



19TH INTERNATIONAL CONGRESS ON

Early Onset Scoliosis and the Growing Spine

NOV 5-7

2025

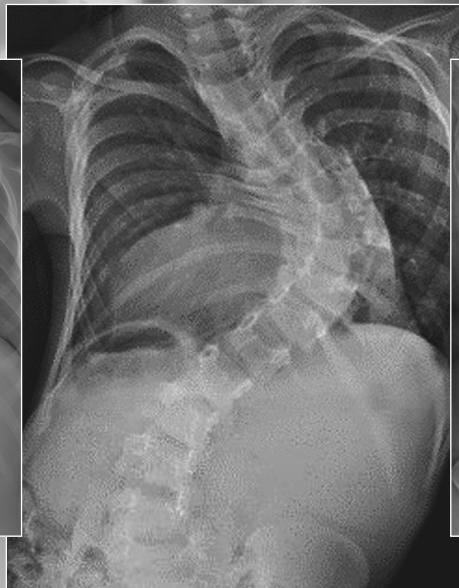
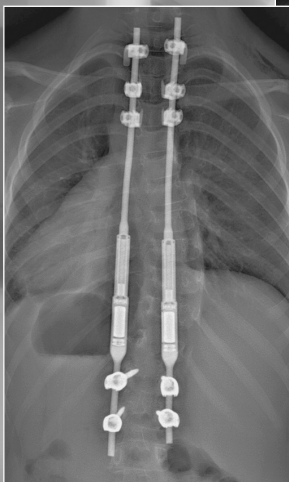
HOTEL MARTINEZ
CANNES, FRANCE



Ying Li, MD
PROGRAM CHAIR



Scott Luhmann, MD
PROGRAM CO-CHAIR



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ICEOS Meeting

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Welcome

to the 19th International Congress on Early Onset Scoliosis and the Growing Spine!

ICEOS 2025 is more than just a meeting—it's an opportunity to advance how we care for patients with growing spine conditions and strengthen the teams behind that care. With insights from world-renowned clinicians and researchers, this year's program is designed to inspire innovation, foster collaboration, and spark meaningful conversations that continue long after the event ends. We hope you leave Cannes with new ideas, valuable connections, and a renewed sense of purpose—plus a few great memories along the way!



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PROGRAM CHAIR



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CME Information & Credit

For a complete list of educational objectives, faculty disclosures, and more, please visit the Online Syllabus.

Attendees who wish to receive CME credit for this program must complete the Online Course Evaluation at the link below. Upon completion, your certificate will be emailed to you. Participants should only claim credit commensurate with the extent of their participation in the activity.

Scan the QR code or visit our website:

- Visit **www.broad-water.com**
- Navigate to the **Meetings** drop-down on the main menu
- Select **Online Syllabus**
- Select **19th Annual ICEOS**
- Password: **iceos2025**



If you need assistance, please contact us at **(630) 681-1040** or **amatta@broad-water.com**.

ICEOS IS ENDORSED BY:



Scientific Program

WEDNESDAY, NOVEMBER 5

2:00-5:00 pm Registration Opens CITRUS FOYER

SESSION 1 | ICEOS OPENING SESSION

THE GROWING SPINE AND THE GOLDEN CIRCLE: LET’S START WITH WHY

FESTIVAL 2

Moderators: L. Andras, P. Sponseller

4:15	Welcome	Y. Li
4:20	The Birth of the EOS Movement	B. Akbarnia
4:27	Why EOS Impacts the Spine and Chest Wall	J. Sanders
4:34	Why EOS Impacts the Lungs and Pulmonary Function	G. Redding
4:41	Discussion	
4:51	Vin and Vignettes—Lessons Learned from Difficult Cases Panel: L. Blakemore, D. Brockmeyer, J. Flynn, B. Yaszay, M. Yazici	
5:50	Corporate Recognition and Thank-You to Top Supporters	M. Vitale
5:55	Introduction to Smith Family Lecture	Y. Li
6:00	Smith Family Lecture Behind the Scenes of Film Production: The Untold Story of a Producer’s Journey	Sébastien Aubert
6:25	Adjourn	
6:30	Welcome Reception	CITRUS 1 & 2

