

WFNS SPINE COMMITTEE

"Equal Spine Care for All"

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EDITORIAL

Francesco Costa and Nikolay Peev



Dear All,

2023 is close to its end, but one more great event is lacking. In fact, it will start the 18th WFNS Congress in Cape Town in less than a month. It is an excellent opportunity to meet friends, share knowledge, and have fullcon experience in this special city.



As in the last WFNS Congress, the Spine Committee is fully involved in the scientific program with many activities, starting with the Spine Workshop (4 December 2023) and continuing with several sessions during the event, ranging from the role of new technology to teaching, and the different aspect of the spine surgery.

I hope to see many of you in person in Cape Town to share our passion and friendship.

WFNS 2023 Capetown

WFNS Spine Committee - Program Highlights

WFNS Spine Committee has arranged some of the most prominent speakers from all over the World who are experts. They will be traveling to Capetown to share their knowledge and expertise with the Trainees and Spine Surgeons. There will be a Hands-On spine Workshop on 4th November. There are interesting topics related to modern techniques and innovation and the Guidelines and recommendations prepared by the WFNS Spine Committee. There will be exciting debates and discussions on Cutting Edge Technology, AI, Global Spine Health, Robotics and Spinal Navigation, CV Junction Symposium, Innovations, Back Pain, and Trauma guidelines. Some of the most prominent speakers from the Spine Committee Program during WFNS 2023 are as follows.

Master Class in Anatomy: CV Junction Symposium

Consensus and Recommendations on Craniovertebral Junction (Massimiliano Visocchi - Italy)

Plenary Session I

Global Spine Education - Mehmet Zileli (Turkey)

Speciality Breakaways

Lumbar Spine Stenosis and Degenerative Listhesis: Decompression or Fusion

MIS Decompression - Richard Fessler (USA)

MIS Fusion - Nikolay Peev (UK)

Ambassador Session - Innovations in Lumbar Spine Surgery

Endoscopic Decompression & Fusion - Hyeun Sung Kim (Korea)

Minimally Invasive XLIF using K-Wire Guided Cannulated Cages - Jose Soriano (Mexico)

Over the Top Lumbar Surgery - Ciaren Bolger (Ireland)

Current Indications for Endoscopic Approaches in the lumbar spine - Enrique Osorio (Columbia)

Lumbar Spine Objective Measures as the definition of disability - Corinna Zygourakis (USA)

Future of Planning a Spine Surgery - Musa Ibrahim (Nigeria)

Spinal Navigation and Robotics - Innovating and Working with Industry

Working with Industry (Brain Lab) - Christopher Nimsky (Germany)

Exelsius Robot - Muhammad Abd El Bar (USA)

Artificial Intelligence - Anand Veeragavu (USA)

AR/ VR Augmedeix - Tim Witham (USA)

Are Robots Good for Spine Surgery Training ? - Jesus Lafuante (Spain)

Plenary Session: Cutting Edge Technology - AI and Informatics Education, Global Spine Health

Specialty breakaways: Trauma Guidelines

Spinal Dysraphism: Advocacy in Neurosurgery

Specialty breakaways: Back Pain and Lumbar Disc Guidelines

Video on Spine Procedures

Interview of President, EUROSPINE, Marco Teli

Francesco Costa (Italy)

During the 25th Eurospine Congress (4-6th October; Frankfurt - Germany) I met Dr. Marco Teli, President of Eurospine and he kindly granted an interview.

1. How is the situation of the education program in spine surgery in Europe, and endorsed by Eurospine

There are two major diplomas in Europe, one provided by AO Spine with 12-month tuition from international experts and the other from EUROSPINE, with 6 basic and 2 advanced modules from European and North American experts, plus e-learning content. The EUROSPINE diplomas were established in 2012, and several European national societies (like the German, French, and Swiss ones) and the European Association of Neurological Surgeons have reached the equivalent status of their respective diplomas. Therefore, if one considers that EUROSPINE, through its Eussab committee, covers about 8000 members of national spine societies, it is easy to imagine the potential of its educational program on the continent and beyond. Finally, peculiar to the EUROSPINE offer is the integration of surgical and non-surgical knowledge offered by a dynamic, young faculty of international reputation.



