Program

AOTrauma Course—Basic Principles of Fracture Management

February 10–12, 2016 Szeged, Hungary
Value statement

AOTrauma is committed to improve patient care outcomes through the highest quality education. We strive to combine the right knowledge and surgical skills that empower the orthopedic and trauma surgeons to put theory into practice and to improve fracture management for the benefit of the patient.

7 Principles of Education

1. Based on needs
2. Motivates to learn
3. Relevant
4. Interactive
5. Provides feedback
6. Promotes reflection
7. Leads to verifiable outcomes

The AO principles of fracture management

Fracture reduction and fixation to restore anatomical relationships.

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

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

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

Welcome to the AOTrauma 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.

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

Kodi Kojima  
Chairperson AOTrauma Education Commission

John (Jack) Wilber  
Chairperson AOTrauma International Board

If you enjoy the experience during your course and would like to stay in touch with the organization and its international network of surgeons, we invite you to become a member of AOTrauma. The benefits of membership, including options to get involved in new opportunities that advance trauma care are described at www.aotrauma.org.
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8 Faculty

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Goal of the course

The AOTrauma 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 AOTrauma Basic Principles course is the initial step along the path of lifelong learning in the area of operative fracture management. This course mainly focuses on the basic principles of fracture management.

Target participants

The AOTrauma Course—Basic Principles of Fracture Management is targeted at physicians in surgical training but is also open to anyone else who is interested in furthering their knowledge and skills in operative fracture management.

Course 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 tissues
- Treat diaphyseal and simple (peri)articular fractures using different application techniques
- Evaluate and recognize the special problems related to fractures in the immature skeleton, pelvic injuries, osteoporotic fractures, postoperative infection, delayed union and/or nonunion
- Plan the initial treatment of the polytraumatized patient

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 online modules on bone healing and classification.

The course contains several evidence-based lectures, which cover the key information required. The AO Skills Lab engages participants 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, 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.
Elnöki köszöntő

Kedves Kolléganők és Kollégák!

Megtisztelő feladat számomra, hogy az AO Bázis kurzus elnökeként köszönhetek mindenkit Szegeden.

Az AO (Arbeitgemeinschaft für Osteosynthesefragen) Svájcban alakult meg közel 60 évvel ezelőtt és célja az volt és maradt, hogy javítsa a traumatológiai, ortopédiai betegek ellátásának minőségét. Sikeressége miatt világszerte elterjedt és Magyarországról is több mint 50 tagja van. Az AO magyar képviselői évente rendszeresen postgraduális kurzusokat, szemináriumokat, továbbképzéseket tartanak a magyar és a szomszédos országok baleseti- és ortopédi sebészeinek, gerinc- és maxillofacialis sebészeinek, valamint műtős szakasszisztenseinek. Az AO magyarországi vezetése rendszeresen delegál tehetséges tagokat a nemzetközi ún. „Faculty Training-re” és „Chairman Education Programra,” melyet az AO Foundation szervez.

Különösen nagy öröm számomra, hogy ebben az évben szülővárosom, Szeged ad otthont annak az AO Bázis kurzusnak, amely az ATLS kurzussal együtt 2013. januárja óta kötelező minden újonnan belépő hazai ortopéd-trauma rezidensnek. A bázis kurzus az első lépés arra, hogy teljesítésével mindenki előtt megnyúlljon az a kivételes lehetőség, hogy elméleti és gyakorlati képességeit fejlesztve, a kor követelményeinek megfelelő színvonalon legyen képes ellátni betegeit és, hogy aktív tagja legyen az AOTrauma új köntösbe öltöztetett magyarországi munkacsoportjának.

A 2016. évben további képzési lehetőséget kínál az AO. A nyár végén a Magyar Traumatológus Társaság 50 éves fennállását ünnepli. Az eseményt az MTT ünnepi trauma kongresszussal, valamint elhelyezés az AO mesterkurzussal kívánja emlékezetessé tenni. A színes szakmai anyag mellett, az oktatói gárda is kivételes lesz ezen a rendezvényen.

Az AO Bázis kurzusához kívánok minden résztvevőnek hasznos és kellemes időtölést, Szegeden! Bővebb információ a rendezvényekről és a tagságról a https://www.aofoundation.org honlapon érhető el.