THURSDAY, NOVEMBER 6

6:45 am Registration CITRUS FOYER

7:00 Continental Breakfast and Exhibit Viewing CITRUS 1

SESSION 2 | THE GROWING SPINE AND THE GOLDEN CIRCLE: HOW WE DO IT

FESTIVAL 2

Moderators: C. Hardesty, M. Vitale

7:40	Welcome	Y. Li
	Innovation—New World vs. Old World	
7:45	How We Innovate in the U.S.	P. Cahill
7:52	How We Innovate in Europe	R. Castelein
7:59	Discussion	
	Genetics, AI, and Digital Twins	
8:06	Impact of Genetic and Genomic Analyses on Early-Onset Scoliosis	N. Wu
8:13	Impact of AI on Spine Imaging	G. Hogue
8:20	Impact of Digital Twin Models in Optimizing Spine Surgery Outcomes	C.E. Aubin
8:27	Discussion	
	Old Dog, New Tricks—Embracing New Techniques as an Experienced Surgeon	
8:37	How I Got into Navigation in the Cervical Spine	D. Bauer
8:44	How I Got into Navigation in the Thoracolumbar Spine and Pelvis	S. Garg
8:51	How I Got into Robotics	C. Birch

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8:58 How I Got into VBT *J. Pahys*

9:05 Discussion

9:15 Refreshment Break and Exhibit Viewing CITRUS 1

SESSION 3 | SCIENTIFIC PAPERS #1-20

FESTIVAL 2

Moderators: *J. Anari, R. Iyer*

9:45 Paper #1 | Who Benefits from Spinal Bracing in Spinal Muscular Atrophy? A Preliminary Study *H. Matsumoto*

9:49 Paper #2 | Efficacy of Suspension Bending Cast for Early Onset Scoliosis *K. Masuda*

9:53 Paper #3 | Improving the Inpatient Experience: Dynamic vs. Static Halo-Gravity Traction in Pediatric Spine Surgery: The Weight is Over! *R. Chambers*

9:57 Discussion

10:03 Paper #4 | Golden Responders: Which Early Onset Scoliosis Patients Have Improved PFTs 2 Years After Surgical Intervention? *A. McIntosh*

10:07 Paper #5 | Evaluating the Effect of Age at Growing Rod Insertion on Final T1-T12 Height *B. Montgomery*

10:11 Paper #6 | Calibrated Estimates of Future Growth and Maturation in a Large Multi-Center Cohort of Pediatric Scoliosis Patients *M. Boeyer*

10:15 Discussion

10:21 Paper #7 | What Outcomes Should We Expect from Definitive Fusion vs. Growing Implants in Young Tweens with Idiopathic Scoliosis? *M. Hughes*

10:25 Paper #8 | Do We Practice What We Preach? Has Evidence Impacted Trends in Surgical Management of Early Onset Scoliosis in "Tweeners"? *N. Houlihan*

10:29 Paper #9 | Magnetic Growing Rods vs. Early Fusion for Juvenile Scoliosis: What Do Parents Actually Prefer? *S. Culpepper*

10:33 Discussion

10:39 Paper #10 | Feasibility of Synthetic CT Images for Robotic Screw Planning and Navigation *A. Kashtiar*

10:43 Paper #11 | Utilizing Robotic-Assisted Navigation in Early Onset Scoliosis: A Multicenter Perspective *J. Heyer*

10:47 Paper #12 | No Time Lost, Safety Gained: Impact of Enabling Technology on Early-Onset Scoliosis Surgery *B. Lullo*

10:51 Discussion

10:57 Paper #13 | Growth-Friendly vs. Posterior Spinal Fusion Surgery for Congenital Kyphosis: A Multicenter Analysis of Complications, Reoperations, and Patient Outcomes *S. Luhmann*

11:01 Paper #14 | Postpone and Posterior if Possible: Comparison of Surgical Approaches for Hemivertebrectomy *M. Heffernan*

11:05 Paper #15 | Vertebral Column Resection and Hemivertebra Excision: The Role of Age, Weight, Surgical Constructs and Their Effects on Successful Surgical Correction in Congenital Scoliosis *K. Hideshima*

11:09 Paper #16 | Complications After Three-Column Osteotomies in Early Onset Scoliosis *S. Hwang*