2. What are the future prospects for the training program in Eurospine, and which role is for orthopedics and neurosurgeons?

A blend of on-site and online learning is now established in Europe and other developed areas of the globe, providing a balanced mix of involvement for the learners while respecting the needs of busy professionals seeking to improve and certify their knowledge. With regards to spinal practice, I would foresee a brilliant future for those programs that are and will be able to mix the input of different subspecialties: rehabilitation, pain management, epidemiology, and neurological and orthopedic surgery. Successful centers that are quickly developing all over the globe rely on the integration and expertise of professionals from different backgrounds, while single specialty centers are becoming less attractive and productive in terms of scientific production: spinal training should reflect and encourage these needs and developments of everyday practice, as it has always been the role and mission of good Academia.

3. For some years, Eurospine has organized the Eurospine Charity Run. What is the specific purpose?

The purpose of the Charity Run is twofold. On the one hand, to raise awareness of the EUROSPINE FOUNDATION among attendees of the Annual Congress and to promote its ability to attract donations, which will help our educational efforts and ability to provide research grants - among EUROSPINE's core activities. On the other, the Run is a moment of gathering for Members right in the middle of the Congress, which is meant to reinforce the feeling and spirit of belonging to a young yet prestigious scientific Society. And lastly, to remind everyone that aerobic exercise is one of the pillars of spinal wellbeing!

4. You were in the first row in that race. What role have sports played in your professional life?

I have been in the first row in the last two years, first as a Local Host in Milan and then as President of the Society in Frankfurt, to embody the leadership position members have given me the privilege to hold. I have been the youngest President of Eurospine, but younger leaders are in the Presidential line and will soon take my role. Therefore, the image of a dynamic Society that looks at the newer generations of spinal practitioners should be guaranteed. Sports and physical fitness are paramount for me and many fellow surgeons involved in long-lasting and exact operations on the human spine. Long-distance running has been proven to improve resistance to both physical fatigue and the effects of stress (anxiety, raised blood pressure, hyperglycemia/diabetes). It has been the basis of my training for decades. I enjoy it and would suggest our readers cycle (in safety) or run to work when possible to focus on the daily tasks and wash out tiredness at the end of a long day.



5. We know you started to use a spine robot, or better, as you always said, a Co-Bot. How do you see the future of this technology in spine surgery?

You have taught me to see Navigation as the magic glasses, thanks to which we were once blind and we could finally see. What (Co)Robotics gives, in addition, is reproducibility: the mechanical arm, nothing more than a motorized assistant, does not feel fatigued and does not have emotions; it aims for the target we plan it to go to and delivers. The human operator feels more relaxed, and training can happen at a different, higher level since the trainee can do, touch, and see what happens in real-time with less fear of mistakes. Overall, with the limitations of cost (shared with navigation) and potentially of tactile feedback in difficult areas of the spine, my Colleagues and I do find co-botic a great current tool that makes complex procedures easier and safer.



6. What message would you like to give to the young neurosurgeon in the world for WFNS?

Be focused on your desires and share them with your loved ones and best colleagues: they will lead you to professional happiness and inner peace once fulfilled. Be compassionate with your patients, and never forget to put them first in your daily list at work. In return, you will be considered a member of society worth considering. Learn from whom you choose to be your mentors, and never stop daring to ask. Your curiosity and aspiration will gratify mentors. Go beyond limits: medicine has never had borders, physical or intellectual. Neurosurgery is continuously evolving, and you have the privilege of leading this change: live it to the fullest!

