

Paris, France

November 3–6, 2021

Hybrid Event



FINAL PROGRAM

Your guide to the schedule for all
four days of the scientific program
at Global Spine Congress 2021

PROGRAM KEY

 Paper sessions  Symposia  Precourses  Breaks and Industry Lunch Symposia

 AO Spine Members-only sessions. These sessions are for members only. 
Join AO Spine today at: www.aospine.org/membership

TIMES

02:30-04:00—figures in blue denote time in New York (Eastern Standard Time: -6 hours from Paris)

08:30-10:00—figures in black denote time in Paris (Central European Standard Time)

14:30-16:00—figures in red denote time in Beijing (Chinese Standard Time: +6 hours from Paris)

		Room 1	Room 2	Room 3	Room 4
02:30-04:00 08:30-10:00 14:30-16:00					
04:00-07:00 10:00-13:00 16:00-19:00					Pre-course Next generation spinal intervention training: hands- on in VR and simulator
07:00-11:00 13:00-17:00 19:00-23:00	Participant Registration	Pre-course Spine Injuries in Sports  Live Stream	Pre-course AO PEER  Online only	 Live Stream	
11:00-11:45 17:00-17:45 23:00-23:45		Members-only Session: Telemedicine And Virtual Spine Care—What Is It, Impact And Future Directions  Live Stream	Members-only Session: Getting Published: How To Write A Research Paper And The Editorial Process  Live Stream		
11:45-12:30 17:45-18:30 23:45-00:30		Members-Only Session: Appropriate Use Of Surgery In The Elderly Patient With Spinal Deformity (ends 18:45)  Live Stream	Members-only Session: The Good, The Bad And The Ugly –The Case That Taught Me The Most  Live Stream	Members-only Session: Primary Spine Tumor Round Table  Live Stream	
14:00-17:00 20:00-23:00 02:00-05:00		AO Spine Members Networking Event 			



	Room 1	Room 2	Room 3	Room 4	Online
02:00-03:30 08:00-09:30 14:00-15:30	Congress Opening Opening Symposium: Cutting Edge Updates And Controversies In Modern Spine Surgery—AI, VR, Endoscopic Surgery, Si Fusion				 Live Stream
09:30-10:00	Break				 Live from our Paris studio
04:00-05:00 10:00-11:00 16:00-17:00	Surgical Complications 1	Deformity-Thoracolumbar (Adolescent) 1	Clinical Topics	Tumor And Infections	
05:00-06:00 11:00-12:00 17:00-18:00	Degenerative Lumbar/ Surgical Complications	Adult Deformity—Surgical Management	Spine Biologics And Novel Technologies	Trauma—Thoracolumbar 2	
12:00-13:30	Industry Lunch Symposium	Industry Lunch Symposium	Industry Lunch Symposium	Industry Lunch Symposium	
07:30-08:30 13:30-14:30 19:30-20:30	Symposium: Robotic spine surgery as a future enabling technology	Symposium: Frailty And Sarcopenia In Spine. A Comprehensive Update And Look To The Future	Symposium Hosted By KF Degenerative: Prevention And Treatment Of Asd After Lumbar Fusion	Symposium Hosted By SFCR: Sagittal Balance Through The Ages	 Live Stream
08:30-09:30 14:30-15:30 20:30-21:30	Endoscopic Spine Surgery	Degenerative Lumbar Surgery 1	Spinal Trauma	Spine Surgical Topics	 Live from our Paris studio
15:30-16:00	Break				
10:00-11:00 16:00-17:00 22:00-23:00	Surgical Complications Of Adult Deformity	Novel Diagnostics	Cervical Surgery	Spinal Tumors	 Live Stream
11:00-12:00 17:00-18:00 23:00-00:00	Symposium Hosted By KF SCI: Contemporary Concepts In Optimizing The Management Of Acute Traumatic SCI	Symposium: Cervico-Thoracic Junction Sagittal Deformity	Symposium Hosted By NASS: Managing Risk Factors In Deploying Emerging Technologies	Symposium Hosted By SBC: Improving The Management Of Paediatric Deformity In Developing Countries—Project For Improving Spine Deformity Care In Latin America	
12:00-13:30 18:00-19:30 00:00-01:30	Welcome Reception & Award Ceremony (Exhibition)				



	Room 1	Room 2	Room 3	Room 4	Online
01:00-02:00 07:00-08:00 13:00-14:00				Women in Spine	 Live Stream
02:00-03:00 08:00-09:00 14:00-15:00	Symposium: Challenges In The Surgical Treatment Of Spinal Kyphosis: From Congenital To Iatrogenic	Symposium: Handling The Plight Of Revision Spinal Surgeries	Symposium hosted by DWG: Corpectomies In Pathological Fractures	Symposium Hosted By CCOS: Diagnosis And Surgical Treatment Of The Ossification Of The Spinal Ligaments	 Live Stream
03:00-04:00 09:00-10:00 15:00-16:00	Minimally Invasive And Novel Surgical Treatments	Spinal Tumor Surgery 1	Degenerative Lumbar Surgery 2	Basic Science/Cellular Therapy	 Live from our Paris studio
10:00-10:30	Break				
04:30-05:30 10:30-11:30 16:30-17:30	Cervical Trauma And Spinal Cord Injury	Deformity— Thoracolumbar (Adult)	Cervical Myelopathy	Basic Science/Novel Therapy	
05:30-06:30 11:30-12:30 17:30-18:30	Lumbar Degeneration	Trauma—Thoracolumbar 1	Spinal Infections	Clinical Biomechanics 1	
12:30-14:00	Industry Lunch Symposium	Industry Lunch Symposium	Industry Lunch Symposium	Industry Lunch Symposium	
08:00-09:00 14:00-15:00 21:30-21:00	Symposium Hosted By KF Trauma and Deformity: Posttraumatic Spinal Deformity: What Is It And When Is It Relevant?	Symposium Hosted By AO Spine ESA: Safety In Spine Surgery —The Importance Of Non-Technical Skills	Symposium: How to get your published research work noticed and why it is important	Symposium Hosted By GEER: Cervical Spine Deformity. What To Know	 Live Stream
15:00-16:00	Break				 Live from our Paris studio
10:00-11:00 16:00-17:00 22:00-23:00	Novel Technologies	Deformity— Thoracolumbar (Adolescent) 2	Surgical Complications 2	Clinical Biomechanics 2	
11:00-12:00 17:00-18:00 23:00-00:00	Symposium Hosted By KF Tumor: 7 Rules To Treat Metastatic Spine Disease: An Antidote To Failure	Symposium: Intelligence-Based Spine Care—Implications For Research And Clinical Decision- Making	Symposium Hosted By AO SNA: Controversies In The Management Of Cervical Spine Trauma	Symposium: KF Degenerative Bone Biologics: A Conundrum Of Choice. The AO Spine Bone Classification—What To Use And When	 Live Stream

	Room 1	Room 2	Room 3	Room 4	Online
02:00-03:00 08:00-09:00 14:00-15:00	Symposium: Pearls Of Endoscopic Spine Surgery	EANS Symposium	Symposium Hosted By Eurospine: Dealing With Spondylarthropathies	Symposium Hosted By AO Spine MENA Congenital Scoliosis in Children and Adolescents in Countries with Limited Resources	 Live Stream
03:00-04:00 09:00-10:00 15:00-16:00	Robotics, Navigation And VR	Trauma—Cervical	Arthroplasty—Cervical	Spinal Tumor Surgery 2	 Live from our Paris studio
10:00-10:30	Break				
04:30-05:30 10:30-11:30 16:30-17:30	Surgical Complications 3	Cervical Trauma	Minimally Invasive Spine Surgery	Deformity— Thoracolumbar (Adolescent) 3	 Live Stream
05:30-06:30 11:30-12:30 17:30-18:30	Symposium Hosted By KF Trauma: Controversies In The Management Of Spinal Trauma	Symposium Hosted By KF SCI: Degenerative Cervical Myelopathy— Evidence-Based Decision-Making For Optimizing Care	Symposium Hosted By KF Degenerative: Update And Controversies In Cervical Arthroplasty	Symposium	
12:30-12:45	Closing Ceremony				 Live Stream
06:45-07:45 12:45-13:45 18:45-19:45	Closing Symposium: Advances in lumbar interbody fusion: Where are we with posterior/lateral /prone lateral techniques?				



Global Spine Congress
2021

Wednesday

November 3, 2021

Wednesday

Thursday

Friday

Saturday

Wednesday Program Schedule

09:00-19:00 Participant Registration

Wednesday

November 3, 2021

Location: Room 3  **Live Stream**

10:00-17:00	Pre-course: Next generation spinal intervention training: hands-on in VR and simulator	Moderators: Karsten Wiechert
10:00-10:15	Welcome and Introduction	Karsten Wiechert
10:15-10:30	Diagnostic Spine Injections For Surgical Planning	Gene Tekmyster
10:30-10:45	Therapeutic Spine Injections	Karsten Wiechert
10:45-11:00	Risks, Complications And Radiation Safety	Gene Tekmyster
11:00-11:15	Introduction To VR As A Training Tool	Danny Goel
11:15-11:30	The Role Of Surgical Simulators In Surgical Training	Simon Weidert, TBC
11:30-11:45	Break	
11:45-16:45	Hands-On Injection Training In VR Environment And On The Surgical Simulators	Karsten Wiechert
	Lumbar facet joints, medial branch blocks, radio frequency ablation	Gene Tekmyster
	Lumbar epidural injections: Interlaminar, transforaminal	Danny Goel
	SI joint injections	Simon Weidert
	Cervical facet joints, periradicular	TBC
	Lumbar disc access	
16:45-17:00	Summary And Wrapup	

Wednesday

November 3, 2021

Location: Room 1  **Live Stream**

13:00–17:00	Pre-course: Spine Injuries in Sports	Moderators: Jens Chapman Carlos Tucci
13:00–13:05	Welcome, Introduction And Review Of Program	TBC
13:05–13:15	The Sports And Spine Connection	TBC
13:15–13:30	Conceptual Approach To Spine Injuries In Sports	TBC
13:30–13:40	Gamechanger: Head Injuries In Impact Sports	TBC
13:40–13:50	Differences Of Pro–Athletes To ‘Regular’ Spine Patients	TBC
13:50–14:00	Discussion And Take-Home Messages	
14:00–14:05	Focus Spondylolysis—Case Presentation	TBC
14:05–14:10	Focus Spondylolysis—Rapidfire®: Optimal Diagnostic Pathway	TBC
14:10–14:15	Focus Spondylolysis—Debate: Good Nonop Care For Athletes Is Optimal	
14:15–14:20	Focus Spondylolysis—Debate: Timely Well–Performed Surgery Is The Way To Go	TBC
14:20–14:30	Focus Spondylolysis—Resolution Case And Discussion	
14:30–14:35	Focus Lumbar Disc Herniation / Ddd—Case Presentation	TBC
14:35–14:45	Focus Lumbar Disc Herniation / Ddd—Rapidfire®: Optimal Surgical Care—Endoscope, Micro, Mis. What’s Best For An Athlete?	TBC
14:45–14:55	Focus Lumbar Disc Herniation—Rapidfire®: Lumbar Degenerative Disc: Fusion Or Adr?	TBC
14:55–15:00	Focus Lumbar Disc Herniation / Ddd—Discussion And Case Resolution	
15:00–15:15	Break	
15:15–15:20	Focus Cervical Disc Herniations—Case Presentation	TBC
15:20–15:30	Focus Cervical Disc Herniations—Differentiating Stingers, Burners, Radiculopathy, Thoracic Outlet, Neuropathies. Helpful Primer For Surgeons And Therapists	TBC
15:30–15:35	Focus Cervical Disc Herniations—Rapidfire®: In Favor Of Foraminotomies	TBC
15:35–15:40	Focus Cervical Disc Herniations—Rapidfire®: In Favor Of Acdf’S	TBC
15:40–15:50	Focus Cervical Disc Herniations—Rapidfire®: In Favor Of Adr’S	TBC
15:50–16:00	Focus Cervical Disc Herniations—Discussion And Case Resolution	
16:00–16:05	Catastrophic Spine Injuries—Case Presentation	TBC
16:05–16:15	Asymptomatic Severe Cervical Stenosis And Collision / Contact Sports	TBC
16:15–16:25	Sc Injury Prevention—What Works?	TBC
16:25–16:30	Als And Cervical Spine Concussive Trauma: Is There A Connection?	TBC
16:30–16:40	Performing Sports With Scoliosis	TBC
16:40–16:50	Using Big Data In Sports And Spine For Predictive Modeling	TBC
16:50–17:00	Integrating Spine Care Into Sports Medicine: A Team Approach	

Wednesday Program Schedule

Wednesday

November 3, 2021

Location: Online  **Online only**

AO PEER @ GSC Online Blended Course— Principles of Clinical Research Supported by AO Spine	
Time	October: 1 month online self-directed learning November 2, 14:00-18:00 Live online event November 3, 14:00-18:00 Live online event
Registration	GSC registration not required Regular price 224 EUR AO Member price 160 EUR
Description	Participants will learn about the importance of research and evidence-based medicine (EBM), the relevant ethical considerations and guidelines for Good Clinical Practice (GCP) with a focus on the formulation of a clinical research question. In addition to practicing some of the skills related to critical literature review, this course offers support in working with a statistician, how to publish and navigating the AO Program for Education and Excellence in Research (AO PEER) to help make their research project a success. In this blended program, the basic principles will be taught in an online setting over a 1-month period, followed by a 2 days synchronous online event with interactive workshops and discussions. Module 1: Why is research important? Module 2: Does your study follow the ethical guidelines? Module 3: Step-by-step to your research question Module 4: Literature—reading between the lines Module 5: How to navigate your research environment Module 6: Give your study statistical power Module 7: Getting ready to publish Module 8: Make your research a success
Preliminary speakers	Asdrubal Falavigna Matthew Allen Dino Samartzis Sara Hassouna Elsayed María Eugenia Pireira Anita Hasler Mohammad El-Sharkawi Marcelo Valacco Vincenzo Giordano Atiq Uz Zaman
Learning objectives	At the end of this course, participants should be able to: • Explain the importance of doing research and the link to evidence-based medicine • Apply the basic principles of literature search and critical appraisal • Follow GCP guidelines and adhere to ethical requirements, eg, informed consent • Identify a clinical problem, formulate a clinical research question, and select the study design • Collaborate with a statistician to perform sample size calculation and basic statistical analyses • Describe the principles of medical writing • Utilize available research environment, resources, and tools
Target Audience	This course is mainly aimed at fully qualified medical specialists, and also at any other individuals who want to learn or improve the skills in conducting clinical research and publishing results and also at those with a general interest in research and documentation of clinical cases.

