AO Trauma Foot and Ankle

Information about practical exercises

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AO Trauma Foot and Ankle courses—information about practical exercises

prepared by the AO Trauma Foot and Ankle Education Taskforce

Contents

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1 Hints and tips for chairpersons and practical directors

The practical director sets up and introduces the practical exercises. He/she is responsible for carefully planning the session well in advance and should keep the following things in mind.

Equipment/set up

- ✓ Check that there are enough artificial bones, instruments, and implants available or on order.
- ✓ Check all equipment and ensure projectors, screen and sound system work and are adequate.
- ✓ Review all video/DVD material to check that it matches the teaching and learning requirements.
- ✓ Table instructors need to preview the video material so that they know what they will be demonstrating/supporting.
- ✓ Divide the long video materials into chunks to allow practicing the exercise step by step.
- ✓ The course directors may decide to show only the main parts of very long videos depending on the overall level of the participants.
- ✓ The use of a CCTV system needs to be planned and set up with additional material, such as a flip chart to write learning outcomes.

Learning objectives

- ✓ The learning objectives should be mentioned at the beginning of the practical exercise.

Throughout the practical

- ✓ Grab the attention of the learners by stressing clinical relevance and how their surgical performance will be enhanced by the activities.
- ✓ Divide the content into short, manageable sections.
- ✓ Engage the participants—discuss learning objectives and your expectations.
- ✓ Ensure all participants are advised about health and safety issues.
- ✓ Outline the structure of the session and introduce the exercise.
- ✓ Provide meaningful feedback.

Closure

- ✓ Reflect on outcomes and key learning points.
- ✓ Address questions and summarize main points.
- ✓ Deliver final “take-home” messages

Remind table instructors:

- ✓ They need to familiarize themselves with equipment, instruments and learning objectives.
- ✓ Lecturing at the workstation is not desired.
- ✓ They should let the participants perform the skill.

A full booklet and checklist for running a practical exercise is available in the faculty center under "AO Faculty Tools". https://aotrauma.aofoundation.org/en/education/faculty/faculty-center

2 Working with anatomical specimens

Before the course

- ✓ Any course with anatomical specimen must follow the Human Tissue Act (HTA)'s regulations and requirements.
- ✓ Anatomical specimens must be ordered at least one month prior to the course.
- ✓ The number of specimens should be calculated according to the number of participants and number of practical exercises.
- ✓ Good planning of the order of exercises and the number of incisions is essential for proper use of the specimens (a proposal for planning the incisions for 1 and 2 available specimens is supplied below)
- ✓ The number of participants on each specimen should ideally be 2, and maximum 3 participants.
- ✓ The specimens should be checked by the course chairpersons on day prior to the course.
- ✓ Thawing time depends on the size of specimens. However most of foot and ankle specimens require 16-24 hours for thawing in room temperature.
- ✓ Check that there are enough instruments, equipment and implants for all stations
- ✓ If image intensifier is going to be used, check the radiation safety requirements (distance) and equipment such as lead gowns and partitions.

During the course

- ✓ In accordance with HTA guidance, authorized access to cadavers in the lab area is restricted only to individuals with a permission.
- ✓ Ethical handling of the anatomical specimens with respect and dignity must be emphasized throughout the course.
- ✓ The demonstrator demonstrates the steps of each exercise in systematic and clear way.
- ✓ The table instructors should ensure that all participants are engaged in sharing in practice.
- ✓ The participants should have time to reflect on key learning points.