Robotics Spinal Surgery: Revolutionizing Precision and Patient Care

Nikolay Peev (UK)

Robotic spinal surgery represents a groundbreaking advancement in medical science, transforming how spinal procedures are performed and improving patient outcomes. This essay explores the evolution of robotic spinal surgery, its current applications, and its profound impact on precision, safety, and patient care. In contemporary medical practice, robotic spinal surgery has expanded its applications significantly. One of the primary advantages lies in the realm of minimally invasive surgery. Robotic systems enable surgeons to perform intricate spinal procedures through small incisions, minimizing tissue damage and accelerating recovery times. These minimally invasive techniques reduce postoperative pain, decrease blood loss, lower infection rates, and shorter hospital stays, significantly enhancing the overall patient experience.

Additionally, robotic spinal surgery offers superior preoperative planning capabilities. Surgeons can create detailed, patient-specific 3D spine models, allowing for precise mapping of the surgical approach. Integration with advanced imaging techniques provides real-time, high-resolution visuals, aiding surgeons in navigating complex anatomical structures with unprecedented accuracy.

Moreover, robotic spinal surgery has a transformative impact on patient care. The enhanced precision and reduced invasiveness of these procedures translate to faster recovery times and improved quality of life for patients. Reduced pain and discomfort post-surgery contribute to a better patient experience, encouraging more individuals to seek necessary spinal interventions without undue fear or apprehension. Furthermore, the technology's ability to customize surgical approaches based on individual patient anatomy ensures tailored, patient-centric care.

The future of robotic spinal surgery holds even more promising prospects. Continued research and development in robotics, combined with advancements in nanotechnology and regenerative medicine, may enable the repair of spinal cord injuries and degenerative spinal conditions at a cellular level. Remote surgery and telemedicine applications could revolutionize healthcare delivery, ensuring access to specialized surgical expertise regardless of geographical constraints. Robotic spinal surgery stands at the forefront of medical innovation, reshaping the landscape of spinal interventions and patient outcomes. With its unparalleled precision, enhanced safety features, and the potential for further technological integration, robotic spinal surgery continues redefining patient care standards. As research and development progress, the future promises even more remarkable advancements, bringing hope and healing to countless individuals suffering from spinal disorders.

Sculpting Excellence: Prof. Majid Samii's Remarkable Sojourn At Xuan Wu Hospital

In the golden autumn of October in Beijing, China—INI warmly welcomed the distinguished return of one of its founding members, Professor Majid Samii, former President of the World Federation of Neurosurgical Societies. Professor Samii's sojourn to China—INI after the long COVID-19 pandemic was marked by a poignant sentiment, likening the experience to a heartfelt return home.

Professor Samii has long been dedicated to the specialized realm of spinal neurosurgery. Noting the dearth of expertise in spinal surgery within the broader field of neurosurgery in China, he emphasized the importance of advancing spinal neurosurgery during the establishment of China—INI in 2000. In a meticulously planned initiative, he dispatched several doctors interested in spinal neurosurgery to Hannover—INI for immersive learning. Upon their return, these doctors, now well-versed in knowledge and skills, established China's inaugural spinal neurosurgery ward. Over the two decades, China—INI's Neurosurgery Spinal Unit has grown remarkably, with an annual surgical volume exceeding 3000 cases. Pioneering internationally acclaimed spinal surgical techniques—including posterior approach joint distraction and fusion for craniovertebral junction deformities, ACAF (Anterior Controllable Antedisplacement Fusion) for cervical OPLL (Opacified Posterior Longitudinal Ligament), 3D-printed artificial vertebral column implant for assisting en-bloc resection of spinal tumors, and OLIF (Oblique Lumbar Interbody Fusion) in treating adult degenerative scoliosis—the center has become a luminary in China spinal neurosurgery. Its impact extends beyond domestic boundaries, showcasing formidable technical prowess on the global stage.

Professor Samii expressed profound satisfaction after a comprehensive presentation on the accomplishments of the China—INI Spinal Neurosurgery Center. In his address, he urged the center to sustain its developmental momentum and actively engage with esteemed global experts in spinal neurosurgery. His visit included meticulously inspecting spinal neurosurgery procedures in the operating theatres. During this, Dr Zan Chen showcased a live surgery on En-Bloc resection of sacrococcygeal chordoma and presented nine similar cases, with Professor Samii providing insightful feedback on each procedure. The master's guidance, in words and actions, was an infusion of enthusiasm and dedication for the craft.



