

# AO Trauma Course— Basic Principles of Fracture Management

April 19–21, 2023

Seč, Czech Republic

PROGRAM



Home to  
trauma and  
orthopedics



# Content

---

**4** Mission  
The AO principles of fracture management

---

**5** Welcome

---

**6** Course description  
Goal of the course  
Target participants  
Learning objectives

---

**7** Chairperson and faculty

---

**8** Wednesday, April 19, 2023

---

**9** Thursday, April 20, 2023

---

**11** Friday, April 21, 2023

---

**12** Event information  
Venue

---

**13** Sponsors

---

**17** General information

---

**18** Principles of AO educational events

---

**19** Course finder

---

# Mission

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

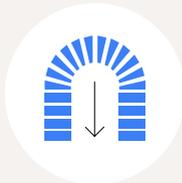
## The AO principles of fracture management

1



Fracture reduction and fixation to restore anatomical relationships.

2



Fracture fixation providing absolute or relative stability, as required by the "personality" of the fracture, the patient, and the injury.

3



Preservation of the blood supply to soft tissues and bone by gentle reduction techniques and careful handling.

4



Early and safe mobilization and rehabilitation of the injured part and the patient as a whole.

# Welcome

## Dear AO Trauma Course participant,

Welcome to the AO Trauma Course—Basic Principles of Fracture Management, which is planned and delivered to meet your needs using a competency-based curriculum approach and the AO's seven principles for high-quality education.

AO Trauma's innovative approach to education has been further strengthened as a result of the successful collaboration with the AO Education Institute in the application of state-of-the-art educational concepts in curriculum planning and all faculty development programs.

This course is one of our many educational activities for providing lifelong learning, from the Residents Education Program through to specialized Continuing Professional Development (CPD) for practicing surgeons and clinicians.

We believe that your active engagement in this course will result in improved care for your patients. Your current level of knowledge and skills will be challenged by the activities and throughout the entire event. We are confident that the combination of education principles and relevant content from our curriculum, as well as your interaction with colleagues and expert faculty will provide an effective learning experience that meets your needs.

This course is part of an overall competency-based educational program that includes many other activities and resources for self-directed learning. The educational activities in each program are developed by an international taskforce of clinical experts and educationalists and made available to you through the Education section of [www.aotrauma.org](http://www.aotrauma.org).

We hope you enjoy the course and benefit from the networking opportunities it provides for you to share experiences with your colleagues.



**Mark Reilly**  
Chairperson  
AO Trauma  
Education Commission



**Mike Baumgaertner**  
Chairperson  
AO Trauma  
International Board

## Course description

Online precourse self-assessment prepares participants for the course and allows the faculty to tailor the course to the needs of the participants. Before attending the course, participants are expected to complete self-assessment questionnaire.

The course contains several evidence-based lectures, which cover the key information required. The AO Skills Lab engages surgeons in hands-on learning of basic principles and practical know-how needed for live surgery. With experiences such as proper tightening of a screw and feeling the difference between drilling with sharp and blunt drill bits, course participants gain important surgical skills and learn about basic biomechanical concepts in a safe, instructive environment. In practical exercises participants will be trained in the application of fixation techniques. Discussing cases in small groups helps participants to understand decision-making and management skills. After the course an online postcourse self-assessment provides participants with a possibility to review the important topics from the course and provide feedback for future improvement of the course. After the course, an online postcourse self-assessment will provide participants an opportunity to review the important topics from the course. In order to support self-directed learning, a range of additional online resources will be offered.

## Goal of the course

The AO Trauma course Basic Principles of Fracture Management teaches fundamental principles and current concepts in the treatment of injuries, incorporating the latest techniques in operative fracture management. The AO Trauma Basic Principles course is the initial step along the path of lifelong learning in the area of operative fracture management and the main focus of this course lies in the basic principles of fracture management.

## Target participants

The AO Trauma Course—Basic Principles of Fracture Management is targeted at doctors in surgical training but also open to those who are interested in furthering their knowledge and skills in operative fracture management.

