnetic growing rods…

- Used to lengthen every 6-12 months



Psychosocial Effects of Repetitive Surgeries in Children With Early-Onset Scoliosis: Are We Putting Them at Risk?

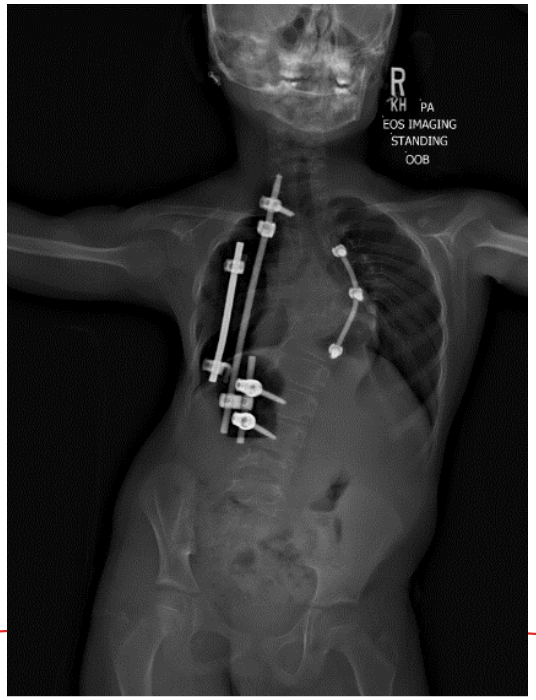
Hiroko Matsumoto, MA, Brendan A. Williams, BA,* Jacqueline Corona, MD,† Jonathan S. Comer, PhD,‡ Prudence W. Fisher, PhD,§ Yuval Neria, PhD,§ Benjamin D. Roye, MD, MPH,*‖ David P. Roye1, MD,*‖ and Michael G. Vitale, MD, MPH*‖*

Psychological Dysfunction in Children Who Require Repetitive Surgery for Early Onset Scoliosis

John M. Flynn, MD, Hiroko Matsumoto, MA,† Frances Torres, PhD,‡ Norman Ramirez, MD,* and Michael G. Vitale, MD, MPH§*

New factors like with magnetic growing rods…

- Used to lengthen every 6-12 months
- Now we lengthen every 6-12 weeks



Psychosocial Effects of Repetitive Surgeries in Children With Early-Onset Scoliosis: Are We Putting Them at Risk?

Hiroko Matsumoto, MA, Brendan A. Williams, BA,* Jacqueline Corona, MD,† Jonathan S. Comer, PhD,‡ Prudence W. Fisher, PhD,§ Yuval Neria, PhD,§ Benjamin D. Roye, MD, MPH,*‖ David P. Roye1, MD,*‖ and Michael G. Vitale, MD, MPH*‖*

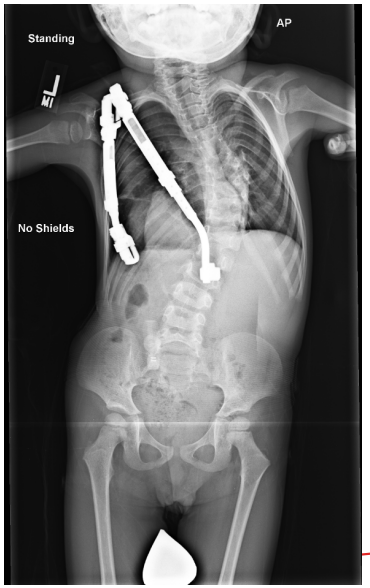
Psychological Dysfunction in Children Who Require Repetitive Surgery for Early Onset Scoliosis

John M. Flynn, MD, Hiroko Matsumoto, MA,† Frances Torres, PhD,‡ Norman Ramirez, MD,* and Michael G. Vitale, MD, MPH§*

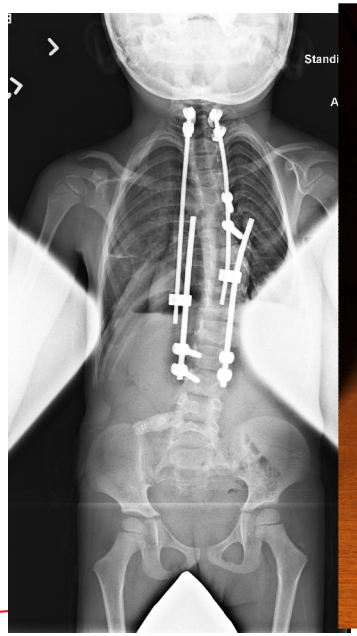
New factors like with magnetic growing rods…

- Used to lengthen every 6-12 months
- Now we lengthen every 6-12 weeks

Age 3

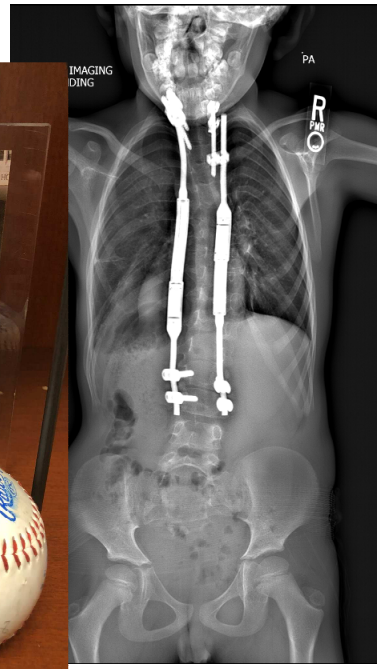


Age 4

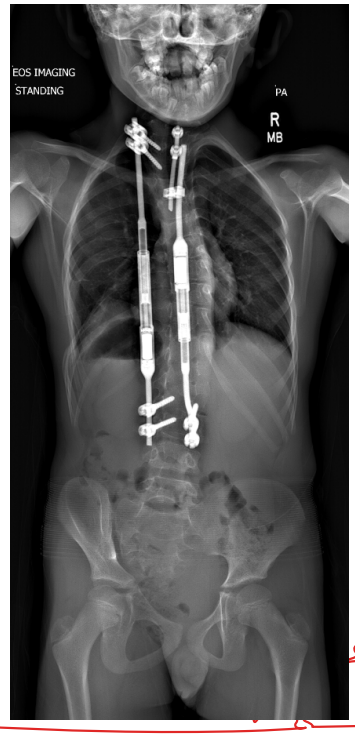


Age 5

Age 6



Age 8



Magec Rodeo:

TEXAS SCOTTISH RITE HOSPITAL FOR CHILDREN

Dr Flynn's clinic:

NCBI Resources How To

PubMed.gov
US National Library of Medicine
National Institutes of Health

PubMed | chronic pain management early onset scoliosis | Search

Create RSS Create alert Advanced

Article types
Clinical Trial
Review
Customize ...

Text availability
Abstract

Format: Summary **Sort by**: Most Recent **Send to**

Search results

Items: 4

Google Scholar | association of back pain and anxiety

Articles About 1,260,000 results (**0.10** sec) My profile

Any time
Since 2019
Since 2018
Since 2015
Custom range...

