AO Recon Online Course—Principles of Total Hip and Knee Arthroplasty

December 3–5, 2020
Davos, Switzerland

Virtual classroom

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

Purpose statement
AO Recon is a global network of orthopedic surgeons committed to best-in-class education in joint preservation and replacement.

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.
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Welcome

Wherever you are in the world, we welcome you to the first-ever, fully online AO Davos Courses.

Welcome to the AO Davos Courses 2020. This course is one of more than 20 online educational opportunities spanning AO Trauma, AO Spine, AO CMF, AO VET, AO Recon, and the AO Program for Education and Excellence in Research (AO PEER) offered during the AO Davos Courses 2020, scheduled December 3–6. As you know, COVID-19 has limited surgeons’ and operating room personnel’s access to educational opportunities. The online format means that participants will have access to the AO’s gold-standard educational offering, from the safety of their homes and offices, wherever they are in the world.

You are part of a milestone in the history of our flagship annual event, as we continue shaping the future of medical education while underscoring our commitment to the health and wellbeing of course participants, faculty, staff, partners, and the Davos community.

This year, we unleash the power of technology to provide you with a user-centered, highly interactive experience closely simulating the traditional on-site AO Davos Courses, including:

• The ability to connect with your peers via myAO groups with chat and video function
• Exciting plenary activities in our virtual auditorium—and on-demand videos of the opening ceremony and keynotes
• World-class education in engaging live, synchronous classroom sessions
• Meet the Experts sessions giving you an insight into the latest innovations from the AO Technical Commission
• Our networking lounge where you can mingle with your peers and gain insights from your field’s top experts during fireside chats
• Access to curated, high-value publications in the library
• Special AO spirit events where you can mingle, relax, and discover the legendary AO spirit
• Opportunities to meet our strategic and industrial partners and sponsors in the exhibit hall
• An immersive AO experience offering a tour of the environment and information about our clinical divisions and unit, our innovation-driving institutes, memberships, and fellowships
• Our integrated photo booth where you can take a selfie to capture the moment and post on social media

Welcome to AO Davos Courses 2020—and the future of medical education.
Welcome

Dear AO Recon online course participant,

Welcome to the AO Recon Online Course—Principles of Total Hip and Knee Arthroplasty, 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. It is with great pleasure that we welcome you to our online educational event that offers surgeons training on basic principles of hip and knee arthroplasty.

During three modules conducted over three days, global leaders in the field of hip and knee arthroplasty will present inspiring lectures and lead interactive discussion groups.

Your current knowledge level, attitudes, and skills will be challenged throughout the event. The best-in-class curriculum and faculty will provide you a memorable learning experience that will remain with you for a lifetime.

We hope that you will immediately transfer the knowledge you gain here into your daily practice in order to reach our shared goal of improving patient care through surgical excellence.

Norbert P. Haas
AO Recon
Steering Board

Carsten Perka
AO Recon
Education Forum
Course description
The online course is delivered in three modules. Each module consists of online lectures, polling questions, and small group discussions in breakout rooms.

Module 1: Perioperative Management of Total Hip and Knee Arthroplasty
Module 2: Performing Total Hip Arthroplasty
Module 3: Performing Total Knee Arthroplasty

Goal of the course
The AO Recon Course—Principles of Total Hip and Knee Arthroplasty teaches fundamental principles and current concepts in the treatment of patients with a need for primary arthroplasty of the hip and knee. This course is the initial step along the path of lifelong learning in the area of joint arthroplasty. Based on a patient-centered approach, this course focuses on the key principles of primary arthroplasty.

Target participants
This course is targeted at newly certified orthopedic surgeons and advanced orthopedic surgical trainees.

Learning objectives
Upon completion of this course, participants will be able to:
- Identify patients’ reconstructive surgery needs.
- Adopt a patient-centered approach.
- Anticipate, recognize, and stratify potential complications.
- Describe and discuss safe and effective procedures for primary arthroplasty.
- Discuss the management of early and late problems or complications.
- Communicate and facilitate a multidisciplinary, team-based approach.
- Apply best practice to optimize and document patient outcomes.
Chairpersons