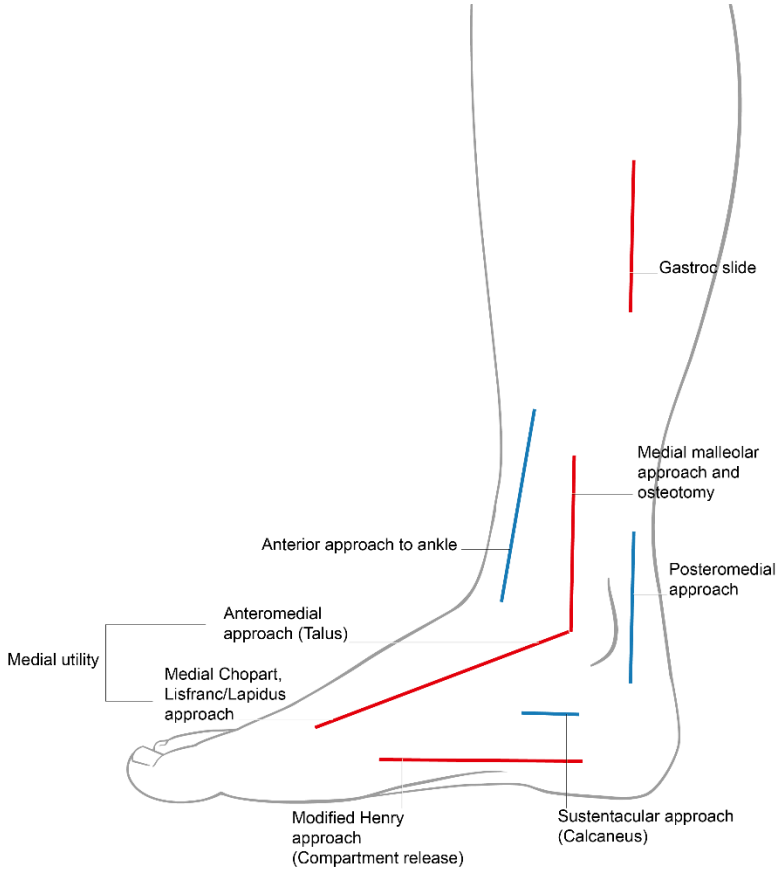
Recommendations for incisions

The illustrations below show the incisions that could be performed in the wet lab.

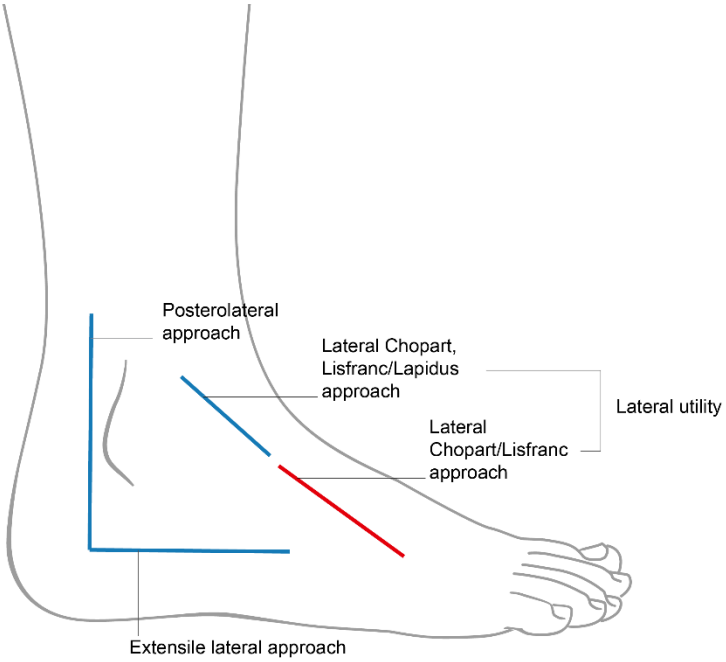
If two specimens per workstation are available, the red incisions would be done on day one on the first specimen, the blue incisions on day two on the second specimen.

If only one specimen per workstation is available, go through the red incisions on day one, which then need to be sutured before performing the blue incisions on the same specimen on day two.

Medial aspect



Lateral aspect



3 Module 1b: Pilon fracture

Duration
- approx. 60 min

Sets:
- 110.23 Basic Instrument Set for Foot and Ankle
- 131.0 LCP Instruments 3.5
- 168.0 Large Distractor
- 192.0 Wire Instruments (6 Stations/1 Set)
- 410.0 Compact Air Drive (6 Stations/1 Set)
- 935.3 Screw Rack 3.5 Titanium, GO (3 Stations/1 Set)
- 935.4 Screw Rack LCP 3.5 Titanium (3 Stations/1 Set)

Additional instruments:
- 399.980 Reduction Forceps, large, with Points, ratchet lock, length 200 mm (2 pieces)
- 393.100 Universal Chuck with T-Handle
- 312.922 LCP Drill Sleeve 2.7, for Drill Bits Ø 2.0 mm
- 399.400 Periosteal Elevator, slightly curved blade, straight edge, width 6 mm, length 187/87 mm
- U20-312-40 Skin Retractor Langenbeck-Kocher, 12 x 40 mm (2 pieces)
- C000013 Felt Pens

Additional implants:
- 440.082 LCP Pilon Plate 2.7/3.5, cruciform, shaft 7 holes, Pure Titanium (10 pieces)
- 292.160 Kirschner Wire Ø 1.6 mm with trocar tip, length 150 mm, Stainless Steel (3 & 3)
- 402.938 & 940 LCP Locking Screw Ø 2.7 mm (head LCP 3.5), self-tapping, length 38&40 mm (3&3)
- 406.032 & 035 Cancellous Bone Screw Ø 4.0 mm, fully threaded, length 32&35 mm
- 329.916 Bending Pin for LCP Plates 3.5, with thread
- 329.151 Cutting Pliers with Positioning Pin Ø 3.0 mm (1 per course for demo)
- 391.931 Cutting Pliers for Plates, length 230 mm (1 per course for demo)
- 329.095 Bending Iron for LCP Pilon Plates 2.7/3.5, (2 per course for demo)