Sort by relevance
Sort by date

include patents
include citations

Create alert

Depression and **anxiety** associated with three **pain** conditions: results from a nationally representative sample [PDF] semanticscholar.org
LA McWilliams, RD Goodwin, BJ Cox - **Pain**, 2004 - Elsevier
… Given that strong **associations** between these disorders have been consistently found across several … manual of mental disorders 3rd ed revised, American Psychiatric **Association**, Washington, DC … 35-44. Currie and Wang, 2004 SR Currie, J. WangChronic **back pain** and major …
☆ Cited by 552 Related articles All 22 versions

[HTML] **Association** between chronic low **back pain**, **anxiety** and depression in patients at a tertiary care centre [HTML] jpma.org.pk
MA Sagheer, MF Khan, S Sharif - J Pak Med Assoc, 2013 - jpma.org.pk
Objective: To observe the prevalence of **anxiety** and depression in chronic low **back pain** population at a tertiary care centre. Methods: The prospective cross-sectional study was conducted using convenience sampling at the Department of Neurosurgery, at Liaquat …
☆ Cited by 71 Related articles All 8 versions

[HTML] **Association** of depression and **anxiety** alone and in combination with chronic musculoskeletal **pain** in primary care patients [HTML] nih.gov
MJ Bair, J Wu, TM Damush, JM Sutherland… - Psychosomatic …, 2008 - ncbi.nlm.nih.gov

Child Psychologists' View on Pediatric Pain

TERESA L. COLLINS-JONES, PH.D.

TRAINING DIRECTOR, PSYCHOLOGY DEPARTMENT

Teresa L. Collins-Jones, Ph.D., is a pediatric psychologist who has worked extensively with children and families diagnosed with pediatric health conditions and/or injury over the past 25 years through her graduate coursework, supervised practicum experiences, pre-doctoral internship, post-doctoral fellowship and professional work. At Texas Scottish Rite Hospital for Children, she provides consultation and liaison services through the outpatient orthopedic clinics and inpatient unit on cases with a wide range of behavioral, medical and psychological problems. She conducts psychological assessments with children and young adults, provides individual and family outpatient psychotherapy, and offers pain management services to patients who report significant changes to their level of functioning and quality of life.

Pain, Pain, Go Away: Helping Children With Pain

By
Patrick J McGrath, OC, Ph.D., FRCS[1], G Allen Finley, MD, FRCPC[1],
Judith Ritchie, RN, Ph.D.[2], Stephanie J Dowden, RN, MEd[3]

What is Pain?

- According to Webster's Dictionary "Pain is physical suffering or discomfort caused by illness or injury."
- It is an unpleasant sensation and emotional experience linked to tissue damage.
- The experience of pain is different for everyone.
- There are different ways of feeling and describing pain.

As a result, it is difficult to treat!

Developmental Stages and Pain Responses

Phase	Developmental Task	Unique Pain Response
Infancy	Trust v. Mistrust Sensorimotor	Cry, withdraw, furrow brow, taut mouth
Toddlerhood	Autonomy v. Shame and Doubt Sensorimotor Preoperational Thought (perceive pain as a physical event that disappears like magic)	Cry, scream, protest, withdraw
Preschooler	Initiative v. Guilt Preoperational Thought (perceive pain as a physical event that disappears like magic)	Cry, localize body part, anticipate painful procedures. Body image concerns
School-aged	Industry v. Inferiority Concrete Operations (children relate to pain physically and are able to identify its location within the body)	Body image concerns, may assume pain is punishment.
Adolescent	Identify v. Role Confusion Formal Operations (beginning to problem-solve similar to adults)	Assume pain will be treated, can conceptualize pain relief.

Increasing Pain is normal??

The Final 24-Item Early Onset Scoliosis Questionnaires (EOSQ-24): Validity, Reliability and Responsiveness

Hiroko Matsumoto, MA,† Brendan Williams, MD,‡ Howard Y. Park, MD,§ Julie Y. Yoshimachi, BA,* Benjamin D. Roye, MD, MPH,* David P. Roye, Jr, MD,* Behrooz A. Akbarnia, MD,‖ John Emans, MD,¶ David Skaggs, MD,§# John T. Smith, MD,** and Michael G. Vitale, MD, MPH**

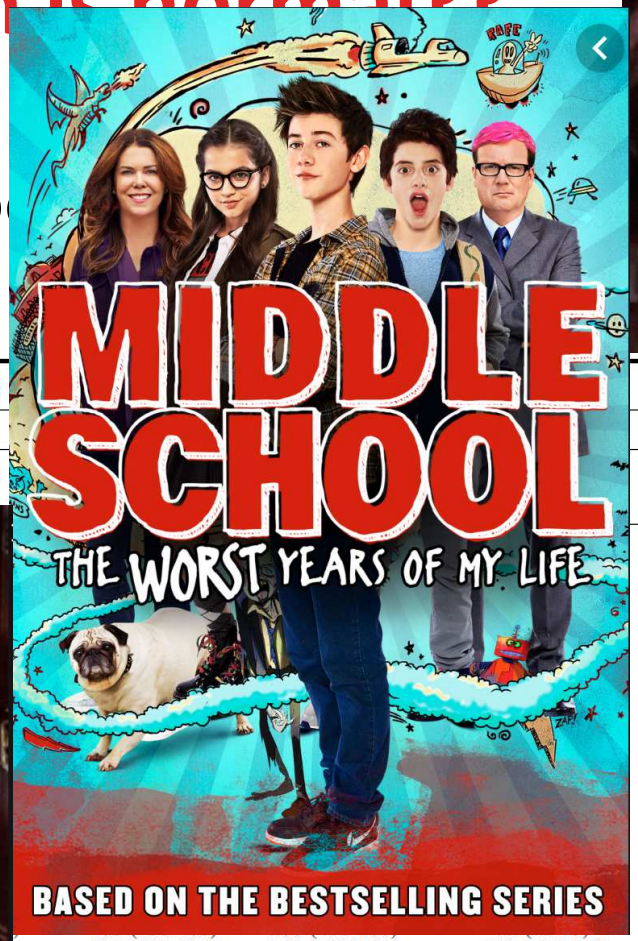
(*J Pediatr Orthop* 2018;38:144–151)

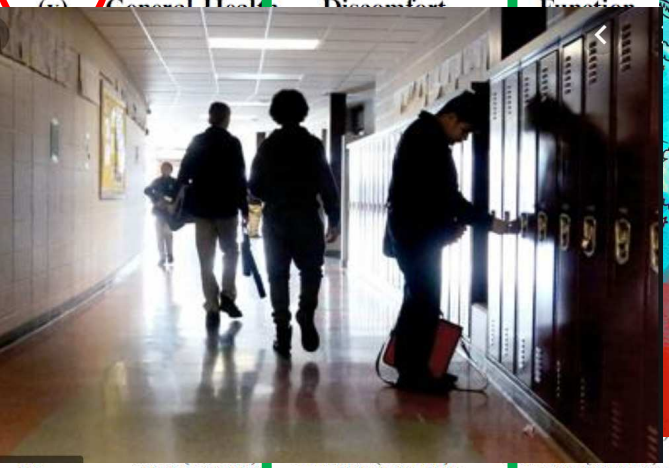
141 normal kids took the EOSQ:

