AO TRAUMA

AO Competency-Based Curriculum

AO Trauma Course—

Basic Principles of Fracture Management for Swiss Surgeons

December 08-12, 2024
Davos, Switzerland

Lecture hall: Davos 1

PRELIMINARY EVENT PROGRAM

Course description

The AO Trauma Course—Basic Principles of Fracture Management for Swiss Surgeons is part of AO Trauma's educational program for residents and based on a specific framework of competencies and learning objectives. They feature a balanced mix of educational methods with a strong focus on interactive sessions.

Online pre-course 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 the online self-assessment questionnaire.

The course consists of evidence-based lectures which cover the key information required. In practical exercises, participants will be trained in the application of various techniques.

The AO Skills Lab consists of ten stations where participants will learn about the principles of fractures, biomechanics, and test fracture management options. Discussing cases in small groups will help participants to understand decision-making processes and further develop management skills.

After the course, an online post-course self-assessment will provide participants with important feedback on how much they have learned.

Goal of the course

The AO Trauma Course—Basic Principles of Fracture Management for Swiss Surgeons is part of AO Trauma's educational program teaching 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 operative fracture management. The focus of this course is on teaching the basic principles of fracture management.

Target participants

This AO Trauma Course—Basic Principles of Fracture Management for Swiss Surgeons is targeted at first- to third-year trainees and is also open to newly certified orthopedic and trauma surgeons who are interested in furthering their knowledge and skills in operative fracture management.

All surgeons, including those of European or international origin, working at Swiss hospitals can participate in this course.

Learning objectives

Upon completion 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
- Read and analyze x-rays of clinical cases properly and apply the AO/Orthopedic Trauma Association (AO/OTA) Fracture and Dislocation Classification Compendium
- Plan a treatment based on assessment, imaging, classification and decision-making
- Outline and use the AO Principles in the treatment of diaphyseal and simple articular fractures
- Apply the knowledge of soft-tissue injury in making appropriate decisions regarding treatment options and timing
- Identify and discuss the special problems related to:
    - Fractures in the immature skeleton
    - Polytraumatized patients
    - Osteoporotic fractures
    - Postoperative infection
    - Delayed union and/or nonunion

Chairpersons

Ruth Gremminger
Kantonsspital Winterthur, Winterthur, Switzerland

Martin Riegger
Ospedale regionale Lugano, Lugano, Switzerland

Faculty

Florin	Allemann	Universitätsspital Zürich	Zurich	Switzerland
Michele	Arigoni	Spital Uster	Uster	Switzerland
Arby	Babians	Spital Limmattal	Schlieren	Switzerland
Michael	Badulescu	Kantonsspital St. Gallen	St. Gallen	Switzerland
Thomas	Beck	Spitalzentrum Oberwallis	Visp	Switzerland
Frank	Beeres	Kantonsspital Luzern	Luzern	Switzerland
Luca	Deabate	Ospedale Regionale Lugano	Lugano	Switzerland
Michael	Dietrich	Stadtspital Zürich Waid and Triemli	Zurich	Switzerland
Matthias	Eppinger	Spital Linth	Uznach	Switzerland
Andreas	Fösel	Klinik Sonnenhof	Bern	Switzerland
Axel	Gamulin	HUG Genève	Geneva	Switzerland
Lorenz	Haldemann	Spitäler FMI AG	Interlaken	Switzerland
Samuel	Haupt	Spital Oberengadin	Samedan	Switzerland
Petros	Ismailidis	Universitätsspital Basel	Basel	Switzerland
Method	Kabelitz	Stadtspital Zürich Waid and Triemli	Zurich	Switzerland
Christian	Keiser	Kantonsspital Graubünden	Chur	Switzerland
Andreas	Ladurner	Stadtspital Zürich Waid and Triemli	Zürich	Switzerland
Björn-Christian	Link	Kantonsspital Luzern	Luzern	Switzerland
Severin	Meili	Kantonsspital Schaffhausen	Schaffhausen	Switzerland
Christian	Michelitsch	Kantonsspital Graubünden	Chur	Switzerland
Vanessa	Morello	HUG Genève	Genève	Switzerland
Gherardo	Pagliazzi	Ospedale Regionale Lugano	Lugano	Switzerland
Daniel	Petek	University Hôpital Fribourg	Fribourg	Switzerland
Primoz	Potocnik	Kantonsspital St. Gallen	St. Gallen	Switzerland
Dominic	Rigling	Kantonsspital Nidwalden	Stans	Switzerland
Jan	Rosenkranz	Stadtspital Zürich Waid and Triemli	Zurich	Switzerland
Valentina	Scholz	Kantonsspital Graubünden	Chur	Switzerland
Christian	Spross	Stadtspital Zürich Waid and Triemli	Zurich	Switzerland
Michael	Stalder	Spitäler FMI AG	Interlaken	Switzerland
Christina	Steiger	HUG Genève	Geneva	Switzerland
Paul-Martin	Sutter	Spital Oberengadin	Samedan	Switzerland
Tudor	Trache	Kantonsspital Winterthur	Winterthur	Switzerland
Daniel	Wagner	CHUV Lausanne	Lausanne	Switzerland
Hanna	Wellauer	Kantonsspital Winterthur	Winterthur	Switzerland
Matthieu	Zingg	HUG Genève	Geneva	Switzerland