Synbone bone model for this exercise:
- 9185.1 Foot 4-part, fractured, foam

Media support:
- Video 24028 Distal Tibia—Pilon Fracture 43-C3.2 LCP Pilon Plate 2.7/3.5

Key teaching points:
- Perform a lateral and an anteromedial approach to treat a C-type pilon fracture
- Explain the steps to reduce a C2 pilon with a simple fibula fracture
- Apply a medial DCP distal tibial plate to fix a pilon fracture
- Explain the principles used to treat a C2 pilon fracture
- Review the benefits of locking plates in the fixation of a 43-C2 fracture

Notes for practical director:
Divide the video into 3 parts followed by take-home messages:
- Part 1: Learning objectives, introduction to the fracture geometry and implant design
- Part 2: Incision, fracture reduction and preliminary fracture fixation
- Part 3: Plate application and epiphyseal fixation
- **Take-home messages**

4 Module 2: Calcaneal fracture

Duration
- approx. 60 min

Sets:
- 110.23 Basic Instrument Set for Foot and Ankle
- 131.0 LCP Instruments 3.5
- 192.0 Wire Instruments (6 Stations/1 Set)
- 418.0 Trauma Recon System TRS (2 Stations/1 Set)
- 935.3 Screw Rack 3.5 Titanium, GO (3 Stations/1 Set)
- 935.4 Screw Rack LCP 3.5 Titanium (3 Stations/1 Set)

Additional instruments:
- 329.916 Bending Pin for LCP Plates 3.5, with thread
- 391.963 Universal Bending Pliers, length 165 mm (3 per table)
- 393.100 Universal Chuck with T-Handle
- C000013 Felt Pens

Additional implants:
- 292.200 Kirschner Wire Ø 2.0 mm with trocar tip, length 150 mm, Stainless Steel (13 pieces)
- 494.785 Seldrill™ Schanz Screw Ø 5.0 mm, length 175/60 mm, Pure Titanium
- 441.622 Calcaneal Locking Plate 3.5, right, length 69 mm, Pure Titanium

Synbone bone model for this exercise:
- 9181.1 Foot with Soft Tissue Part (90°), Calcaneum Fracture

Media support:
- Video 24026 ORIF of Intraarticular Calcaneal Fractures with the Locking Calcaneal Plate

Key teaching points:
- Identify the fragments of a typical calcaneal articular fracture
- Perform a lateral L-shape calcaneal approach
- Explain the reduction technique
- Reproduce the fixation with a calcaneal locking plate

Notes for practical director:
Divide the exercise into two parts followed by take-home messages:

- **Part 1**: Reduction technique: Reduction of posterior facet, reduction of tuberosity, reducing the CC-joint and anterior process to calcaneal body.
- **Part 2:** Fixation: Preparing the plate, placing of subthalamic screws, placement of posterior tuberosity screws, placement of anterior process screws
- **Take-home messages**

5 Module 4: Lisfranc fracture

Duration
- approx. 60 min

Sets:
- 115.0 VA-LCP Forefoot/Midfoot System 2.4/2.7
- 914.0 Screw Set VA-Locking Stardrive 2.7 / Cortex 2.4 Titanium (2 Stations/1 Set)
- 416.0 Colibri for Trauma (2 Stations/1 Set)
- 532.021 Oscillating Saw Attachment (3 per Table) (Saw Blades in Set 115.0)

Additional instruments:
- 399.540 Chisel Handle (from set 110.23)
- 399.550 Chisel Blade, width 10 mm (from set 110.23)
- 399.420 Hammer 500 g
- 399.980 Reduction Forceps, large, with Points, ratchet lock, length 200 mm
- C000013 Felt Pens red and black

Additional implants:
- 292.160 Kirschner Wire Ø 1.6 mm with trocar tip, length 150 mm, Stainless Steel (4 pieces)

Synbone bone model for this exercise:

- LD9100 Foot single bone

Media support:
- Video 24039 Midfoot–Lisfranc Injury (TMT Fracture Dislocation) ORIF Using Cortex Screws Ø 4.0 mm and a VA-LCP 1st TMT Fusion Plate 2.4/2.7, VA Locking