TABLE 4. Normative Data Breakdown by Age and Domains

	Mean (95% CI)									
Age (y)	General Health	Pain/ Discomfort	Pulmonary Function	Transfer	Physical Function	Daily Living	Fatigue/Energy Level	Emotion	Parental Burden	Financial Burden
0	80 (71-89)	92.5 (84-101)	98.75 (96-102)	97.5 (92-103)	92.5 (84-101)	86.1111 (72-100)	86.1111 (70-102)	98.4375 (95-102)	77.5 (60-95)	92.5 (80-105)
1	81.25 (75-88)	86.4583 (75-98)	94.7917 (83-106)	95.8333 (87-105)	92.3611 (82-103)	90.6250 (82-100)	91.6667 (83-100)	94.3182 (86-102)	87.5 (81-94)	95.8333 (90-102)
2	76.9231 (69-84)	82.6923 (73-92)	97.1154 (94-100)	100 (100-100)	100 (100-100)	79.8077 (71-88)	91.3462 (86-96)	94.2308 (89-99)	85.7692 (78-94)	96.1538 (90-100)
3	81.25 (72-89)	94.6429 (86-100)	100 (100-100)	98.2143 (95-100)	100 (100-100)	96.4286 (93-99)	99.1071 (97-100)	98.2143 (95-100)	95 (88-98)	100 (100-100)
4	81.25 (76-86)	86.4583 (79-96)	97.9167 (95-100)	100 (100-100)	99.3056 (98-100)	89.5833 (81-97)	97.9167 (96-100)	98.9583 (97-100)	95 90-99)	100 (100-100)
5	91.6667 (89-96)	94.7917 (86-100)	98.9583 (97-100)	97.9167 (94-100)	95.8333 (88-100)	87.5 (75-97)	93.75 (89-98)	93.75 (85-100)	93.3333 (85-99)	97.9167 (94-100)
6	84.0909 (78-91)	90.9091 (84-98)	98.8636 (97-100)	100 (100-100)	96.9697 (91-100)	77.2727 (61-91)	92.0455 (82-99)	93.1818 (86-100)	89.5455 (79-98)	95.4545 (86-100)
7	90 (85-95)	93.75 (88-100)	97.5 (92-100)	97.5 (93-100)	98.3333 (95-100)	92.5 (81-100)	93.75 (85-100)	95 (85-100)	93 (85-99)	100 (100-100)
8	87.5 (77-97)	87.5 (77-96)	97.9167 (94-100)	97.9167 (94-100)	97.9167 (94-100)	97.9167 (95-100)	90.6250 (79-100)	95.8333 (88-100)	94.5833 (85-100)	97.9167 (94-100)
9	92.5 (89-96)	85 (74-94)	97.5 (94-100)	100 (100-100)	99.1667 (98-100)	96.25 (91-100)	97.5 (94-100)	92.5 (81-100)	95.5 (88-100)	97.5 (93-100)
10	87.5 (79-93)	75 (58-89)	97.2222 (93-100)	91.6667 (83-100)	92.5926 (80-100)	88.8889 (75-99)	93.0556 (83-100)	91.6667 (85-99)	90 (83-97)	97.2222 (92-100)
11	85.7143 (80-91)	76.7857 (64-89)	94.6429 (87-100)	100 (100-100)	100 (100-100)	100 (100-100)	76.7857 (61-89)	96.4286 (93-100)	97.8571 (96-100)	100 (100-100)
12	80.5556 (69-92)	72.2222 (56-89)	97.2222 (93-100)	94.4444 (78-100)	99.0741 (96-100)	100 (100-100)	88.8889 (81-96)	93.0556 (72-100)	92.2222 (73-100)	91.6667 (78-100)
13	90 (80-100)	85 (65-100)	95 (85-100)	100 (100-100)	100 (100-100)	92.5 (78-100)	82.5 (73-93)	92.5 (78-100)	98 (96-100)	95 (85-100)
14	91.6667 (88-100)	100 (100-100)	95.8333 (88-100)	100 (100-100)	100 (100-100)	100 (100-100)	95.8333 (88-100)	100 (100-100)	100 (100-100)	100 (100-100)
15	100 (100-100)	100 (100-100)	100 (100-100)	100 (100-100)	100 (100-100)	75 (75-75)	75 (75-75)	100 (100-100)	100 (100-100)	100 (100-100)
16	87.5 (79-100)	91.6667 (75-100)	95.8333 (88-100)	100 (100-100)	100 (100-100)	100 (100-100)	75 (67-84)	87.5 (75-100)	96.6667 (93-100)	100 (100-100)
17	100 (100-100)	100 (100-100)	100 (100-100)	100 (100-100)	100 (100-100)	100 (100-100)	100 (100-100)	100 (100-100)	100 (100-100)	100 (100-100)
18	87.50 (87.5-87.5)	37.50 (37.5-37.5)	100 (100-100)	25.00 (25-25)	83.33 (83.33-83.33)	37.50 (37.5-37.5)	62.50 (62.5-62.5)	62.50 (62.5-62.5)	60 (60-60)	75 (75-75)

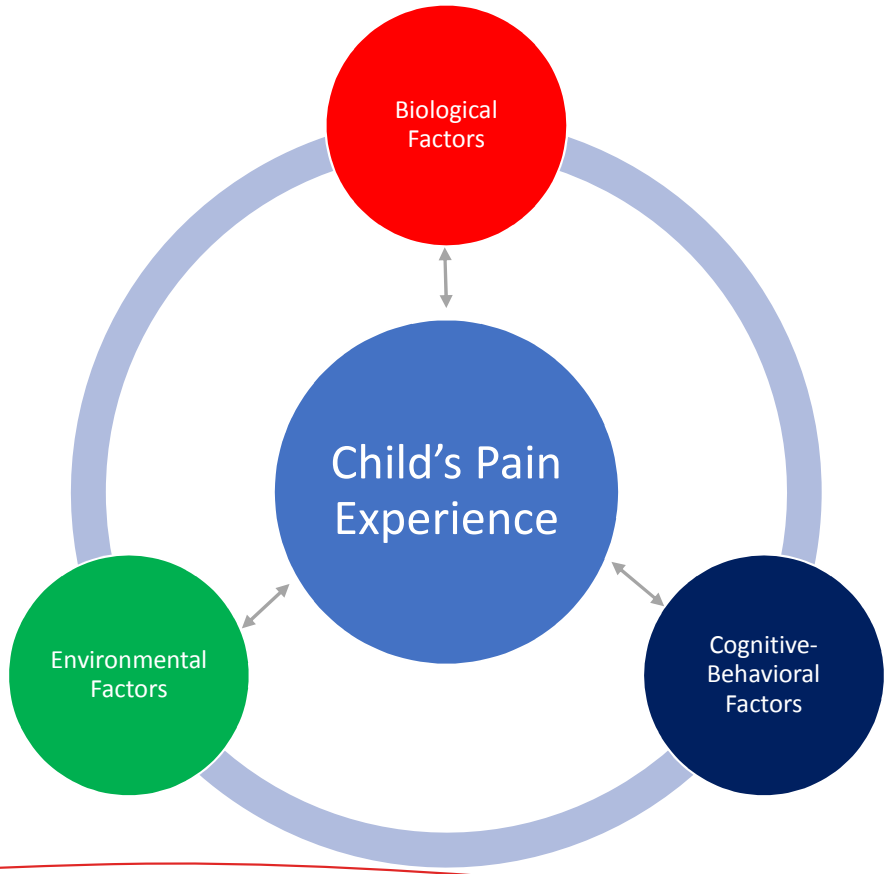
The Final 24-Item Early Onset Scoliosis Questionnaires