Prof. Majid Samii was warmly welcomed by Prof. Fengzeng Jian.



Preoperative case discussion session between Professor Zan Chen and Professor Majid Samii.



Professor Majid Samii delivered his speech.



Prof. Zan Chen (right) with Prof. Majid Samii (Center) and Prof. Amir Samii (Left)

Interview of a Spine Committee Member

Mirza Pojskic



Jeong-Yoon Park
Korea

1. Kindly introduce yourself and tell us why you chose to become a neurosurgeon.

"I am Jeong-Yoon Park, M.D., Ph.D., currently serving as Professor and the chief of the Department of Spine Neurosurgery at Gangnam Severance Hospital, Yonsei University College of Medicine in Seoul, South Korea. I became a board-certified neurosurgeon in 2003, and it has been 20 years since I chose Spinal neurosurgery as my subspecialty. At Yonsei University College of Medicine, neurosurgery is divided into five subfields: 1. Tumor, 2. Vascular, 3. Functional, 4. Pediatric, and 5. Spine. There are fellowship programs where one can select a specific area of expertise for additional training. I completed a two-year fellowship in Spinal neurosurgery, and though I am a neurosurgeon, I currently only perform spine surgeries.

The reason I became a neurosurgeon dates back to my dreams since entering medical school. I was deeply attracted to neurosurgery, which deals with vitals and performs the most precise surgeries, as inspired by the famous American TV drama 'ER.' This inspired me to pursue my dream of becoming a neurosurgeon."

2. Who were your mentors and role models during neurosurgery and spine surgery training?

During my spinal neurosurgery fellowship training, my mentors were Prof. Yong-Eun Cho, Keun-Su Kim, and Dong-Kyu Chin from the Department of Spinal Neurosurgery at Gangnam Severance Hospital, Yonsei University College of Medicine. Although time has passed, and I now serve as the chief of this department, the lessons learned from my mentors remain invaluable. Their relentless pursuit of clinical excellence and continuous discussions and critiques of surgical cases taught me the proper attitude and approach as a spinal neurosurgeon. I focus on performing minimally invasive spine surgeries among various spine surgeries. The global pioneers in this field, who have always taught with an open mind and engaged in fruitful discussions, are not only my mentors but also my friends."

3. Tell us your advice and recommendations for people starting neurosurgery residency.

"The neurosurgery residency training is widely recognized as the most challenging in South Korea and the World across all medical specialties. Recently, efforts have been made to alleviate the physical hardships of residency by limiting weekly working hours. Still, neurosurgery training remains the most physically and mentally demanding compared to other specialties. Before embarking on this path, one must have a clear self-conviction about why one wants to become a neurosurgeon and what the role of a neurosurgeon entails. My answers to these two questions have always been, 'I believe that a neurosurgeon is a true physician and a true surgeon,' and 'A neurosurgeon is the ultimate and only bastion for neurological diseases requiring surgery.' This belief has guided me through the rigorous training period in neurosurgery."

4. Tell us your thoughts on the role of research in spine surgery and its potential clinical applications.

"In the field of spine research, it is essential to distinguish between clinical and pure research areas. First, the clinical aspect primarily involves surgery-related research. Unlike life-saving procedures, a significant part of spine disease treatment focuses on maintaining the quality of life. This is particularly important due to the spine's unique anatomical feature of being mobile. Therefore, clinical research is crucial in developing surgical methods and instruments that minimize functional impairment post-surgery and continuously comparing new surgical techniques with existing ones to maximize patients' functional abilities.