Key teaching points:
- Perform dorsomedial and dorsolateral approaches to fix a Lisfranc injury
- Perform a staged fixation of multiple rays Lisfranc dislocation
- Perform fixation of the first, second and third rays with plates
- Review the principles of Lisfranc injuries fixation

Notes for practical director:

Divide the exercise into three parts followed by take- home messages:

- **Part 1**: Superficial and deep dissection of:
  - dorsomedial approach to expose Lisfranc joint
  - dorsolateral approach to expose lateral tarsometatarsal joints
- **Part 2:** Reduction and screw fixation of:
  - Lisfranc instability by Lisfranc screw
  - first and 3rd TMT joints by interfragmentary screws
- **Part 3:** Application of bridging plates for the TMT joints
- **Take-home messages**

6 Module 7: Ankle fusion anterior (Option 1)

Duration
- approx. 60 min

Sets:
- 110.23 Basic Instrument Set for Foot and Ankle
- 115.0 VA-LCP Forefoot/Midfoot System 2.4/2.7
- 141.0 Cannulated Screws 7.3 mm
- 143.0 Cannulated Screws 7.3mm for Ankle Fusion
- 416.0 Colibri for Trauma (2 Stations/1 Set)

Additional instruments:
- U40-72020 Bone Curette Volkmann, Figure 00
- U41-32315 Gouge Pliers Luer, curved
- U22-21825 CASPAR Soft Tissue Retractor, straight, blunt, 5 x 6 teeth, 34/28 x 27 mm deep
- 399.100 Bone Spreader, speed lock, width 8 mm, length 210 mm
- 399.420 Hammer 500 g
- From Set 110.23 only: 399.540/550, M060514. SWA20 Scalpell.
- From Set 115.0 only: 03.000.172 Burr round
- C000013 Felt Pens black and red

Synbone bone model for this exercise:
- 9140.1 Right 3-part Foot with Tibia, Fibula, Talus, Calcaneus, Forefoot sections, Ligaments and 120° foam
- Entire left foot with Tibia, Fibula, Talus, Calcaneus, intact model

Media support:
- Video 24032 Ankle joint—Deformity and Malunion Ankle Arthrodesis Using an Anterior Approach

Key teaching points:
- Choose one of two options—ankle fusion anterior or transfibular
- Perform an anterior approach to the ankle joint
- Prepare the ankle joint surfaces to a fusion
- Correct malalignment
- Place cannulated screws

Notes for practical director:
Divide the video into two parts followed by take-home messages:

- **Part 1**: Skin incision, superficial and deep dissection of the anterior approach, exposure and preparation of the ankle joint
- **Part 2**: Placement of the anterolateral, anteromedial and posteromedial screws.
- **Take-home messages**

7 Module 7: Ankle fusion transfibular (Option 2)

Duration
- approx. 60 min

Sets:
- 110.23 Basic Instrument Set for Foot and Ankle
- 115.0 VA-LCP Forefoot/Midfoot System 2.4/2.7
- 141.0 Cannulated Screws 7.3 mm
- 143.0 Cannulated Screws 7.3mm for Ankle Fusion
- 935.0 Screw Rack 3.5, GO (3 Stations/1 Set)
- 416.0 Colibri for Trauma (2 Stations/1 Set)
- 532.021 Oscillating Saw Attachment

Additional instruments:
- U40-72020 Bone Curette Volkmann, Figure 00
- U41-32315 Gouge Pliers Luer, curved
- U22-21825 CASPAR Soft Tissue Retractor, straight, blunt, 5 x 6 teeth, 34/28 x 27 mm deep
- 399.100 Bone Spreader, speed lock, width 8 mm, length 210 mm
- 399.420 Hammer 500 g
- 399.180 Bone Lever, small, short narrow tip, width 6 mm, length 160 mm
- 399.190 Bone Lever, small, short narrow tip, width 8 mm, length 160 mm
- 399.980 Reduction Forceps, large, with Points, ratchet lock, length 200 mm
- From Set 115.0 only: 03.000.172 Burr round
- C000013 Felt Pens black and red

Additional implants:
- From Set 110.23 only: 310.250, 310.350, 311.320, 311.440, 312.280, 314.070, 314.090, 319.010, 399.540, 399.970, M060514, SWA4

Synbone bone model for this exercise:
- 9140.1 Right 3-part Foot with Tibia, Fibula, Talus, Calcaneus, Forefoot sections, Ligaments and 120° foam
- Entire left foot with Tibia, Fibula, Talus, Calcaneus, intact model

Media support:
- Video 24033 Ankle joint—Deformity and Malunion Ankle Arthrodesis with Fibular-onlay Strut Graft Using a Transfibular Approach