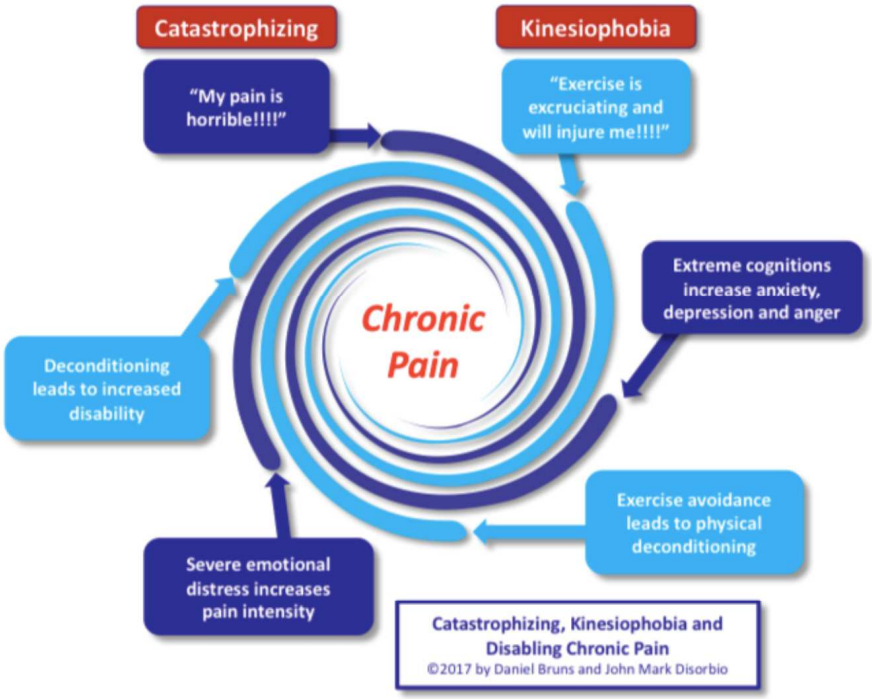




							Fatigue/Energy Level	Emotion	Parental Burden	Financial Burden
17	100 (100-100	100 (100-100)	100 (100-100)	100 (100-100)	100 (100-100)	100 (100-100)	95.8333 (88-100)	100 (100-100)	100 (100-100)	100 (100-100)
18	87.50 (87.5-87.5)	37.50 (37.5-37.5)	100 (100-100)	25.00 (25-25)	83.33 (83.33-83.33)	37.50 (37.5-37.5)	75 (75-75)	100 (100-100)	100 (100-100)	100 (100-100)
							75 (67-84)	87.5 (75-100)	96.6667 (93-100)	100 (100-100)
							100 (100-100)	100 (100-100)	100 (100-100)	100 (100-100)
							62.50 (62.5-62.5)	62.50 (62.5-62.5)	60 (60-60)	75 (75-75)

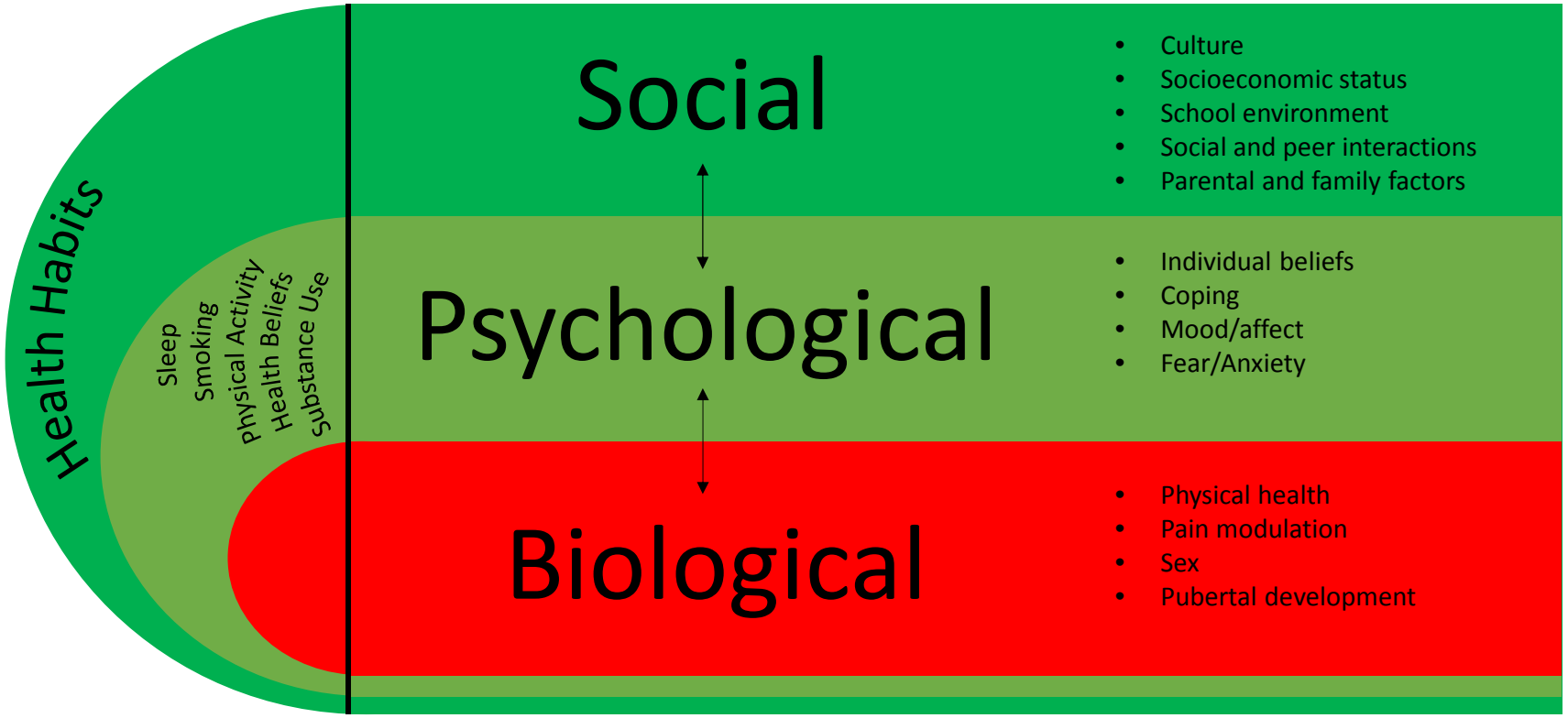
Biopsychosocial Model of Pain





The cognitive vortex diagram illustrates how poor pain coping can result in increasing pain and disability, and cause a patient to enter a downward spiral. The cognitive vortex is a simplified version of the biopsychosocial vortex, which depicts a perfect storm of varables associated with a poor medical treatment outcome.