11:13 Discussion

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11:20	Paper #17 How Often Should You Re-Screen for Cervical Spine Deformities in Children with Loeys-Dietz Syndrome? Evidence-Based Recommendations for Imaging	Z. Elsabbagh
11:24	Paper #18 My Neck Has a Cage and I'm Doing Just Fine: Anterior Column Support in the Pediatric Cervical Spine	G. Hogue
11:28	Discussion	
11:32	Paper #19 Generation of Thoracolumbar Vertebral Anomalies in the Late Stage Chick	J. Anari
11:36	Paper #20 Dynamic Spinal Cord Mapping: A Study of Accuracy, Sensitivity, and Specificity in Localizing Spinal Cord Injury Using an Animal Model	A. Kadado
11:40	Discussion	
11:45	Lunch Served in Exhibit Hall	CITRUS 1

Lunch with Non-CME Workshops

12:15 pm	Workshop #1 Integrating Growth Guidance Strategies into Complex Deformity Surgery: Anticipating the Unanticipated with Innovative Technology <i>Scott Luhmann, MD & Richard McCarthy, MD</i> <i>Supported by OrthoPediatrics</i>	CYPRES 1
12:15 pm	Workshop #2 The Growth Journey: Primary Interventions and Smart Revisions in Vertebral Body Tethering and Growing Constructs <i>Juan C. Rodriguez-Olaverri, MD, PhD, & Michelle C. Welborn, MD, FAAOS</i> <i>Supported by: Globus Medical</i>	CITRUS 2
1:05	Walking Break	

SESSION 4 | SCIENTIFIC PAPERS #21-38

FESTIVAL 2

Moderators: M. Glotzbecker, R. Murphy

1:15 pm	Paper #21 Radiographic and Pulmonary Function Outcomes in Lenke 4–6 Adolescent Idiopathic Scoliosis: Evaluating Diaphragm Intrusion as a Functional Marker	Z. Elsabbagh
1:19	Paper #22 Analysis of 5317 Consecutive Pediatric Spinal Deformity Intraoperative Neuromonitoring (IONM) Alerts: Importance of Normotension at Correction and IONM Recovery	S. Luhmann
1:23	Paper #23 Spondylolysis and Spondylolisthesis is Associated with Disc Degeneration in Pediatric Patients	V. Chan
1:27	Discussion	
1:33	Paper #24 Surgical Outcomes and Complications for Patients Undergoing Vertebral Body Tethering with 5–8 Years Follow-Up	S. Parent
1:37	Paper #25 Do Double-Row Cords Decrease the Incidence or Delay the Timing of Lumbar Vertebral Body Tether Breakage?	S. Hwang
1:41	Paper #26 Can Refined Indications for Anterior Vertebral Tethering Yield Superior Outcomes to Fusion Surgery?	J. Braun
1:45	Discussion	
1:51	Paper #27 Minimal Clinically Important Difference (MCID) of EOSQ-24 Questionnaire	B. Royce
1:55	Paper #28 Lost in Translation: Limited Agreement Between Proxy and Self-Reported Outcomes in Early-Onset Scoliosis	N. Houlihan
1:59	Paper #29 The Association Between Sagittal Plane Parameters and Patient Reported Outcomes in Patients with Neuromuscular Scoliosis	L. Floccari

