

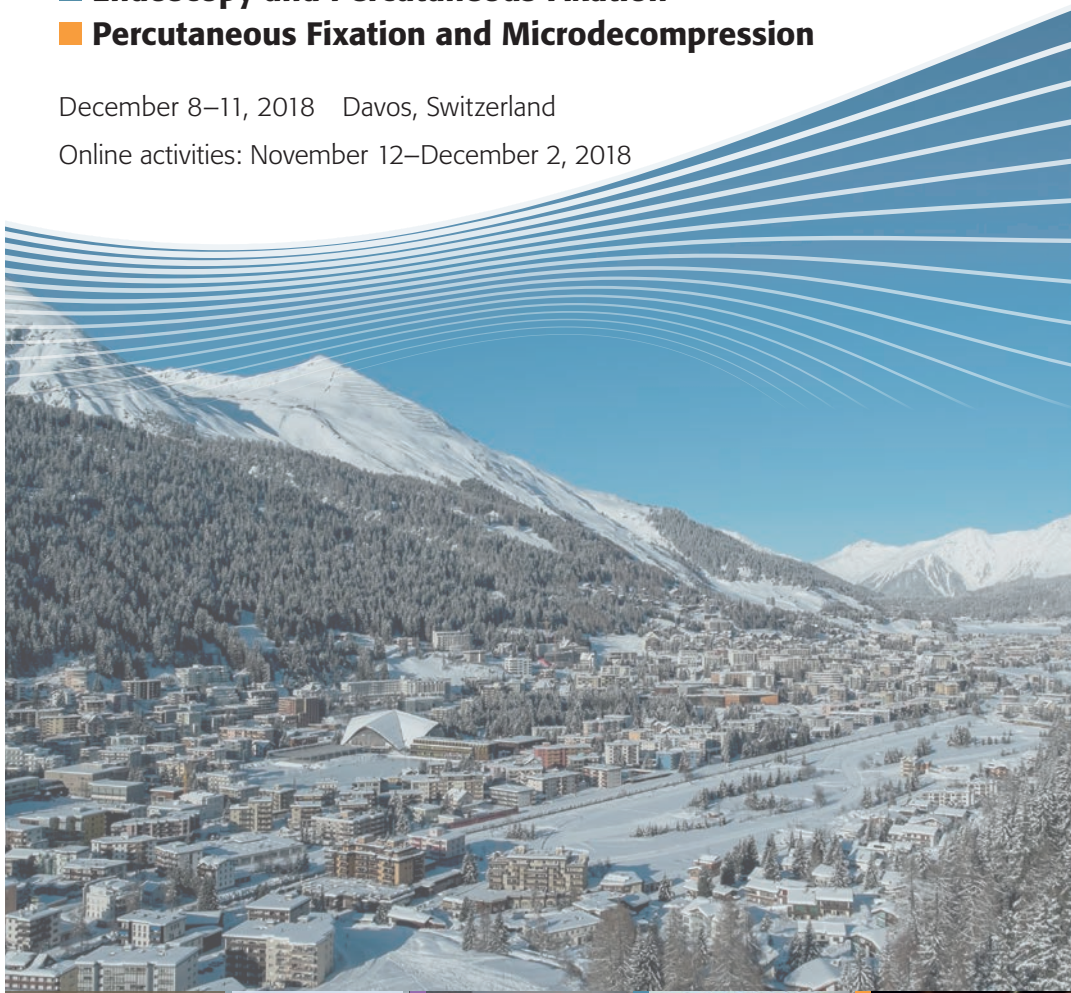
Event Program

AOSPINE Davos Courses 2018

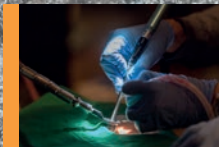
- **Microdecompression and Endoscopy**
- **Endoscopy and Percutaneous Fixation**
- **Percutaneous Fixation and Microdecompression**

December 8–11, 2018 Davos, Switzerland

Online activities: November 12–December 2, 2018



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spine care
worldwide



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allows me to
be connected
to surgeons
worldwide.**

And acts as a **source of knowledge for current thinking** and change in the concepts of spine surgery in other parts of the world."

**Shanmuganathan
Rajasekaran**
AOSpine International
Chairperson



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Never stop learning,
never stop improving



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Research that matters,
improving patient care



Networking

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Content

- 3 Welcome
- 4 Floor plan
- 5 Mission | Purpose statement
- 5 Course format
- 6 Chairpersons
- 6 Educational Advisors
- 7 Faculty members
- 8 Endoscopy course
- 9 Microdecompression course
- 10 Percutaneous Fixation course
- 11 Schedule at a glance
- 12 Microdecompression and Endoscopy
- 18 Endoscopy and Percutaneous fixation
- 24 Percutaneous fixation and Microdecompression
- 30 Event organization
- 30 Event information and logistics
- 31 Event venue and opening times
- 32 Exhibitions | Sponsors
- 33 Business center | WiFi
- 34 General information
- 35 AO Foundation—Principles of AO Educational Events
- 36 AO Research Institute (ARI)
- 38 Upcoming Davos Courses 2019

Design your personal AOSpine Davos Courses 2018!

Dear colleagues

Welcome to the 2018 Davos Courses, which are focusing entirely on minimally invasive spine surgery (MISS).

Participants of all levels of practice will have the opportunity to improve their use of the microscope, the endoscope and work on their percutaneous fixation skills.

All courses include case discussions and hands-on sessions on a life-like simulator as well as online course preparations and provide an outstanding occasion to train under the supervision of world-renowned MISS experts.

Also, make sure you don't miss "the good, the bad, the ugly—a case that taught me a lesson" discussions in the afternoon—a great chance to benefit from the experiences of others and to discuss best practices with your peers.

Our renowned international faculty will not only share their extensive knowledge and skills with you but also make sure that you get the best learning experience possible.

As always during the Davos Courses, you will have plenty of time for discussions and networking with spine experts from all over the world.

I hope you will enjoy this outstanding learning experience and wish you a wonderful time in Davos.