Guiding Conceptual Model for Understanding Pediatric Chronic Pain and Disability



Palermo, T. M. (2012). *Cognitive-behavioral therapy for chronic pain in children and adolescents*. Oxford: Oxford University Press.

Commonly Used Psychological Assessment Measures for Children with Chronic Pain

Assessment Domain	Example
Pain Intensity	Faces Pain Scale Revised (FPS-R)
Broad-Based Measures	PedsQL; Bath Adolescent Pain Questionnaire
Emotional Functioning	Pain Catastrophizing Scale for Children (PCS-C)
Physical Functioning	Functional Disability Inventory (FDI)
Sleep	Children's Sleep Habits Questionnaire (CSHQ)
Parental Responses/Family Function	Family Assessment Device (FAD)

Palermo, T. M. (2012). *Cognitive-behavioral therapy for chronic pain in children and adolescents*. Oxford: Oxford University Press.

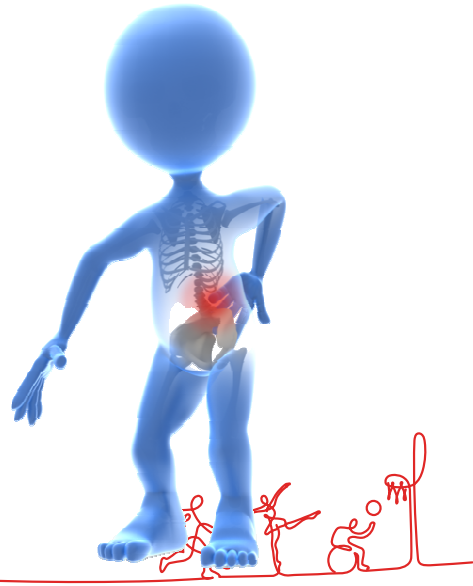
How Pain May Affect Children

Children Who Maintain Function

- Some children with pain symptoms have very little disruption in their day-to-day lives.
- They keep going to school, playing sports, and spending time with friends.
- Some children push themselves to continue with their activities because they don't want to have their lives impacted by pain.

Children Who Struggle

- Other children with pain symptoms have major disruption in their daily lives.



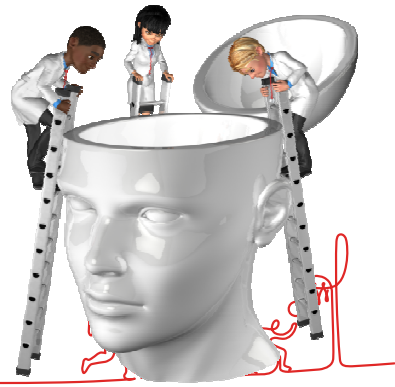
TEXAS SCOTTISH RITE HOSPITAL FOR CHILDREN

Parent Response/Beliefs About Pain

- Parents may worry that their child's pain means that there is a medical problem that has not yet been identified.
- Parents may feel that strongly that a cure for the pain/discomfort can be found.
- Parents may feel discouraged because the treatments offered are not working.
- Parents may feel that they are being told that their child's pain is not real.

Why Does Chronic Pain Develop?

- Some types of pain conditions run in families (child is born with a tendency to experience a pain problem)
- **Child may have a medical condition that affects his/her physiology**
- A child's psychological functioning (mood and emotions).
  - Negative emotions like anger, sadness, worry and disgust is related to experiencing higher levels of pain.
  - Parts of the brain related to the perception of pain are involved in the regulation of emotion.

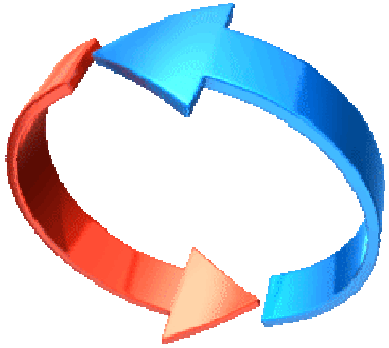


Chronic Pain:

- Can affect children's participation in physical, social, and recreational activities
- Can impact school attendance and performance
- Can affect parents and families by creating worries, stress, and financial burden.
- Places children at risk for chronic pain in adulthood.

Coping Becomes More Difficult When The Child Experiences Negative Emotions

- Changes in the brain that occur with the processing of pain may also have an effect on the child's emotions (and vice versa).



TLCJ4
TLCJ5

Common Problems in Families Coping with Chronic Pain

- Child Function and Behavior
- Parent Distress
- Family and Marital Issues
- Interactions with Healthcare or School System

Slide 38

TLCJ4 Tonya Palermo, PhD and Emily Law, PhD from the Department of Anesthesiology and Pain Medicine at University of Washington School of Medicine.
Teresa Collins-Jones, 11/18/2019

TLCJ5 Book: Managing Your Child's Chronic Pain (2015)
Teresa Collins-Jones, 11/18/2019