Prof. Dr. Varga Endre
AO Trustee
Tanszékvezető egyetemi tanár
Szegedi Tudományegyetem
Szent-Györgyi Albert Klinikai Központ
Traumatológiai Klinika
Welcome words

Dear Colleagues,

It is an honor for me to welcome you as the president of the AOTrauma Basic Principles of Fracture Management course in Szeged. The AO (Arbeitgemeinschaft für Osteosynthesefragen) was founded about 60 years ago in Switzerland with the dedication which stayed throughout the years to improve the quality of the patients care in trauma and orthopedic surgery. Because of it’s success the AO spread around the world. Even in Hungary AO Trauma has more than fifty members. The representatives of the Hungarian AO are holding postgraduate courses, seminars, trainings for trauma,- orthopedic,- spine,- maxillofacial surgeons and for ORP’s not just in Hungary but in neighboring countries, too. The leadership of the Hungarian AO regularly delegates talented members to the „Faculty trainings” and to the „Chairman Education Programs”, which is organized by the AO Foundation.

I am delighted that this year the AOTrauma Basic Principles of Fracture Management course takes place in my hometown, Szeged. The Basic course together with the ATLS has been mandatory for the newly entered trauma-orthopedic residents since 2013. Attending the basic course may be the first step for everyone to improve their theoretical and practical ability on the road which leads to the way to be an active member of the renewed AOTrauma team in Hungary.

In the year 2016, AO will also offer courses. At the end of the summer, the Hungarian Society for Traumatology will be celebrating it’s 50 years of existence with a Congress and in connection with that congress there will also be an AO Master course. Beside the experienced faculties from Hungary, international well-known colleagues will also participate there.

I hope this course both professionally and in terms of recreation will be memorable for all of us.

I wish you much success and useful freetime in my hometown.

For more information about the AO FOUNDATION please check : www.aofoundation.org

Prof. Endre Varga, MD.
Head of Trauma Department
Head of Central Operation Rooms and Sterilization Unit
Professor of Trauma Surgery
general-, trauma- hand- & orthopedic-surgeon
Past President of Hungarian Trauma Society
AO Trustee
Chair of ATLS Hungary
National Delegate for ESTES
Chairperson

Prof. Endre Varga, MD.
Szeged, Hungary
endrevargamd@yahoo.com

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Head of Central Operation Rooms and Sterilization Unit
Professor of Trauma Surgery
general-, trauma- hand- & orthopedic-surgeon
Past President of Hungarian Trauma Society
AO Trustee
Chair of ATLS Hungary
National Delegate for ESTES

Regional Faculty
Baumgaertel Friedrich Germany
Novakovic Vladan Serbia

Local Faculty
Csonka Endre Hungary
Gunther Tibor Hungary
Nacsai István Hungary
Simonka János Aurél Hungary
Szabó Zsolt Hungary
Tóth Ferenc Hungary
Turchányi Béla Hungary
Urbán Endre Hungary
Varga Norbert Hungary
Wiegand Norbert Hungary

Table Instructors
Csonka Ákos Hungary
Csonka Endre Hungary
Csete Károly Hungary
Kősző Balázs Hungary
Ungvári Gábor Hungary

Guest Faculty Anesthesiology
Molnár Zsolt Hungary
Tuesday, 9 February, 2016

<table>
<thead>
<tr>
<th>TIME</th>
<th>AGENDA ITEM</th>
<th>WHO</th>
</tr>
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<tbody>
<tr>
<td>17:00–20:00</td>
<td>Faculty meeting</td>
<td>Faculty members</td>
</tr>
<tr>
<td>20:00–</td>
<td>Faculty dinner</td>
<td>Faculty members</td>
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</tbody>
</table>