Wednesday

November 3, 2021

Location: Room 1 Live Stream

17:00–17:45	Members-only session: Telemedicine and Virtual Spine Care—what is it, impact and future directions	Moderators: Dino Samartzis
17:00–17:12	Introduction Of Ao Global Telemedicine Initiative	Dino Samartzis
17:12–17:24	Review Of Telemedicine And Findings From The Ao Global Telemedicine Initiative	Melvin Makhni
17:24–17:36	Expert Consensus Of Telemedicine In Spine	Sravisht Iyer
17:36–17:45	Discussion	

Location: Room 2 Live Stream

17:00–17:45	Members-only session: Getting Published: How to Write a Research Paper and the Editorial Process	Moderators:
17:00–17:10	Global Spine Journal Introduction	Danielle Lieberman
17:10–17:20	Editorial Process To Publication	Karsten Wiechert
17:20–17:30	How To Write & Research A Paper Pt. 1	Jeffrey C. Wang
17:30–17:40	How To Write & Research A Paper Pt. 2	Jens Chapman
17:40–17:45	Q&A	

Location: Room 1 Live Stream

17:45–18:45	Members-only session: Appropriate Use of Surgery in the Elderly Patient with Spinal Deformity	Moderators: Sigurd Berven
17:45–17:53	Disorders Of The Aging Spine: Pathologies, Prevalence, And Impact Around The World	Yong Qiu
17:53–18:01	Appropriateness Of Surgery In The Elderly Patient: Expected Benefits And Complications—Early Results Of The Peeds Study	Stephen Lewis
18:01–18:09	Predictive Modelling: What Factors Are Significant In The Elderly Patient?	TBC
18:09–18:17	Preoperative Optimization In The Elderly	Sigurd Berven
18:17–18:25	Intraoperative Standardization—Fixation Strategies In The Aging Spine	David Polly
18:25–18:33	AO Spine Adult Spinal Deformity Patient Profile: A Paradigm Shift In Comprehensive Patient Evaluation In Order To Optimize Treatment And Improve Patient Care	Marinus De Kleuver
18:33–18:45	Case Presentation And Discussion	Lawrence Lenke

Wednesday Program Schedule

Wednesday

November 3, 2021

Location: Room 2 Live Stream

17:45–18:30	Members-only session: The Good, The Bad and The Ugly—The case that taught me the most	Moderators: Harry Gebhard
17:45–17:50	The Case That Taught Me A Lesson	Harry Gebhard
17:50–18:00	The Case That Taught Me A Lesson	Richard Bransford
18:00–18:10	The Case That Taught Me A Lesson	Kenny Yat Hong Kwan
18:10–18:20	The Case That Taught Me A Lesson	Juan José Zamorano
18:20–18:30	The Case That Taught Me A Lesson	TBC

Location: Room 3 Live Stream

17:45–18:30	Members-only session: Primary Spine Tumor Round Table	Moderators: Ziya Gokaslan Stefano Boriani
17:45–18:05	Session One: Aggressive Benign Primary Tumors Of The Spine: Preventing Their Return. An Interactive Discussion On State-Of-The-Art Treatment Options	Raphaële Charest-Morin
17:45–18:05	Session One: Aggressive Benign Primary Tumors Of The Spine: Preventing Their Return. An Interactive Discussion On State-Of-The-Art Treatment Options	Arjun Sahgal
17:45–18:05	Session One: Aggressive Benign Primary Tumors Of The Spine: Preventing Their Return. An Interactive Discussion On State-Of-The-Art Treatment Options	Laurence Rhines
17:45–18:05	Session One: Aggressive Benign Primary Tumors Of The Spine: Preventing Their Return. An Interactive Discussion On State-Of-The-Art Treatment Options	John Shin
17:45–18:05	Session One: Aggressive Benign Primary Tumors Of The Spine: Preventing Their Return. An Interactive Discussion On State-Of-The-Art Treatment Options	Charles Fisher
18:05–18:30	Session Two: Challenges Of Local Recurrence And Cure In Low Grade Malignant Tumors Of The Spine: Chordoma And Chondrosarcoma What Is The Latest?	Daniel Sciubba
18:05–18:30	Session Two: Challenges Of Local Recurrence And Cure In Low Grade Malignant Tumors Of The Spine: Chordoma And Chondrosarcoma What Is The Latest?	Chetan Bettgowda
18:05–18:30	Session Two: Challenges Of Local Recurrence And Cure In Low Grade Malignant Tumors Of The Spine: Chordoma And Chondrosarcoma What Is The Latest?	Aron Lazary
18:05–18:30	Session Two: Challenges Of Local Recurrence And Cure In Low Grade Malignant Tumors Of The Spine: Chordoma And Chondrosarcoma What Is The Latest?	Joseph Schwab
18:05–18:30	Session Two: Challenges Of Local Recurrence And Cure In Low Grade Malignant Tumors Of The Spine: Chordoma And Chondrosarcoma What Is The Latest?	Jeremy Reynolds
18:05–18:30	Session Two: Challenges Of Local Recurrence And Cure In Low Grade Malignant Tumors Of The Spine: Chordoma And Chondrosarcoma What Is The Latest?	Arjun Sahgal



Global Spine Congress
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Thursday

November 4, 2021

Wednesday

Thursday

Friday

Saturday

Thursday Program Schedule

Thursday

November 4, 2021

Location: TBA  **Live Stream**

08:00–09:30	Congress Opening and Opening Symposium: Cutting Edge Updates and Controversies in Modern Spine Surgery—AI, VR, Endoscopic Surgery, SI fusion	Moderators:
08:00–08:10	Congress opening	
08:10–08:20	Artificial Intelligence In Spine Surgery And The Future	Jens Chapman
08:20–08:25	Discussion	
08:25–08:35	Virtual Reality And Augmented Reality For Spine Surgery And The Future	Harry Gebhard
08:35–08:40	Discussion	
08:40–08:50	Debate: Endoscopic Surgery Is A Reliable Technique And The Future Of Spine Surgery	Christoph Siepe
08:50–09:00	Debate: Endoscopic Surgery Is Not Valid And Not The Future Of Spine Surgery	Luiz Vialle
09:00–09:05	Discussion	
09:05–09:15	Debate: Si Fusion Is A Valid Technology For The Treatment Of Low Back Pain	David Polly
09:15–09:25	Debate: Si Fusion Is Not A Valid Technology For The Treatment Of Low Back Pain	TBC
09:25–09:30	Discussion	

Thursday

November 4, 2021

Location: Room 1

10:00–11:00	Paper Session: Surgical Complications 1		Moderators: Doniel Drazin Patrick Johnson
10:00–10:05	1176	The Pad (Post-Operative Airway Distress) Score—First Steps To Develop A Post-Surgery Tool For The Assessment Of Upper Airway-Related Complications Following Anterior Cervical Spina Surgery	Sven Frieler
10:05–10:10	942	Analysis Of Effectiveness Of Gelatin Sponge Preperfusion In Vertebral Augmentation: Is It Conductive To Preventing Bone Cement Leakage?	Baoliang Zhang
10:10–10:15	526	The Use Of Table Mounted Retraction Does Not Lead To Higher Incidence Of Postoperative Dysphagia After Anterior Cervical Spine Surgery	Athan Zavras
10:15–10:20	418	Drivers For Unplanned Readmissions Following Adult Spinal Surgery	Sachin Gupta
10:20–10:25	1581	Outcomes After Lumbar Disk Herniation Surgery In The Dutch Population	Miranda Van Hooff
10:25–10:30	339	10k Spinal Cord Stimulation Improves Back And Leg Pain For Patients With Failed Back Syndrome: A Prospective Cohort Analysis With 2y Follow-Up.	Simon Weidert
10:30–10:35	587	Hyperlordotic Alif Cages For The Treatment Of Adult Spine Deformity: Incidence Of Peri-Operative Radicular Pain And Its Correlation With Radiological Outcomes.	Domenico Compagnone
10:35–10:40	1364	Association Of Duration Of Preoperative Opioid Use With Reoperation After One-Level Acdf In Non-Myelopathic Patients	Andre Samuel
10:40–10:45	450	Does Minimally Invasive Spine Approach Reduces The Incidence Of Dural Tear In Degenerative Lumbar Pathology?	Ayush Sharma
10:45–11:00		Discussion	

Thursday Program Schedule

Thursday

November 4, 2021

Location: Room 2

10:00–11:00	Paper Session: Deformity–Thoracolumbar (Adolescent) 1	Moderators:
10:00–10:05	943 Is There Evidence Of Latent Iron Deficiency In Adolescents Undergoing Spinal Corrective Surgery? An Audit And Quality Improvement Project	Thomas Barker
10:05–10:10	816 Three Dimensional Correction Is Related To Brace Effectiveness In Patients With Adolescent Idiopathic Scoliosis	Kenny Yat Hong Kwan
10:10–10:15	601 Is Fresh Leucodepleted Whole Blood Transfusion Superior To Blood Component Transfusion In Pediatric Patients Undergoing Spine Deformity Surgeries?—A Prospective Randomized Study Analyzing Post-Operative Serological Parameters And Clinical Recovery	Shanmuganathan Rajasekaran
10:15–10:20	1126 Myelopathic Patients With Severe Pediatric Spinal Deformity Can Improve Neurologic Function Close To Non-Myelopathic Patients By 1-Year After Surgery	Meghan Cerpa
10:20–10:25	927 Can We Stop Distally At Lstv-1 For Adolescent Idiopathic Scoliosis With Lenke 1a/2a Curves?	Yong Qiu
10:25–10:30	1589 Selective Vs. Non-Selective Thoracic Fusion For Lenke Type 1–4c Curves: Which Has More Complications At 5-Year Follow-Up?	Jay Reidler
10:30–10:35	981 Learning Curve In Minimally Invasive Surgery Of Adolescent Idiopathic Scoliosis.	Ayrat Syundyukov
10:35–10:40	506 Serratus Plane Catheter For Pain Relief In Anterior Spinal Surgery For Idiopathic Scoliosis	Emily Tsang
10:40–10:45	1117 Readmission And Unplanned Surgery After Surgical Scoliosis Correction In Children. A Multivariate Chort Study Of 613 Cases.	Francisco Javier Alonzo González
10:45–11:00	Discussion	

Thursday

November 4, 2021

Location: Room 3

10:00–11:00	Paper Session: Clinical Topics		Moderators:
10:00–10:05	1890	Comparing Routine Elective Inpatient Spine Surgery To Orthopedic And Non-Orthopedic Surgery Trends	Mustfa Manzur
10:05–10:10	387	Post-Operative Readmission Following Spine Surgery: What Role Do Socioeconomic And Community Factors Play?	Sarthak Mohanty
10:10–10:15	1551	The Epidemiology Of Vertebral Osteomyelitis Requiring Surgical Intervention In The United States From 1998 To 2013	Daniel Coban
10:15–10:20	1279	Sagittal Spinal Alignment Varies With An Individual'S Race: Results Of The Multi-Ethnic Alignment Normative Study (Means)	Zeeshan Sardar
10:20–10:25	1892	Intraoperative Ketamine Use On Intermediate And Long-Term Opioid Utilization Following Spine Surgery	Comron Saifi
10:25–10:30	1877	The Use Of Telemedicine For Orthopedic Pathology During The Covid-19 Pandemic	Karen Weissmann
10:30–10:35	1914	Incidence Of Vertebral Fractures By Bone Fragility In Patients With Fractures Of The Appendicular Skeleton	RAFAEL Cabral
10:35–10:40	1903	Impact Of Postmenopausal State On The Distribution Of Bone Mineral Density In The Lumbar Spine	Avani Vaishnav
10:40–10:45	510	Analysis Of Industry Payments To Spine Surgeons Using The Open Payments Database	Andrew Platt
10:45–11:00	Discussion		

Thursday Program Schedule

Thursday

November 4, 2021

Location: Room 4

10:00–11:00	Paper Session: Tumor and Infections	Moderators:
10:00–10:05	776 Risk Factors Associated With Infection And Blood Transfusion In Pediatric Population Undergoing Scoliosis Correction	Fernando Alvarado Gómez
10:05–10:10	1113 Operative Site Antibiotic Concentrations In Spine Surgery: Do The Prophylactic Antibiotics Reach The Surgical Site In Adequate Concentrations?—Systematic Review On Analysis Of Wound Concentrations Of Various Prophylactic Systemic Antibiotics	Viswanadha Arun-Kumar
10:10–10:15	844 Subclinical Propionibacterium Acnes Infection Estimation In The Intervertebral Disc (Spine-Id): A Prospective Cohort	Nelson Astur
10:15–10:20	1200 A Change In Protocol Of Wound Care In Spinal Surgery And Its Impact On Postoperative Wound Infections In Neurosurgery	Sara Lener
10:20–10:25	1672 Malignant Spinal Cord Compression In The Pediatric Population—A Systematic Review, Meta-Analysis And Formulation Of National Guidelines	Nigil Palliyil
10:25–10:30	1321 Apoe4 Polymorphic Genotype-Associated Neck Or Back Pain And Radiculopathy Incidence In Intradural Spinal Cord Tumor Patients In Beijing: A Prospective Clinical Observation	Nicholas Van Halm-Lutterodt
10:30–10:35	1388 Application Of Instrasite Vancomycin For Risk Reduction Of Surgical Site Infection After Degenerative Thoracolumbar Posterior Fusion And Idiopathic Scoliosis Surgeries	Zoltan Hoffer
10:35–10:40	679 Spinal Infection: Analysis Of 600 Patients Over 11 Years	Hamdan Abdelrahman
10:40–10:45	295 Standardising Post Operative Care Documentation Practices In Spinal Surgery	Raveen Jayasuriya
10:45–10:50	Discussion	