Guest lecturers

Martin	Stoddart	AO Research Institute	Davos	Switzerland

Sunday

December 08, 2024

15:00	Opening of the Davos Congress Centre
15:00–17:00	Registration of participants
17:00–19:00	Opening Ceremony and Founders' Reception

Monday

December 09, 2024

Module 1
Moderator: Frank Beeres
General concepts

Upon completion of this module, participants will be able to:

- Describe the AO principles of fracture management
- Explain bone and fracture healing processes
- Name the patient factors which influence fracture healing
- Describe the mechanical concepts of fracture fixation
- Define relative and absolute stability
- Select the appropriate type of stability and implant according to the AO/OTA Fracture and Dislocation Classification and associated soft-tissue injury
- Perform the steps of applying screws and plates to provide absolute stability

08:00–08:10	Welcome and introduction—objectives, structure, faculty, and outlook for the week	Ruth Gremminger
08:10–08:30	Influence of patient factors and the mechanism of injury on fracture management	Christina Steiger
08:30–08:50	Biology of bone healing	Martin Stoddart
08:50–09:15	Concepts of mechnical fixation - relative and absolute stability	Christian Michelitsch
09:15–09:35	Coffee break	
09:35–10:00	Principles of conventional plate fixation, including lag screw technique	Petros Ismailidis
10:00–10:05	Location change to practical exercise room	
10:05–10:45	**Practical exercise 1A** **Welcome to the 'Baumarkt'** How to use a power drill and a saw	Lorenz Haldemann
10:45–12:15	**Practical exercise 1B** **Internal fixation with screws and plates—absolute stability**	Lorenz Haldemann
12:15-13:30	Lunch break	
13:30–13:55	Principles and concepts of the LCP	Method Kabelitz
13:55–14:00	Location change to practical exercise room	
14:00–15:30	**Practical exercise 1C** **Principles of the internal fixator using an LCP**	Michael Badulescu

15:30–15:50	Coffee break	
	Location: Davos 1	
Green team	(Two teams, red and green, run in parallel)	
15:50-17:50	**AO Skills Lab** *Note: Participants spend 10 minutes at each station, then rotate clockwise. Station A: Torque measurement of bone screws Station B: Soft-tissue penetration during drilling Station C: Heat generation during drilling Station D: Mechanics of bone fractures Station E: Techniques of reduction, part 1 Station F: Techniques of reduction, part 2 Station G: Mechanics of intramedullary fixation Station H: Mechanics of plate fixation Station J: Fracture healing and plate fixation Station K: Difficult implant removal	Moderator: Michael Dietrich
	Location: Davos 2	
Red team	(Two teams, red and green, run in parallel)	
	AO Skills Lab *Note: participants spend ten minutes at each station, then rotate clockwise Station A: Torque measurement of bone screws Station B: Soft-tissue penetration during drilling Station C: Heat generation during drilling Station D: Mechanics of bone fractures Station E: Techniques of reduction, part 1 Station F: Techniques of reduction, part 2 Station G: Mechanics of intramedullary fixation Station H: Mechanics of plate fixation Station J: Fracture healing and plate fixation Station K: Difficult implant removal	Moderator: Björn-Christian Link
17:50–18:00	Evaluation	