Wednesday, 10 February, 2016

<table>
<thead>
<tr>
<th>TIME</th>
<th>AGENDA ITEM</th>
<th>WHO</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00–08:10</td>
<td>Welcome and introduction</td>
<td>E Varga</td>
</tr>
<tr>
<td>08:10–08:25</td>
<td>The AO world — From history to lifelong learning</td>
<td>E Varga</td>
</tr>
<tr>
<td>08:25–08:40</td>
<td>Influence of the patient factors and the mechanism of injury on fracture management</td>
<td>T Gunther</td>
</tr>
<tr>
<td>08:40–08:55</td>
<td>The (soft-tissue) injury — a high priority consideration</td>
<td>Zs Szabó</td>
</tr>
<tr>
<td>08:55–09:15</td>
<td>Absolute stability: biomechanics, techniques, and fracture healing</td>
<td>V Novakovic</td>
</tr>
<tr>
<td>09:15–09:35</td>
<td>Relative stability: biomechanics, techniques, and fracture healing</td>
<td>I Nacsai</td>
</tr>
<tr>
<td>09:40–10:45</td>
<td>Practical exercise 1</td>
<td>T Gunther</td>
</tr>
<tr>
<td>10:45–11:00</td>
<td>COFFEE BREAK</td>
<td></td>
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<tr>
<td>11:00–11:10</td>
<td>Bone healing: review of learning outcomes of eLearning module</td>
<td>F Tóth</td>
</tr>
<tr>
<td>11:10–11:20</td>
<td>Fracture classification: review of learning outcomes of eLearning module</td>
<td>V Novakovic</td>
</tr>
</tbody>
</table>

LOCATION CHANGE TO SMALL GROUP DISCUSSIONS:

11:20–12:10 Small group discussion 1
Discussion on general principles, classification, concepts of stability, their influence on bone healing, and how to apply implants to achieve appropriate stability

Group A: E Csonka – Zs Szabó
Group B: J A Simonka – T Gunther
Group C: I Nacsai – F Urbán
Group D: F Baumgaertel – N Wiegand
Group E: B Kószó – G Ungvári
10 AOTrauma Course—Basic Principles of Fracture Management

12:10–13:05 LUNCH BREAK

**LOCATION: Díszterem**

13:05–13:20 Fracture fixation using locking plates — when, why, and how F Baumgaertel

13:20–13:40 Principles of diaphyseal fracture management — what is important in treating these fractures? J A Simonka

13:40–13:55 Reduction techniques of diaphyseal fractures — principles and methods I Nacsai

13:55–14:00 **LOCATION CHANGE TO SMALL GROUP DISCUSSIONS:**

14:00–15:10 Small group discussion 2
Management principles for the treatment of diaphyseal fractures

Group A: F Baumgaertel – N Wiegand
Group B: E Csonka – Zs Szabó
Group C: J A Simonka – T Gunther
Group D: I Nacsai – F Urbán
Group E: B Kőszó – G Ungvári

15:10–15:30 COFFEE BREAK

**LOCATION: Informatórium**

15:30–16:40 Practical exercise 2
Principle of the internal fixator using the locking compression plate (LCP)

- Video: 00112
- Bone model: 1142
- Bone model 0068

G Ungvári

Table instructors:
1. Á Csonka
2. E Csonka
3. K Csete
4. B Kőszó
5. I Nacsai

16:45–17:00 Principles of articular fractures management — how do they differ from diaphyseal fractures? F Urbán

17:00–17:15 Reduction techniques for articular fractures — principles and methods F Baumgaertel

**LOCATION: Kamaraterem**

17:25–19:25 AO Skills Lab

- Torque measurement of bone screws
- Soft-tissue penetration during drilling
- Heat generation during drilling
- Mechanics of bone fractures
- Fracture healing
- Techniques of reduction
- Mechanics of intramedullary fixation
- Mechanics of plate fixation part 1
- Mechanics of plate fixation part 2
- Damaged implant removal

Skill Lab Director:
F Baumgaertel
Á Csonka
E Csonka
Zs Szabó
B Kőszó
G Ungvári
J A Simonka
K Csete
F Urbán
I Nacsai
F Tóth