Thursday

November 4, 2021

Location: Room 1

11:00–12:00	Paper Session: Degenerative Lumbar/Surgical Complications		Moderators:
11:00–11:05	343	Risk Factors For Reoperation And Joint Replacement Surgery After Short-Segment Spinal Cord Surgeries For Lumbar Degenerative Disc Disease: A Population Based Cohort Study	Christopher Wu
11:05–11:10	680	Prevalence Of Occult Infections In Primary Posterior Instrumented Spinal Fusion	Jessica Dorilio
11:10–11:15	1193	Reoperation And Long-Term Clinical Consequences Following Single-Segment Surgery For Meyerding Grade 1 Degenerative Lumbar Spondylolisthesis	Andrew Chan
11:15–11:20	1430	The Effect Of Total Hip Arthroplasty On Lumbar Pain And Sagittal Balance Of The Spine: A Prospective Observational Study	Helder Fonte
11:20–11:25	1530	Spinal Alignment Comparison For Lateral Versus Supine L5–S1 Alif In The Treatment Of Patients With Degenerative Conditions Of The Lumbar Spine	Cristiano Menezes
11:25–11:30	678	The Impact Of Modifiable Risk Factors On Post-Operative Complications Following Lumbar Spine Fusion	Alexander Ballatori
11:30–11:35	535	Responsiveness Of Depression And Its Influence On Surgical Outcomes Of Lumbar Degenerative Disease	Asdrubal Falavigna
11:35–11:40	1644	Physical Therapy On Postoperative Day Zero Following Lumbar Spine Surgery Decreases Length Of Stay	Blaine Manning
11:40–11:45	1864	Preoperative Cross-Sectional Area Of Psoas Muscle Impacts Short-Term Functional Outcomes After Posterior Lumbar Surgery	Hikari Urakawa
11:45–12:00	Discussion		

Thursday Program Schedule

Thursday

November 4, 2021

Location: Room 2

11:00–12:00	Paper Session: Adult Deformity—Surgical Management		Moderators:
11:00–11:05	360	Acute Failure Of S2–Alar–Iliac Pelvic Fixation Following Adult Deformity Correction	Christopher Martin
11:05–11:10	1098	Patient Reported Outcomes After Complex Adult Spinal Deformity Surgery: 5-Year Follow-Up Results Of The Scolio-Risk-1 Study	Scott Zuckerman
11:10–11:15	1106	Lower Extremity Motor Scores (Lems) After Complex Adult Spinal Deformity Surgery: 5-Year Follow-Up Of The Scolio-Risk-1 Study	Lawrence Lenke
11:15–11:20	1403	Evaluation Of The Reliability And Reproducibility Of Roussouly Classification For Lumbar Lordosis Types	Michel Kanas
11:20–11:25	1085	Adult Degenerative Scoliosis Shares The Same Spino-Pelvic Alignment As Lumbar Adolescent Idiopathic Scoliosis: A Ct-Based And Sex-Age Matched Controlled Analysis	Steven De Reuver
11:25–11:30	919	Intra-Operative Neurophysiological Monitoring Alters During Three-Column Osteotomy: Incidence And Risk Factors	Yong Qiu
11:30–11:35	1208	The Efficacy And Safety Of Large Diameter Pedicle Screws In Adult Thoracolumbar Deformity	Paul Park
11:35–11:40	226	Clinical Outcomes Of Coccygectomy For Coccydynia: A Single Institution Series With Mean 5-Year Follow-Up	Shaleen Vira
11:40–11:45	1192	Iliac Screw Fixation Revisited: Improved Clinical And Radiological Outcomes Using A Modified Iliac Screw Fixation Technique	Alexander Von Glinski
11:45–12:00	Discussion		

Thursday
November 4, 2021

Location: Room 3

11:00–12:00	Paper Session: Spine Biologics and Novel Technologies		Moderators:
11:00–11:05	677	Intravenous V. Oral Acetaminophen Administration In Perioperative Care Of One And Two Level Llifts With Instrumented Posterior Lumbar Fusion: A Comparative Effectiveness Study	Celeste Abjornson
11:05–11:10	1881	The Use Of Telemedicine As A Rehabilitation Tool For Lower Back Pain (Lbp) During The Covid-19 Pandemic	Karen Weissmann
11:10–11:15	1055	Macrophage Therapy For Intervertebral Disc Herniation: In Vivo Proof-Of-Concept	Carla Cunha
11:15–11:20	413	Pedicle Screw Insertion Accuracy Using Intraoperative Computed Tomography Image-Guided Navigation : A Series Of 608 Screws	Bastian Stemmer
11:20–11:25	20	Efficacy Of Anterior Vertebral Body Tethering In Skeletally Mature Children With Adolescent Idiopathic Scoliosis—A Preliminary Report	Keyur Akbari
11:25–11:30	1826	Lumbar Spine Fusion Outcomes Using A Cellular Bone Allograft With Lineage-Committed Bone Forming Cells In 96 Patients	Hossein Elgafy
11:30–11:35	398	Development Of AOspine Bone (Bone Osteobiologics And Evidence) Classification	Zorica Buser
11:35–11:40	1444	Cervical Bmp Use Is Associated With Increased Fusion Rates Without More Complications In Anterior Cervical Discectomy And Fusion	Alexandra Thomson
11:40–11:45	575	AO Spine Guideline For Using Osteobiologics In Spinal Degenerative Cases: Protocol For AO Spine Guideline Development (AO-Go)-Chapter I Acdf	Hans Joerg Meisel
11:45–12:00	Discussion		

Thursday

Thursday Program Schedule

Thursday

November 4, 2021

Location: Room 4

11:00–12:00	Paper Session: Trauma–Thoracolumbar 2		Moderators:
11:00–11:05	1477	Diagnostic Value Of Horizontal Vs Vertical Laminar Fracture For Diagnosis Of Posterior Ligamentous Complex Injury In Thoracolumbar Fractures	Mohamed Ali
11:05–11:10	1379	Timing Of Surgical Spine Stabilization In Multiple Injured Patients: Introducing Damage Control Spine	Kai Sprengel
11:10–11:15	1229	Systematic Review Of Rct: Use Of Orthosis In Thoracolumbar Fractures	Daniela Linhares
11:15–11:20	609	Associated Injuries In Patients With Thoracic Spine Fractures	Patrick Curtin
11:20–11:25	1579	Venous Thromboembolism In Patients With Thoracic Spine Fractures	Patrick Curtin
11:25–11:30	911	Thoracolumbar Injuries In Polytrauma: The Importance Of The M2 Modifier	Jessica Gilchrist
11:30–11:35	1242	Vertebral Bone Density Variation And The Risk Of Subsequent Fracture After Cement Augmentation: A Retrospective Study Of Site Specific Computed Tomography Measurements	Alon Grundshtein
11:35–11:40	1777	Outcomes Of Posterior Short Segment Fixation In AO Type A3 And A4 Thoracolumbar Fractures In Patients With High Occupational Activity	Mirant Dave
11:40–11:45	1260	Virtual Thoracolumbar Fracture Clinics Are A Safe And Effective Alternative To Traditional Clinic Models	Peter Loughenbury
11:45–12:00	Discussion		

Location: Room 1 Live Stream

13:30–14:30	Symposium: Robotic spine surgery as a future enabling technology		Moderators: Michael Wang
13:30–13:35	Introduction		Michael Wang
13:35–13:50	Robotic Technology And Its Historical Performance		Enrico Tessitore
13:50–14:05	Robotic Surgery As An Enabler For Complex Deformity Surgery		TBC
14:05–14:20	Robotic Surgery As An Enabler For Mis Spine Surgery		TBC
14:20–14:30	Questions And Answers		

Thursday

November 4, 2021

Location: Room 2 Live Stream

13:30–14:30	Symposium: Frailty and Sarcopenia in Spine. A Comprehensive Update and Look to the Future	Moderators: Raphaële Charest-Morin
13:30–13:35	Moderator Introductions	Raphaële Charest-Morin
13:35–13:50	Frailty And Spine In The Elderly	Abhay Nene
13:50–14:05	Frailty And Sarcopenia In Spine. What To Measure, When And How	Raphaële Charest-Morin
14:05–14:20	Recent Updates And Future Advances	Eryck Moskven
14:20–14:30	Questions / Roundtable Discussion	All Speakers

Location: Room 3 Live Stream

13:30–14:30	Symposium hosted by AO Spine KF Degenerative: Prevention and treatment of ASD after lumbar fusion	Moderators: Christopher Martin Timothy S. Yoon
13:30–13:35	Case Presentation And Definition	Timothy S. Yoon
13:35–13:40	Causes—Surgery Vs Natural History	TBC
13:40–13:45	Prevention—Biomechanics Soft Transition	Christopher Martin
13:45–13:50	Discussion	
13:50–13:55	Lateral, Oblique, Or Anterior Interbody Fusion	Christopher Martin
13:55–14:00	Decompression Alone	Patrick Hsieh
14:00–14:05	Posterior Decompression And Fusion With Or Without Interbody	TBC
14:05–14:10	Discussion	
14:10–14:15	Spinopelvic Alignment And Asd	TBC
14:15–14:20	Advanced Imaging To Detect Disc Degeneration	TBC
14:20–14:25	Degen Kf Future Research	Timothy S. Yoon
14:25–14:30	Discussion	

Thursday Program Schedule

Thursday

November 4, 2021

Location: Room 4  **Live Stream**

13:30–14:30	Symposium hosted by SFCR: Sagittal Balance through the Ages	Moderators: Patrick Tropicano
13:30–13:45	Global Sagittal Alignment Parameters According To Gender, Pelvic Incidence And Age.	Yann Philippe Charles
13:45–14:00	Cervical Sagittal Alignment According To Age	TBC
14:00–14:15	Segmental Thoracic And Lumbar Alignment According To Age Variations.	Solène Prost
14:15–14:30	Sagittal Alignment Changes During Childhood: Results Of A National Cohort Analysis Of 1078 Healthy Children.	TBC
14:20–14:30	Questions And Answers	
14:30–17:00	Live from our studio in Paris: AO Spine Side Events	Moderators:
	Information TBC	

Thursday

November 4, 2021

Location: Room 1

14:30-15:30	Paper Session: Endoscopic Spine Surgery		Moderators:
14:30-14:35	694	Clinical And Radiographic Outcomes Of Cervical Disc Replacement Versus Posterior Endoscopic Cervical Decompression: A Matched-Pair Comparison Analysis	Vit Kotheeranurak
14:35-14:40	725	Endoscopic Transnasal Odontoidectomy For Ventral Decompression Of The Craniovertebral Junction: Surgical Technique And Clinical Outcome In 18 Cases	Vicki Butenschön
14:40-14:45	140	Transforaminal Endoscopic Discectomy. Comparison With Microdiscectomy.	Roman Khalepa
14:45-14:50	250	Comparison Of Primary Versus Revision Lumbar Discectomy Using A Biportal Endoscopic Technique	Min-Seok Kang
14:50-14:55	1600	Full Endoscopic Lumbar Discectomy For The Treatment Of Lumbar Disc Herniation And Radiculopathy: An Observational Study And Experience Of A Single Surgeon In 273 Patients	Wael Chaaban
14:55-15:00	685	A Comparison Of Patient Reported Outcomes Between Tranforaminal And Interlaminar Endoscopic Discectomy In Treating Patients With Paracentral Disc Herniation: A Randomized Controlled Trial	Vit Kotheeranurak
15:00-15:05	229	Percutaneous Endoscopic Lumbar Discectomy: Presentation Of 110 Operated Cases In Argentina And Revision Of The Surgical Technique.	Guillermo Frucella
15:05-15:10	32	Partial Pediculotomy , Partial Vertebrotoomy Approach For Posterior Endoscopic Cervical Foraminotomy And Discectomy	Pang Hung Wu
15:10-15:15	34	Comparative Clinical And Radiologic Cohort Study: Uniportal Thoracic Endoscopic Laminotomy With Bilateral Decompression Using One Block Resection Technique And Thoracic Open Laminotomy With Bilateral Decompression For Thoracic Ossified Ligamentum Flavum	Pang Hung Wu
15:15-15:30	Discussion		

Thursday Program Schedule

Thursday

November 4, 2021

Location: Room 2

14:30–15:30	Paper Session: Degenerative Lumbar Surgery 1		Moderators:
14:30–14:35	1037	6-Month Outcomes For Patients Undergoing Posterior Vs Circumferential Surgical Approach For Isthmic Spondylolisthesis	Paul Arnold
14:35–14:40	519	Do Organs Change Position In Prone Patients Compared To Supine?	Fauzan A. Hashmi
14:40–14:45	1337	Morphological Changes In The Major Psoas Position In Relation To The Patient Positioning	Rodrigo Amaral
14:45–14:50	603	Low Back Pain Patients With Modic Changes Should Not Be Treated With Antibiotics	Peter Udby
14:50–14:55	770	What Preoperative Factors Are Associated With Achieving A Clinically Meaningful Improvement And Satisfaction After Lumbar Fusion For Degenerative Spondylolisthesis? A Multivariate Analysis Of 997 Patients	Graham Goh
14:55–15:00	1471	Lumbar Disc Herniation Surgery Preferences Amongst Latin America Spine Surgeons: A Web-Based Survey	Asdrubal Falavigna
15:00–15:05	1285	Early Results Of 3d Printed Porous Titanium Thoracolumbar Interbody Cages	Peter Loughenbury
15:05–15:10	963	Is There A Place For Surgical Repair In Adults With Spondylolysis Or Grade I Spondylolisthesis?—A Systematic Review And Treatment Algorithm	Andrew Thomas
15:10–15:15	260	K-Wireless Robotic And Navigation Assisted Pedicle Screw Placement In Adult Degenerative Spine Surgery	Fedan Avrumova
15:15–15:30	Discussion		

Thursday

November 4, 2021

Location: Room 3

14:30–15:30	Paper Session: Spinal Trauma		Moderators:
14:30–14:35	308	Validation Of The AO Spine Sacral Classification System: Reliability Among Surgeons Worldwide	Brian Karamian
14:35–14:40	672	Percutaneous Lumbopelvic Fixation Significantly Decreases Blood Loss, Operating Time, And Return To Or Risk Compared To Open Fixation For Unstable Sacral Fractures	Jimmy Zhu
14:40–14:45	136	Spinal Posttraumatic Deformity: An International Expert Survey Amongst AO Spine Knowledge Forum Members.	Erin De Gendt
14:45–14:50	1523	Predicting Survival In Elderly Spine Trauma Patients	Catherine Carlile
14:50–14:55	1788	Baseline, Effect Size Of The AO Spine Prost In A Spine Center In The Netherlands.	Erin De Gendt
14:55–15:00	779	Epidemiology Of Spinal Trauma In Trauma-Reference Hospitals In Brazilian Metropolis	Anderson Matsubara
15:00–15:05	1803	Percutaneous Si-Screw Fixation In High Energy And Low Energy Pelvic Ring Injuries—A 15-Years Retrospective Analysis On Over 640 Screws	Oliver Riesenbeck
15:05–15:10	513	An Independent Intra-And Interobserver Agreement Assessment Of The AOspine Sacral Fracture Classification System	Gaston Camino Willhuber
15:10–15:15	434	Vertebral Fractures And Neurological Injury Associated With Increased Recreational Vehicle Use	Sachin Gupta
15:15–15:30	Discussion		