TLCJ1

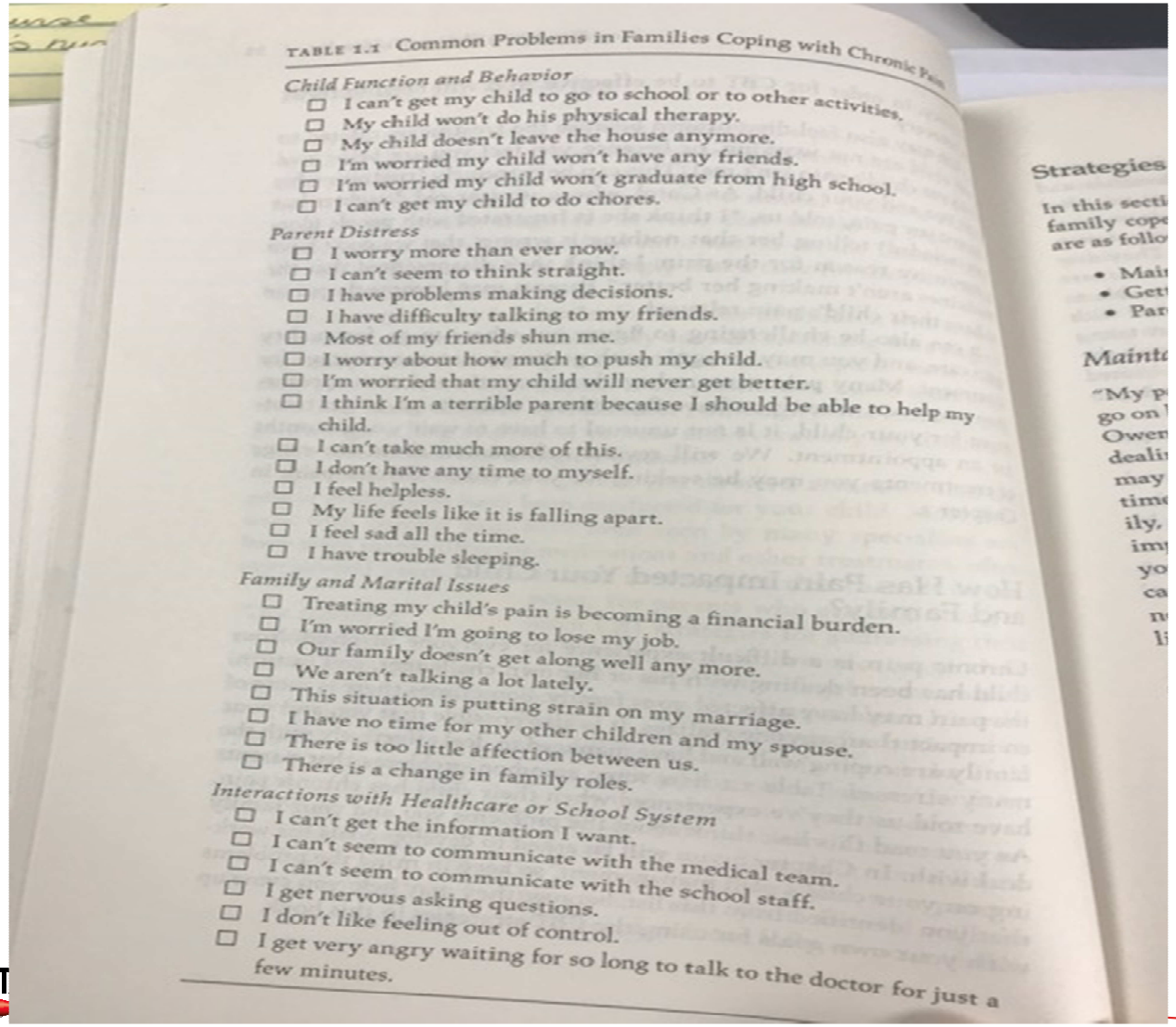


TABLE 1.1 Common Problems in Families Coping with Chronic Pain

Child Function and Behavior

- ☐ I can't get my child to go to school or to other activities.
- ☐ My child won't do his physical therapy.
- ☐ My child doesn't leave the house anymore.
- ☐ I'm worried my child won't have any friends.
- ☐ I'm worried my child won't graduate from high school.
- ☐ I can't get my child to do chores.

Parent Distress

- ☐ I worry more than ever now.
- ☐ I can't seem to think straight.
- ☐ I have problems making decisions.
- ☐ I have difficulty talking to my friends.
- ☐ Most of my friends shun me.
- ☐ I worry about how much to push my child.
- ☐ I'm worried that my child will never get better.
- ☐ I think I'm a terrible parent because I should be able to help my child.
- ☐ I can't take much more of this.
- ☐ I don't have any time to myself.
- ☐ I feel helpless.
- ☐ My life feels like it is falling apart.
- ☐ I feel sad all the time.
- ☐ I have trouble sleeping.

Family and Marital Issues

- ☐ Treating my child's pain is becoming a financial burden.
- ☐ I'm worried I'm going to lose my job.
- ☐ Our family doesn't get along well any more.
- ☐ We aren't talking a lot lately.
- ☐ This situation is putting strain on my marriage.
- ☐ I have no time for my other children and my spouse.
- ☐ There is too little affection between us.
- ☐ There is a change in family roles.

Interactions with Healthcare or School System

- ☐ I can't get the information I want.
- ☐ I can't seem to communicate with the medical team.
- ☐ I can't seem to communicate with the school staff.
- ☐ I get nervous asking questions.
- ☐ I don't like feeling out of control.
- ☐ I get very angry waiting for so long to talk to the doctor for just a few minutes.

Strategies

In this secti
family cope
are as follo

- Mai
- Get
- Par

Mainta

"My p
go on
Owen
deali
may
time
ily.
imp
yo
ca
n
li

TEXAS SCOTTISH RITE HOSPITAL FOR CHILDREN

Slide 39

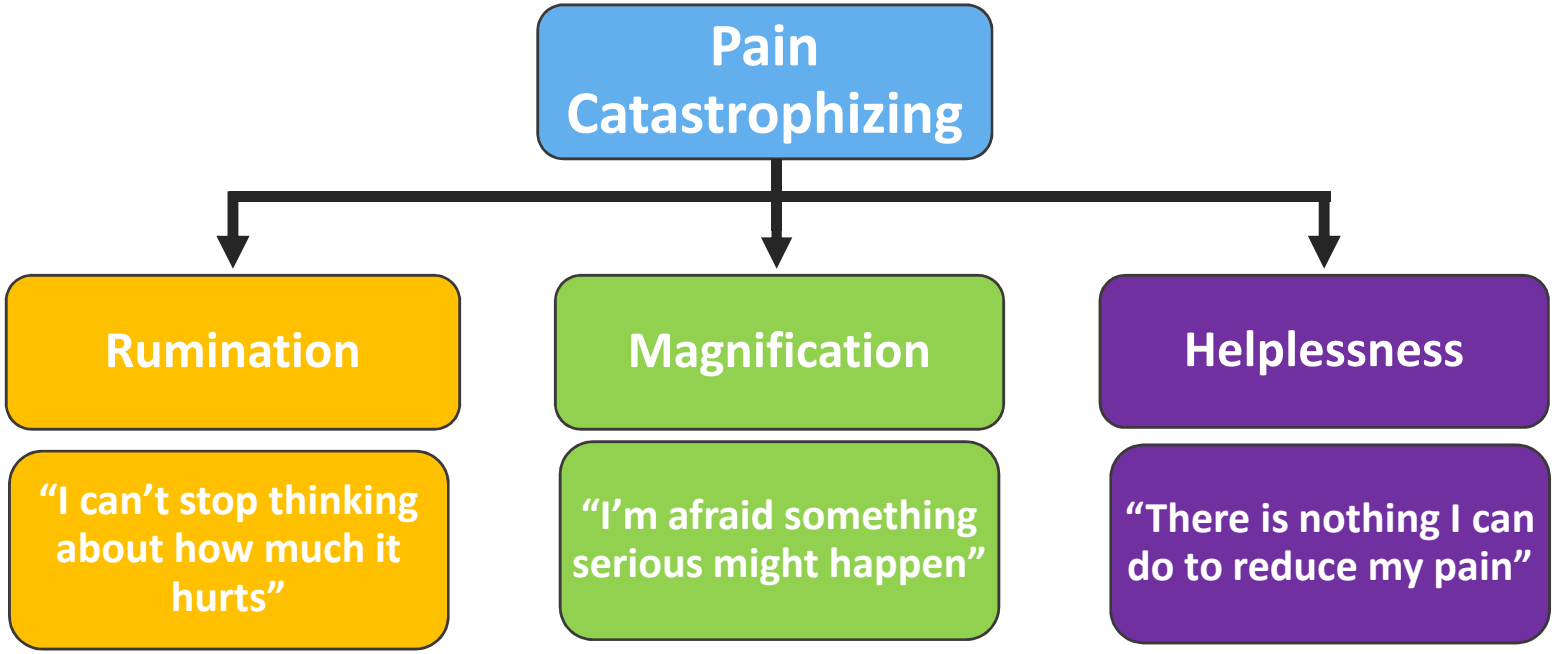
TLCJ1 This info goes with the slide before
Teresa Collins-Jones, 11/18/2019