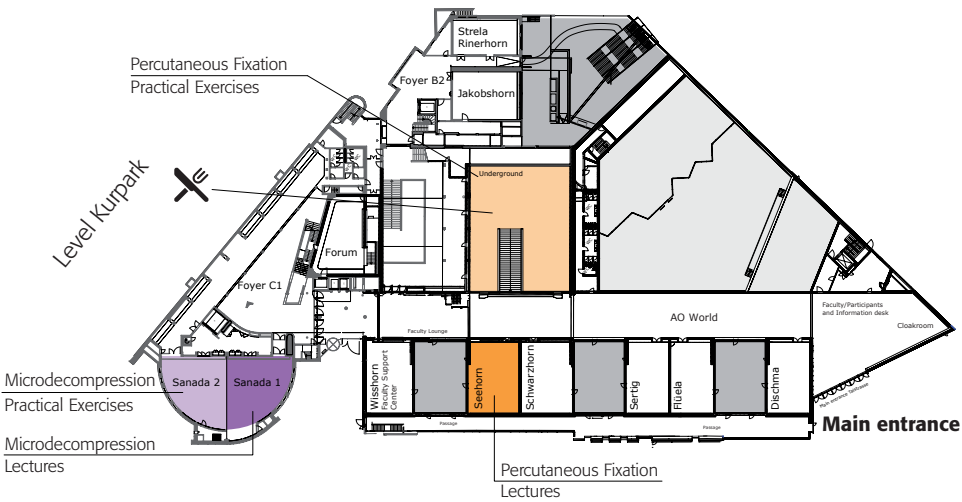
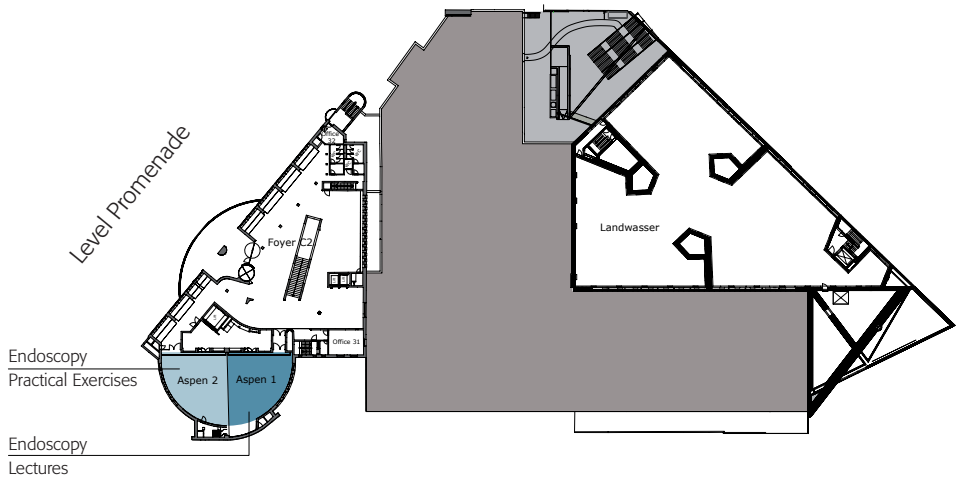
Best wishes



Bryan Ashman

Chairperson AOSpine Education Commission

Floor plan



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.

Course format

Over three extraordinary days, participants at the Davos Courses 2018 will have multiple opportunities to interact with renowned worldwide faculty who will be teaching MISS at the expert level. These specialists will share their knowledge and experiences in an appropriate faculty-to-participant ratio course setting and will focus on the most relevant, evidence-based information and current controversies in spine surgery.

This year we offer three separate courses emphasizing hands-on experiences on the latest techniques, and offer participants a way to improve their MISS skills on the microscope, the endoscope, and in percutaneous screw placement.

The following courses are offered:

- **Course 1:** AOSpine Davos Courses—Microdecompression and Endoscopy
- **Course 2:** AOSpine Davos Courses—Endoscopy and Percutaneous Fixation
- **Course 3:** AOSpine Davos Courses—Percutaneous Fixation and Microdecompression

The three AOSpine Davos Courses 2018 are targeted at participants of all levels of practice in spine surgery who would like to advance in MISS. Participants will register for one of the above courses focusing on two techniques over three days, including hands-on exercises, case discussions on general related topics and the famous "the good, the bad, and the ugly—a case that taught me a lesson" panel discussion.

Course Director



Bryan Ashman
Canberra Hospital
Canberra, Australia

Chairpersons

Endoscopy course module



Jin Sung Kim
Seoul St Mary's Hospital, The Catholic University
of Korea, Seoul, South Korea

Microdecompression course module



Avelino Parajon
Hospital Universitario Ramón y Cajal,
Madrid, Spain

Percutaneous Fixation course module



Muhammed Assous
Razi Spine Clinic,
Amman, Jordan

Educational Advisors



Manabu Ito
National Hospital Organization Hokkaido Medical
Center, Sapporo, Japan



Patrick Tropicano
Hopital de la Timone,
Marseille, France



Muzahem Taha
Sardam Hospital,
Erbil, Iraq

Faculty members

Endoscopy course module:

Chien-Min Chen

Christoph Hofstetter

Jun-Ho Lee

Abhay Nene

Si Young Park

Peter van Daele

Taiwan, Asia Pacific

USA, North America

South Korea, Asia Pacific

India, Asia Pacific

South Korea, Asia Pacific

Belgium, Europe and Southern Africa

Microdecompression course module:

Richard Assaker

Luiz Gustavo Dal Oglio da Rocha

Kevin Foley

Matti Scholz

Nestor Taboada Taboada

Jake Timothy

France, Europe and Southern Africa

Brazil, Latin America

USA, North America

Germany, Europe and Southern Africa

Colombia, Latin America

UK, Europe and Southern Africa

Percutaneous fixation course module:

Amer Aziz

Daniel Gelb

Roger Härtl

Jean-Pierre Mobasser

Ahmed Shawky Abdelgawaad

Paul Taylor

Pakistan, Middle East and Northern Africa

USA, North America

USA, North America

USA, North America

Germany, Europe and Southern Africa

Australia, Asia Pacific

Endoscopy course module

Why you should attend this course and how it could benefit your daily practice

Endoscopic spine surgery has been accepted for many kinds of spinal diseases.

Currently, we are seeing the beginning of a paradigm shift in spine surgery toward more minimally invasive techniques. As the chairperson of the endoscopy course module at the AOSpine Davos Courses 2018, I strongly recommend this course because it will give you the opportunity to change your life and improve your patients' outcomes, which is the goal of every MISS spine surgeon.

What the “hands-on” format will provide

This 1.5 day course will cover basic endoscopic procedures—transforaminal, interlaminar discectomy, and unilateral laminotomy and bilateral decompression—for lumbar disc herniation and lumbar spinal stenosis.

All participants will have intensive discussions with expert endoscopic spine surgeons and they will gain an understanding of the best indications for each endoscopic procedure available, in addition to its benefits and risks.

By offering endoscopy teaching in AOSpine, I am confident that this format provides an optimal learning setting to overcome the steep learning curve and enables every participant to start endoscopic spine procedures.

Learning objectives

- Diagnose the patient problem and recognize appropriate indications and contraindications for endoscopic spinal surgery
- Select the appropriate endoscopic spinal procedure and set up the technology, operating room, and team
- Manage complications and apply a backup plan
- Perform the key steps of endoscopic procedures through interlaminar and transforaminal access
- Recognize possible complications in endoscopic procedures and describe how to avoid these
- Integrate current evidence and expert techniques to determine the optimal treatment for lumbar disc herniation



Jin Sung Kim
Chairperson

Seoul St Mary's Hospital,
The Catholic University of Korea,
Seoul, South Korea

Microdecompression course module

Why you should attend this course and how it could benefit your daily practice

Microsurgical MISS microsurgical techniques for decompression and fusion are now established tools that can contribute to better outcomes and fewer complications for patients with spinal conditions.

Microsurgical MISS decompression techniques also allow us to treat elderly patients or those with serious medical conditions when open surgeries may be contraindicated or have high risk.

What the “hands-on” format will provide

The format of the course is based on real cases with “real” simulators reflecting the daily practice of a spine surgeon, in small groups and from worldwide experts in the field. This provides the opportunity to discuss the indications, pros and cons and surgical tips and tricks with the experts and other colleagues and to practice the surgical techniques on realistic models of the spinal diseases.