Thursday Program Schedule

Thursday

November 4, 2021

Location: Room 4

14:30–15:30	Paper Session: Spine Surgical Topics	Moderators:
14:30–14:35	1969 Total Disc Replacement As A Part Of Adult Scoliosis Surgical Treatment Of 205 Patients With Minimum Of 2 Years Of Follow-Up	Thierry Marnay
14:35–14:40	1649 Characteristic Features Of Cervical Spine Deformity In Dropped Head Syndrome.	Yoshifumi Kudo
14:40–14:45	297 Does Posterior Scoliosis Correction Improve Respiratory Function In Adolescent Idiopathic Scoliosis? A Systematic Review And Meta-Analysis	So Kato
14:45–14:50	1660 Treatment Of Acute Spinal Cord Injuries: Use Of High-Doses Steroids—Survey Among Ibero-Latinoamerican Spine Surgeons	Ana Ribau
14:50–14:55	973 The Clinical Course Of Disease During Wait Time For Lumbar Spinal Stenosis Surgery And Its Effect On Postoperative Outcome: A Retrospective Cohort Study	Thorsten Jentzsch
14:55–15:00	1290 Increase In Thoracic Kyphosis With Aging Is The Main Factor That Leads To Positive Sagittal Balance: Results Of The Multi-Ethnic Alignment Normative Study (Means)	Zeeshan Sardar
15:00–15:05	1339 Outcome And Predictive Factors In Rapid Progressive Cervical Spondylotic Myelopathy: A Retrospective Case–Control Study	Haimiti Abudouaini
15:05–15:10	1466 Indications Of Electromyography In Lumbar Spine Surgery, Literature Review	Alejandro Tejera Morett
15:10–15:15	1661 Observational Prospective Study Of Efficacy Of Non-Operative Management Of Thoracolumbar Osteoporotic Compression Fractures.	Ankit Singh
15:15–15:30	Discussion	

Thursday

November 4, 2021

Location: Room 1

16:00–17:00		Paper Session: Surgical Complications of Adult Deformity	Moderators:
16:00–16:05	1943	Patients With Severe Baseline Global Alignment And Proportion May Require More Aggressive Age-Adjusted Alignment Goals For Lumbo-Pelvic Mismatch	Peter Passias
16:05–16:10	1247	Prospective Validation Of The Spinal Cord Shape Classification System (Scscs) To Assess The Risk Of Intraoperative Neuromonitoring Data Loss With Thoracic Deformity Correction	Scott Zuckerman
16:10–16:15	1524	The Impact Of Preoperative Cross-Sectional Area Of Psoas Muscle On Postoperative Outcomes Of Adult Spinal Deformity Surgery	Hikari Urakawa
16:15–16:20	1811	Stratifying Outcome Based On The Oswestry Disability Index For Operative Treatment Of Adult Spinal Deformity On Patients 60 Years Of Age Or Older: A Multicenter, Multi-Continental Study On Prospective Evaluation Of Elderly Deformity Surgery (Peeds).	Christopher Nielsen
16:20–16:25	51	Adult Spinal Deformity Surgery: Instrumentation-Related Complication-Free Survival	Dmitry Ptashnikov
16:25–16:30	1754	Complications Of Multilevel Surgery In Elderly Patients: The Prospective Evaluation Of Elderly Deformity Surgery (Peeds)	Sigurd Berven
16:30–16:35	458	Postoperative Complications And Unplanned Readmission After Adult Spinal Deformity Surgery. Multicentric Registry In Latin America	Gaston Camino Willhuber
16:35–16:40	714	Predictors Of 30-Day Complications In Deformity Correction Surgery: A National Database Study	Lawrence Lenke
16:40–16:45	357	30-Day Complications For Deformity Correction Surgery In Patients Older And Younger Than 55	Lawrence Lenke
16:45–17:00		Discussion	

Thursday Program Schedule

Thursday

November 4, 2021

Location: Room 2

16:00–17:00	Paper Session: Novel Diagnostics	Moderators:
16:00–16:05	156 Subclassification Of Sanders Stage 7: The Use Of Ulna Physis Can Improve Decision-Making For Brace Weaning In Adolescent Idiopathic Scoliosis	Prudence Wing Hang Cheung
16:05–16:10	116 Utility Of Magnetic Resonance Imaging In Diagnosing The Pathology Of Vertebral Compression Fractures—Comparison Of Three Observers And Radiologist With Biopsy Report	Shaffaf Kareem
16:10–16:15	1868 In Vivo Response To Corrective Spinal Fusion Surgery Of Disc Morphology In Adolescent Idiopathic Scoliosis: Initial Response & 1-Year Follow-Up	David Polly
16:15–16:20	1781 Ossification Of Posterior Longitudinal Ligament In Cervical Spine And Its Association With Ossified Lesions In The Whole Spine: A Cross-Sectional Study Of 2500 Ct Scans	Ajoy P Shetty
16:20–16:25	709 Prenatal Counselling For Spine Anomalies—Algorithm Of Management—From The Genesis To Treatment.	Hriday Acharya
16:25–16:30	1042 The Utility Of Surgeon-Directed Dicom Manipulation Software As A Preoperative Surgical Planning Tool In Pediatric Craniovertebral Anomalies	Kshitij Chaudhary
16:30–16:35	688 'Spine Anomalies In Fetus': Diagnosis & Incidence—A Retrospective Study Of 10,000 Consecutive Fetal Scans.	Hriday Acharya
16:35–16:40	1034 High-Resolution Computed Tomography Angiography (Cta) For Diagnosing Blunt Cerebrovascular Injury: Does It Cut The Mustard? A Systematic Review And Meta-Analysis	Willem Bart Slooff
16:40–16:45	1928 Diagnostic And Treatment Criteria Of Craniocervical Instability In Ehlers Danlos Syndrome—A Systematic Review	Laura-Nanna Lohkamp
16:45–17:00	Discussion	

Thursday

November 4, 2021

Location: Room 3

16:00–17:00	Paper Session: Cervical Surgery		Moderators:
16:00–16:05	326	Fusion Rate For Combined Antero–Posterior Vs Anterior Fixation With Allograft For 3 And 4 Level Cervical Spine Pathology	Richard Bransford
16:05–16:10	1549	Acdf With Ultra-Low Dose Bmp-2 Versus The Posterior Approach In Multilevel Fusions To The Cervico-Thoracic Junction	Daniel Coban
16:10–16:15	638	Preoperative And Postoperative Sagittal Cervical Alignment Is Predictive Of Promis Patient Reported Outcomes And Nurick Scores	Sarthak Mohanty
16:15–16:20	1724	The Effect Of The Positioning Of The Screws And Plate In Anterior Cervical Fusion	Sara Diniz
16:20–16:25	698	Clinical Risk Factors Associated With The Development Of Adjacent Segment Disease In Patients Undergoing Cervical Spine Procedure	Zorica Buser
16:25–16:30	789	Clinical Outcomes Of Patients With Degenerative Cervical Myelopathy Managed Nonoperatively: An Ambispective Longitudinal Cohort Study In 117 Patients	Allan Martin
16:30–16:35	798	Inter-Rater Reliability Of The Modified Japanese Orthopaedic Association Score In Degenerative Cervical Myelopathy: A Prospective Study	Allan Martin
16:35–16:40	529	Stand Alone Cages Versus Cage And Plate Constructs For One-And Two-Level Anterior Cervical Discectomy And Fusion: A Prospective Randomized Controlled Trial	Athan Zavras
16:40–16:45	1926	Predicting Severe Clinically Relevant Distal Junctional Kyphosis Development Following Adult Cervical Deformity Surgery With Further Distinction From Mild Asymptomatic Episodes	Peter Passias
16:45–17:00	Discussion		

Thursday Program Schedule

Thursday

November 4, 2021

Location: Room 4

16:00–17:00	Paper Session: Spinal Tumors		Moderators:
16:00–16:05	1232	Incidence, Management, And Outcomes Of Adult Spinal Chondrosarcoma Patients In The United States	Ravi Nunna
16:05–16:10	1824	Correlation Between The Spinal Instability Neoplastic Score (Sins) And Patient Reported Outcomes.	Anne Versteeg
16:10–16:15	1186	Outcomes Of An Enhanced Recovery After Surgery (Eras) Program For Patients With Metastatic Spine Tumors	Ilya Laufer
16:15–16:20	1920	Outcomes In Surgically Treated Patients With Symptomatic Spinal Metastases: Results From "Eposo", A Prospective, Multi-Institutional And International Study	Ori Barzilai
16:20–16:25	960	Comprehensive Surgical Treatment Strategy For Spinal Metastases: Results Of A Single-Center Series.	Arthur Wagner
16:25–16:30	216	Cortical Integrity, Lesion'S Position And Size As Additional Parameters For The Characterisation Of The Mechanical Weakness Of Metastatic Vertebrae	Marco Palanca
16:30–16:35	45	An Externally Validated Machine Learning Algorithm For Prediction Of Ninety-Day And One-Year Mortality After Surgery For Spinal Metastasis	Akash Shah
16:35–16:40	1538	High Predictive Value Of Spinal Instability Score Following Radiosurgery For Spinal Metastases	Maximilian–Niklas Bonk
16:40–16:45	530	Expectations Of Treatment Outcomes In Patients With Spinal Metastases; What Do We Tell Our Patients? A Qualitative Study	Anne Versteeg
16:45–17:00	Discussion		

Location: Room 1 Live Stream

17:00–18:00	Symposium hosted by KF SCI: Contemporary Concepts in Optimizing the Management of Acute Traumatic SCI		Moderators: Brian Kwon Michael Fehlings
17:00–17:05	Introduction—What Can Be Done To Improve Neurologic Outcome In Acute Spinal Cord Injury?		Brian Kwon
17:05–17:15	Early Surgical Decompression In Cervical And Thoracic Sci		TBC
17:15–17:25	Does Surgical Technique And The Extent Of Decompression Matter?		Bizhan Aarabi
17:25–17:35	Methylprednisolone For Acute Sci—What Is The Evidence?		TBC
17:35–17:45	Adverse Events After Acute Sci—Do They Matter For Neurologic Outcome?		James Guest
17:45–17:55	Summary And Discussion		Michael Fehlings

Thursday

November 4, 2021

Location: Room 2 Live Stream

17:00–18:00	Symposium: Cervico-Thoracic Junction Sagittal Deformity	Moderators:
17:00–17:10	Unique Radiographic And Clinical Anatomy Of The Cervico-Thoracic Spine: Understanding This Critical Transition For Spinal Surgeons	Jeffrey C. Wang
17:10–17:20	Causes And Prevention Of Pjk In Tl Deformity Surgery Ending In The Proximal Thoracic Spine	Christopher Shaffrey
17:20–17:30	How Best To Salvage Pjf/Pjk In The Cervico-Thoracic Junction: How To Decide The Optimal Correction Method And Upper Level Of Instrumentation And Fusion	Lawrence Lenke
17:30–17:40	Cervical And Cervico-Thoracic Kyphosis: How To Decide The Lowest Level Of Instrumentation/Fusion To Prevent Distal Junctional Failure	K. Daniel Riew
17:40–17:48	Questions And Discussion	
17:48–18:00	Case Presentation Of Cervico-Thoracic Pjk With Discussion	Lawrence Lenke

Location: Room 3 Live Stream

17:00–18:00	Symposium hosted by NASS: Managing Risk Factors in Deploying Emerging Technologies	Moderators: Patrick Hsieh
17:00–17:05	Introduction And Welcome Remarks	Patrick Hsieh
17:05–17:20	How To Evaluate And Incorporate New Technologies In Your Spine Practice	Eric Truumees
17:20–17:30	Adopting Mis And Avoiding Complications	Jeffrey C. Wang
17:30–17:40	Mis Lateral Interbody Fusion For Degenerative Spondylolisthesis And Scoliosis	Edward Dohring
17:40–17:50	Intraoperative Navigation And Robotics Assisted Spine Surgery	Patrick Hsieh
17:50–18:00	Discussions And Questions	

Location: Room 4 Live Stream

17:00–18:00	Symposium hosted by SBC (Brazilian Spine Society): Improving the management of paediatric deformity in developing countries—Project for improving spine deformity care in Latin America	Moderators: Emiliano Vialle
17:00–17:15	Dealing With Waiting Lists In Latin America	Robert Meves
17:15–17:30	Is Icu Always Necessary In Scoliosis Surgery	Emiliano Vialle
17:30–17:45	Global Trends In Scoliosis Surgery	TBC
17:45–18:00	Discussion	



Friday

November 5, 2021

Wednesday

Thursday

Friday

Saturday

Friday Program Schedule

Friday

November 5, 2021

Location: Room 4

07:00–08:00	Women in Spine	Moderators:
	TBC	

Location: Room 1 Live Stream

08:00–09:00	Symposium: Challenges in the Surgical Treatment of Spinal Kyphosis: from congenital to Iatrogenic	Moderators: Shanmuganathan Rajasekaran Yong Hai
08:00–08:10	Congenital Kyphosis At Cervical And Cervico-Thoracic Junction	Yong Hai
08:10–08:20	Cervical Kyphosis Post-Laminoplasty (Or Other Iatrogenic Kyphosis)	K. Daniel Riew
08:20–08:30	Post-Traumatic Kyphosis In The Elder	TBC
08:30–08:40	Kyphosis Secondary To Pott's Disease With Neurological Deficits	Shanmuganathan Rajasekaran
08:40–08:50	Ankylosing Spondylitic Kyphosis With Hip Joint Deformity	TBC
8:50–09:00	Discussion	

Location: Room 2 Live Stream

08:00–09:00	Symposium: Handling the Plight of Revision Spinal Surgeries	Moderators: Chung Chek Wong TBC
08:00–08:11	Surgical Strategies—Tips And Pearls On Revision Spinal Deformity Surgeries	Chung Chek Wong
08:11–08:22	Non-Union Post Spinal Fusion Surgery—Addressing The Biological And Mechanical Properties And How Best To Tackle It From These Two Standpoints	Abhay Nene
08:22–08:33	Fallacy Of Broken Rods In Deformity Surgeries—Have We Attained A Relatively Definite Solution To This Predicament?	Luiz Gustavo Dal Oglio Da Rocha
08:33–08:44	Implant Failure In The Face Of Relative Absence Of Symptoms—The Race Between Union Versus Hardware Breakage—When Do We Intervene And Should We Intervene?	TBC
08:44–08:55	Element And Applicability Of The Concept Of Minimalism—“Less Is More” In Revision Spinal Deformity Surgeries	Chung Chek Wong
08:55–09:00	Q&A	