In pure research, while finding solutions for intractable spinal conditions like spinal cord injuries is a primary goal, it's also vital to broaden the scope beyond just the spine to encompass the entire nervous system, in line with the global interest in neuroscience. This broader perspective is necessary for foundational research. Applying various basic research methodologies used in other fields, such as machine learning, artificial intelligence, neuro mapping, and miRNA, to spine-related research is also a critical axis for basic research in the spine field."

5. What is different in your country's neurosurgical residency, training, and practice compared to the rest of the world?

"In South Korea, becoming a neurosurgeon typically requires a 6-year medical school education, followed by a 1-year general internship and a 4-year neurosurgery residency, totaling 11 years. Due to the mandatory 3-year military service for men in South Korea, and considering that neurosurgery is predominantly male, the total duration extends to 14 years after entering medical school. Additionally, subspecialties like spine surgery require 1-2 years of fellowship. This extensive training period is not significantly different from other countries.

A unique aspect of South Korea's neurosurgical residency is that medical students are often top-tier, owing to medical schools' high national popularity. This results in a high medical care and training standard compared to other countries. However, the overwhelmingly long working and training hours require continuous improvement compared to other specialties. About 80 neurosurgeons are certified annually, which is a relatively high number considering the population of about 50 million. As only a proportion of these neurosurgeons perform surgeries, efficient management of the newly certified neurosurgeons appears necessary."

6. What are your thoughts on the work of the WFNS Spine Committee regarding our educational activities and efforts?

"Recently, neurosurgical societies are increasingly becoming specialized, focusing on gatherings for experts in specific subspecialties. In contrast, the World Federation of Neurosurgical Societies (WFNS) covers generalized neurosurgery as a whole, characterized by the participation of many countries, including those from the third world. WFNS places a greater emphasis on programs for education rather than just presenting the latest research. Advancing these unique goals and characteristics of WFNS is seen as a crucial role of its committee. Enhancing web-based educational programs that can be easily accessible in regions worldwide with insufficient educational environments in spinal neurosurgery is necessary. Also, surgical training programs using cadavers should focus on basic and essential training that can be implemented in various countries rather than cutting-edge surgical techniques and methods requiring many resources.

Furthermore, in the current environment where numerous research findings are continuously published, it is important to synthesize these results and present a consensus that can be easily integrated into actual clinical situations. This would be a significant educational objective of the WFNS Spine Committee.

Interview of a Spine Committee Member

Mirza Pojskic



Manuel Soto
Mexico

1. Kindly introduce yourself and tell us why you chose to become a neurosurgeon?

I consider that neurosurgery is the most complete medical specialty since the central and peripheral nervous system governs the cognitive capacity and motor skills of each human being. The fact that we can intervene in some pathologies and offer a possible cure in such a complicated universe makes neurosurgery wonderful.

2. Who were your mentors and role models during neurosurgery and spine surgery training?

Antonio Maldonado, M.D, Vascular Surgeon; Jaime León, M.D, Skull base surgeon; and José A. Soriano, M.D, Spine Surgeon.

3. Tell us your advice and recommendations for people starting neurosurgery residency.

Remember that the vocation and dedication to the specialty must be complete, and skills and abilities only improve and develop with continuous training and perseverance, always supported by knowledge.

4. What is different in neurosurgical residency, training, and practice in your country compared to the rest of the world?

The most important difference is the technological support. Unfortunately, work faces a limited technical infrastructure.

5. What are your thoughts on the work of the WFNS Spine Committee regarding our educational activities and efforts?

The importance of the work carried out by the WFNS Spine Committee is precisely to integrate the knowledge of different opinion leaders from around the world to carry out activities such as continuing medical education, training workshops, and clinical guides for the care of different pathologies, especially aimed at developing countries.

7. What do you think about training residents in endoscopic procedures during their residency, or should they be reserved for a special fellowship?

I am a big fan of endoscopic spine surgery and am responsible for training my residents and fellows in this area. However, I do not believe that endoscopic spine surgery training is essential during the residency program. Endoscopic spine surgery can be efficiently performed after a relatively short period of focused training, about 3-6 months, providing adequate training in conventional spine surgery.