Learning objectives

- Diagnose the patient problem and recognize appropriate indications and contraindications for MISS
- Select the appropriate MISS procedure and set up the technology, operating room, and team
- Manage complications and apply a backup plan
- Use microsurgical instruments and perform basic techniques for the lumbar spine
- Describe and perform the key steps of lumbar decompression and MISS transforaminal lumbar interbody fusion (TLIF) through tubular retractors
- Identify and address potential complications with the lumbar tubular microsurgical approach



Avelino Parajon
Chairperson

Hospital Universitario Ramón y Cajal,
Madrid, Spain

Percutaneous Fixation course module

Why you should attend this course and how it could benefit your daily practice

Percutaneous screw placement is an integral part of most MISS procedures requiring instrumentation. Adult spinal deformity correction, trauma reduction and stabilization, degenerative spinal fusions, and many infection/tumor cases require pedicle screw insertion. This can be effectively and safely achieved percutaneously, reducing unnecessary tissue and muscle dissection, and bleeding, and enhances post-operative patient recovery.

What the “hands-on” format will provide

The hands-on format, the signature of the AOSpine Davos Courses 2018, ensures the maximum increase of knowledge as it deals with actual clinical cases that may present to any spine surgeon's clinic using realistic simulators in a supervised training environment. Backed up with highly interactive discussions moderated by world renowned experts, based on the best available evidence, ideas and concepts are challenged and redefined. This is what usually improves one's practice and patients' care. The hands-on framework is most useful to show and explain the real and proven advantages of MISS.

Learning objectives

- Diagnose the patient problem and recognize appropriate indications and contraindications for MISS
- Select the appropriate MISS procedure and set up the technology, operating room, and team
- Manage complications and apply a backup plan
- Take specific steps and precautions to minimize radiation exposure during percutaneous fixation
- Identify radiological landmarks required for safe and accurate placement of a trephine needle into the pedicle
- Correctly and safely insert percutaneous pedicle screws in the thoracic and lumbar spine



Muhammed Assous
Chairperson
 Razi Spine Clinic,
 Amman, Jordan

Schedule at a glance

Saturday, December 8

TIME	AGENDA ITEM
12:00–16:00	Participant registration
16:00–18:30	AO Foundation 60th Anniversary Celebration and Opening Ceremony
18:30–19:30	Anniversary Reception

Sunday, December 9

TIME	AGENDA ITEM
08:00–08:30	AOSpine opening session
08:30–10:00	<div> <div>Microdecompression and Endoscopy</div> <div>Endoscopy and Percutaneous Fixation</div> <div>Percutaneous Fixation and Microdecompression</div> </div>
10:00–10:30	COFFEE BREAK
10:30–12:00	<div> <div>Microdecompression and Endoscopy</div> <div>Endoscopy and Percutaneous Fixation</div> <div>Percutaneous Fixation and Microdecompression</div> </div>
12:00–13:00	LUNCH BREAK
13:00–15:00	<div> <div>Microdecompression and Endoscopy</div> <div>Endoscopy and Percutaneous Fixation</div> <div>Percutaneous Fixation and Microdecompression</div> </div>
15:00–15:30	COFFEE BREAK
15:30–17:30	<div> <div>Microdecompression and Endoscopy</div> <div>Endoscopy and Percutaneous Fixation</div> <div>Percutaneous Fixation and Microdecompression</div> </div>
17:45–18:45	"The good, the bad, and the ugly—a case that taught me a lesson" session

Monday, December 10

TIME	AGENDA ITEM
08:00–10:00	<div> <div>Microdecompression and Endoscopy</div> <div>Endoscopy and Percutaneous Fixation</div> <div>Percutaneous Fixation and Microdecompression</div> </div>
10:00–10:20	COFFEE BREAK
10:20–12:30	<div> <div>Microdecompression and Endoscopy</div> <div>Endoscopy and Percutaneous Fixation</div> <div>Percutaneous Fixation and Microdecompression</div> </div>
12:30–13:30	LUNCH BREAK
13:30–15:00	<div> <div>Microdecompression and Endoscopy</div> <div>Endoscopy and Percutaneous Fixation</div> <div>Percutaneous Fixation and Microdecompression</div> </div>
15:00–15:30	COFFEE BREAK
15:30–17:00	<div> <div>Microdecompression and Endoscopy</div> <div>Endoscopy and Percutaneous Fixation</div> <div>Percutaneous Fixation and Microdecompression</div> </div>
17:15–18:15	"The good, the bad, and the ugly—a case that taught me a lesson" session
18:15–20:30	AO World Night (social event)

Tuesday, December 11

TIME	AGENDA ITEM
08:00–10:00	<div> <div>Microdecompression and Endoscopy</div> <div>Endoscopy and Percutaneous Fixation</div> <div>Percutaneous Fixation and Microdecompression</div> </div>
10:00–10:30	COFFEE BREAK
10:30–12:30	<div> <div>Microdecompression and Endoscopy</div> <div>Endoscopy and Percutaneous Fixation</div> <div>Percutaneous Fixation and Microdecompression</div> </div>
12:30–13:30	LUNCH BREAK
13:30–15:30	<div> <div>Microdecompression and Endoscopy</div> <div>Endoscopy and Percutaneous Fixation</div> <div>Percutaneous Fixation and Microdecompression</div> </div>
15:30–15:50	COFFEE BREAK
15:50–18:00	<div> <div>Microdecompression and Endoscopy</div> <div>Endoscopy and Percutaneous Fixation</div> <div>Percutaneous Fixation and Microdecompression</div> </div>

Microdecompression and Endoscopy

Sunday, December 9

LOCATION: **Microdecompression:** Room Sanada 1 and 2, House C

TIME	AGENDA ITEM	WHO
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08:00–08:30	AOSpine opening session	B Ashman
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Introduction to the microdecompression course module—part I Moderator: A Parajon

08:30–08:45	Welcome to course module—introduction to MISS microsurgical techniques	A Parajon
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08:45–09:00	Integration of microscope into surgical flow	A Parajon
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09:00–09:15	How to use microsurgical tools	N Taboada
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09:15–09:30	Evidence for tubular techniques	LG Dal Oglio da Rocha
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09:30–09:45	Navigation and MISS	J Timothy
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09:45–10:00	Advantages and disadvantages of microsurgical tubular techniques	K Foley
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10:00–10:30	COFFEE BREAK	
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Introduction to the microdecompression course module—part II Moderator: K Foley

10:30–10:45	Indirect microsurgical decompression—interspinous devices	J Timothy
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10:45–11:00	Step-by-step microsurgical discectomy	M Scholz
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11:00–11:15	Step-by-step over the top decompression	A Parajon
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11:15–11:30	Microsurgical tubular dural repair	N Taboada
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11:30–11:45	Step-by-step MISS tubular TLIF	R Assaker
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11:45–12:00	Step-by-step cervical tubular foraminotomy	K Foley
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12:00–13:00	LUNCH BREAK	
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13:00–14:00	Case 1—Lumbar stenosis (without spondylolisthesis)	M Scholz, P Tropicano
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- Indication for surgery
- Indication for decompression only vs stabilization—advantages of MISS vs open surgery in terms of less postoperative instability
- Surgical approaches
- Complications management