Treatment of Pediatric Pain

- Use of Evidence-Based Interventions
  - Cognitive-Behavioral Therapy
  - Working with Parents
  - Interdisciplinary Treatment of Pain Disorders in Pediatric Patients

What is Pain Catastrophizing?

Pain catastrophizing is a negative cascade of cognitive and emotional responses to actual or anticipated pain. *Those who pain catastrophize tend to experience more pain.*



Preop PCS Predicts SRS Scores

Two Group Comparison showed significant differences in postoperative SRS scores

This means those who catastrophized continued to have higher levels of pain and mental health concerns 1-year postoperative

1 Year SRS Domains	Low/Normal PCS	High PCS	p-value
SRS Total	**4.22**	**3.74**	**<0.001**
Pain	4.36	3.97	**0.04**
Appearance	4.16	3.76	**0.005**
Activity	4.00	3.60	**0.002**
Mental	4.31	3.44	**<0.001**
Satisfaction	4.56	4.09	**0.004**

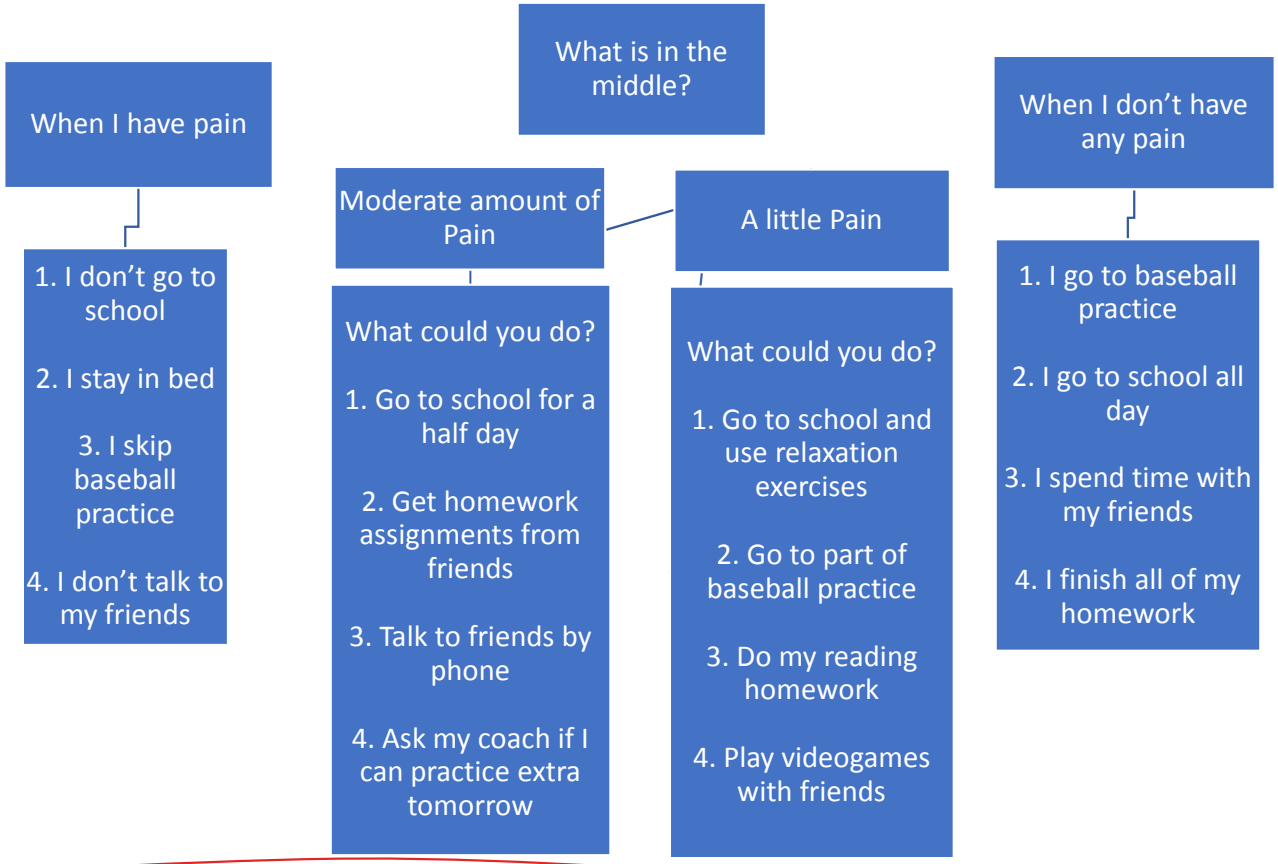
Cognitive Behavioral Therapy: Pain Log

Name: _____

Week of: _____

Date	Did you have any pain today?	How much did it hurt? (0-10 rating scale)	What time did the pain start?	What time did the pain end (if it ended)?	How difficult were your normal activities for you today because of your pain? (0-10 rating scale)

Thought Continuum Exercise

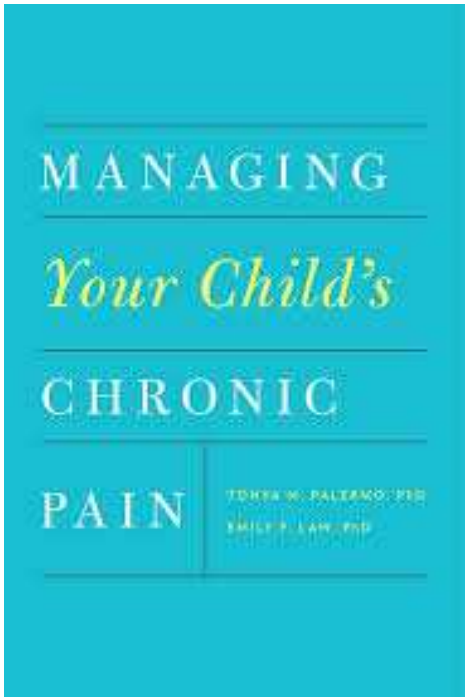


Parent Management Guidelines

1. Remove the focus on pain.
2. Encourage normal activity during pain episodes.
3. Provide different consequences.
4. Encourage independent management of pain.
5. Do not give excessive attention.
6. Reward activity participation and school attendance.

