AO Spine Online Course—Minimally Invasive Spine Surgery (MISS) in Degenerative Spine Conditions and Spine Trauma

Self-directed learning experience
October 26–December 2, 2020

Synchronous live event
December 3–6, 2020
14:00–17:10 CET
Mission
The AO’s mission is promoting excellence in patient care and outcomes in trauma and musculoskeletal disorders.

Purpose statement
The global academic spine community promoting excellence in patient care and outcomes

The AO Spine principles

1. **Stability**
   Stabilization to achieve a specific therapeutic outcome

2. **Alignment**
   Balancing the spine in three dimensions

3. **Biology**
   Etiology, pathogenesis, neural protection, and tissue healing

4. **Function**
   Preservation and restoration of function to prevent disability
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Welcome
Dear AO Spine online course participant,

Welcome to AO Spine Online Course—Minimally Invasive Spine Surgery (MISS) in Degenerative Spine Conditions and Spine Trauma at the AO Davos Courses 2020.

Minimally invasive surgery (MIS) represents technology-supported procedures that reduce local tissue damage and systemic surgical stress, enabling earlier recovery for better outcomes than traditional techniques.

The course will take online teaching to a different level. In the self-directed precourse activities, you will have six weeks of online teaching using various learning materials, interactive discussions, and daily feedback from expert faculty. This will cover the principles of MIS in degenerative spine conditions, and spine trauma, including the basic procedures and techniques with their indications and management of complications. This first part will be followed by a very interesting synchronous live event in December, where internationally recognized faculty will take you through the step-by-step techniques of the procedures. This will take the form of highly interactive group discussions in virtual rooms using surgical videos to highlight the pearls and pitfalls of each procedure.

Sincerely yours,

John France
United States

Alpaslan Senkoylu
Turkey
Event description

The AO Spine Online Course—Minimally Invasive Spine Surgery (MISS) in Degenerative Spine Conditions and Spine Trauma will consist of two parts. The first part is a six-week, self-directed learning experience with educational content that includes recorded lectures, webinars, and reading material, as well as a discussion platform on which you can reflect and discuss your learnings with your faculty and peers. This six-week component will take you from the principles of MIS in degenerative spine conditions and spine trauma, through the surgical anatomy, indications, and management of complications, to the more advanced procedures.

The second part of the course is a four-day, synchronous, live online event (December 3–6) during which you, along with the faculty, will participate in live case discussions and surgical technique demos with interactive live discussions. These lively case discussions are specifically picked to cover indications, approaches, surgical techniques, and managing complications of MIS in degenerative spine conditions and spine trauma.
Goals of the course

The AO Spine Online Course—Minimally Invasive Spine Surgery (MISS) in Degenerative Spine Conditions and Spine Trauma will benefit both junior and more experienced spine surgeons. While junior spine surgeons will learn the basic MISS principles in degenerative spine conditions and trauma of the spinal column, senior spine surgeons will get an excellent opportunity to broaden their MISS practice by discussing complex cases with their peers as well as experts.

Target participants

The AO Spine Online Course—Minimally Invasive Spine Surgery (MISS) in Degenerative Spine Conditions and Spine Trauma is targeted at fully qualified medical specialists who have considered, but have not yet adopted, minimally invasive spinal procedures. It also targets spine surgeons who want to broaden the spectrum of MISS they offer to their patients.

Learning objectives

- Describe the surgical anatomy for MISS.
- Define the indications and contraindications of MISS for spinal trauma.
- Determine the indications and contraindications of MISS for degenerative spine conditions.
- Recognize specific steps and precautions to minimize radiation exposure during the procedure.
- Outline the principles of spinal navigation and its use for minimally invasive spinal procedures.
- Identify and manage complications and apply backup plan.
Chairpersons

John France
United States

Alpaslan Senkoylu
Turkey

Richard Bransford
United States

International faculty

Torphong Bunmaprasert,
Thailand

Alejandro Morales Ciancio,
Argentina

Praveen Mummaneni,
United States

Nestor Taboada,
Colombia

Mike Weber,
United States
Event structure

Week 1:
Faculty: Alejandro Morales Ciancio, Praveen Mummaneni
- Introduction of course

Week 2:
Faculty: Alejandro Morales Ciancio, Praveen Mummaneni
- Describe the surgical anatomy for MISS in spine.
- Define the indications and contraindications of MISS for spinal trauma.
- Determine the indications and contraindications of MISS for degenerative spine conditions.