Friday

November 5, 2021

Location: Room 3 Live Stream

08:00–09:00	Symposium hosted by DWG: Corpectomies in pathological fractures	Moderators: Ulf Liljenqvist
08:00–08:20	Cervical	Peter Vajkoczy
08:20–08:40	Endoscopic Techniques	Markus Arand
08:40–09:00	Standard Open Anterior/Posterior	Ulf Liljenqvist

Location: Room 4 Live Stream

08:00–09:00	Symposium hosted by CCOS (China College of Orthopedic Surgeons): Diagnosis and Surgical Treatment of the Ossification of the Spinal Ligaments	Moderators: Yan Wang
08:00–08:07	Complications Of Anterior Surgical Treatment Of Ossification Of The Posterior Longitudinal Ligament Of The Cervical Spine.	TBC
08:07–08:14	Surgical Strategy For Thoracic Myelopathy Due To Multilevel Ossification Of The Posterior Longitudinal Ligament.	TBC
08:14–08:21	The Role Of K-Line In The Surgical Treatment Of OpII In Real World	TBC
08:21–08:28	Correlation Between Posterior Shift Of K-Line And Outcome Of Expansive Laminoplasty With Reattachment Of The Spinous Process For Ossification Of The Posterior Longitudinal Ligament	TBC
08:28–08:35	How To Prevent Neurological Deterioration Of Posterior Circumferential Decompression For TopII?	TBC
08:35–08:42	The Advantages Of Anterior Cervical Ossified Posterior Longitudinal Ligament En Bloc Resection (Acoe) For The Treatment Of Cervical OpII	TBC
08:42–08:49	Selective Acdf For Non-Continuous Cervical OpII.	Wenjian Wu
08:49–08:56	Clinical And Radiographic Outcomes Of Modified Unilateral Open-Door Laminoplasty With Posterior Muscle-Ligament Complex Preservation For Cervical Ossification Of The Posterior Longitudinal Ligament	TBC
08:56–09:00	Discussion	

09:00–12:30 Live from our studio in Paris: AO Spine Side Events

	Information TBC	

Friday

Friday Program Schedule

Friday

November 5, 2021

Location: Room 1

09:00–10:00	Paper Session: Minimally Invasive and Novel Surgical Treatments		Moderators:
09:00–09:05	1706	Preoperative Mri-Based Vertebral Bone Quality (Vbq) Score Assessment In Patients Undergoing Lumbar Spinal Fusion	Stephan Salzmann
09:05–09:10	761	Prospective Study Pf Intraoperative Motor Evoked Potential Monitoring To Identify Lumbosacral Nerve Root Motor Deficits	Kelley Mcgowan
09:10–09:15	1696	Thoracic Bone Mineral Density Measured By Quantitative Computed Tomography In Patients Undergoing Spine Surgery	Stephan Salzmann
09:15–09:20	169	Imaging Profile Of Subjects With Lumbar Developmental Spinal Stenosis In A Population-Based Cohort	Prudence Wing Hang Cheung
09:20–09:25	733	Clinical And Radiographic Outcomes Miss Stand-Alone Alif Vs Posterior Approach Surgery (Pco And Transpedicular Fixation) For Adult Degenerative Scoliosis	Dmitry Ptashnikov
09:25–09:30	239	Rate Of Failure Of Indirect Decompression In Lateral Single-Position Surgery—Clinical Results	Cristiano Menezes
09:30–09:35	1882	The Impact Of Posterior Cervical Foraminotomy On Neck Pain: A Systematic Review And Meta-Analysis	Hikari Urakawa
09:35–09:40	1547	Does Obesity Affect Long-Term Outcomes Of Lateral Lumbar Interbody Fusion	Stuart Changoor
09:40–09:45	740	Cinical And Radiological Outcomes For Mini-Open Combined One Step Anterior And Oblique Approach For Two Level Lumbar Interbody Fusion.	Pablo Mendivil
09:45–10:00	Discussion		

Friday
November 5, 2021

Location: Room 2

09:00–10:00		Paper Session: Spinal Tumor Surgery 1	Moderators:
09:00–09:05	495	Surgical Treatment Of Spinal Metastases Of The Cervicothoracic Junction	Vanessa Hubertus
09:05–09:10	1687	Multilevel Total En-Bloc Excision Of Primary Chondrosarcoma Of The Thoracic Spine Through An All Posterior Approach-Case Presentation And Systematic Review Of Literature	Nigil Palliyil
09:10–09:15	819	Multiple Cavernous Angiomas Of Central Nervous System Associated With Neurofibromatosis Type 2 (Nf2)	Dimitar Haritonov
09:15–09:20	1369	Metastatic Spine Tumor Surgery In Elderly Patients: Analysis Of 78 Patients	Ibrahim Hussain
09:20–09:25	1769	Are Vertebral Hemangiomas Always Innocuous? A Retrospective Series Of 23 Patients Who Underwent Surgical Treatment Following Aggressive, Symptomatic, Atypical Vertebral Hemangiomas	Ajoy P Shetty
09:25–09:30	1913	Long-Term Result Of Sacrococcygeal Chordoma Surgical Management : About 13 Cases	Mouadh Nefiss
09:30–09:35	54	Pre-Treatment Expectations Of Patients With Spinal Metastases: What Do We Know And What Can We Learn From Other Disciplines? A Systematic Review Of Qualitative Studies	Anne Versteeg
09:35–09:40	554	Time Between The First Symptoms And The Onset Of Neurological Deficits In Patients With Metastatic Spinal Disease	Floris Van Tol
09:40–09:45	910	Single-Stage Minimal-Invasive Posterolateral Transpedicular Approach (Mitpa) In The Treatment Of Metastatic Tumors In Thoracic Spine.	Rafal Zaluski
09:45–10:00		Discussion	

Friday

Friday Program Schedule

Friday

November 5, 2021

Location: Room 3

09:00–10:00	Paper Session: Degenerative Lumbar Surgery 2		Moderators:
09:00–09:05	1919	Incremental Clinical Benefit Of Adding Layers Of Complexity To The Planning And Execution Of Adult Spinal Deformity Corrective Surgery	Peter Passias
09:05–09:10	1317	Bilateral Radioscopy-Guided Erector Spinae Plane Block For Postoperative Analgesia In Spine Surgery: A Prospective, Randomized Study.	Sofia Beltrame
09:10–09:15	21	Clinical Outcomes In Patients >75 Years Undergoing Spine Surgery For Lumbar Degenerative Spine Disease: Impact Of Increasing Age And Modified Frailty Index On Surgical Morbidity	Keyur Akbari
09:15–09:20	456	Efficacy And Feasibility Of Percutaneous Transforaminal Endoscopic Surgery(Ptes) For Selective Treatment Of Responsibility Segments In Multi-Level Lumbar Degenerative Disease	YuTong Gu
09:20–09:25	653	Impact Of Modic Changes On Functional Outcomes After Microdiscectomy: A Prospective Comparative Cohort Study	Sri Vijay Anand Ks
09:25–09:30	1784	Preoperative Community-Based Functional Exercise Training With High-Risk Patients Opting For Lumbar Spinal Fusion: Feasibility And Preliminary Effectiveness	Esther Janssen
09:30–09:35	689	Complication Rates And Onset Of Mental Disorders In Patients Who Developed Failed Back Surgery Syndrome	Ki-Eun Chang
09:35–09:40	1596	Targeting Self-Efficacy More Important Than Dysfunctional Behavioural Cognitions In Patients With Longstanding Chronic Low Back Pain; A Longitudinal Study	Miranda Van Hooff
09:40–09:45	53	Lordosis Restoration With Midline Minimally Invasive Cortical Trajectory Screws (Midlf) And Transforaminal Interbody Fusion: A Safe Technique With A Short Stay	Brett Rocos
09:45–10:00	Discussion		

Friday
November 5, 2021

Location: Room 4

09:00–10:00		Paper Session: Basic Science/Cellular Therapy	Moderators:
09:00–09:05	650	Mesenchymal Stem Cell Secretome: A Potential Anabolic And Immunomodulatory Therapy For Early Intervertebral Disc Degeneration	Sibylle Grad
09:05–09:10	1048	Mesenchymal Stem Cell-Seeded High-Density Collagen Gel For Annular Repair: 16-Week Results From In Vivo Sheep Models	Sertac Kirnaz
09:10–09:15	527	Ex Vivo Priming Of Culture-Expanded Mesenchymal Stem Cells (Mscs) With Bone Morphogenetic Protein-2 In A Lumbar Spinal Fusion Model: A Comparative Study Of Adipose-Derived And Bone Marrow-Derived Mscs	Timothy F. Witham
09:15–09:20	342	An In Vitro Model Of Discogenic Pain. Immunomodulatory Properties Of Adipose-Derived Mesenchymal Stem Cells.	Marta Esteban Blanco
09:20–09:25	532	Effect Of Hypoxia Preconditionated Culture-Expanded Adipose-Derived Mesenchymal Stromal Cells In A Posterolateral Lumbar Spinal Fusion Model	Timothy F. Witham
09:25–09:30	950	Characterisation Of Acute Peripheral Inflammatory Responses Identifies Distinct Phenotypes Of Circulating Monocytes Following Spinal Cord Injury	Ryan Doig
09:30–09:35	1281	What Is The Mesenchymal Stem Cell Concentration In The Vertebral Body Compared To The Iliac Crest In Patients Undergoing Posterior Instrumentation?	Robin Mcmanus
09:35–09:40	606	Exploring The Core Matrisome Profile Of Fetal Intervertebral Discs In Search Of Molecular Targets Of Therapeutic Potential	Shanmuganathan Rajasekaran
09:40–09:45	1874	Analysis Of 3d-Printed Titanium Porous Scaffolds Using Mesenchymal Stem Cells	Jessica Dorilio
09:45–10:00		Discussion	

Friday

Friday Program Schedule

Friday

November 5, 2021

Location: Room 1

10:30–11:30	Paper Session: Cervical Trauma and Spinal Cord Injury		Moderators:
10:30–10:35	518	Early Versus Late Surgical Decompression For Acute Spinal Cord Injury: A Meta-Analysis Of Individual Patient Data	Michael Fehlings
10:35–10:40	615	The Subaxial Cervical AO Spine Injury Score	Jose Canseco
10:40–10:45	1233	Spinal Cord Signal Change On Magnetic Resonance Imaging Predicts Worse Clinical In-And Outpatient Outcomes In Patients With Spinal Cord Injury: A Prospective Multicenter Study In 459 Patients	Thorsten Jentzsch
10:45–10:50	1555	How Does Surgical Approach Affect Outcomes Following Cervical Trauma In The Elderly?	Catherine Carlile
10:50–10:55	700	Subaxial Spine Arthrodesis In Patients With Spine Fractures And Facet Dislocations: Is Magnetic Resonance Imaging Required To Determine The Optimal Surgical Approach?	Asdrubal Falavigna
10:55–11:00	623	Establishing The Injury Severity Of Subaxial Cervical Spine Trauma: Validating The Hierarchical Nature Of The AO Spine Subaxial Cervical Spine Injury Classification System	Gregory Schroeder
11:00–11:05	47	Odontoid Fracture Extending Into The Pars Interarticularis: A Distinct Clinico-Pathological Injury Pattern?	Salvatore Russo
11:05–11:10	1642	Fusion Failure Analysis In Anterior Cannulated Screw Fixation Of Odontoid Fracture Of C2 Ii Type	Tahir Tamaev
11:10–11:15	1797	The Impact Of Hbot In Spinal Cord Injury	Renate Krassnig
11:15–11:30	Discussion		

Friday
November 5, 2021

Location: Room 2

10:30–11:30		Paper Session: Deformity–Thoracolumbar (Adult)	Moderators:
10:30–10:35	1433	Compensation For Standing Posture By Whole-Body Sagittal Alignment In Relation To Health-Related Quality Of Life	Kazuhiro Hasegawa
10:35–10:40	970	Is There A Heritability Impact On Spinal Sagittal Alignment? A Twin Study In The United Kingdom	Khai Lam
10:40–10:45	1054	Optimal Intraoperative Fluid Management In Adult Spinal Deformity Correction Surgery	Meghan Cerpa
10:45–10:50	228	Sagittal Balance Study In Professional Brazilian Football Players	Michel Kanas
10:50–10:55	757	The Posterior Cranial Vertical Line (Pcvl): A Novel Global Sagittal Alignment Parameter That Correlates To Proximal Junctional Kyphosis Following Adult Spinal Deformity Surgery	Paul Park
10:55–11:00	394	Multilevel Thoracic Spine Fusion Complications For The Treatment Of Idiopathic And Neuromuscular Scoliosis	Alexander Ballatori
11:00–11:05	896	A New Intradiscal 3-Column Osteotomy Technique In Adult Spinal Deformity Using Expandable And Non-Expandable Cages.	Sven Frieler
11:05–11:10	949	Variation Patterns Of Cervical Alignment In Ankylosing Spondylitis-Related Thoracolumbar Kyphosis Following Pedicle Subtraction Osteotomy In Sitting Position: An Eos-Based Investigation	Bangping Qian
11:10–11:15	420	The Minimally Invasive Interbody Selection Algorithm For Spinal Deformity	Ibrahim Hussain
11:15–11:30		Discussion	

Friday

Friday Program Schedule

Friday

November 5, 2021

Location: Room 3

10:30–11:30	Paper Session: Cervical Myelopathy		Moderators:
10:30–10:35	630	Multi-Level Cervical Myelopathy Is Associated With Cervical Spinal Deformity	Sarthak Mohanty
10:35–10:40	1087	Frailty Is A Better Predictor Than Age Of Mortality And Perioperative Complications After Surgery For Degenerative Cervical Myelopathy: An Analysis Of 41,369 Patients From The Nsqip Database 2010-2018	Michael Fehlings
10:40–10:45	832	Clinical Impact Of Opll Progression After Cervical Laminoplasty	Kawaguchi Yoshiharu
10:45–10:50	721	Efficacy Of Surgical Decompression In Patients With Degenerative Cervical Myelopathy: Results Of The Canadian Prospective Multi-Center Study	Syed Mohammed Karim
10:50–10:55	1895	Cervical Spine Steroid Injections For Delay Of Surgery For Cervical Spondylotic Myelopathy	Mustfa Manzur
10:55–11:00	701	Prospective Randomized Control Pilot Study To Compare The Role Of Injection Cerebrolysin In Operated Cases Of Cervical Myelopathy	Ayush Sharma
11:00–11:05	16	Do Intra-Operative Neurophysiological Changes During Decompressive Surgery For Cervical Myeloradiculopathy Impact Functional Outcome? A Prospective Study	Keyur Akbari
11:05–11:10	1735	A Multicentric Prospective Study On Cervical Spine Myelopathy Surgery In France	Philippe Bancel
11:10–11:15	1588	The Role Of Nutrition In Degenerative Cervical Myelopathy: A Systematic Review	Celine Partha-Sarathi
11:15–11:30	Discussion		