TEXAS SCOTTISH RITE HOSPITAL FOR CHILDREN

Resources for Parents



Why are kids hurting more these days?

General Principles We Should Follow

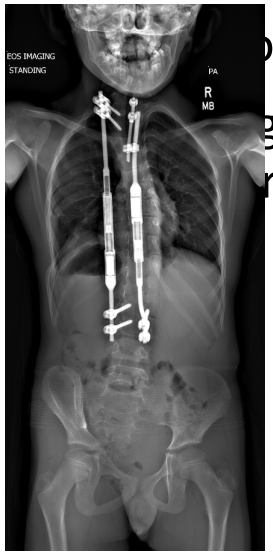
- Limit narcotics
- Utilize Child Life during Magec and TGR lengthenings
- Parent Education – awareness of normal
- Psychology, psychology, psychology!
- Engaging pain “experts” or neurology for use of non-narcotic pain medicines like Neurontin

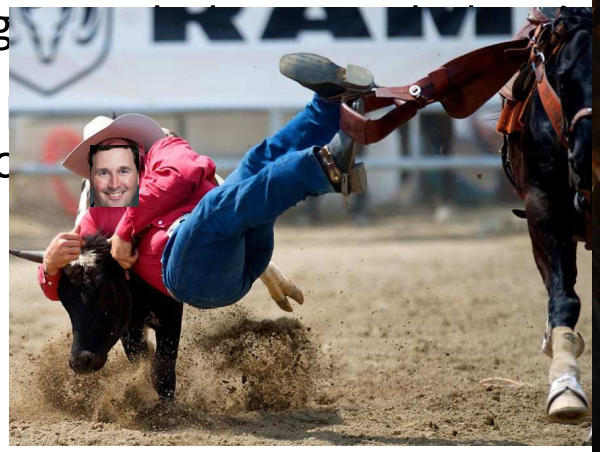
General Principles We Should Follow

- **Limit narcotics**
- Utilize Child Life during Magec and TGR lengthenings
- Parent Education – awareness of normal
- Psychology, psychology, psychology!
- Engaging pain “experts” or neurology for use of non-narcotic pain medicines like Neurontin

General Principles We Should Follow

- Limit narcotics
- **Utilize Child Life during Magec and TGR lengthenings**
- Parent Education – awareness of nor

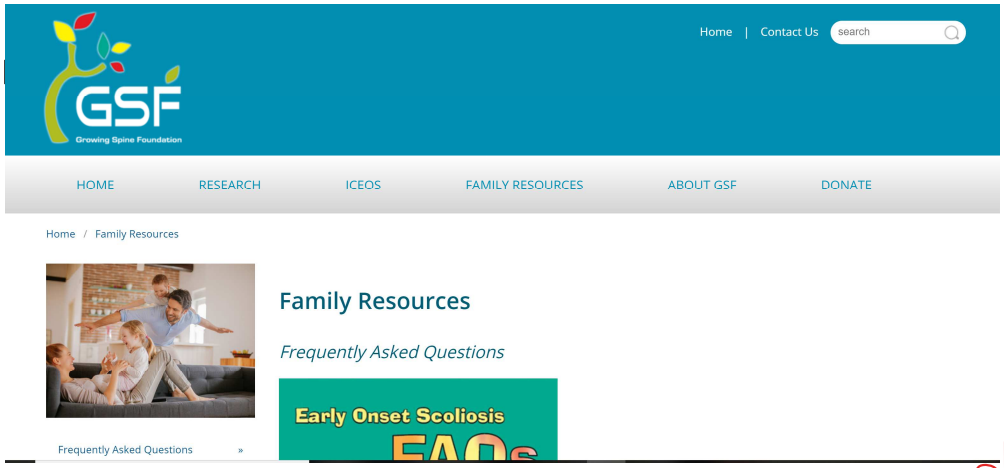




Magec Rodeo:

General Principles We Should Follow

- Limit narcotics
- Utilize Child Life during Magec and TGR lengthenings
- **Parent Education – awareness of normal**
- Psychology, psychology, psychology!
- Engaging pain “experts” or neurology fo
  like Neurontin



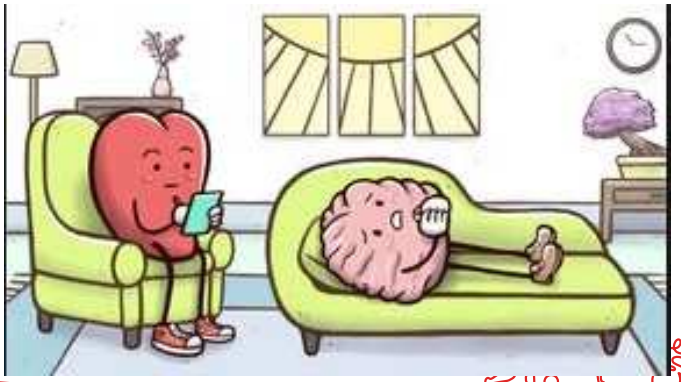
General Principles We Should Follow

- Limit narcotics
- Utilize Child Life during Magec and TGR lengthenings
- Parent Education – awareness of normal
- **Psychology, psychology, psychology!**
- Engaging pain “experts” or neurology for use of non-narcotic pain medicines like Neurontin

TERESA L. COLLINS-JONES, PH.D.

TRAINING DIRECTOR, PSYCHOLOGY DEPARTMENT

Teresa L. Collins-Jones, Ph.D., is a pediatric psychologist who has worked extensively with children and families diagnosed with pediatric health conditions and/or injury over the past 25 years through her graduate coursework, supervised practicum experiences, pre-doctoral internship, post-doctoral fellowship and professional work. At Texas Scottish Rite Hospital for Children, she provides consultation and liaison services through the outpatient orthopedic clinics and inpatient unit on cases with a wide range of behavioral, medical and psychological problems. She conducts psychological assessments with children and young adults, provides individual and family outpatient psychotherapy, and offers pain management services to patients who report significant changes to their level of functioning and quality of life.



TEXAS SCOTTISH RITE HOSPITAL FOR CHILDREN

General Principles We Should Follow

- Limit narcotics
- Utilize Child Life during Magec and TGR lengthenings
- Parent Education – awareness of normal
- Psychology, psychology, psychology!
- **Engaging pain "experts" or neurology for use of non-narcotic pain medicines like Neurontin**

ICEOS

13TH INTERNATIONAL CONGRESS
ON EARLY ONSET SCOLIOSIS
NOVEMBER 21-22, 2019
THE WESTIN PEACHTREE PLAZA, ATLANTA — ATLANTA, GA

TEXAS SCOTTISH RITE HOSPITAL FOR CHILDREN


Greetings From
WEST END
HISTORIC
Since 1835
FOX
ATL


Greetings From
HISTORIC
THE END
HISTORIC
ATL


Greetings From
WEST END
HISTORIC
FOX
ATL


Greetings From
HISTORIC
HISTORIC
ATL

Art slide