Week 3:
Faculty: Alejandro Morales Ciancio, Praveen Mummaneni
- Describe the preoperative planning in MISS cases.
- Define the basic procedural steps of percutaneous fixation in thorocolumbar (TL) trauma.

Week 4:
Faculty: Alejandro Morales Ciancio, Praveen Mummaneni
- Define the key procedural steps of MISS decompression
- Describe the procedural steps of MISS transforaminal lumbar interbody fusion (TLIF) and anterior lumbar interbody fusion (ALIF).

Week 5:
Faculty: Alejandro Morales Ciancio, Praveen Mummaneni
- Define the indications and procedural steps of MISS in degenerative deformity
- Recognize specific steps and precautions to minimize radiation exposure during the procedure
- Outline the principles of spinal navigation and its use for minimally invasive spinal procedures

Week 6:
Faculty: Alejandro Morales Ciancio, Praveen Mummaneni
- Identify and manage complications and apply backup plan

Synchronous live event

December 3–6, 2020

General structure
There will be four three-hour sessions, with three one-hour case discussion per session. Each day’s session will have a moderator and three faculty with presentations and the other faculty will participate in the discussions. Each one-hour case discussion will include:
- A 5-minute case presentation by the assigned faculty
- A 10-minute small group discussion involving all course faculty (each one leading a group)
- A 15-minute full group discussion led by the moderator of that session
- A 15-minute presentation by the same faculty presenting the case (literature, techniques, and instructional materials such as videos) to give participants an understanding of how to handle such a case.
- A 15-minute case conclusion by the faculty
- A 10-minute transition period
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<tr>
<td>10 minutes</td>
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<td><strong>Module 1</strong></td>
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<td>Moderator: John France</td>
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<td><strong>Far lateral discectomy</strong></td>
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<tr>
<td>50 minutes</td>
<td>Case 1</td>
<td>Far lateral discectomy</td>
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<td><strong>Module 2</strong></td>
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<td>Moderator: John France</td>
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<td><strong>Mid-lumbar asymmetric collapse with foraminal stenosis and radiculopathy</strong></td>
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<tr>
<td>50 minutes</td>
<td>Case 2</td>
<td>Mid-lumbar asymmetric collapse with foraminal stenosis and radiculopathy</td>
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<td>Break</td>
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<td><strong>Module 3</strong></td>
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<td>Moderator: John France</td>
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<td><strong>Cervical foraminal stenosis or herniation of the nucleus pulposus with radiculopathy (candidate for posterior laminoforaminotomy)</strong></td>
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<td>50 minutes</td>
<td>Case 3</td>
<td>Cervical foraminal stenosis or herniation of the nucleus pulposus with radiculopathy (candidate for posterior laminoforaminotomy)</td>
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Module 4
Moderator: Rick Bransford
Lumbar stenosis with slight degenerative spondylolisthesis without instability
50 minutes Case 4
Lumbar stenosis with slight degenerative spondylolisthesis without instability
10 minutes Break

Module 5
Moderator: Rick Bransford
Degenerative spondylolisthesis with stenosis and instability criteria for fusion
50 minutes Case 5
Degenerative spondylolisthesis with stenosis and instability criteria for fusion
10 minutes Break

Module 6
Moderator: Rick Bransford
Grade 2 L5-S1 isthmic spondylolisthesis with foraminal stenosis and L5 radiculopathy
50 minutes Case 6
Grade 2 L5-S1 isthmic spondylolisthesis with foraminal stenosis and L5 radiculopathy
Saturday  
December 5, 2020

**Module 7**  
**Moderator: Rick Bransford**  
**Type B TL fracture with large boney component or pediatric true chance fracture**

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<td><strong>Case 7</strong></td>
<td>Type B TL fracture with large boney component or pediatric</td>
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<td>true chance fracture</td>
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**Module 8**  
**Moderator: Rick Bransford**  
**Ankylosing spondylitis fracture**

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<td><strong>Case 8</strong></td>
<td>Ankylosing spondylitis fracture</td>
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<td>Break</td>
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**Module 9**  
**Moderator: Rick Bransford**  
**Minimally displaced or insufficiency sacral U fracture**