Microdecompression and Endoscopy

Sunday, December 9

LOCATION: **Microdecompression:** Room Sanada 1 and 2, House C

TIME	AGENDA ITEM	WHO
14:00–15:00	Case 2—Lumbar spondylolisthesis and stenosis <ul style="list-style-type: none"> • Indication for surgery • Indication for decompression only vs stabilization • Surgical approaches: TLIF, XLIF, laminectomy • Complications management 	M Scholz, P Tropiano
15:00–15:30	COFFEE BREAK	
15:30–16:30	Case 3—Cervical foraminal disc <ul style="list-style-type: none"> • Surgical indications • Anterior vs posterior approach • Fusion vs decompression • Tubular approach vs endoscopy • Tips and tricks 	M Scholz, P Tropiano
16:30–17:30	Case 4—Lumbar synovial cyst <ul style="list-style-type: none"> • Physiopathology • Surgical indication • Complications cerebrospinal fluid (CSF) leak • Tubular contralateral approach • The need for instrumentation and fusion vs excision only • Other MISS options (punction) 	M Scholz, P Tropiano
13:00–17:30 incl. coffee break	Practical exercises (parellel session) <ul style="list-style-type: none"> • Over the top laminectomy, ipsilateral decompression • Over the top laminectomy, contralateral decompression • Microdiscectomy • CSF leak repair 	A Parajon, K Foley, LG Dal Oglio da Rocha, R Assaker, N Taboada, J Timothy
LOCATION: Hotel Ameron, Room Symondpark I		
17:45–18:45	The good, the bad, and the ugly—a case that taught me a lesson in microdecompression	R Assaker, K Foley, J Timothy

Microdecompression and Endoscopy

Monday, December 10

LOCATION: **Microdecompression:** Room Sanada 1 and 2, House C

TIME	AGENDA ITEM	WHO
08:00–09:00	Case 1–Lumbar stenosis (without spondylolisthesis) <ul style="list-style-type: none">• Indication for surgery• Indication for decompression only vs stabilization—advantages of MISS vs open surgery in terms of less postoperative instability• Surgical approaches• Complications management	M Scholz, P Tropiano
09:00–10:00	Case 2–Lumbar spondylolisthesis and stenosis <ul style="list-style-type: none">• Indication for surgery• Indication for decompression only vs stabilization• Surgical approaches: TLIF, XLIF, laminectomy• Complications management	M Scholz, P Tropiano
10:00–10:20	COFFEE BREAK	
10:20–11:20	Case 3–Cervical foraminal disc <ul style="list-style-type: none">• Surgical indications• Anterior vs posterior approach• Fusion vs decompression• Tubular approach vs endoscopy• Tips and tricks	M Scholz, P Tropiano
11:20–12:20	Case 4–Lumbar synovial cyst <ul style="list-style-type: none">• Physiopathology• Surgical indication• Complications cerebrospinal fluid (CSF) leak• Tubular contralateral approach• The need for instrumentation and fusion vs excision only• Other MISS options (puncture)	M Scholz, P Tropiano
08:00–12:20 incl. coffee break 10:00–10:20	Practical exercises (parallel session) <ul style="list-style-type: none">• Over the top laminectomy, ipsilateral decompression• Over the top laminectomy, contralateral decompression• Microdiscectomy• CSF leak repair	A Parajon, K Foley, LG Dal Oglio da Rocha, R Assaker, N Taboada, J Timothy
12:20–12:30	Closing session of course module	A Parajon, P Tropiano
12:30–13:30	LUNCH BREAK	

Microdecompression and Endoscopy

Monday, December 10

LOCATION: **Endoscopy:** Room Aspen 1 and 2, House C

TIME	AGENDA ITEM	WHO
Introduction to the endoscopy course module—part I Incorporating spinal endoscopy into your routine practice		Moderator: M Ito
13:30–13:40	Welcome to course module—introduction to endoscopy	JS Kim
13:40–13:55	Critical reappraisal of spinal endoscopy based on historical evidence	JH Lee
13:55–14:10	Optimizing case selection and surgical indications for spinal endoscopy	P van Daele
14:10–14:25	Anatomical considerations prior to spinal endoscopy	CM Chen
14:25–14:40	Recent advances in spinal endoscopy preceding publication	SY Park
14:40–15:00	Questions and answers	All faculty
15:00–15:30	COFFEE BREAK	

Introduction to the endoscopy course module—part II Navigating through technical details for spinal endoscopy

Moderator: R Härtl

15:30–15:45	Customizing your operating room for spinal endoscopy; set up considerations	P van Daele
15:45–16:00	Transforaminal vs interlaminar approach (based on foraminal morphometry)	CM Chen
16:00–16:15	Commonly expected complications and their management tactics	JH Lee
16:15–16:30	Feasibility of endoscopic revision surgery	C Hofstetter
16:30–17:00	Questions and answers	All faculty

LOCATION: Hotel Ameron, Room Campanello

17:15–18:15	The good, the bad, and the ugly—a case that taught me a lesson in endoscopy	CM Chen, JH Lee, A Nene
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Microdecompression and Endoscopy

Tuesday, December 11

LOCATION: **Endoscopy:** Room Aspen 1 and 2, House C

TIME	AGENDA ITEM	WHO
08:00–09:00	Case 1—Huge migrated lumbar disc herniation: which approach?	M Ito, A Nene
09:00–10:00	Case 2—Twice recurring lumbar disc herniation: still going for another endoscopy?	M Ito, A Nene
10:00–10:30	COFFEE BREAK	
10:30–11:30	Case 3—Is an endoscopic solution available for the facet cyst combined with lumbar stenosis?	M Ito, A Nene
11:30–12:30	Case 4—What is the best MISS solution for lateral recess stenosis?	M Ito, A Nene
08:00–12:30 incl. coffee break	Practical exercises (parallel session)	
10:00–10:30	<ul style="list-style-type: none">• The ideal trajectory of transforaminal endoscopy• Transforaminal endoscopic discectomy• Transforaminal endoscopic foraminotomy• Interlaminar endoscopic discectomy at L5S1• Interlaminar endoscopic lateral recess decompression• Interlaminar endoscopic laminotomy and bilateral decompression	JS Kim JH Lee CM Chen P van Daele SY Park C Hofstetter
12:30–13:30	LUNCH BREAK	
13:30–14:30	Case 1—Huge migrated lumbar disc herniation: which approach?	M Ito, A Nene
14:30–15:30	Case 2—Twice recurring lumbar disc herniation: still going for another endoscopy?	M Ito, A Nene
15:30–15:50	COFFEE BREAK	

Microdecompression and Endoscopy

Tuesday, December 11

LOCATION: **Endoscopy:** Room Aspen 1 and 2, House C

TIME	AGENDA ITEM	WHO
15:50–16:50	Case 3—Is an endoscopic solution available for the facet cyst combined with lumbar stenosis?	M Ito, A Nene
16:50–17:50	Case 4—What is the best MISS solution for lateral recess stenosis?	M Ito, A Nene
13:30–17:50 incl. coffee break	Practical exercises (parallel session)	
15:30–15:50	<ul style="list-style-type: none"> • The ideal trajectory of transforaminal endoscopy • Transforaminal endoscopic discectomy • Transforaminal endoscopic foraminotomy • Interlaminar endoscopic discectomy at L5S1 • Interlaminar endoscopic lateral recess decompression • Interlaminar endoscopic laminotomy and bilateral decompression 	JS Kim JH Lee CM Chen P van Daele SY Park C Hofstetter
17:50–18:00	Closing session of course module End of course	