19:25–19:45 Discussion of faculty Faculty members
Thursday, 11 February, 2016

<table>
<thead>
<tr>
<th>TIME</th>
<th>AGENDA ITEM</th>
<th>WHO</th>
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</thead>
</table>
| 08:00–09:00 | **Practical exercise 3**  
Intradmedullary nailing  
This nailing exercise can be done for a tibial shaft fracture or a femoral shaft fracture.  
Tibial shaft fractures — reamed IM nailing with the expert tibia nail (ETN)  
- Video: 00130  
- Bone model: 1149-01, (and ASLS perspex model) | I Nacsai  
Table instructors:  
1. Á Csonka  
2. E Csonka  
3. K Csete  
4. B Kószó  
5. G Ungvári |
| 09:00–09:20 | **COFFEE BREAK**                                                                                                                                                                                               |                                          |
| 09:20–09:35 | Distal radial fractures—which to fix? How to fix?                                                                                                                                                               | F Tóth                                  |
| 09:35–09:50 | Fractures of the olecranon and patella  
(Tension Band stabilization)                                                                                                                                 | B Turchányi                             |
| 09:50–10:05 | Forearm fractures need understanding of principles for diaphyseal and articular fractures                                                                                                                                 | T Gunther                               |
| 10:05–10:20 | Preoperative planning — rationale and how to do it                                                                                                                                                             | F Baumgaertel                          |
| 10:20–11:30 | Preoperative planning — “plan your forearm operation”  
(Templating exercise)                                                                                                                                                                                   | F Urbán                                 |
| 11:30–12:30 | **LUNCH BREAK**                                                                                                                                                                                                 |                                          |
| 12:30–13:40 | **Practical exercise 4**  
Operate your plan — fixation of a 22-C1 forearm fracture using the LCP 3.5 (8 and 11 holes)  
- No video  
- Bone model: 6501  
- 6 bone spreader 399.100 | J A Simonka  
Table instructors:  
1. Á Csonka  
2. E Csonka  
3. K Csete  
4. B Kószó  
5. G Ungvári |
| 13:40–13:55 | Ankle fractures — a logical approach for their fixation                                                                                                                                                         | N Wiegand                              |
| 13:55–14:10 | Femoral neck fractures                                                                                                                                                                                         | E Csonka                                |
| 14:10–14:25 | Trochanteric fractures                                                                                                                                                                                          | F Baumgaertel                          |
| 14:25–14:40 | Distal femoral fractures — management principles                                                                                                                                                               | B Turchányi                            |
| 14:40–14:55 | Tibial plateau fractures                                                                                                                                                                                         | N Wiegand                              |
| 14:55–15:15 | **COFFEE BREAK**                                                                                                                                                                                               |                                          |
AOTrauma Course—Basic Principles of Fracture Management


15:15–16:25  
**Small group discussion 3**
Management principles for the treatment of articular fractures

Group A: I Nacsai – F Urbán  
Group B: F Baumgaertel -N Wiegand  
Group C: E Csonka– Zs Szabó  
Group D: J A Simonka – T Gunther  
Group E: B Kószó – G Ungvári

16:25–16:30  
**LOCATION CHANGE TO LECTURE HALL: Díszterem**

16:30–16:40  
Minimally invasive osteosynthesis (MIO) — when to use it?  
V Novakovic

16:40–16:50  
Radiation hazards  
Zs Szabó

16:50–16:55  
**LOCATION CHANGE TO PRACTICALS: Informatórium**

16:55–18:05  
**Practical exercise 5**
**Fixation of a trochanteric fracture**  
IM nailing of a proximal femur using a proximal femoral nail anti-rotation (PFNA)
- Video: 00125  
- Bone model: 2220

18:05–18:10  
**LOCATION CHANGE TO LECTURE HALL: Díszterem**

18:10–18:25  
Anesthesiological aspects of trauma care  
Zs Molnár

18:25–18:40  
Fixation principles in osteoporotic bone — the geriatric patient  
E Csonka

18:40–19:15  
Discussion of faculty  
Faculty members

20:00–  
Course dinner  
All

Friday, 12 February, 2016

TIME  
AGENDA ITEM  
WHO

**LOCATION: Informatórium**

08:00–08:30  
**Practical exercise 6**
**Tension band wiring of the olecranon**
- Video: 00132  
- Bone model: 6011