Friday

November 5, 2021

Location: Room 4

10:30–11:30	Paper Session: Basic Science/Novel Therapy		Moderators:
10:30–10:35	854	Serpins—A Potential Target For Arresting Intervertebral Disc Degeneration	Sri Vijay Anand Ks
10:35–10:40	363	Effects Of Single-Dose Versus Hypo-Fractionated Focused Radiation On Vertebral Body Structure And Biomechanical Integrity: Development Of An Irradiation Model	Alexander Perdomo–Pantoja
10:40–10:45	619	The Spatial And Temporal Expression Of Sclerostin And Canonical Wnt Signaling Factors In Maturing Posterolateral Spinal Fusions	Steven Presciutti
10:45–10:50	580	Bilateral Erector Spinae Plane Block—A Promising Protocol For Post-Operative Pain Relief	Sathish Muthu
10:50–10:55	1417	Anti-Inflammatory Effect Of Bsp-Resveratrol Membrane For The Prevention Of Epidural Fibrosis After Laminectomy	Hsuan-Yu Chen
10:55–11:00	882	Use Of Npy Y1 Selective Antagonist To Suppress Neuropathic Pain	Robert Mcguire
11:00–11:05	334	Biomimetic Platelet-Derived Growth Factor Delivery System With Osteoinductive Bone Particles And Adipose-Derived Stem Cells In Biodegradable Tissue-Engineered Grafts For Spinal Fusion	Alexander Perdomo–Pantoja
11:05–11:10	800	Validity Of Scoliotic Discs As Controls For Molecular Research In Intervertebral Disc Disorders	Sri Vijay Anand Ks
11:10–11:15	569	Intra-Operative Topical Vancomycin Powder Application—Is The Practise Safe In Paediatric Spine Surgeries ?	Sathish Muthu
11:15–11:30	Discussion		

Friday

Friday Program Schedule

Friday

November 5, 2021

Location: Room 1

11:30–12:30	Paper Session: Lumbar Degeneration		Moderators:
11:30–11:35	799	Lessing Prom Burdens Via Machine Learning	Gregory Schroeder
11:35–11:40	1360	Preoperative Sagittal Imbalance Associated With Improved Radiographic And Clinical Outcomes After Mis Tlif For Degenerative Spondylolisthesis	Andre Samuel
11:40–11:45	1559	Sagittal Balance In Short-Segment Decompression And Fusion For The Management Of Degenerative Lumbar And Sacral Spine Stenosis.	Valerii Serikov
11:45–11:50	1859	Isovue Contrast For Intraoperative Assessment Of Discectomy Quality In Tlif: A Preliminary Report Of A Prospective Randomized Controlled Trial	Athan Zavras
11:50–11:55	731	Long-Term Outcomes In In Cauda Equina Syndrome. Measurement Of Core Outcomes Using Validated Questionnaires	Thomas Barker
11:55–12:00	1197	Body Mass Index Impact On Clinical Outcomes After Minimally Invasive Extreme Lateral Interbody Fusion	Carlos De La Torre
12:00–12:05	624	Post-Operative Outcomes After Degenerative Lumbar Spine Surgery In Rheumatoid Arthritis Patients—A Propensity Score Matched Analysis	So Kato
12:05–12:10	1632	Relation Between Patient Perceived Surgical Indication, Fulfillment Of Expectations And Functional Outcome In Patients Undergoing Spine Surgery	Sara Diniz
12:10–12:15	247	Nose To Back: Spheroids Derived From Human Nasal Chondrocytes For Nucleus Pulpous Repair	Arne Mehrkens
12:15–12:30	Discussion		

Friday

November 5, 2021

Location: Room 2

11:30–12:30	Paper Session: Trauma–Thoracolumbar 1		Moderators:
11:30–11:35	1463	AO Spine Prost (Patient Reported Outcome Spine Trauma)– Validation Of The English And Dutch Versions	Said Sadiqi
11:35–11:40	224	Ability And Limits Of Kyphoplasty To Stabilise Post Traumatic Segmental Instability	René Hartensuer
11:40–11:45	1721	Is The AO Spine Thoracolumbar Injury Classification System Reliable And Practical? A Systematic Review.	Zion Hwang
11:45–11:50	1537	Posterior Stabilisation Of Fractures Of The Thoraco-Lumbar Junction: Does The Inclusion Of The Fracture-Level Pedicle Screw Affect Functional And Radiological Outcomes?	Riaz Mohammed
11:50–11:55	1045	Reliability Of Thoracolumbar Injury Classification System (Tlics) In Predicting The Outcome Following Thoracolumbar Fractures .	Nishanth Ampar
11:55–12:00	175	Single-Stage Short-Segment Posterior Fixation And Anterior Decompression With Inter-Body Fusion As A Management Approach For Unstable Thoracolumbar Burst Fractures	Shaffaf Kareem
12:00–12:05	1837	Post-Traumatic Thoracolumbar Kyphosis: A Major, Challenging, Late Complication Following TI Spinal Injuries—A Retrospective Analysis Of Its Clinical Presentation, Surgical Management And Long-Term Outcome Following Surgical Intervention	Ajoy P Shetty
12:05–12:10	1400	Classifications And Therapy Recommendations For Thoracolumbar Spinal Injuries: A Comparison Between AO_ Magerl, Tlics, And AOspine	Fady Khamis
12:10–12:15	1732	Burst Fractures Without Neurological Injury-Predictive Factors For Surgical Treatment	Ana Ribau
12:15–12:30	Discussion		

Friday

Friday Program Schedule

Friday

November 5, 2021

Location: Room 3

11:30–12:30	Paper Session: Spinal Infections	Moderators:
11:30–11:35	582 Relapses, Complications And Mortality With Hematogenous Vertebral Osteomyelitis	Alexander Bazarov
11:35–11:40	381 Tuberculosis Of The Cranio-Vertebral Junction: Its Altered Biomechanics And Treatment Strategy	Nandan Marathe
11:40–11:45	710 Current Trends Of Drug Resistance In Spinal Tuberculosis: A Single Centre Experience	Aditya Raj
11:45–11:50	661 Instrumented Fusion In Tubercular Spondylitis In Low Middle Income Country, Nepal	Subin Byanjankar
11:50–11:55	718 Modern Tactics And Surgical Treatment Of 338 Patients With Purulent Spondylitis	Maxim Goncharov
11:55–12:00	676 Can Intra-Operative Irrigation With Antibiotics Reduce Bacterial Load At The Surgical Site?—An In-Vitro Study	Rawan Masarwa
12:00–12:05	484 Outcomes Of Surgical Treatment Of Spondylitis In Hiv-Infected Patients	Maxim Goncharov
12:05–12:10	743 Risk Factors For Revision Surgery In Infectious Spondylitis Patients: Prospective Cohort Analysis	Denis Naumov
12:10–12:15	220 Recovery Of Long Standing Neurological Deficit In Paediatric Dorsal Spinal Tuberculosis	Aditya Raj
12:15–12:30	Discussion	

Friday
November 5, 2021

Location: Room 4

11:30–12:30	Paper Session: Clinical Biomechanics 1		Moderators:
11:30–11:35	1927	Biomechanical Study Of The Behavior Of The Intervertebral Disc: Intact Lumbar Spine Versus Lumbar Arthrodesis	Khalil Habboubi
11:35–11:40	158	Exploring The Effect Of Different Implant Materials On The Active Apex Correction Technique: A Finite Element Study Simulating 6-Month Growth	Alaa Azmi Ahmad
11:40–11:45	1808	Biomechanics Of Different Cage Shapes And Positions In Transforaminal Lumbar Interbody Fusion (Tlif)—A Finite Element Analysis	Gael Dreher
11:45–11:50	1571	Biomechanical Comparison Of Two Fixation Techniques For B2 Fractures Of The Sacrum According To The AO Spine Sacral Classification System	Moritz Lodde
11:50–11:55	348	Biomechanical Effects Of Changes In Cervical Alignment Following Single-Level Acdf Using 3d Motion Capture	Darren Lebl
11:55–12:00	1626	Analysis Of Implants Of Lumbosacral Spinal Fusion Using Fem	Hiroyuki Tachi
12:00–12:05	931	Reduced Dynamic Stability In Simulated Scoliosis	Fraje Watson
12:05–12:10	1107	Biomechanics Following Two Special Constructs Of 3-Level Hybrid Surgery With Cervical Disc Arthroplasty And Anterior Cervical Discectomy And Fusion: A Finite Element Analysis	Kangkang Huang
12:10–12:15	469	Framingham Cohort Adjacent Segment Biomechanics Following T10-Pelvis Spinal Fusion: A Computational Study	Christian Rodriguez
12:15–12:30		Discussion	

Friday

Friday Program Schedule

Friday

November 5, 2021

Location: Room 1 Live Stream

14:00–15:00	Symposium hosted by KF Trauma and Deformity: Posttraumatic Spinal Deformity: What is it and when is it relevant?	Moderators: TBD David Polly
14:00–14:10	What Is Post-Traumatic Deformity? A Review Of Existing Literature	Erin De Gendt
14:10–14:25	Basics Of Sagittal Contour And Compensation Mechanisms	David Polly
14:25–14:40	What Can We Do To Prevent Post-Traumatic Spinal Deformity: Case Presentation	Cumhur Oner
14:40–14:50	Treatment Strategies For Symptomatic Post-Traumatic Spinal Deformity: Case Presentation	Yong Qiu
14:50–15:00	Summary And Discussion	

Location: Room 2 Live Stream

14:00–15:00	Symposium hosted by AO Spine ESA: Safety in spine surgery—the importance of Non-technical skills	Moderators: Lorin Michael Benneker
14:00–14:02	Introduction	Lorin Michael Benneker
14:02–14:14	Complication Prevention By Planning And Use Of Checklists	Giovanni Barbanti Bròdano
14:14–14:26	Complication Prevention By Use Of Safety Concepts From Aviation	TBC
14:26–14:38	Complication Prevention By Patient Selection And Working On Expectations	Pedro Berjano
14:38–14:50	Complication Prevention By Improving Communication	Beat Lauper
14:50–15:00	Discussion	

Location: Room 3 Live Stream

14:00–15:00	Symposium: How to get your published research work noticed and why it is important	Moderators: Jeffrey C. Wang Robert Gunzburg
14:00–14:09	Why dissemination of research is important	TBC
14:09–14:18	Impact factor and alternative metrics	Marcin Czyz
14:18–14:27	Which articles are noticed - why and how to improve	Danielle Lieberman
14:27–14:30	Discussion	
14:30–14:39	Tips and tricks to get your article noticed	Dino Samartzis
14:39–14:48	Good practice in dissemination of results	TBC
14:48–14:57	As a clinician, what influences the importance of a research study for me	TBC
14:57–15:00	Discussion	

Friday
November 5, 2021

Location: Room 4 **Live Stream**

14:00–15:00	Symposium hosted by GEER (Sociedad Espanola de Columna Vertebral): Cervical Spine Deformity. What to know	Moderators:
14:00–14:15	Why Is Important Cervical Sagittal Balance? Hrql. What Is Known About Cervical Balance?	TBC
14:15–14:30	What Should We Achieve? What Are The Angular Values That We Need?	Manuel Ramirez Valencia
14:30–14:45	How To Achieve? Techniques And Classification	TBC
14:45–15:00	Cases Discussion	TBC
15:30–17:00	Live from our studio in Paris: AO Spine Side Events	Moderators:
	Information TBC	

Location: Room 1

16:00–17:00	Paper Session: Novel technologies	Moderators:
16:00–16:05	1709 Comparing Hyper-Lordotic And Less-Lordotic Cages For Achieving Segmental Lumbar Lordosis During Transforaminal Lumbar Interbody Fusion In Adult Spinal Deformity Surgery	Justin Mathew
16:05–16:10	1159 Safe And Improved Bone Removal Using A New Curved Device: Four Center Experience With 624 Patients	Ely Ashkenazi
16:10–16:15	1801 Digital And Sensor-Based Training In Spine Surgery–The Future Of Education?	Werner Korb
16:15–16:20	375 Patient Perspectives On Artificial Intelligence In Healthcare Decision Making	Matthew Parry
16:20–16:25	875 Development Of A Non-Opioid Biodegradable Sustained Release Formulation For Local Postoperative Analgesia	Jasper Steverink
16:25–16:30	1647 The "Raising Roof" Cervical Expansive Laminoplasty With Preservation Of Bilateral Muscular-Ligament Complex	Yu Sun
16:30–16:35	1635 Nano Topography Is More Important Than The Coating Itself : Titanium Versus Cap Nanocoated Cages	Karel Willems
16:35–16:40	1397 Shape Memory Polymer Added With Monitoring System For The Invention Of Intelligent Brace	Dechun Wang
16:40–16:45	1799 Early Minimally Invasive Surgery Is Associated With Improved Clinical Outcomes In Patients With Traumatic Spinal Fractures And Ankylosing Spondylitis	Fahid Rasul
16:45–17:00	Discussion	

Friday Program Schedule

Friday

November 5, 2021

Location: Room 2

16:00–17:00	Paper Session: Deformity–Thoracolumbar (Adolescent) 2		Moderators:
16:00–16:05	1097	Risk Factors For Implant Failure In Spinal Deformity Correction Surgery. A Cohort Study Of 365 Cases.	Francisco Javier Alonzo González
16:05–16:10	1173	Is Isolated Pulmonary Function Test(Pft), Sufficient To Asses The Pulmonary Status In Scoliosis Deformity Correction Cases?	Jvaghari Jill
16:10–16:15	809	Comparison Of Flexibility Assessments In Adolescent Idiopathic Scoliosis (Flexis)	Kenny Yat Hong Kwan
16:15–16:20	975	Changes In Shoulder Balance And Prediction Of Final Shoulder Imbalance During Growing-Rod Treatment For Early-Onset Scoliosis: A Case Series	Ziyang Liu
16:20–16:25	1587	Should Selective Thoracic Fusion Be Reserved For Non-Structural Compensatory Lumbar Curves? Radiographic And Clinical Results From Propensity Matched Patients At Minimum 5-Year Follow-Up	Jay Reidler
16:25–16:30	78	Fusing To The Pelvis In The Correction Of Scoliosis Associated With Rett Syndrome	Brett Roccos
16:30–16:35	1618	Anterior Versus Posterior Approach For The Treatment Of Lenke 5c Curves In Patients With Idiopathic Scoliosis; Results From The Swedish Spine Registry	Anastasios Charalampidis
16:35–16:40	1185	Effect Of Tranexamic Acid Dosing On The Percent Of Total Blood Lost During Adolescent Idiopathic Scoliosis Surgery	Katherine Krenek
16:40–16:45	1917	Vcr-Based And Non-Vcr-Based Surgical Maneuvers In Deformity Correction For Achieving Spinal Balance In Severe Rigid Scoliosis Patients: Weighing The Odds	Nicholas Van Halm-Lutterodt
16:45–17:00	Discussion		