■ Endoscopy and Percutaneous Fixation

Sunday, December 9

LOCATION: **Endoscopy:** Room Aspen 1 and 2, House C

TIME	AGENDA ITEM	WHO
08:00—08:30	AOSpine opening session	B Ashman
Introduction to the endoscopy course module—part I Incorporating spinal endoscopy into your routine practice		Moderator: M Ito
08:30—08:40	Welcome to course module—introduction to endoscopy	JS Kim
08:40—08:55	Critical reappraisal of spinal endoscopy based on historical evidence	JH Lee
08:55—09:10	Optimizing case selection and surgical indications for spinal endoscopy	P van Daele
09:10—09:25	Anatomical considerations prior to spinal endoscopy	CM Chen
09:25—09:40	Recent advances in spinal endoscopy preceding publication	SY Park
09:40—10:00	Questions and answers	All faculty
10:00—10:30	COFFEE BREAK	
Introduction to the endoscopy course module—part II Navigating through technical details for spinal endoscopy		Moderator: A Nene
10:30—10:45	Customizing your operating room to spinal endoscopy; set up considerations	P van Daele
10:45—11:00	Transforaminal vs interlaminar approach (based on foraminal morphometry)	CM Chen
11:00—11:15	Commonly expected complications and their management tactics	JH Lee
11:15—11:30	Feasibility of endoscopic revision surgery	C Hofstetter
11:30—12:00	Questions and answers	All faculty
12:00—13:00	LUNCH BREAK	

Endoscopy and Percutaneous Fixation

Sunday, December 9

LOCATION: **Endoscopy:** Room Aspen 1 and 2, House C

TIME	AGENDA ITEM	WHO
13:00–14:00	Case 1–Huge migrated lumbar disc herniation: which approach?	M Ito, A Nene
14:00–15:00	Case 2–Twice recurring lumbar disc herniation: still going for another endoscopy?	M Ito, A Nene
15:00–15:30	COFFEE BREAK	
15:30–16:30	Case 3–Is an endoscopic solution available for the facet cyst combined with lumbar stenosis?	M Ito, A Nene
16:30–17:30	Case 4–What is the best MISS solution for lateral recess stenosis?	M Ito, A Nene
13:00–17:30 incl. coffee break	Practical exercises (parallel session)	
15:00–15:30	<ul style="list-style-type: none"> • The ideal trajectory of transforaminal endoscopy • Transforaminal endoscopic discectomy • Transforaminal endoscopic foraminotomy • Interlaminar endoscopic discectomy at L5S1 • Interlaminar endoscopic lateral recess decompression • Interlaminar endoscopic laminotomy and bilateral decompression 	JS Kim JH Lee CM Chen P van Daele SY Park C Hofstetter
LOCATION: Hotel Ameron, Room Campanello		
17:45–18:45	The good, the bad, and the ugly—a case that taught me a lesson in endoscopy	C Hofstetter, SY Park, P van Daele

■ Endoscopy and Percutaneous Fixation

Monday, December 10

LOCATION: **Endoscopy:** Room Aspen 1 and 2, House C

TIME	AGENDA ITEM	WHO
08:00–09:00	Case 1—Huge migrated lumbar disc herniation: which approach?	M Ito, A Nene
09:00–10:00	Case 2—Twice recurring lumbar disc herniation: still going for another endoscopy?	M Ito, A Nene
10:00–10:20	COFFEE BREAK	
10:20–11:20	Case 3—Is an endoscopic solution available for the facet cyst combined with lumbar stenosis?	M Ito, A Nene
11:20–12:20	Case 4—What is the best MISS solution for lateral recess stenosis?	M Ito, A Nene
08:00–12:30 incl. coffee break	Practical exercises (parallel session)	
10:00–10:20	<ul style="list-style-type: none">• The ideal trajectory of transforaminal endoscopy• Transforaminal endoscopic discectomy• Transforaminal endoscopic foraminotomy• Interlaminar endoscopic discectomy at L5S1• Interlaminar endoscopic lateral recess decompression• Interlaminar endoscopic laminotomy and bilateral decompression	JS Kim JH Lee CM Chen P van Daele SY Park C Hofstetter
12:20–12:30	Closing session of course module	JS Kim, M Ito
12:30–13:30	LUNCH BREAK	

■ Endoscopy and Percutaneous Fixation

Monday, December 10

LOCATION: **Percutaneous Fixation:** Room Seehorn, House A, Bunker rooms

TIME	AGENDA ITEM	WHO
Introduction to the percutaneous fixation course module–part I		Moderator: P Taylor
13:30–13:40	Welcome to course module—introduction to percutaneous screw fixation	M Assous
13:40–13:50	Percutaneous screws: literature review	A Aziz
13:50–14:00	Ionizing radiation: safety and tips to minimize exposure	R Härtl
14:00–14:10	Square vertebra concept, entry point and trajectory	D Gelb
14:10–14:20	Lumbar percutaneous screws: technique and tips	A Shawky Abdelgawaad
14:20–14:30	Thoracic percutaneous screws: technique and tips	JP Mobasser
14:30–14:40	Percutaneous screw fixation in the pelvis	D Gelb
14:40–15:00	Discussion	All faculty
15:00–15:30	COFFEE BREAK	
Introduction to the percutaneous fixation course module–part II		Moderator: D Gelb
15:30–15:40	Rod application, compression and distraction techniques	JP Mobasser
15:40–15:50	Multiaxial vs monoaxial screws: tips in trauma	A Aziz
15:50–16:00	Percutaneous screws: tips in fusion surgery	P Taylor
16:00–16:10	Percutaneous screws: in the osteoporotic spine	P Taylor
16:10–16:20	Percutaneous screws: complications and avoidance	A Shawky Abdelgawaad
16:20–16:30	Navigated screws: added value?	R Härtl
16:30–17:00	Discussion	All faculty
LOCATION: Hotel Ameron, Room Symondpark II		
17:15–18:15	The good, the bad, and the ugly—a case that taught me a lesson in percutaneous fixation	R Härtl, JP Mobasser, D Gelb

Endoscopy and Percutaneous Fixation

Tuesday, December 11

LOCATION: **Percutaneous Fixation:** Room Seehorn, House A, Bunker rooms

TIME	AGENDA ITEM	WHO
08:00–09:00	Case 1–Degeneration (TLIF)	A Shawky Abdelgawaad
09:00–10:00	Case 2–Adult deformity	D Gelb
10:00–10:30	COFFEE BREAK	
10:30–11:30	Case 3–Trauma	A Shawky Abdelgawaad
11:30–12:30	Case 4–Infection and tumors	D Gelb
08:00–12:30 incl. coffee break	Practical exercises (parallel session)	
10:00–10:30	<ul style="list-style-type: none"> • Percutaneous screw placement in the proximal thoracic spine • Percutaneous screw placement in the middle lower thoracic spine • Percutaneous screw placement in the lumbar spine • Screw placement into the pelvis • Rod insertion, compression and distraction • Navigated screws 	A Aziz M Assous M Taha P Taylor JP Mobasser R Härtl
12:30–13:30	LUNCH BREAK	
13:30–14:30	Case 1–Degeneration (TLIF)	A Shawky Abdelgawaad
14:30–15:30	Case 2–Adult deformity	D Gelb
15:30–15:50	COFFEE BREAK	
15:50–16:50	Case 3–Trauma	A Shawky Abdelgawaad
16:50–17:50	Case 4–Infection and tumors	D Gelb
13:30–17:50 incl. coffee break	Practical exercises (parallel session)	
15:30–15:50	<ul style="list-style-type: none"> • Percutaneous screw placement in the proximal thoracic spine • Percutaneous screw placement in the middle lower thoracic spine • Percutaneous screw placement in the lumbar spine • Screw placement into the pelvis • Rod insertion, compression and distraction • Navigated screws 	A Aziz M Assous M Taha P Taylor JP Mobasser R Härtl
17:50–18:00	Closing session of course module End of course	M Assous, M Taha