08:30–09:30  
**Practical exercise 7**
**Management of a malleolar fracture**
Management of a malleolar fracture type 44–B
- Video: 00114  
- Bone model: 3118
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:30</td>
<td>COFFEE BREAK</td>
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<tr>
<td>09:50</td>
<td>Treatment algorithms for the polytrauma patient</td>
<td>E Varga</td>
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<tr>
<td>10:05</td>
<td>Emergency management of pelvic fractures — a critical skill can save lives</td>
<td>E Varga</td>
</tr>
<tr>
<td>10:20</td>
<td>Management of open fractures</td>
<td>J A Simonka</td>
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<tr>
<td>10:35</td>
<td>Infection after osteosynthesis — how to diagnose and manage</td>
<td>T Gunther</td>
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<tr>
<td>10:50</td>
<td>Delayed healing — causes and treatment principles</td>
<td>V Novakovic</td>
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<tr>
<td>12:30</td>
<td>Small group discussion 4</td>
<td></td>
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<tr>
<td>13:10</td>
<td>Final case discussion (eg, polytrauma, complications, special fractures...)</td>
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<tr>
<td>12:10</td>
<td>LUNCH BREAK</td>
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<tr>
<td>13:10</td>
<td>Practical exercise 8</td>
<td></td>
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<tr>
<td>13:10</td>
<td><strong>Stabilization of the pelvic ring using a large external fixator</strong></td>
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<tr>
<td>14:20</td>
<td>Practical exercise 9</td>
<td></td>
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<tr>
<td>14:20</td>
<td><strong>Tibial fractures treated with different external fixator frame constructs — assessment of stability</strong></td>
<td></td>
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<tr>
<td>15:20</td>
<td><strong>LOCATION CHANGE TO LECTURE HALL: Díszterem</strong></td>
<td></td>
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<tr>
<td>15:25</td>
<td>Implant removal — Why, when, and how?</td>
<td>F Tóth</td>
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<tr>
<td>15:50</td>
<td>The future of fracture treatment</td>
<td>E Varga</td>
</tr>
<tr>
<td>16:00</td>
<td>Discussion of faculty</td>
<td>Faculty members</td>
</tr>
</tbody>
</table>
Course organization

**AOTrauma Europe**
Calavdelerstrasse 8
7270 Davos, Switzerland
Phone  +41 81 414 27 20
Fax      +41 81 414 22 84
Email   courses@aotrauma.org

Course logistics

**Industrial Partner**
Edina Buzas
Nagyenyed utca 8-14.
1123 Budapest, Hungary
Phone  +36 1 884 28 48
Fax      +36 1 884 27 58
Email   ebuzas@its.jnj.com

Course venue

**Szent-Györgyi Albert Agóra**
Kálvária sugárút 23.
6722 Szeged, Hungary
Web     http://www.agoraszeged.hu/intezmenyek/szent-gyorgyi-albert-agora
Phone  +36 62 563 480
Email   kapcsolat@agoraszeged.hu
Course information

Course fee
AOTrauma Course—Basic Principles of Fracture Management:

Local attendees: 80,000 HUF
International attendees: 400 EUR

Included in the course fee are conference bag with documentation, coffee breaks, lunches and course certificate.

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

Evaluation guidelines
All AOTrauma courses apply the same evaluation process, either audience response system (ARS) or paper and pencil questionnaires. This will help AOTrauma to ensure that we continue to meet your training needs. In some regions, CME accreditation is dependent on the participant’s evaluation results.

Intellectual property
Course materials, presentations, and case studies are the intellectual property of the course faculty. All rights are reserved. Check hazards and legal restrictions on www.aofoundation.org/legal.

Recording, photographing, or copying of lectures, practical exercises, case discussions, or any course materials is absolutely forbidden.

The AO Foundation reserves the right to film, photograph, and audio record during their 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 AO marketing and other purposes, and made available to the public.

Security
There will be a security check at the entrance of the building. Wearing of a name tag is compulsory during lectures, workshops, and group discussions.

No insurance
The course organization does not take out insurance to cover any individual against accidents, theft, or other risks.

Mobile phone use
Mobile phone use 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.

Transportation
Transport should be arranged individually.

Dress code
Casual
Driving excellence and empowering the next generation

AOTrauma membership
Discover the advantages of joining the leading global trauma and orthopedic community, providing its members with education, research and networking opportunities worldwide.

Apply for membership at www.aotrauma.org