Friday
November 5, 2021

Location: Room 3

16:00–17:00	Paper Session: Surgical Complications 2		Moderators:
16:00–16:05	1269	Spinal Surgery Complications. An Unsolved Problem. Is The World Health Organization Safety Surgical Checklist An Useful Tool To Reduce Them?	Giovanni Barbanti Bròdano
16:05–16:10	939	Outcomes In Spinal Surgery During The Covid-19 Pandemic	Christine Scarsbrook
16:10–16:15	1077	Adverse Events Occurring Up To 5-Years After Complex Adult Deformity Surgery: A Scolio-Risk-1 Analysis	Meghan Cerpa
16:15–16:20	667	The Influence Of Hospital Type, Insurance Type, And Patient Income On 30-Day Complication And Readmission Rates Following Lumbar Fusion	Alexander Ballatori
16:20–16:25	1915	Endplate Volumetric Bone Mineral Density Is A Predictor For Cage Subsidence Following Lateral Lumbar Interbody Fusion: A Risk Factor Analysis	Conor Jones
16:25–16:30	1873	Severe Short-Term Complications After Cerebrospinal Fluid Leakage Following Lumbar Spine Surgery. A Retrospective Single-Centre Study.	Michal Krakowiak
16:30–16:35	1793	Comparison Of Implant-Related Complications Between The Magnetically Controlled Growing Rod And The Spring Distraction System For The Treatment Of Early Onset Scoliosis.	Justin Lemans
16:35–16:40	388	Complication Rates Following Posterior Lumbar Fusion In Osteoporotic Patients Taking Bisphosphonates	Zorica Buser
16:40–16:45	1312	Safety And Efficacy Of Magnetically Controlled Growing Rods In An Early Onset Scoliosis Population	Henry Turner
16:45–17:00	Discussion		

Friday

Friday Program Schedule

Friday

November 5, 2021

Location: Room 4

16:00–17:00	Paper Session: Clinical Biomechanics 2		Moderators:
16:00–16:05	1036	Spine Stability After Treatment Of Degenerated Intervertebral Discs With Percutaneous Cement Discoplasty	Chloe Techens
16:05–16:10	1702	Analysis Of The Largest Database Of Anthropometric Measurements Of The Occipito-Atlantoaxial Joints	Karim Bayanzay
16:10–16:15	1625	A Simple Biomechanical Study, Reveals That A Reversal In Direction Of Compression, Could Greatly Improve Restoration Of Lordosis In Lumbar Fusion.	Shay Menachem
16:15–16:20	92	Biomechanics Of The Active Apex Correction Technique Of Early Onset Scoliosis: A Parametric Finite Element Study Simulating 6-Month Growth	Alaa Azmi Ahmad
16:20–16:25	640	Update On The Biomechanics Of The Transverse Atlantal Ligament In The Elderly	Basem Ishak
16:25–16:30	974	Influence Of Pelvic Incidence On The Segmental Lordotic Parameters In Normal Adults	Kuldeep Bansal
16:30–16:35	863	Novel Biomechanical Model For Proximal Junctional Kyphosis	Timothy Oconnor
16:35–16:40	899	Association Of Facet Tropism At The Last Mobile Segment With Sacralisation Of The L5 Vertebrae	Sasidharan M D S
16:40–16:45	1726	Implant Surface Functionalization Technologies And The Need Of A Transparent Quality Evaluation System	Dietmar Schaffarczyk
16:45–17:00	Discussion		

Location: Room 1 Live Stream

17:00–18:00	Symposium hosted by KF Tumor: 7 Rules to Treat Metastatic Spine Disease: An Antidote to Failure		Moderators: Ziya Gokaslan
17:00–17:09	Rule#1: Take The Time To Merge Patient Expectations With Outcome		Charles Fisher
17:09–17:17	Rule#2: Decisionomics Is Guiding Treatment		C. Rory Goodwin
17:17–17:26	Rule#3: Timedex Is Everything In Neurological Recovery		Ilya Laufer
17:26–17:34	Rule#4: Match Their Sins To Your Intervention		Anne Versteeg
17:34–17:43	Rule#5: Be Precise With Radiation Treatment		Arjun Sahgal
17:43–17:51	Rule#6: Know The Metastatic Outliers And Act Accordingly		Laurence Rhines
17:51–18:00	Rule#7: Remove The Cause And Adverse Effect		Nicolas Dea

Friday
November 5, 2021

Location: Room 2 **Live Stream**

17:00–18:00	Symposium: Intelligence-Based Spine Care—Implications for Research and Clinical Decision-Making	Moderators:
17:00–17:10	What Is Intelligence Based Spine Care Model What Is Intelligence Based Spine Care Model?	Dino Samartzis
17:10–17:20	Predictive Modelling	Dino Samartzis
17:20–17:30	Augmented Reality	Daniel Sciubba
17:30–17:40	Artificial Intelligence And Spine Deformity	TBD
17:40–17:50	Artificial Intelligence And Spine Tumors	Joseph Schwab
17:50–18:00	Discussion	

Location: Room 3 **Live Stream**

17:00–18:00	Symposium hosted by AO SNA: Controversies in the Management of Cervical Spine Trauma	Moderators:
17:00–17:10	Management Of C1 Ring Fractures—Conservative Versus Fusion Versus Internal Fixation	TBD
17:10–17:20	Hangman'S Fractures—Which Injuries Are Best Managed With Surgery?	Michael Daubs
17:20–17:30	Dens Fractures—Role Of Conservative Versus Anterior Screw Versus C1-C2 Fusion	TBD
17:30–17:40	F4 (Jumped Facets)—Timing Of Mri, Closed Reduction, Anterior Versus Posterior Versus 360	Brandon Lawrence
17:40–17:50	F1 Versus F2 (Unilateral Subaxial Facet Fracture)—How Can I Tell The Difference? Who Should Have Surgery? Anterior Versus Posterior?	Daniel Sciubba

Location: Room 4 **Live Stream**

17:00–18:00	Symposium hosted by KF Degenerative: Bone biologics: A Conundrum of Choice. The AO Spine BONE Classification—What to use and When	Moderators: Zorica Buser Timothy S. Yoon
17:00–17:08	Call For Evidence: Bone Classification	Zorica Buser
17:08–17:16	Bone Classification In Lumbar Spine	Timothy S. Yoon
17:16–17:24	Bone Classification For Osteobiologics For Cervical Fusion	Jeffrey C. Wang
17:24–17:32	Evidence For Acdf Interbodies (Bone Vs. Synthetic)	Amit Jain
17:32–17:40	Is Bone Classification Applicable To Off-Label Biologics?	Patrick Hsieh
17:40–17:48	Next Steps-AOgo	Hans Joerg Meisel
17:48–18:00	Question And Answer	



Saturday

November 6, 2021

Wednesday

Thursday

Friday

Saturday

Saturday Program Schedule

Saturday

November 6, 2021

Location: Room 1 Live Stream

08:00–09:00	Symposium Pearls of Endoscopic Spine Surgery	Moderators:
08:00–08:05	Endoscopic Spine Surgery—Way To Go	Jin–Sung LUKE Kim
08:05–08:12	Interlaminar Endoscopic Lumbar Discectomy For Migrated Disc	Javier Quillo–Olvera
08:12–08:19	Lumbar Endoscopic Ulbd: Advantages Of Full-Endoscopic Over-The-Top Decompression Over Microsurgery	Christoph Siepe
08:19–08:26	Transforaminal Endoscopic Approach For Ventral Facectomy	TBC
08:26–08:33	Thoracolumbar Interfascial Plane (Tlip) Block For An Opioid-Free Early Post-Operative Recovery After Endoscopic Tlif	Christian Morgenstern
08:33–08:40	Endoscopic Approach For Synovial Cyst	Vit Kotheeranurak
08:40–08:47	Endoscopic Lumbar Interbody Fusion—Recent Updates In China	Yong Hai
08:47–08:54	Complication Of Biportal Endoscopic Spine Surgery	Sang Min Park
08:54–09:00	Q & A	

Location: Room 2 Live Stream

08:00–09:00	EANS Symposium	Moderators:
08:00–08:12	Image Guided Cervical Spine Surgery	John Duff
08:12–08:24	The Role Of Navigation In The Surgery Of Spine Tumours	Marcel Ivanov
08:24–08:36	Avoiding ‘Oops’ Surgery In Primary Bone Tumors In The Spine: An Intake Protocol For All Possibly Involved Caregivers In A Large Hospital	Bart Depreitere
08:36–08:48	Concomitant Cranio-Spinal Injury: Lessons From Institutional And Registry Cohorts	Andreas Demetriades
08:48–09:00	Discussion	

Location: Room 3 Live Stream

08:00–09:00	Symposium hosted by Eurospine: Dealing with Spondylarthropathies	Moderators:
08:00–08:10	Diagnostic Criteria And Infection	TBC
08:10–08:15	Discussion	
08:15–08:25	How To Asses And Manage Correction Of Ankylosed Deformity? Sagittal Balance Analysis To Predict Pjk Risk After Fusion	Jean Charles Le Huec
08:25–08:30	Discussion	
08:30–08:40	Minimally Invasive Options And The Use Of Navigation In Trauma With An Ankylosed Spine	Bernhard Meyer
08:40–08:45	Discussion	
08:45–08:55	Quality Of Life In Ankylosing Spine Disorders	TBC
08:55–09:00	Discussion	

Saturday

November 6, 2021

Location: Room 4  **Live Stream**

08:00–09:00	Symposium hosted by AO Spine MENA: Congenital Scoliosis in Children and Adolescents in Countries with Limited Resources	Moderators: Mohammad El-Sharkawi TBC
08:00–08:05	Introduction	Mohammad El-Sharkawi
08:05–08:15	Difficulty Of Screening And Problems Of Care	Atiq Uz Zaman
08:15–08:25	Diagnosis Of Deformity And Search For Associated Anomalies	Amin Henine
08:25–08:35	Functional Treatment And Rehabilitation—Non-Operative Treatment	Muzahem Taha
08:35–08:45	Minimal Surgery Of Minor Forms	Alaa Azmi Ahmad
08:45–08:55	Radical Surgical Treatment Of Advanced Cases	Ahmed Shawky Abdelgawaad
08:55–09:00	Discussion	

09:00–11:30	Live from our studio in Paris: AO Spine Side Events	Moderators:
	Information TBC	

Saturday Program Schedule

Saturday

November 6, 2021

Location: Room 1

09:00–10:00	Paper Session: Robotics, Navigation and VR		Moderators:
09:00–09:05	1310	Learning Curve In Pedicle Screw Insertion Using An Intraoperative Computertomography (Ict) Guided Navigation	Benedikt Trnovec
09:05–09:10	852	The Trends In Robot-Related Complications, Operative Efficacy, Radiation Exposure, And Clinical Outcomes After Robot-Assisted Spine Surgery: A Multicenter Study Of 722 Patients And 5,005 Screws From 2015 To 2019	Nathan Lee
09:10–09:15	1301	The Iliac Kickstand Screw: A Novel Pelvic Screw For Correction Of Coronal Spinal Imbalance	James Lin
09:15–09:20	338	The "Unfair Advantage" Of Mixed-Reality Simulation For Percutaneous Pedicle Screw Placement Makes It As Effective As Cadaver Training: A Prospective Randomized Study With Novice Volunteers.	Simon Weidert
09:20–09:25	1214	Procedural Metrics For Minimally Invasive Lumbar Stenosis Decompression Using A Lumbar Astenosis Simulation Model To Improve The Skills And Accelerate The Learning Curve In Orthopedic And Neurosurgical Trainees	Carolyn Melcher
09:25–09:30	1907	Evolution Of Image Guidance In Minimally Invasive Transforaminal Lumbar Interbody Fusion (Mi-Tlif): Comparing The Learning Curves Of Fluoroscopy, Navigation And Robotics	Avani Vaishnav
09:30–09:35	856	Does Robot-Assisted Spine Surgery Achieve Better Patient-Reported Outcomes Than Freehand Techniques?	Nathan Lee
09:35–09:40	1199	Clinical Outcomes And Complications Of Computer Navigated Minimal Invasive Postero-Lateral Sacro-Iliac Joint Fusion Using A Threaded Bolt System	Carlos De La Torre
09:40–09:45	1128	First Experiences With A Reinforced Lumbopelvic Fixation Technique With 6 Months Follow-Up	Jacques Dominik Müller-Broich
09:45–10:00	Discussion		

Saturday

November 6, 2021

Location: Room 2

09:00–10:00		Paper Session: Trauma–Cervical	Moderators:
09:00–09:05	1080	Long Term Proms (Patient Reported Outcome Measures) For The Non-Operative Management Of Odontoid Peg Fractures In The Elderly.	Andreas Demetriades
09:05–09:10	316	Variation In Global Treatment Practices Of Subaxial Cervical Facet Fractures	Brian Karamian
09:10–09:15	522	Posterior Atlantoaxial Fusion: Technique And Retrospective Case Series	Andrew Platt
09:15–09:20	1172	Risk Factors Associated With 90-Day Readmission Following Odontoid Fractures—A Nationwide Readmissions Database Study	Alexander Von Glinski
09:20–09:25	1263	Diagnostic Imaging In Subaxial Discoligamentous Injury—Is Ct Sufficient ?	Svorad Trnovec
09:25–09:30	1259	Traumatic Cervical Spine Injuries In Rugby Players: A South American Trinational Case Series	Juan José Zamorano
09:30–09:35	604	Regional And Experiential Differences In Surgeon Preferences For The Treatment Of Cervical Facet Injuries	Jose Canseco
09:35–09:40	1420	Unstable Jefferson Burst Fractures: Intraoperative Stability Testing After Posterior Atlas Ring Osteosynthesis (C1-Ro) Regardless Of Dickman Type Transverse Atlantal Ligament (Tal) Lesion Allows Determination Of The Extent Of The Surgical Procedure	Andy Ottenbacher
09:40–09:45	1807	Isolated C1 Fixation For Traumatic Jeffersons Fractures Using A Novel Surgical Technique	Fahid Rasul
09:45–10:00		Discussion	