Education

AO Surgery Reference— Expertise just when you need it

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Luiz Vialle—General Editor

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Percutaneous Fixation and Microdecompression

Sunday, December 9

LOCATION: **Percutaneous Fixation:** Room Seehorn, House A, Bunker rooms

TIME	AGENDA ITEM	WHO
08:00–08:30	AOSpine opening session	B Ashman
Introduction to the percutaneous fixation course module–part I		Moderator: P Taylor
08:30–08:40	Welcome to course module—introduction to percutaneous fixation	M Assous
08:40–08:50	Percutaneous screws: literature review	M Taha
08:50–09:00	Ionizing radiation: safety and tips to minimize exposure	R Härtl
09:00–09:10	Square vertebra concept, entry point and trajectory	D Gelb
09:10–09:20	Lumbar percutaneous screws: technique and tips	A Shawky Abdelgawaad
09:20–09:30	Thoracic percutaneous screws: technique and tips	JP Mobasser
09:30–09:40	Percutaneous screw fixation in the pelvis	D Gelb
09:40–10:00	Discussion	All faculty
10:00–10:30	COFFEE BREAK	
Introduction to the percutaneous fixation course module–part II		Moderator: D Gelb
10:30–10:40	Rod application, compression and distraction techniques	JP Mobasser
10:40–10:50	Multiaxial vs monoaxial screws: tips in trauma	M Assous
10:50–11:00	Percutaneous screws: tips in fusion surgery	P Taylor
11:00–11:10	Percutaneous screws: in the osteoporotic spine	P Taylor
11:10–11:20	Percutaneous screws: complications and avoidance	A Shawky Abdelgawaad
11:20–11:30	Navigated screws: added value?	R Härtl
11:30–12:00	Discussion	All faculty
12:00–13:00	LUNCH BREAK	

Percutaneous Fixation and Microdecompression

Sunday, December 9

LOCATION: **Percutaneous Fixation:** Room Seehorn, House A, Bunker rooms

TIME	AGENDA ITEM	WHO
13:00–14:00	Case 1–Degeneration (TLIF)	A Shawky Abdelgawaad
14:00–15:00	Case 2–Adult deformity	D Gelb
15:00–15:30	COFFEE BREAK	
15:30–16:30	Case 3–Trauma	A Shawky Abdelgawaad
16:30–17:30	Case 4–Infection and tumors	D Gelb
13:00–17:30 incl. coffee break	Practical exercises (parallel session)	
15:00–15:30	<ul style="list-style-type: none"> • Percutaneous screw placement in the proximal thoracic spine • Percutaneous screw placement in the middle lower thoracic spine • Percutaneous screw placement in the lumbar spine • Screw placement into the pelvis • Rod insertion, compression and distraction • Navigated screws 	A Aziz M Assous M Taha P Taylor JP Mobasser R Härtl

LOCATION: Hotel Ameron, Room Symondpark II

17:45–18:45	The good, the bad, and the ugly—a case that taught me a lesson in percutaneous fixation	A Aziz, A Shawky Abdelgawaad, P Taylor
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Percutaneous Fixation and Microdecompression

Monday, December 10

LOCATION: **Percutaneous Fixation:** Room Seehorn, House A, Bunker rooms
Microdecompression: Room Sanada 1 and 2, House C

TIME	AGENDA ITEM	WHO
08:00–09:00	Case 1–Degeneration (TLIF)	A Shawky Abdelgawaad
09:00–10:00	Case 2–Adult deformity	D Gelb
10:00–10:20	COFFEE BREAK	
10:20–11:20	Case 3–Trauma	A Shawky Abdelgawaad
11:20–12:20	Case 4–Infection and tumors	D Gelb
08:00–12:20 incl. coffee break	Practical exercises (parallel session)	
10:00–10:20	<ul style="list-style-type: none"> • Percutaneous screw placement in the proximal thoracic spine • Percutaneous screw placement in the middle lower thoracic spine • Percutaneous screw placement in the lumbar spine • Screw placement into the pelvis • Rod insertion, compression and distraction • Navigated screws 	A Aziz M Assous M Taha P Taylor JP Mobasser R Härtl
12:20–12:30	Closing session of course module	M Assous, M Taha
12:30–13:30	LUNCH BREAK	
Introduction to the microdecompression course module—part I		Moderator: A Parajon
13:30–13:45	Welcome to course module—introduction to MISS microsurgical techniques	A Parajon
13:45–14:00	Integration of microscope into surgical flow	A Parajon
14:00–14:15	How to use microsurgical tools	N Taboada
14:15–14:30	Evidence for tubular techniques	LG Dal Oglio da Rocha
14:30–14:45	Navigation and MISS	J Timothy
14:45–15:00	Advantages and disadvantages of microsurgical tubular techniques	K Foley
15:00–15:30	COFFEE BREAK	

Percutaneous Fixation and Microdecompression

Monday, December 10

LOCATION: **Microdecompression:** Room Sanada 1 and 2, House C

TIME	AGENDA ITEM	WHO
Introduction to the microdecompression course module—part II		Moderator: K Foley
15:30–15:45	Indirect microsurgical decompression—interspinous devices	J Timothy
15:45–16:00	Step-by-step microsurgical discectomy	M Scholz
16:00–16:15	Step-by-step over the top decompression	A Parajon
16:15–16:30	Microsurgical tubular dural repair	N Taboada
16:30–16:45	Step-by-step MISS tubular TLIF	R Assaker
16:45–17:00	Step-by-step cervical tubular foraminotomy	K Foley

LOCATION: Hotel Ameron, Room Symondpark I

17:15–18:15	The good, the bad, and the ugly—a case that taught me a lesson in microdecompression	LG Dal Oglio da Rocha, N Taboada, R Assaker
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Percutaneous Fixation and Microdecompression