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<td>50 minutes</td>
<td><strong>Case 6</strong></td>
<td>Minimally displaced or insufficiency sacral U fracture</td>
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### Module 10
**Moderator: John France**

HNP or lateral recess stenosis above or below fusion without instability that is amenable to simple MISS in spine decompression

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| 50 minutes | **Case 10**  
HNP or lateral recess stenosis above or below fusion without instability that is amenable to simple MISS in spine decompression |
| 10 minutes | Break |

### Module 11
**Moderator: John France**

Degenerative scoliosis or old idiopathic with radiculopathy in fraction L5-S1 curve

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| 50 minutes | **Case 11**  
Degenerative scoliosis or old idiopathic with radiculopathy in fraction L5-S1 curve |
| 10 minutes | Break |

### Module 12
**Moderator: John France**

Deformity amenable to anterior fusion (anterior lumbar interbody fusion (ALIF), oblique lumbar interbody fusion (OLIF), lateral lumbar interbody fusion (LLIF)) and posterior percutaneous fixation

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| 50 minutes | **Case 12**  
Deformity amenable to anterior fusion (anterior lumbar interbody fusion (ALIF), oblique lumbar interbody fusion (OLIF), lateral lumbar interbody fusion (LLIF)) and posterior percutaneous fixation |
Event organization

AO Spine International
Brian Amster
Clavadelerstrasse 8
7270 Davos
Switzerland
Phone +41 76 526 17 32
E-mail bamster@aospine.org

Participant management

AO Spine International
Mohamed Said
Clavadellerstrasse 8
7270 Davos
Switzerland
Phone +41 79 715 49 90
E-mail msaid@aospine.org

AO funding sources
Unrestricted educational grants from different sources are collected and pooled together centrally by the AO. All events are planned and scheduled by local and regional AO surgeon groups based on local needs assessments. We rely on industrial commercial partners for in-kind support to run simulations and/or skills training if educationally necessary.

Event information and logistics

Event organization compliance
In certain countries where the AO has no office but offers educational events, the AO cooperates with third-party companies to conduct local organization and logistics, as well as to communicate with participants in the local language. In these cases, the AO has put rules and guidelines in place to ensure that this cooperation has no impact on the curricula, scientific program, or faculty selection.
General information

Event fee
AO Spine nonmember: CHF 1,110
AO Spine member: CHF 965.70

European CME Accreditation
An application has been made to the UEMS-EACCME® in Brussels for CME accreditation of this event.

Disclosures and conflicts of interest
Disclosure information and potential conflicts of interest (COI) can be viewed at the event webpage.

Evaluation guidelines
All AO Spine events apply the same evaluation process, which includes pre- and post-event online evaluation and on-site written questionnaires. These evaluation tools help ensure that AO Spine continues to meet your training needs.

Intellectual property
Event materials, presentations, and case studies are the intellectual property of the event faculty.
All rights are reserved. For more information, please see: www.aofoundation.org/legal.

Recording, photographing, or copying lectures, practical exercises, case discussions, or any event materials is strictly forbidden. Participants violating intellectual property will be dismissed.

The AO reserves the right to film, photograph, and audio record during its events. Participants must understand that in this context they may appear in these recorded materials. The AO assumes participants agree that these recorded materials may be used for the AO’s marketing and other purposes, and that they may be made available to the public.

Event language
English
Sponsors

We thank our major industry partners, DePuy Synthes and Siemens, for contributing key in-kind support (materials and logistics), without which this event would not be possible, as well as an unrestricted educational grants for this event.
Principles of AO educational events

1. Academic independence
Development of all curricula, design of scientific event programs, and selection of faculty are the sole responsibilities of volunteer AO network surgeons. All education is planned based on needs assessment data, designed and evaluated using concepts and evidence from the most current medical education research, and reflects the expertise of the AO Education Institute (www.aofoundation.org). Industry participation is not allowed during the entire curriculum development and planning process to ensure academic independence and to keep content free from bias.