## Learning objectives

At the end of this course, participants will be able to:

- Discuss the concepts of stability, their influence on bone healing, and how to apply implants to achieve appropriate stability
- Plan a treatment based on assessment, imaging, classification, and decision-making
- Apply reduction techniques in fracture management with attention to the importance of the soft-tissue
- Use appropriate fixation techniques to treat diaphyseal and simple (peri)articular fractures
- Evaluate and recognize the special problems related to: fractures in the immature skeleton, pelvic injuries, osteoporotic fractures, postoperative infection, and delayed union and/or nonunion
- Plan the initial treatment of the polytraumatized patient



## Chairperson



**Roman Mišičko**  
Masarykova Hospital,  
Ústí nad Labem,  
Czech Republic

## Regional faculty

**Rastislav Burda**  
**Alan Dostál**

University Hospital of L. Pasteur, Kosice, Slovakia  
University Hospital Bratislava, Bratislava, Slovakia

## National faculty

<b>Filip Burget</b>	University Hospital Praha, Praha 2, Czech Republic
<b>Jiří Demel</b>	University Hospital Ostrava, Ostrava, Czech Republic
<b>Pavel Douša</b>	University Hospital Ostrava, Praha 10, Czech Republic
<b>Pavel Dráč</b>	University Hospital Olomouc, Olomouc, Czech Republic
<b>Martin Frank</b>	University Hospital Hradec Kralove, Hradec Kralove, Czech Republic
<b>Karel Holub</b>	Hospital České Budějovice, České Budějovice, Czech Republic
<b>Martin Kelbl</b>	Trauma Hospital Brno, Brno, Czech Republic
<b>Martin Kloub</b>	Hospital České Budějovice, České Budějovice, Czech Republic
<b>Martin Křivohlávek</b>	Regional Hospital of Liberec, Liberec, Czech Republic
<b>Milan Krtička</b>	University Hospital Brno, Brno, Czech Republic
<b>Josef Mář</b>	Karovy Vary Hospital, Karlovy Vary, Czech Republic
<b>Petr Obruba</b>	Masarykova Hospital, Ústí nad Labem, Czech Republic
<b>Jiří Skála-Rosenbaum</b>	University Hospital Kralovske Vinohrady - Charles University, Praha 10, Czech Republic

## Guest speakers

<b>Radek Bartoška</b>	University Hospital Kralovske Vinohrady - Charles University, Praha 10, Czech Republic
<b>Filip Čechlovský</b>	Regional Hospital of Liberec, Liberec, Czech Republic
<b>Valér Džupa</b>	University Hospital Kralovske Vinohrady - Charles University, Praha 10, Czech Republic
<b>Pavel Korpa</b>	University Hospital Kralovske Vinohrady - Charles University, Praha 10, Czech Republic
<b>Martin Krbec</b>	University Hospital Kralovske Vinohrady - Charles University, Praha 10, Czech Republic
<b>Ján Kužma</b>	Trauma Hospital Brno, Brno, Czech Republic
<b>Alexandr Rypal</b>	Hospital České Budějovice, České Budějovice, Czech Republic

# Wednesday

April 19, 2023

08:00–08:10	Welcome and introduction	R Mišičko R Bartoška
08:10–08:20	The AO world—from history to lifelong learning	J Skála-Rosenbaum
08:20–08:40	Bone healing and the effect of patient factors and injury mechanism on fracture management	M Frank
08:40–08:55	The (soft-tissue) injury—a high priority consideration	A Ryppl
08:55–09:10	Absolute stability: biomechanics, techniques, and fracture healing	M Kelbl
09:10–09:25	Relative stability: biomechanics, techniques, and fracture healing	P Obruba
09:25–09:35	Summary and Q&A	J Skála-Rosenbaum
09:35–09:40	Location change to practical room	
09:40–10:45	<b>Practical exercise 1</b> Internal fixation with screws and plates—absolute stability	M Kelbl
10:45–11:05	Coffee break	
11:05–11:20	The use of plates in fracture fixation	M Křivohlávek
11:20–11:35	The 2018 AO/OTA Fracture and Dislocation Classification Compendium	F Burget
11:35–12:35	<b>Small group discussion 1</b> Discussion on general principles, classification, concepts of stability, their influence on bone healing, and how to apply implants to achieve appropriate stability	All faculty
12:35–13:35	Lunch break	
13:35–13:55	Principles of diaphyseal fracture management—what is important in treating these fractures?	J März
13:55–14:00	Location change to discussion room	
14:00–15:10	<b>Small group discussion 2</b> Management principles for the treatment of diaphyseal fractures	All faculty
15:10–15:25	Coffee break	
15:25–16:35	<b>Practical exercise 2</b> Principle of the internal fixator using the locking compression plate (LCP)	A Ryppl

16:35–16:40	Location change to lecture room	
16:40–17:00	Principles of articular fracture management—how do they differ from diaphyseal fractures?	R Burda
17:00–17:10	Intramedullary nailing—to ream or not to ream?	F Čechlovský
17:10–17:15	Location change to AO Skills Lab	
17:15–18:35	<b>Updated AO Skills Lab</b> A. Torque measurement of bone screws (10) B. Soft-tissue penetration during drilling (10) C. Heat generation during drilling (10) D. Mechanics of bone fractures (10) E. Techniques of reduction, part 1 (10) F. Techniques of reduction, part 2 (10) G. Mechanics of intramedullary fixation (10) H. Mechanics of plate fixation (10) J. Fracture healing and plate fixation (10) K. Damaged implant removal (10)	M Křivohlávek