Tuesday, December 11

LOCATION: **Microdecompression:** Room Sanada 1 and 2, House C

TIME	AGENDA ITEM	WHO
08:00–09:00	Case 1—Lumbar stenosis (without spondylolisthesis) <ul style="list-style-type: none"> • Indication for surgery • Indication for decompression only vs stabilization—advantages of MISS vs open surgery in terms of less postoperative instability • Surgical approaches • Complications management 	M Scholz, P Tropiano
09:00–10:00	Case 2—Lumbar spondylolisthesis and stenosis <ul style="list-style-type: none"> • Indication for surgery • Indication for decompression only vs stabilization • Surgical approaches: TLIF, XLIF, laminectomy • Complications management 	M Scholz, P Tropiano
10:00–10:30	COFFEE BREAK	
10:30–11:30	Case 3—Cervical foraminal disc <ul style="list-style-type: none"> • Surgical indications • Anterior vs posterior approach • Fusion vs decompression • Tubular approach vs endoscopy • Tips and tricks 	M Scholz, P Tropiano
11:30–12:30	Case 4—Lumbar synovial cyst <ul style="list-style-type: none"> • Physiopathology • Surgical indication • Complications cerebrospinal fluid (CSF) leak • Tubular contralateral approach • The need for instrumentation and fusion vs excision only • Other MISS options (punction) 	M Scholz, P Tropiano
08:00–12:30 incl. coffee break 10:00–10:30	Practical exercises (parellel session) <ul style="list-style-type: none"> • Over the top laminectomy, ipsilateral decompression • Over the top laminectomy, contralateral decompression • Microdiscectomy • CSF leak repair 	A Parajon, K Foley, LG Dal Oglio da Rocha, R Assaker, N Taboada, J Timothy
12:30–13:30	LUNCH BREAK	

Percutaneous Fixation and Microdecompression

Tuesday, December 11

LOCATION: **Microdecompression:** Room Sanada 1 and 2, House C

TIME	AGENDA ITEM	WHO
13:30–14:30	Case 1–Lumbar stenosis (without spondylolisthesis) <ul style="list-style-type: none"> • Indication for surgery • Indication for decompression only vs stabilization—advantages of MISS vs open surgery in terms of less postoperative instability • Surgical approaches • Complications management 	M Scholz, P Tropiano
14:30–15:30	Case 2–Lumbar spondylolisthesis and stenosis <ul style="list-style-type: none"> • Indication for surgery • Indication for decompression only vs stabilization • Surgical approaches: TLIF, XLIF, laminectomy • Complications management 	M Scholz, P Tropiano
15:30–15:50	COFFEE BREAK	
15:50–16:50	Case 3–Cervical foraminal disc <ul style="list-style-type: none"> • Surgical indications • Anterior vs posterior approach • Fusion vs decompression • Tubular approach vs endoscopy • Tips and tricks 	M Scholz, P Tropiano
16:50–17:50	Case 4–Lumbar synovial cyst <ul style="list-style-type: none"> • Physiopathology • Surgical indication • Complications cerebrospinal fluid (CSF) leak • Tubular contralateral approach • The need for instrumentation and fusion vs excision only • Other MISS options (puncture) 	M Scholz, P Tropiano
13:30–17:50 incl. coffee break	Practical exercises (parallel session) <ul style="list-style-type: none"> • Over the top laminectomy, ipsilateral decompression • Over the top laminectomy, contralateral decompression • Microdiscectomy • CSF leak repair 	A Parajon, K Foley, LG Dal Oglio da Rocha, R Assaker, N Taboada, J Timothy
17:50–18:00	Closing session of course module End of course	A Parajon, P Tropiano

Event organization

Course organization

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Melanie Schatz
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AO funding sources

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

Event information and logistics

Accommodation

Please refer to the event page www.aodavoscourses.org for more information about accommodation and special hotel rates for Davos courses participants.

Travel by car

Davos is located in the heart of Grisons (Graubünden) in the east of Switzerland, about 150 km from Zurich. It takes approximately 2 hours from Zurich. Four-wheel drive and winter tires are strongly recommended at this time of the year. Depending on road conditions, you may need snow chains on the last few kilometers.

Travel by plane

The nearest airport is Zurich Airport. From there you can travel to Davos either by train or by car.

Travel by train

A regular train service will conveniently take you from Zurich main station or Zurich Airport to Davos Platz; travel time is approximately 3 hours. Tickets and train schedule available at: www.sbb.ch

Event venue and opening times

Congress Center Davos

Talstrasse 49A
7270 Davos,
Switzerland
Phone +41 81 414 62 00
Fax +41 81 414 62 29

AO World

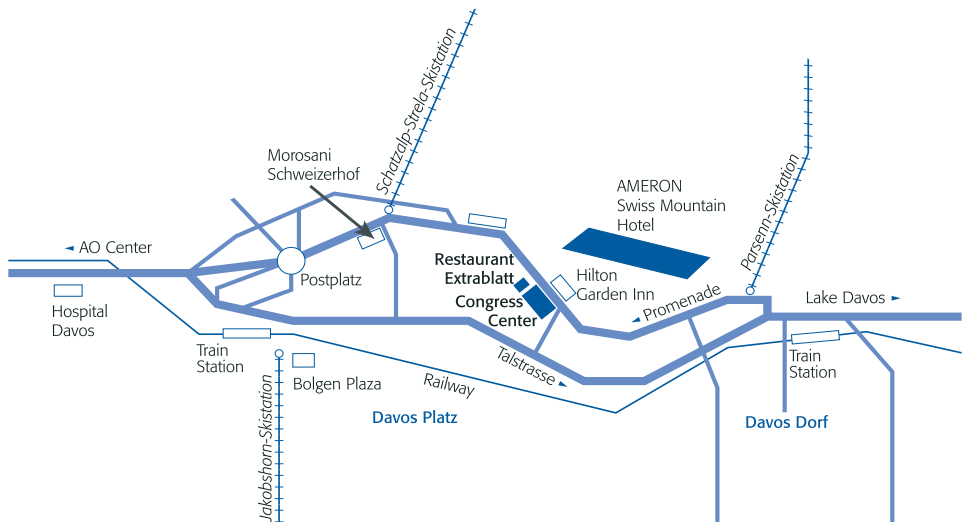
Saturday	13:00–16:00
Sunday	09:00–18:30
Monday	09:00–20:30
Tuesday	09:00–18:30
Wednesday	09:00–16:30

General information

Saturday	12:00–19:00
Sunday to Wednesday	07:30–19:00

Industry exhibition

Saturday	13:00–16:00
Sunday to Tuesday	09:00–18:30
Wednesday	09:00–16:30



Events

AO Foundation 60th Anniversary Celebration and Opening Ceremony

Saturday, 8 December
16:00–18:30

Anniversary Reception

18:30–19:30

AO World Night

Monday, 10 December
18:15–20:30

Exhibitions

Experience a whole new AO World

This year AO World has been transformed to give you a new insight into our history and activities. You are invited to view the latest publications at the AO library, find out what benefits you are eligible for at the AO community and membership area, explore the AO's teaching and learning resources at the AO digital learning zone's interactive stations, visit AO research and innovations – which this year includes AOTK's popular Meet the Experts sessions, and purchase mementos at the AO merchandise area. Experience the AO spirit, walk the timeline of the AO's history and

development, and mingle with other participants. AO staff will be on-hand to ensure you get the most out of this experience.

Industry exhibitors

Visit the exhibitions of our industry partners DePuy Synthes and Siemens, and the other exhibitors: Ethicon, SYN BONE, Digital Surgery, Invibio, Precision OS, Synoste, Victorinox, AO Alliance, Medical Insights.

Media exhibitors

Lehmanns Media can be found this year in the industry exhibition area.

Sponsors

We thank our major industry partners DePuy Synthes and Siemens; as well as our industry partners Karl Storz, Richard Wolf and Carl Zeiss Meditec AG for contributing in-kind support (material and logistics) without which this event would not be possible. A special thanks to DePuy Synthes and Siemens for providing an unrestricted educational grant for this event.