Recently, in South Korea, there has been an increase in neurosurgeons focusing solely on endoscopic spine surgery without sufficient experience in conventional spine surgery. This trend has led to an ironic situation where the number of endoscopic spine surgeries is increasing. Still, conventional surgical techniques cannot resolve complications arising during these surgeries. Therefore, if a residency program can already include endoscopic neurosurgery, it should certainly be part of the training. However, for institutions not equipped for endoscopic spine surgery, offering an additional training program would be more efficient in the relatively short term in endoscopic spine surgery.

Recommendations of Spine Committee

Dear Reader,

The following recommendations (and correlate papers) will be published in 2023 by the Spine Committee:

- Back Pain
- Lumbar Disc Herniation
- Cranio-Vertebral Junction Pathologies



Moreover, during this year, the Spine Committee completed the Spine Metastasis Consensus (upcoming) and the first round of the Spine Primary Tumor Consensus during the Centenary Congress of Serbia Neurosurgical Society.

We want to remind you that all of the papers of previous Recommendations are open access. The specific recommendations of the spine committee can be found on the website of WFNS: <http://wfns-spine.org/recommendations>

Webinars

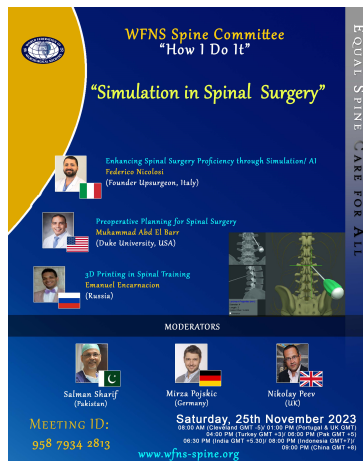
WFNS HOW I DO IT

Simulation in Spine Surgery Training

25th November 2023

[https://youtube.com/live/ciUqrKwYMeM?](https://youtube.com/live/ciUqrKwYMeM?feature=share)

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WFNS HOW I DO IT

Spine Surgery in South America

14th October 2023

[https://youtube.com/live/HD2CNjKENCc?](https://youtube.com/live/HD2CNjKENCc?feature=share)

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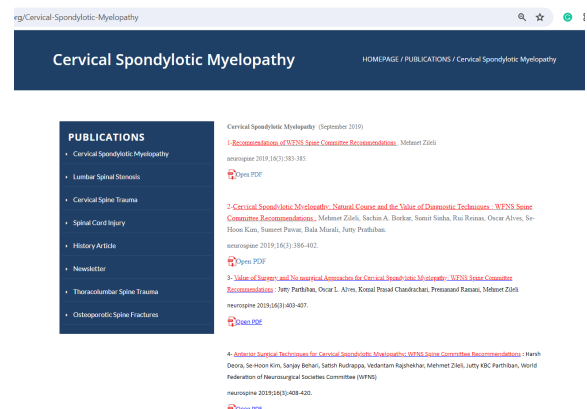
WFNS SPINE COMMITTEE WEBSITE

www.wfns-spine.org

The World Federation of Neurosurgical Societies (WFNS) Spine Committee plays a pivotal role in advancing spinal neurosurgery and fostering global collaboration among neurosurgeons. Comprising experts in the field, the committee is dedicated to promoting education, research, and clinical practice related to spinal disorders. Their publications, ranging from seminal research papers to comprehensive review articles, serve as invaluable resources for young neurosurgeons and trainees seeking to enhance their knowledge and skills in spinal neurosurgery. By disseminating the latest advancements, surgical techniques, and evidence-based practices, these publications not only contribute to the professional development of aspiring neurosurgeons but also elevate the standard of care in spinal surgery worldwide. Access to the WFNS Spine Committee's publications equips young neurosurgeons with a solid foundation and a nuanced understanding of spinal neurosurgery, thereby empowering them to provide optimal patient care and contribute meaningfully to the ever-evolving field.



Upcoming 2nd Spine Tumor Consensus



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2021-2023

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