Saturday Program Schedule

Saturday

November 6, 2021

Location: Room 3

09:00–10:00	Paper Session: Arthroplasty–Cervical		Moderators:
09:00–09:05	1032	Preoperative Ossification And Range Of Motion Were Risk Factors For High-Grade Ossification	Han Wang
09:05–09:10	1001	Comprison Of Two Anterior Hybrid Techniques For Three-Level Cervical Degenerative Disc Disease	Han Wang
09:10–09:15	287	The Impact Of Physical Therapy After Cervical Spine Surgery For Degenerative Spine Disorders: A Systematic Review	Zorica Buser
09:15–09:20	1358	Assessment Of The Self-Reported Dysphagia In Patients Undergoing One-Level Versus Two-Level Cervical Disc Replacement With The Prestige-Lp Prosthesis	Haimiti Abudouaini
09:20–09:25	1968	Management Of Cervical Spondylotic Myelopathy With Total Cervical Disc Replacement: Analysis Of Patients With Clinical And Radiological Signs Of Cervical Myelopathy	Christoph Mehren
09:25–09:30	1119	Effect Of Changes In Postoperative Intervertebral Space Height On Clinical And Radiological Outcomes After Cervical Disc Replacement	Haimiti Abudouaini
09:30–09:35	1026	Effect Of Disc Height And Degree Of Distraction On Heterotopic Ossification After Cervical Disc Replacement	Xiaofei Wang
09:35–09:40	1356	Outcomes Following Cervical Disc Replacement Versus Anterior Cervical Discectomy And Fusion In Patients With Predominantly Neck Pain Complaints	Andre Samuel
09:40–09:45	1018	Cervical Sagittal Alignment After Prestige Lp Cervical Disc Replacement: Radiological Results And Clinical Impacts	Xiaofei Wang
09:45–10:00	Discussion		

Saturday

November 6, 2021

Location: Room 4

09:00–10:00	Paper Session: Spinal Tumor Surgery 2		Moderators:
09:00–09:05	597	Analysis Of Unplanned Hospital Readmissions Up To Two-Years After Metastatic Spine Tumour Surgery	Andrew Thomas
09:05–09:10	736	Symptomatic Ventriculus Terminalis In A 64-Year-Old Female: A Case Report	Mahmoud Ben Messaoud
09:10–09:15	1367	Clinical Outcomes In 91 Patients Treated With Hybrid Spinal Surgery For Metastatic Renal Cell Carcinoma	Ibrahim Hussain
09:15–09:20	723	Neurological Outcome And Respiratory Insufficiency In Intramedullary Tumors Of The Cervical Spine	Vicki Butenschön
09:20–09:25	1750	Apolipoprotein E4 (Rs429358) Variant Genotype: A Risk Gene Associated With Higher Serum Lipid Profile And Spine-Related Neck Or Back Pain	Nicholas Van Halm-Lutterodt
09:25–09:30	614	Responder-Analysis Of Pain Relief After Surgery For The Treatment Of Spinal Metastatic Tumors	Robert Rothrock
09:30–09:35	1296	Clinical Outcomes Of Symptomatic Spinal Metastases Treated With Hybrid Therapy (Separation Surgery Followed By Radiosurgery) For Colorectal Adenocarcinoma	Benjamin Schachner
09:35–09:40	1297	Outcomes Of Surgery Followed By Radiosurgery For Treatment Of Spinal Metastases From Non-Small Cell Lung Cancer: Do Targetable Mutations Matter?	Benjamin Schachner
09:40–09:45	1295	Spinal Cord Compression And Spinal Instability In Multiple Myeloma—A Shifting Paradigm Towards Non-Operative Management	Nikki Shah
09:45–10:00	Discussion		

Saturday Program Schedule

Saturday

November 6, 2021

Location: Room 1

10:30–11:30	Paper Session: Surgical Complications 3	Moderators:
10:30–10:35	592 Human Lumbar Discs Are Not Sterile!—Defining The Normal Intervertebral Disc Microbiome	Shanmuganathan Rajasekaran
10:35–10:40	884 Highly Concentrated Bupivacaine Does Not Lead To Increased Local Toxicity Following Skeletal Surgery: A Proof Of Concept	Jasper Steverink
10:40–10:45	1102 The Influence Of Frailty On The Outcomes Of Spine Surgery; A Systematic Review.	Michael Fehlings
10:45–10:50	1181 Pedicle Screw Stacking : A Technical Note On Instrumentation Of Lumbar Spine With A Broken Pedicle Screw	Jvaghara Jill
10:50–10:55	1137 Tranexamic Acid In Elective Spine Surgery: A Randomised Controlled Trial Analysing The Efficacy Of Intravenous, Local Infiltration And Topical Administration Of Tranexamic Acid	Viswanadha Arun–Kumar
10:55–11:00	1125 Risk Factors For Post-Operative Venous Thromboembolic Events In Patients Undergoing Thoracic Spine Surgery	Wesley Cooperman
11:00–11:05	395 Post-Operative Complications Following Sacroiliac Joint Fusion To Treat Sacrum Pain, Sacroillitis, Sacral Instability, Or Spondylosis	Alexander Ballatori
11:05–11:10	1861 Short Term Complications Related To The Lumbar Interbody Fusion Approach	Mouadh Nefiss
11:10–11:15	1727 Comparing Clinical Outcomes From Pedicle Screw Insertions With Robotic Guidance Vs Freehand Vs Computer Navigated Techniques: A Systematic Review	Joachim Starup–Hansen
11:15–11:30	Discussion	

Saturday

November 6, 2021

Location: Room 2

10:30–11:30	Paper Session: Cervical Trauma		Moderators:
10:30–10:35	1522	Comparing Outcomes Of Subaxial And Alantoaxial Trauma In Elderly Patients	Catherine Carlile
10:35–10:40	1552	Complications Of Anticoagulation Therapy For Thromboembolic Event Prophylaxis In Patients With Cervical Spine Fractures	Stuart Changoor
10:40–10:45	1964	Results In Dorsal Percutaneous C1/C2-Screw-Osteosynthesis In Instable Odontoid Fracture Type Anderson 2 And Combined Fature C1/C2 In The Elderly	Stefan Hauck
10:45–10:50	1764	Timing Of Surgery And Pre-Operative Physiological Parameters As Clinical Outcomes In Traumatic Subaxial Cervical Spine Fractures And Dislocations	Aman Khanna
10:50–10:55	1676	Youtube As A Source Of Patient Information On Cervical Spine Fractures: A Content-Quality And Optimization Analysis.	Michal Krakowiak
10:55–11:00	544	Epidemiological And Surgical Aspects Of Post-Traumatic Syringomyelia In A Rehabilitation Hospital	Vitor Viana Bonan De Aguiar
11:00–11:05	1601	Standard Set Of Network Outcomes For Traumatic Spinal Cord Injury: A Consensus-Based Approach Using The Delphi Method	Martin Pouw
11:05–11:10	13	Pedicle Screw In Lower Cervical Spine	Pashupati Chaudhary
11:10–11:15	499	Modern Guerilla Warfare And Penetrating Missile Injuries Of The Cervical Spine: Characteristics Of Penetrating Missile Injuries To The Cervical Spine In A Large War Time Cohort Of Modern Guerrilla Warfare	Bisola Ajayi
11:15–11:30	Discussion		

Saturday Program Schedule

Saturday

November 6, 2021

Location: Room 3

10:30–11:30	Paper Session: Minimally Invasive Spine Surgery		Moderators:
10:30–10:35	384	Minimally Invasive Vs. Open Surgery For Lumbar Spinal Stenosis In Patients With Diabetes—A Csorn Study	Erin Bigney
10:35–10:40	1342	Patient Reported Outcomes Of Patients That Fail To Reach Minimum Clinically Important Differences: Comparison Of Mis To Open Tlif	Charles Fisher
10:40–10:45	1586	Open Versus Minimally Invasive Transforaminal Lumbar Interbody Fusion: A Matched Cohort Analysis With Five-Year Follow-Up	Daniel Coban
10:45–10:50	1002	Minimally Invasive Scoliosis Surgery With Trans-Kambin Posterior Oblique Lateral Lumbar Interbody Fusion: Single Surgeon Feasibility Study	Hamid Abbasi
10:50–10:55	765	Minimally Invasive Versus Open Transforaminal Lumbar Interbody Fusion In Obese Patients: A Propensity Score Matched Study On Perioperative, Functional And Subjective Outcomes	Graham Goh
10:55–11:00	579	Percutaneous Kyphoplasty Versus Percutaneous Vertebroplasty For Neurologically Intact Osteoporotic Kummell'S Disease: A Systemtic Review And Meta-Analysis	Baoliang Zhang
11:00–11:05	1700	Prospective Comparative Study Of Functional Outcome In Open Vs Minimally Invasive Tubular Discectomy For Lumbar Disc Herniation	Akash Shakya
11:05–11:10	1265	Stable Low Grade Spondylolisthesis Does Not Compromise Clinical Outcomes Of Minimally Invasive Tubular Decompression In Patients With Spinal Stenosis	Morsi Khashan
11:10–11:15	769	Lumbar Interbody Fusion In Adult Isthmic Spondylolisthesis: Does Minimally Invasive Surgery Benefit Patients Compared With Open Surgery?	Reuben Soh
11:15–11:30	Discussion		

Saturday

November 6, 2021

Location: Room 4

10:30–11:30	Paper Session: Deformity–Thoracolumbar (Adolescent)		Moderators:
10:30–10:35	1778	The Analysis Of Progression Of Disc Degeneration In The Unfused Segments In Post-Operative Adolescent Idiopathic Scoliosis—A 10 Year Follow-Up Mri-Based Study	Ajoy P Shetty
10:35–10:40	1250	Studies On The Influence Of Growth Friendly Implants Used In Eos Treatment On Titanium Ion Release Into The Tissue	Anna Danielewicz
10:40–10:45	1015	What A Stranded Whale With Scoliosis Can Teach Us About Human Idiopathic Scoliosis	Steven De Reuver
10:45–10:50	1116	Management Of Progressive Neuromuscular Scoliosis And Respiratory Distress In A Child With Nemaline Rod Myopathy	BALAMURUGAN Thirugnanam
10:50–10:55	1213	Leaving Out Often Difficult To Place Proximal Thoracic Concave Apical Screw(S) In Adolescent Idiopathic Scoliosis (Ais): Are These Screws Necessary?	Joseph Osorio
10:55–11:00	69	The Use Of 3 Rods In Correcting Severe Scoliosis	Brett Rocos
11:00–11:05	28	Development Of Thoracic Kyphosis After High Implant Density Posterior Correction And Fusion For Adolescent Idiopathic Scoliosis	Peter Obid
11:05–11:10	1274	How Close Are We To "Complication Free" Adolescent Idiopathic Scoliosis Fusion Surgery?	Jay Reidler
11:10–11:15	729	Radiographic Outcomes Of 3-D Alif Stand-Alone Cages Implementation For Ads Patients (Retrospective Study)	Dmitry Ptashnikov
11:15–11:30	Discussion		

Saturday Program Schedule

Saturday

November 6, 2021

Location: Room 1 Live Stream

11:30–12:30	Symposium hosted by KF Trauma: Controversies in the Management of Spinal Trauma	Moderators: Cumhur Oner Klaus Schnake
11:30–11:36	Introduction	Alexander Vaccaro
11:36–11:44	Operative Vs Non-Operative Treatment Of A Type Osteoporotic Thoracolumbar Fractures	Klaus Schnake
11:44–11:52	Operative Vs Non-Operative Treatment Of A Type Osteoporotic Thoracolumbar Fractures	Shanmuganathan Rajasekaran
11:52–12:00	Operative Vs. Non-Operative Treatment Of A3/A4 Fractures	Lorin Michael Benneker
12:00–12:08	Operative Vs. Non-Operative Treatment Of A3/A4 Fractures	TBC
12:08–12:16	Operative Vs Non-Operative Treatment Of Osteoporotic Sacral Fractures	Jens Chapman
12:16–12:24	Operative Vs Non-Operative Treatment Of Osteoporotic Sacral Fractures	Frank Kandziora
12:24–12:30	Panel Discussion	Klaus Schnake

Location: Room 2 Live Stream

11:30–12:30	Symposium hosted by KF SCI Degenerative Cervical Myelopathy: Evidence-Based Decision-Making for Optimizing Care	Moderators: Brian Kwon Michael Fehlings
11:30–11:39	Introduction—The Definition Of Dcm And The Global Burden	Michael Fehlings
11:39–11:48	Asymptomatic Cervical Cord Compression: What Is The Natural History, And When Should I Intervene?	TBC
11:48–11:57	Mild Dcm: What Is The Natural History And When Should I Intervene?	Mark Kotter
11:57–12:06	Decision-Making Around Surgical Technique: What Is The Best Surgical Option And How Should I Decide?	Michael Fehlings
12:06–12:15	Adjuvant Treatments To Optimize Recovery: What Else Should I Be Doing In The Surgical Management Of These Patients?	TBC
12:15–12:24	AO Spine Recode Dcm: A Research Toolkit To Accelerate Knowledge Discovery In Dcm	TBC
12:24–12:30	Summary And Discussion	Brian Kwon

Saturday

November 6, 2021

Location: Room 3 Live Stream

11:30–12:30	Symposium hosted by KF Degenerative: Update and Controversies in Cervical Arthroplasty	Moderators: Amit Jain
11:30–11:36	Update On Cervical Arthroplasty	Ashish Diwan
11:36–11:42	Indications, Patient Selection And Technical Pearls	Amit Jain
11:42–11:48	Biomechanics And Implant Design	Avinash Patwardhan
11:48–11:54	Adjacent Segment Disease	Timothy S. Yoon
11:54–12:00	Complications And Revision Strategies	Patrick Hsieh
12:00–12:06	Multi-Level Cervical Arthroplasty	Christopher Martin
12:06–12:12	Role Of The Hybrid Construct	Jeffrey C. Wang
12:12–12:30	Audience Discussion With Panel Q&A	

Location: TBC Live Stream

12:45–13:45	Closing Symposium: Advances in lumbar interbody fusion: Where are we with posterior/lateral /prone lateral techniques?	Moderators: Roger Härtl
12:45–12:55	Advances In Lateral Surgery	TBC
12:55–13:05	Discussion	
13:05–13:15	Prone Lateral—The Way Of The Future	TBC
13:15–13:25	Discussion	
13:25–13:35	Posterior Mis-Interbody Fusion Techniques; Tlif And Beyond	TBC
13:35–13:45	Discussion	



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