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2:03	Paper #30 Shilla Growth Guidance with a Lumbopelvic Fusion Foundation for Severe Neuromuscular Early-Onset Scoliosis: A Multi-Center Study	<i>D. Bumpass</i>
2:07	Discussion	
2:14	Paper #31 Ideal Surgical Age for Distraction-Based Growth Friendly Techniques (DB-GFT) to Minimize Complications	<i>M. Yazici</i>
2:18	Paper #32 Risk Factors for Unplanned Reoperation After the Treatment of Early Onset Scoliosis with Traditional Dual Growing Rods Combined with Apical Control Techniques	<i>X. Ye</i>
2:22	Paper #33 Completion of Growth-Friendly Early Onset Scoliosis Treatment with the Spring Distraction System: A Follow-Up Study on the Quality of Life, Radiological and Surgical Outcomes	<i>A. Abdi</i>
2:26	Paper #34 Machine Learning Models Pre-Operatively Predict Key Complications in Patients Undergoing Surgery for Early-Onset Scoliosis	<i>M. Vitale</i>
2:30	Discussion	
2:37	Paper #35 Operative and Post-Operative Complications for Early Onset Scoliosis Patients Treated with Implanted Programmable Devices: A Multicenter Study	<i>W. Truong</i>
2:41	Paper #36 Spinal Muscular Atrophy (SMA) and the Modified-Clavien-Dindo-Sink (mCDS) Classification System	<i>K. Kourpas</i>
2:45	Paper #37 Growth Guidance or Posterior Based Distraction in EOS: Can the Modified Clavien-Dindo-Sink Classification System Tell Them Apart?	<i>C. Hardesty</i>
2:49	Paper #38 The Modified Clavien-Dindo-Sink (mCDS) Grading System May Lead to Elevated Casting Complication Severity in Early Onset Scoliosis Patients	<i>E. Stern</i>
2:53	Discussion	
3:00	Refreshment Break and Exhibit Viewing	CITRUS 1
3:30-5:00 pm Concurrent Breakout Sessions		
Breakout 1	Sagittal Plane in EOS <i>Moderators: J. Gomez, M. Oetgen</i> <i>Faculty: J. Brooks, R. El-Hawary, M. Glotzbecker, C. Hardesty, C. Louer</i>	CITRUS 2
Breakout 2	Pairs Like Wine and Cheese Neurosurgical and Orthopaedic Team Management of Complex Cases in the Growing Spine <i>Moderators: R. Anderson, M. Johnson</i> <i>Faculty: C. Bonfield, M. Groves, G. Hogue, R. Iyer, R. Murphy, M. Vitale</i>	CITRUS 3
Breakout 3	Syndromes and Skeletal Dysplasias <i>Moderators: P. Cahill, M. Welborn</i> <i>Faculty: S. Luhmann, C. Nnadi, M. Ruf, P. Sponseller, K. White</i>	CYPRES 1
5:00	Adjourn	
5:30	PSSG New and Prospective Member Reception <i>If you are a new member of the Pediatric Spine Study Group this year, or are interested in joining, gather with other new members and PSSG leaders for a celebratory glass of wine in Citrus 1.</i>	CITRUS 3

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FRIDAY, NOVEMBER 7

7:00 am **Registration** CITRUS FOYER

Continental Breakfast and Exhibit Viewing CITRUS 1

SESSION 5 | BEST PAPER SESSION FESTIVAL 2

Moderators: R. El-Hawary, S. Luhmann

7:40 Welcome S. Luhmann

7:45 Paper #39 | Posterior Dynamic Distraction for Adolescent Idiopathic Scoliosis: Minimum 2-Year Results of a Prospective U.S. FDA Investigational Device Exemption Study R. El-Hawary

7:50 Paper #40 | Novel Targeted Model of Congenital Scoliosis Using the Application of an Electric Current in the Developing Chicken Embryo P. Cahill

7:55 Paper #41 | FLEX Ventilation Improves Pulmonary Function in a Rib-Tethered Mini-Pig Model of Thoracic Insufficiency Syndrome J. Brandly

8:00 Discussion

8:08 Paper #42 | Does Disease Modifying Treatment (DMT) Mitigate Scoliosis in Spinal Muscular Atrophy (SMA)? B. Snyder

8:13 Paper #43 | Does Early Administration of Disease Modifying Therapy (DMT) Prevent Early Onset Scoliosis (EOS) in Young Children with Spinal Muscular Atrophy? H. Matsumoto

8:18 Paper #44 | Higher Screw Density, Accuracy, and Curve Correction with Same OR Time: Enabling Technology in Definitive Fusion Following Growth-Friendly Treatment C. Birch