Bas Masri  
Vancouver, Canada

George Macheras  
Athens, Greece

Faculty

Online Module 1

Bartolomé Allende  
Córdoba, Argentina

Adam Hart  
Montreal, Canada

Plamen Kinov  
Sofia, Bulgaria

Krisztian Sisak  
Szeged, Hungary

Luigi Zagra  
Milan, Italy

Online Module 2

Anthony Albers  
Montreal, Canada

Fares Haddad  
London, United Kingdom

Plamen Kinov  
Sofia, Bulgaria

Krisztian Sisak  
Szeged, Hungary

Nemanja Slavković  
Belgrade, Serbia

Luigi Zagra  
Milan, Italy

Online Module 3

Bartolomé Allende  
Córdoba, Argentina

Jean-Noël Argenson  
Marseille, France

Adam Hart  
Montreal, Canada

Robert Hube  
Munich, Germany

Michael Huo  
Dallas, United States

Sujith Konan  
London, United Kingdom
## Module 1
**Moderator:** Bas Masri

### Perioperative Management of Total Hip and Knee Arthroplasty

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<th>Time</th>
<th>Topic</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>17:00–17:10</td>
<td>Welcome and introduction</td>
<td>B Masri, G Macheras</td>
</tr>
<tr>
<td>17:10–17:20</td>
<td>Summary: Optimizing the patient journey</td>
<td>B Masri</td>
</tr>
<tr>
<td>17:20–17:25</td>
<td>Questions and answers</td>
<td>Moderator</td>
</tr>
<tr>
<td>17:25–17:35</td>
<td>Preventing infection and thromboembolic disease in joint replacement</td>
<td>G Macheras</td>
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<tr>
<td>17:35–17:40</td>
<td>Questions and answers</td>
<td>Moderator</td>
</tr>
<tr>
<td>17:40–17:50</td>
<td>Pain management and rehabilitation</td>
<td>L Zagra</td>
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<tr>
<td>17:50–17:55</td>
<td>Questions and answers</td>
<td>Moderator</td>
</tr>
<tr>
<td>17:55–18:40</td>
<td><strong>Small group discussion 1</strong>&lt;br&gt;<strong>Assessment and decision making</strong></td>
<td>All faculty</td>
</tr>
<tr>
<td>18:40–18:45</td>
<td>Closing of module: take-home messages</td>
<td>B Masri, G Macheras</td>
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</tbody>
</table>
### Module 2 – Part 1
**Moderator: F Haddad
Performing Total Hip Arthroplasty**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>16:00–16:10</td>
<td>Welcome and introduction</td>
<td>B Masri, G Macheras</td>
</tr>
<tr>
<td>16:10–16:20</td>
<td>Key steps in THA</td>
<td>G Macheras</td>
</tr>
<tr>
<td>16:20–16:25</td>
<td>Questions and answers</td>
<td>Moderator</td>
</tr>
<tr>
<td>16:25–16:35</td>
<td>Overview of surgical approaches for THA</td>
<td>P Kinov</td>
</tr>
<tr>
<td>16:35–16:40</td>
<td>Questions and answers</td>
<td>Moderator</td>
</tr>
<tr>
<td>16:40–16:50</td>
<td>Cemented fixation</td>
<td>K Sisak</td>
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<tr>
<td>16:50–16:55</td>
<td>Questions and answers</td>
<td>Moderator</td>
</tr>
<tr>
<td>16:55–17:05</td>
<td>Cementless fixation of the cup and the stem</td>
<td>A Albers</td>
</tr>
<tr>
<td>17:05–17:10</td>
<td>Questions and answers</td>
<td>Moderator</td>
</tr>
<tr>
<td>17:10–17:15</td>
<td>Closing of Module 2 – Part 1: Take-home messages</td>
<td>Moderator</td>
</tr>
<tr>
<td>17:15–17:30</td>
<td>BREAK</td>
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</table>

### Module 2 – Part 2
**Moderator: F Haddad
Performing Total Hip Arthroplasty**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>17:30–17:35</td>
<td>Introduction Module 2 – Part 2</td>
<td>Moderator</td>
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<tr>
<td>17:35–17:45</td>
<td>Bearing choice in THA</td>
<td>N Slavković</td>
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<tr>
<td>17:45–17:50</td>
<td>Questions and answers</td>
<td>Moderator</td>
</tr>
<tr>
<td>17:50–18:00</td>
<td>Intraoperative challenges and complications</td>
<td>L Zagra</td>
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<tr>
<td>18:00–18:05</td>
<td>Questions and answers</td>
<td>Moderator</td>
</tr>
<tr>
<td>18:05–18:15</td>
<td>Preventing dislocation in THA</td>
<td>F Haddad</td>
</tr>
<tr>
<td>18:15–18:20</td>
<td>Questions and answers</td>
<td>Moderator</td>
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</tbody>
</table>
| 18:20–19:05    | **Small group discussion 2**
**Total hip arthroplasty—surgical approaches, preventing dislocation, and fixation** | All faculty |
| 19:05–19:10    | Closing of module 2: Take-home messages | B Masri, G Macheras   |
### Module 3 – Part 1
**Moderator:** G Macheras  
**Performing Total Knee Arthroplasty**