We also extend our thanks to the following co-sponsors (educational grants, in-kind support):



Business center

There are business center facilities in the Congress Center which are accessible to everybody.

Services

- Internet and e-mail access
- Printer access
- www.aodavoscourses.org
AO Course website offering course-related information

Opening hours

- 30 minutes before the first course of the day starts
- 30 minutes after the last course ends

Disclaimer

The use of your own computer in the business center network is inherently not secure. We strongly recommend that you take appropriate actions to protect your computer against unauthorized use or theft (eg. firewalls, VPN-connection, virus scanner). AO cannot be held responsible for any data loss or theft. For further information or support please contact: AO Foundation

Phone: +41 81 414 28 70

E-mail: it.helpdesk@aofoundation.org

Wireless network

How to connect to the AO Wireless LAN

1. Open the Wireless Network Connection Window
2. Choose the **AO Business** Network as shown below and click on the **Connect** Button
3. Our **AO Business** Wireless Network requires a WPA security key:
Security key: **aowireless**



4. Then click on the **OK** button

General information

Event fee

Non-member fee CHF 3,000.

AOSpine member fee CHF 2,700.

Included in course fee are: AO Foundation 60th Anniversary Celebration and opening Ceremony, Anniversary Reception, AOSpine opening session, access to congress center, participation in courses, coffee breaks, lunches, bus transportation in Davos, AO World Night, confirmation of attendance (AO certificate), and CME certificate (only upon proof of course participation)

Cancellation policy

Until November 8, 2018 a refund of 50% of the registration fee is possible.

After November 8, 2018 the registration fee will not be refundable.

Event registration

Register online: www.aodavoscourses.org

Payment options

Bank transfer (plus handling fee of 30 CHF) and credit card (American Express, Visa, Eurocard/Mastercard)

European CME accreditation

This AOSpine event is accredited for continuing medical education (CME) with 24 points.

Conflicts of Interest

All disclosure information can be viewed at the event webpage.

Evaluation guidelines

All AOSpine events apply the same evaluation process, either by the audience response system (ARS) or paper and pencil questionnaires. This helps AOSpine to ensure that we continue 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. Check hazards and legal restrictions on 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 Foundation 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 Foundation 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.

Use of social media

During the Davos Courses you can post about your experience using the #AODavosCourses2018. While we encourage you to share your Davos Courses experience with your online network, it is expressly forbidden to share any images or recordings from inside.

Security

Security checks will be conducted at the building entrance. Wearing a badge is compulsory during the entire event.

No insurance

The event organization does not take out insurance to cover any individual against accident, theft, or other risks.

Use of mobile phones

Use of mobile phones is not allowed in the lecture halls and in other rooms during educational activities. Please be considerate of others by turning off your mobile phone.

Picture gallery

Check out aodavoscourses.org for a daily selection of pictures from the Davos Courses 2018, the best from last year's courses, and a selection of photographs from the first ever AO Davos Courses.

Dress code

Warm clothes and suitable shoes are advisable.

AO Foundation—Principles of AO Educational Events

Academic independence

Development of all curricula, design of scientific event programs, and selection of faculty are the sole responsibilities of volunteer surgeons from the AO network. All education is planned based on needs assessment data, designed and evaluated using concepts and evidence from the most current medical education research, and involving 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.

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, USA (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 (advamed.org)
- Mecomed Guidelines on Interactions with Healthcare Professionals (www.mecomed.org)

Branding and advertising

No industry logos or advertising (with the exception of the AO Foundation and AO 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.

Use of technologies and products in simulations

If case simulations are chosen as an educational method to educate skills, we only use technology approved by the AOTK System (AOTK)—a large independent group of volunteer surgeons developing and peer-reviewing new technology (more information about the AOTK, its development and approval process can be found on the AO Foundation website: www.aofoundation.org).

Personnel

Industry staff are not allowed to interfere with the educational content or engage in educational activities during the event.

AO Research Institute Davos (ARI)

Mission

The AO Foundation's 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 Foundation's mission, ARI's purpose is to advance patient care through innovative orthopedic research and development.

Orthopedics concerns musculoskeletal, spine and cranio-maxillo-facial trauma, degenerative musculoskeletal diseases, infections, and congenital disorders.

Goals

- Contribute high quality applied preclinical research and development focused towards 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, ideas, and learn about the latest results from the 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 3-D 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 – 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 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 2017 AO Research Institute Davos activity report and recent publications go to: www.aofoundation.org/ari/publications

Download AOSpine Classification toolkits at
aospine.org/classification



Upcoming AO Davos Courses 2019

AO Courses—December 1–6, 2019

AOTrauma Course—Basic Principles of Fracture Management

AOTrauma Course—Advances Principles of Fracture Management

AOTrauma Course—Advanced Principles of Fracture Management for Swiss Residents

AOTrauma Masters Course—Current Concepts

AOTrauma Course—Pelvic and Acetabulum Fractures

AOTrauma Masters Course

AOTrauma/AORecon Course—Comprehensive Periprosthetic Fracture Management of the Hip and Knee

AORecon Course—Complex Total Hip and Knee Arthroplasty

AO Courses—December 8–12, 2019

AOTrauma Course—Basic Principles of Fracture Management for Swiss Surgeons

AOSpine Courses

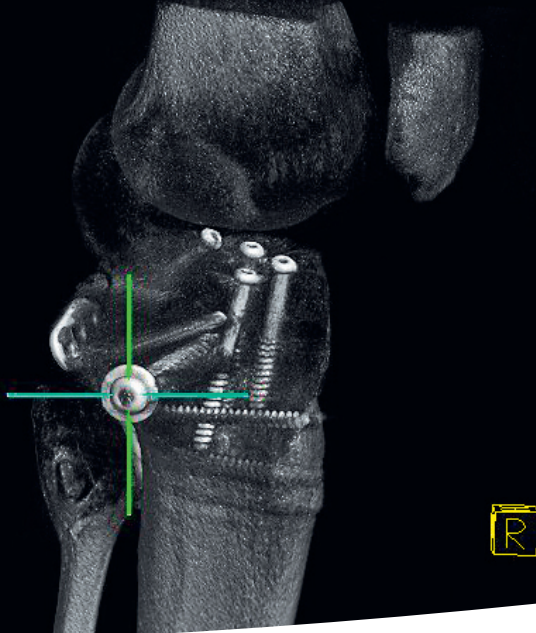
AOCMF Courses

AOVET Masters Course—Small Animal

AOVET Masters Course—Large Animal

This course list is subject to further change.

The final list of AO Davos Courses and worldwide AOSpine events will be available on www.aospine.org in January 2019.



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*Cios Spin®, with VA30 is pending 510(k) clearance, and is not yet commercially available in the United States or in other countries. Due to regulatory reasons, its future availability cannot be guaranteed.

The Global Spine Congress heads to North America

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DECEMBER 20, 2018**

The Global Spine Congress (GSC) is open to all surgeons, spine practitioners, allied health care professionals, and researchers. It provides an outstanding forum to exchange ideas, network with fellow spine professionals, and to learn about the latest research, techniques, and technologies in spine surgery.



Global Spine Congress

Toronto, Canada | May 15–18, 2019

www.gsc2019.org

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