8:23 Discussion

SESSION 6 | THE GROWING SPINE AND THE GOLDEN CIRCLE: WHAT ARE THE OUTCOMES-DEBATES FESTIVAL 2

Moderators: C. Louer, A. McIntosh

Debate #1: Tethered Cords

8:31 I Would Do Primary Detethering J. Johnston

8:38 I Would Do Spinal Column Shortening M. Groves

8:45 Discussion

Debate #2: L5 Spondylolysis

8:49 I Would Fuse S. Parent

8:56 I Would Repair J. Murphy

9:03 Discussion

Debate #3: Juvenile Tweeners

9:07 I Would Cast/Brace M. Welborn

9:14 I Would Operate B. Ramo

9:21 Discussion

9:25 **Refreshment Break and Exhibit Viewing** CITRUS 1

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SESSION 7 | POTPOURRI, AKBARNIA AWARD, PRESIDENTIAL ADDRESS, KEYNOTE FESTIVAL 2

Moderators: L. Blakemore, J. Brooks

9:55	Programmable Devices in Patients Undergoing EOS Surgery	W. Truong
10:02	Spine and Hip Interactions in EOS	B. Snyder
10:09	Perspectives of a Spine Surgeon Who Sees Adult EOS Graduates	T. Bas
10:16	Discussion	
10:21	Second Victim Phenomenon: We All Have Complications	D. Skaggs
10:28	Lifelong Learning: Surgical Coaching	O. Varban
10:35	Discussion	
10:39	And the Award Goes To... Akbarnia Best Paper Award Presentation	Y. Li, B. Akbarnia
10:41	Campbell Award Announcement and Acceptance	Y. Li, J. Flynn
10:53	PSF Presidential Address	M. Vitale
11:04	ICEOS 2026	S. Luhmann
11:08	Keynote Introduction	Y. Li
11:10	Keynote Address: Leveraging Social Networks and Virtual Presence Technology to Build Global Surgical Capacity in LMICs	James M. Johnston
11:35	Q&A and Discussion	
11:45	Lunch Served Outside of Workshop Space	

Lunch with Non-CME Workshops

12:15 pm	Workshop #4 Complex Deformity in Small Anatomy <i>David Bauer, MD & Burt Yaszay, MD</i> <i>Supported by VB Spine</i>	CITRUS 3
12:15 pm	Workshop #5 Growth Modulation After VBT <i>Melanie Boeyer, PhD, John T. Braun, MD, Daniel Hoernschemeyer, MD, & Taemin Oh, MD</i> <i>Supported by Highridge Medical</i>	CYPRES 1
12:15 pm	Workshop #6 Tomosynthesis in the OR: Balancing Safety, Efficiency and Workflow in Pediatric Deformity <i>Allen Kadado, MD, Scott Luhmann, MD, & Brandon Ramo, MD</i> <i>Supported by nView Medical</i>	CITRUS 2
1:05	Walking Break	

1:15-2:00 pm Concurrent Breakout Sessions

Breakout 4	Back to Basics: Surgical Tips and Tricks <i>Moderators: J. Flynn, J. Murphy</i> <i>Faculty: J. Gomez, M. Johnson, J. Pahys</i>	CITRUS 2
Breakout 5	Promenade Through the Posters: Best Poster Session <i>Moderators: R. Fitzgerald, D. Hoernschemeyer</i> <i>Presenters: J. Anari, T. Thompson, M. Balioglu, C. Hardesty, K. Baldwin, J. Vorhies, M. Ito, J. Gomez</i>	CYPRES 1
Breakout 6	Management of Spine Trauma in Children <10 years old <i>Moderators: C. Bonfield, B. Yaszay</i> <i>Faculty: R. Anderson, L. Andras, C. Birch, M. Oetgen, S. Parent</i>	CITRUS 3
2:00	Walking Break	

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SESSION 8 MASTER'S TECHNIQUES		FESTIVAL 2
Moderators: M. Groves, K. White		
2:10	Complex Cervical Spine Deformity	M. Ruf
2:18	Hemivertebra Excision	L. Blakemore
2:26	3-Column Osteotomies	M. Yazici
2:34	Discussion	
2:44	Apical Control	A. McIntosh
2:52	Bipolar Technique	L. Miladi
3:00	Anterior Approaches	D. Sucato
3:08	Chest Wall Deformities	J. Anari
3:16	Discussion	
3:26	Best Poster Award Presentation	Y. Li
3:28	Closing Remarks	Y. Li
3:30	19th Annual ICEOS Adjourns	

Notes

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19TH INTERNATIONAL CONGRESS ON

Early Onset Scoliosis and the Growing Spine

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Questions? Contact:

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