2. Compliance to accreditation and industry codes
All planning, organization, and execution of educational activities follow existing codes for accreditation of high-quality education:
- Accreditation Criteria of the Accreditation Council for Continuing Medical Education, US (www.accme.org)
- ACCME Standards for Commercial Support: Standards to Ensure Independence in CME Activities (www.accme.org)
- Criteria for Accreditation of Live Educational Events of the European Accreditation Council for Continuing Medical Education (www.uems.eu)

Events that receive direct or indirect unrestricted educational grants or in-kind support from industry also follow the ethical codes of the medical industry, such as:
- Eucomed Guidelines on Interactions with Healthcare Professionals (www.medtecheurope.org)
- AdvaMed Code of Ethics on Interactions with Health Care Professionals (www.advamed.org)
- Mecomed Guidelines on Interactions with Healthcare Professionals (www.mecomed.com)

3. Branding and advertising
No industry logos or advertising (apart from the AO Foundation and its clinical divisions) are permitted in the area where educational activities take place.

Sponsors providing financial or in-kind support are allowed to have a promotional booth or run activities outside the educational area with approval from the event chairperson.

4. Use of technologies and products in practical sessions
In case practical sessions are chosen as an educational method to educate skills, the technologies and products used have been approved or reviewed by the AO Technical Commission—a large independent group of volunteer surgeons developing and peer-reviewing new technology on behalf of the AO Foundation.

Any technology and/or products used in the practical sessions of this event have been found suitable to serve the defined educational purposes. This does not imply any statement about its use and performance in actual clinical scenarios.

More information on the AO Technical Commission can be found on the AO’s website: www.aofoundation.org/tc.

5. Personnel
Industry staff members are not permitted to interfere with the educational content or engage in educational activities during the event.
AO Research Institute Davos (ARI)

Mission
The AO mission is promoting excellence in patient care and outcomes in trauma and musculoskeletal disorders.

AO Research Institute Davos (ARI)
In its work to further the AO mission, ARI's purpose is to advance patient care through innovative orthopedic research and development. Orthopedics concerns musculoskeletal, spine and craniomaxillofacial trauma, degenerative musculoskeletal diseases, infections, and congenital disorders.

Goals
- Contribute high-quality, applied preclinical research and development focused toward clinical applications/solutions.
- Investigate and improve the performance of surgical procedures, devices and substances.
- Foster a close relationship with the AO medical community, academic societies, and universities.
- Provide research environment/support/training for AO clinicians.

Meet with our team including our ARI Medical Research Fellows, establish contacts, freely discuss your clinical problems and ideas, and learn about the latest results from ARI.

Collaborative research programs
- Annulus fibrosus rupture
- Acute cartilage injury
- Osteochondral defect

Craniomaxillofacial
- Imaging and planning of surgery, computer aided preoperative planning
- Medication-related osteonecrosis of the jaw
- Bone regeneration and 3D printing

Spine
- Degeneration and regeneration of the intervertebral disc
- Biomarkers and patient outcomes

Trauma
- Bone infection, including the development and testing of active anti-infective interventions
- Sensing implants for objective monitoring of fracture healing
- Development of smart surgical tools
- New implant concepts for optimized bone healing
- Prediction of subject-specific risk of proximal humeral fixation failure via computational tools
- Development of generic Asian pelvic bone model
- Patient outcomes and biomarkers

Veterinary medicine
- Improving osteosynthesis for small and large animals

Multidisciplinary
- 3R principles: refinement of preclinical studies
- Bioreactor culture systems and mechanobiology
- Development, standardization, optimization, and improvement of preclinical models and methods
- Ex vivo testing using advanced biomechanical models
- Gene transfer: non-viral and viral
- Implant design using the finite element methods
- Implant positioning assistance, C-arm guided implant placement
- In-vivo and in-vitro quantification of bone turnover and scaffold degradation
- Medical additive manufacturing and biofabrication
- Medical computed tomography (CT) image processing and analysis
- Polymers to deliver cells and biological factors, create potential space for tissue development, and guide the process of tissue regeneration
- Prototype development and production
- Stem cell therapies for the treatment of bone, intervertebral disc, and cartilage defects

For the AO Research Institute Davos Activity Report 2019 and recent publications, go to www.aofoundation.org/ari/publications.
AO Spine membership
Join our global spine care community

Gain access to numerous privileges, including the most advanced educational programs, a worldwide network of professionals, and the highest quality of research carried out by experts and key opinion leaders in spine care.

Apply for membership
www.aospine.org