Tuesday

December 10, 2024

Module 1 (continued)

Moderator: Frank Beeres

General concepts

08:00–08:10	Outlook of the day (learning objectives)	Ruth Gremminger
08:10-08:25	Radiation in the OR	Andreas Fösel
08:25-08:45	AO classification	
08:45-08:55	Location change to discussion group rooms	
08:55-09:55	**Discussion group 1** **General principles, classification** Group 1: Group 2: Group 3: Group 4: Group 5: Group 6: Group 7: Group 8: Group 9: Group 10: Group 11: Group 12:	
09:55-10:15	Coffee break	

Module 2

Moderator: Primoz Potocnik

Diaphyseal fractures

Upon completion of this module, participants will be able to:

- Describe principles of diaphyseal fracture management
- List the treatment options for femoral and tibial shaft fractures
- Perform the steps for the application of a large external fixator to the tibial shaft
- Recall the principles of surgical approaches

10:15–10:40	Principles of diaphyseal fracture management (incl principles of IM nailing)	Samuel Haupt
10:40–11:00	Principles of external fixation	Matthias Eppinger
11:00–11:20	Forearm fractures—not just another shaft fracture	Michael Stalder
11:20–11:40	Preoperative planning—rationale and how to do it	Gherardo Pagliazzi

11:40–11:45	Change to tables for planning	
11:45–12:45	**Practical exercise 2** (in the lecture room) **Preoperative planning for forearm shaft fracture 2R2A, 2U2C using LCPs (8- and 11-hole plates)**	Gherardo Pagliazzi
12:45-13:45	Lunch break	
13:45-14:30	**SHARD** (participants in practical room) **Live surgery: extended Henry approach and plate positioning (radial shaft)**	Martin Riegger, Gherardo Pagliazzi
14:30–15:40	**Practical exercise 3** **Management of a forearm shaft fracture 2R2A, 2U2C using LCPs (8- and 11-hole plates)**	Axel Gamulin
15:40-16:00	Coffee break	
16:00-16:20	Fractures of the femoral and tibial diaphysis	Christian Keiser
16:20-16:25	Location change to practical exercise room	
16:25-17:00	**Practical exercise 4** **Tibial shaft—external fixator**	Michele Arigoni
17:00-17:05	Location change to discussion groups	
17:05-18:05	**Discussion group 2** **Management principles for the treatment of diaphyseal fractures** Group 1: Group 2: Group 3: Group 4: Group 5: Group 6: Group 7: Group 8: Group 9: Group 10: Group 11: Group 12:	
18:05–18:15	Evaluation	
18:15–20:30	**AO Davos Courses Night** Davos Congress Centre	

Wednesday

December 11, 2024

08:00–08:10	Outlook of the day (learning objectives)	Ruth Gremminger

Module 3

Moderator: Thomas Beck

Special topics

Upon completion of this module, participants will be able to:

- Describe the treatment algorithms for the polytrauma patient
- Outline the principles of damage control orthopedics in the management of pelvic fractures
- Specify the goals and principles of open fracture management
- Describe soft-tissue management in open fractures
- Apply the steps for the application of a reamed tibial nail

08:10-08:30	Pelvic trauma	Jan Rosenkranz
08:30-08:50	Management of open fractures—skeleton and soft tissue	Vanessa Morello
08:50-09:10	Infection after osteosynthesis-implant-associated infection?	Valentina Scholz
09:10-09:30	Coffee break	
09:30-11:00	**Practical exercise 5** Reamed intramedullary nailing of the tibia using the TN-Advanced tibial nailing system (TN-A)	Matthieu Zingg
11:00-11:05	Location change to lecture room	

Module 4
Moderator: Martin Riegger
Articular fractures

Upon completion of this module, participants will be able to:

- Explain the management principles for articular fractures
- Outline surgical treatment of wrist fractures
- Perform the steps for the fixation of an extraarticular distal radial fracture using the palmar LCP
- List indications for nonoperative and operative treatment of clavicle and proximal humeral fractures
- Explain the tension band principle for fractures of the olecranon and patella
- Define alternative techniques when tension band wiring is not possible
- Apply the treatment concept of tension band wiring to patellar and olecranon fractures
- Describe fixation principles in proximal femoral fractures
- Recall the challenges in treating the geriatric patient