## Thursday

April 20, 2023

08:00–09:00	<b>Practical exercise 3</b> <b>Intramedullary nailing</b> Tibial shaft fractures—closed reduction and reamed intramedullary nailing using the expert tibial nail (ETN)	K Holub
09:00–09:20	Coffee break	
09:20–09:35	Distal radial fractures—which to fix? How to fix?	R Burda
09:35–09:50	The tension band principle	J Kužma
09:50–10:05	Forearm fractures—understanding the principles of diaphyseal and articular fractures	M Krtička
10:05–10:20	Preoperative planning—rationale and how to do it	M Kloub
10:20–10:30	Summary and Q&A	
10:30–11:30	Preoperative planning—“plan your forearm operation”	P Dráč
11:30–12:30	Lunch break	

## Thursday (cont.)

April 20, 2023

12:30–13:40	<b>Practical exercise 4</b> Operate your plan—fixation of a 22C1 forearm fracture	P Dráč
13:40–13:55	Ankle fractures—a systematic approach to their fixation	M Kloub
13:55–14:10	Femoral neck fractures	P Douša
14:10–14:25	Trochanteric fractures	V Džupa
14:25–14:40	Distal femoral fractures—management principles	M Křivohlávek
14:40–14:55	Introduction to tibial plateau fractures	R Mišičko
14:55–15:05	Summary and Q&A	M Kloub
15:05–15:25	Coffee break	
15:25–16:35	<b>Small group discussion 3</b> Management principles for the treatment of articular fractures	All faculty
16:35–16:40	Location change to lecture hall	
16:40–16:50	Radiation in the operating room—appropriate use and hazards	J Kužma
16:50–16:55	Location change to practicals	
16:55–18:05	<b>Practical exercise 5</b> Fixation of a trochanteric fracture	P Obruba
18:05–18:10	Location change to lecture hall	
18:10–18:25	Fixation principles in osteoporotic bone—the geriatric patient	A Ryppl

# Friday

April 21, 2023

08:00–08:30	<b>Practical exercise 6</b> Tension band wiring of the olecranon	P Douša
08:30–09:30	Practical exercise 7 Management of a type 44C malleolar fracture	M Kloub
09:30–09:50	Coffee break	
09:50–10:05	Management of open fractures	P Dráč
10:05–10:20	Principles of external fixation	K Holub
10:20–10:35	Treatment algorithms for the polytrauma patient	J Demel
10:35–10:50	Emergency management of pelvic fractures—a critical skill can save lives	M Frank
10:50–11:05	Fracture-related infection—how to prevent, diagnose, and manage infections	R Bartoška
11:05–11:20	Delayed healing—causes and treatment principles	M Krbec
11:20–11:30	Summary and Q&A	M Krbec
11:30–11:35	Location change to discussion group	
11:35–12:35	<b>Small group discussion 4</b> Final case discussion on selected topic: <ul style="list-style-type: none"><li>• Polytrauma</li><li>• Complications</li><li>• Special fractures. eg, geriatric fractures, osteoporosis, periprosthetic fractures</li></ul>	All faculty
12:35–13:25	Lunch break	
13:25–14:25	<b>Practical exercise 8</b> Application of a modular large external fixator (updated content)	V Džupa
14:25–14:30	Location change to lecture hall	
14:30–14:45	Violation of principles	J Skála-Rosenbaum
14:45–14:55	Closing remarks	R Mišičko

# Event information

## Event organization

Jaroslava Horakova  
Clavadelstrasse 8, 7270 Davos Platz, CH  
E-mail: jaroslava.horakova@aofoundation.org  
Phone: +420 736 681 505

## Participant information and contact

If you have any questions, please contact  
Global Event Services:  
Ariane Bono  
E-mail: aoges.emea@aofoundation.org  
Phone: +41 79 138 0116

## Registration fee

Standard Ticket: CHF 780  
Included in the registration fee are  
conference bag, course material, coffee  
break, lunch break, course dinner and course  
certificate.  
Cancellation policy: 50% until 30 days  
before the event. No refund thereafter.

## Online registration

<http://bit.ly/3WCSStP>

## Language

Czech

## European CME accreditation

For this event the UEMS-EACCME® in  
Brussels have granted 21 European CME  
credits (ECMEC).