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>16:00–16:10</td>
<td>Welcome and introduction</td>
<td>B Masri, G Macheras</td>
</tr>
<tr>
<td>16:10–16:25</td>
<td>Key steps in TKA and overview of surgical approaches for TKA</td>
<td>S Konan</td>
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<tr>
<td>16:25–16:30</td>
<td>Questions and answers</td>
<td>Moderator</td>
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<tr>
<td>16:30–16:40</td>
<td>Limb alignment and kinematics</td>
<td>JN Argenson</td>
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<tr>
<td>16:40–16:45</td>
<td>Questions and answers</td>
<td>Moderator</td>
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<tr>
<td>16:45–16:55</td>
<td>The role of the PCL in TKA</td>
<td>G Macheras</td>
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<tr>
<td>16:55–17:00</td>
<td>Questions and answers</td>
<td>Moderator</td>
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<tr>
<td>17:00–17:10</td>
<td>Bone cuts in TKA</td>
<td>M Huo</td>
</tr>
<tr>
<td>17:10–17:15</td>
<td>Questions and answers</td>
<td>Moderator</td>
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<tr>
<td>17:15–17:25</td>
<td>Balancing the varus knee and fixed flexion contracture</td>
<td>R Hube</td>
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<tr>
<td>17:25–17:30</td>
<td>Questions and answers</td>
<td>Moderator</td>
</tr>
<tr>
<td>17:30–17:35</td>
<td>Closing of module 3 – Part 1: Take-home messages</td>
<td>B Masri, G Macheras</td>
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<tr>
<td>17:35–17:50</td>
<td>BREAK</td>
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</table>

### Module 3 – Part 2
**Moderator:** G Macheras  
**Performing Total Knee Arthroplasty**

<table>
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<td>Balancing the valgus knee</td>
<td>B Masri</td>
</tr>
<tr>
<td>18:05–18:10</td>
<td>Questions and answers</td>
<td>Moderator</td>
</tr>
<tr>
<td>18:10–18:20</td>
<td>Patellofemoral resurfacing and tracking</td>
<td>A Hart</td>
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<tr>
<td>18:20–18:25</td>
<td>Questions and answers</td>
<td>Moderator</td>
</tr>
<tr>
<td>18:25–18:35</td>
<td>Fixation options in knee replacement</td>
<td>B Allende</td>
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<tr>
<td>18:35–18:40</td>
<td>Questions and answers</td>
<td>Moderator</td>
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<tr>
<td>18:40–19:25</td>
<td><strong>Small group discussion 3</strong></td>
<td>All faculty</td>
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<td></td>
<td><strong>How to do a TKR–valgus, varus, kinematic alignment</strong></td>
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<tr>
<td>19:25–19:30</td>
<td>Closing of module 3 and course: Take-home messages</td>
<td>B Masri, G Macheras</td>
</tr>
</tbody>
</table>
Event organization

AO Recon
Bas Wijburg
Senior Project Manager AO Recon
Davos, Switzerland
Phone +41 79 547 77 65
E-mail Bas.Wijburg@aorecon.org

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

Exhibitions

Your online AO experience
Your online AO experience brings you the best of the AO in a new format. Intuitively designed to be easily navigable, you can explore the AO’s work to meet patient treatment needs through our clinical divisions, clinical unit, and institutes. The main stage area offers you a chance to engage with the popular AO Technical Commission Meet the Experts sessions, and view AO TV and video content. You can learn more about our relationships with key partners in our industry area, and explore our history and growing impact. AO staff will be on-hand to answer questions you may have, and help guide you on your AO journey.
Sponsors

We thank our major industrial partners, **DePuy Synthes** and **Siemens Healthineers** for being part of our first online AO Davos Courses, as well as our premium exhibitor **SYNBONE** and our exhibitors **AO Alliance**, **Invibio** and **Karl Storz**.

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**Industrial partners**

**DePuy Synthes**

**Siemens Healthineers**

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**Premium exhibitor**

**SYNBONE®**

better education outcome

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**Exhibitors**

**AO Alliance**

**Invibio**

**STORZ**
General information

Event fee
AO Recon Online Course—Principles of Total Hip and Knee Arthroplasty: CHF 275

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

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

Evaluation guidelines
All AO Recon events apply the same evaluation process via online submission. This helps AO Recon 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. For more information, please see: www.aofoundation.org/legal.

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

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

Event language
English
Principles of AO educational events

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

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

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

3. Branding and advertising
No industry logos or advertising (apart from the AO Foundation and its clinical divisions) are permitted in the area where educational activities take place.
Sponsors providing financial or in-kind support are allowed to have a promotional booth or run activities outside the educational area with approval from the event chairperson.

4. Use of technologies and products in practical sessions
In case practical sessions are chosen as an educational method to educate skills, the technologies and products used have been approved or reviewed by the AO Technical Commission—a large independent group of volunteer surgeons developing and peer-reviewing new technology on behalf of the AO Foundation.
Any technology and/or products used in the practical sessions of this event have been found suitable to serve the defined educational purposes.
This does not imply any statement about its use and performance in actual clinical scenarios.
More information on the AO Technical Commission can be found on the AO's website: www.aofoundation.org/tc.

5. Personnel
Industry staff members are not permitted to interfere with the educational content or engage in educational activities during the event.
Mission
The AO mission is promoting excellence in patient care and outcomes in trauma and musculoskeletal disorders.

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

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

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

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

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

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

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

Veterinary medicine
• Improving osteosynthesis for small and large animals

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

For the AO Research Institute Davos Activity Report 2019 and recent publications, go to www.aofoundation.org/ari/publications.
AO Recon is a global network of orthopedic surgeons committed to best-in-class education in joint preservation and replacement.