11:05-11:25	Pediatric fractures-case based lecture	Ruth Gremminger
11:25-11:45	Management principles for articular fractures—how do they differ from diaphyseal fractures?	Björn-Christian Link
11:45-12:05	Distal radius fractures—which to fix and how to fix them?	Michael Dietrich
12:05-13:20	Lunch break	
13:20-14:05	**Practical exercise 6** **Distal radius—intraarticular fracture fixation using the variable angle (VA)-LCP 2.4 palmar two-column distal radial plate**	Florin Allemann
14:05-14:10	Location change to lecture room	
14:10-14:30	Clavicular fractures	Frank Beeres
14:30-14:50	Proximal humeral fractures	Christian Spross
14:50-15:10	Fractures of the olecranon and patella (cerclage compression wiring principles and cerclage wiring)	Tudor Trache
15:10-15:30	Coffee break	
15:30-16:15	**Practical exercise 7** **Olecranon—transverse fracture 2U1B1 managed by cerclage compression wiring**	Paul-Martin Sutter
16:15-16:20	Location change to lecture room	
16:20-16:40	Tibia plateau fractures	Daniel Petek

16:40-17:00	Distal femoral fractures-management principles	Andreas Ladurner
17:00-17:05	Location change to the discussion groups	
17:05-18:05	**Discussion group 3** **Articular fractures** Group 1: Group 2: Group 3: Group 4: Group 5: Group 6: Group 7: Group 8: Group 9: Group 10: Group 11: Group 12:	
18:05–18:15	Evaluation	

Thursday

December 12, 2024

Module 4 (continued)

Moderator:

Articular fractures

08:00–08:10	Outlook of the day (Learning objectives)	Ruth Gremminger
08:10–08:30	Ankle fractures-a logical approach for their fixation	Dominic Rigling
08:30-08:35	Location change to the practical exercise room	
08:35-09:45	**Practical exercise 8** **Management of a type C malleolar fracture**	Dominic Rigling
09:45-10:05	Coffee break	
10:05-10:25	Femoral neck fractures	Luca Deabate
10:25-10:55	Trochanteric fractures	Hanna Wellauer
10:55-11:00	Location change to the practical exercise room	
11:00-12:30	**Practical exercise 9** **Trochanteric femoral fracture—IM nailing using a proximal femoral nail antirotation (TFNA)**	Arby Babians
12:30-13:30	Lunch break	
13:30–13:50	Fixation principles in osteoporotic bone-the geriatric patient	Daniel Wagner
13:50-14:10	Treatment of non-union	Severin Meili
14:10-14:30	Violation of principles, my worst case	Primoz Potocnik
14:30-14:35	Location change to the practical exercise room and instruction of contest	
14:35-15:25	**Practical exercise contest**	Ruth Gremminger, Martin Riegger
15:25-15:30	Location change to the lecture room	
15:30-15:40	The AO world - history and todays activities (research, teaching, country chapter): What is AO, where do we come from, what do we offer	Ruth Gremminger

15:40-15:45	Prize give-away, closing remarks	Ruth Gremminger, Martin Riegger
15:45–15:55	Evaluation	

Event organization

AO Foundation

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Participant information and contact

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Registration fee

Course Full Fee: CHF 1'750

The registration fee covers the following:

- Course materials
- Coffee breaks and lunches
- AO Davos Courses opening ceremony
- Networking with participants and faculty during AO Davos Courses night
- Guided tour of the AO Center (on-site registration required)
- Demonstrations of the latest technologies
- Live surgical demonstrations
- Course certificate

Cancellation policy: 50% until 30 days before the event. No refund thereafter.

Online registration

Event: E20005004 AO Trauma Course—Basic Princ. of Fracture Mgmt. for Swiss Surgeons (site.com)

Language
English

Disclosures and conflicts of interest (COI)

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

National CME accreditation

An application has been made to SGC and Swiss Orthopaedics.

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/skills training if educationally needed.

Venue

Davos Congress Centre

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Switzerland

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