## Event organization compliance

In certain countries where 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.

## 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.

# Venue

## Hotel Jezerka

Seč - Ústupky 278,  
538 07 Czech Republic

Phone +420 469 676 327  
E-mail [recepce@jezerka.cz](mailto:recepce@jezerka.cz)  
Website <https://www.jezerka.cz/en>

## Sponsors

We thank our major industry partner DePuy Synthes as well as Siemens Healthineers for providing an unrestricted educational grant for this event.



# Notes

# Notes

# Notes

# General information

## Evaluation guidelines

All AO Trauma 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 Traumas continues to meet your training needs.

## Disclosures and conflicts of interest

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

## 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](http://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.

## 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 permitted in the lecture halls or in other rooms during educational activities. Please be considerate of others by turning off your mobile phone.

## Dress code

Casual

## Further Information

Any COVID-19 tests that are needed for travel etc. are at your own costs.

# 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](http://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](http://www.accme.org))
- ACCME Standards for Commercial Support: Standards to Ensure Independence in CME Activities ([www.accme.org](http://www.accme.org))
- Criteria for Accreditation of Live Educational Events of the European Accreditation Council for Continuing Medical Education ([www.uems.eu](http://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](http://www.medtecheurope.org))
- AdvaMed Code of Ethics on Interactions with Health Care Professionals ([www.advamed.org](http://www.advamed.org))
- Mecomed Guidelines on Interactions with Healthcare Professionals ([www.mecomed.com](http://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.

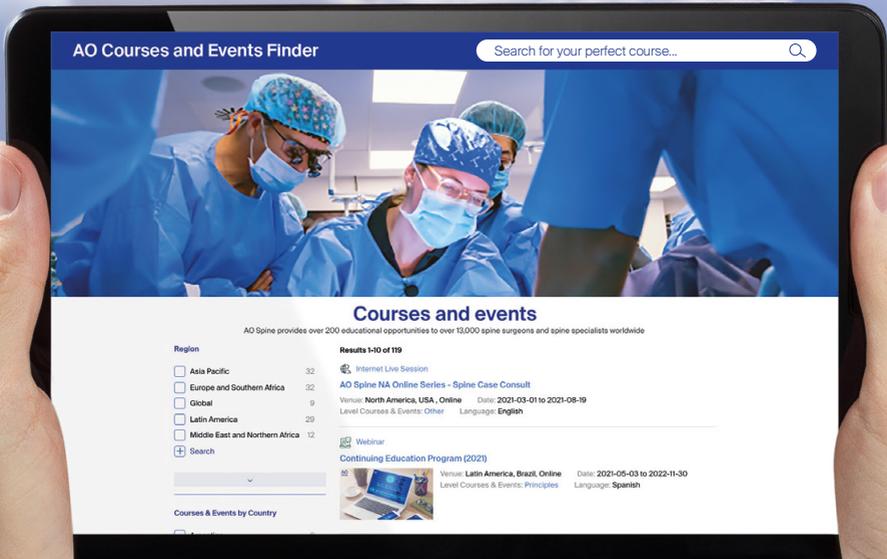
More information on the AO Technical Commission can be found on the AO's website: [www.aofoundation.org/tc](http://www.aofoundation.org/tc).

## 5. Personnel

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



# Find your next learning activity



**Enhance your career, improve your knowledge, skills and network with the world's leading education provider to health care professionals working in the fields of trauma and musculoskeletal disorders.**

Choose from over 800 events each year including face-to-face hands-on surgical skills courses, seminars, and case discussion workshop groups as well as online courses, webinars, panel discussions and more. Courses can be filtered by specialty, country, topic and level.

Create your own learning schedule and find your next learning activity with the AO course and event finder.



AO Trauma



AO Spine



AO CMF



AO Recon



AO VET



AO Sports



Transforming  
Surgery—  
Changing  
Lives

[www.aofoundation.org/our-courses-and-events/course-finder](http://www.aofoundation.org/our-courses-and-events/course-finder)

© 2021 AO Foundation | AO Foundation, Clavadelerstrasse 8, CH-7270 Davos, Switzerland

More information at  
[www.aofoundation.org](http://www.aofoundation.org)



# Share your passion and join the AO Trauma community

**Belong** to a unique orthopedic trauma network



**Get involved** and shape the future of AO Trauma



Discover the exclusive AO Trauma **content**



**Develop** your personal and professional career



**Share and exchange** your knowledge

**AO Trauma** is the **leading global orthopedic trauma network** with a unique culture of surgeon leadership, camaraderie, volunteerism, and mutual respect.