Key teaching points:
- Discuss indications and contraindications to ankle fusion while performing transfibular approach to the ankle joint; mention advantage of this approach over the anterior option
- Explain the fibula osteotomy technique while preparing the ankle joint surfaces for fusion
- Correct the malalignment
- Place cannulated screws
- Fix the fibular onlay strut graft

Notes for practical director:
Choose one of two options—ankle fusion anterior or transfibular
Divide the video into two parts followed by take-home messages:
- **Part 1**: Perform incision, dissection and joint preparation
- **Part 2**: Perform correction, screw fixation and fixation of the fibula

Take-home messages

8 Module 7: Ankle fusion assisted arthroscopically for anatomical specimen workshop

Duration
- approx. 60 min

Set:
- Arthroscope 4.0mm
- 141.0 Cannulated Screws 7.3 mm
- 143.0 Cannulated Screws 7.3mm for Ankle Fusion
- 935.0 Screw Rack 3.5, GO (3 Stations/1 Set)
- 416.0 Colibri for Trauma (2 Stations/1 Set)

Equipment from set for this exercise:
- Osteotomes
- Curettes
- 2.0 mm K wires

Additional material:
- X-rays

Synbone bone model for this exercise: n/a

Media support:
- Video 24034 Ankle joint—Deformity and Malunion Ankle Arthrodesis with 7.3mm Cannulated Screws Using Arthroscopy

Key teaching points:
- Discuss indications and contraindications to arthroscopic ankle fusion
- Explain patient positioning and preparation
- Prepare the anteromedial and anterolateral portals to the ankle joint
- Prepare the ankle joint surfaces using arthroscopy
- Correct malalignment
- Place cannulated screws
- Perform wound closure and dressing

Notes for practical director:
Divide the video into two parts followed by take-home messages:
- **Part 1** Placement of anterolateral and anteromedial arthroscopic portals, joint visualization and preparation of the joint surface.
- **Part 2**: Correction of malalignment and placement of the screws.
- **Take-home messages**

9 Module 8: Subtalar bone block arthrodesis (reorientation distraction fusion)

Duration
- approx. 60 min

Sets:
- 110.23 Basic Instrument Set for Foot and Ankle
- 168.0 Large Distractor
- 410.0 Compact Air Drive (6 Stations/1 Set)
- 410.1 Oscillating Saw Attachment for CAD (6 Stations/1 Set)
- 965.0 Screw Rack 6.5 (3 Stations/1 Set)

Additional instruments:
- 399.360 Periosteal Elevator, slightly curved blade, round edge, width 6 mm, length 190/90 mm
- 399.180 Bone Lever, small, short narrow tip, width 6 mm, length 160 mm (2 pieces)
- 399.100 Bone Spreader, speed lock, width 8 mm, length 210 mm
- 399.420 Hammer 500 g
- 397.700 Handle with Quick Coupling
- 397.740 Cancellous Bone Impactor, rectangular, 6 x 16 mm
- 393.100 Universal Chuck with T-Handle
- 519.150 Saw Blade 70/49 x 14 x 0.6/0.4 mm, for Oscillating Saw with AO/ASIF Coupling
- U22-21825 CASPAR Retractor, straight, blunt, 5 x 6 Teeth, 34/28 x 27 mm deep, length 255 mm

Additional implants:
- 292.160 Kirschner Wire Ø 1.6 mm with trocar tip, length 150 mm, Stainless Steel (3 pieces)

Synbone bone model for this exercise:
- 9183.1 Foot with Soft Tissue Part, Calcaneus Malunion

Media support:
- Video 24025 Subtalar Distraction Bone Block Arthrodesis

Key teaching points:
- Perform a posterolateral approach to the subtalar joint
- Describe the indications of a subtalar distraction bone block arthrodesis
- Apply a large distractor to allow joint access
- Prepare the subtalar joint surfaces to a fusion
- Prepare a structural bone graft to correct deformity
- Correct malalignment
- Place screws to fix a subtalar fusion
- Discuss the effects of a subtalar distraction arthrodesis in the foot

Notes for practical director:
Divide the video into two parts followed by take-home messages:

- **Part 1** : Patient positioning, superficial markings, skin incision, approach to the subtalar joint
- **Part 2**: Application of the bone block graft and placement of the screws.
- **Take-home messages**

10 Module 8: Hindfoot Arthrodesis Nail

Duration
- approx. 60 min

Sets:
- 158.0 Titanium Cannulated Hindfoot Arthrodesis Nail (HAN)
- 935.3 Screw Rack 3.5 Titanium, GO (3 Stations/1 Set)
- 410.0 Compact Air Drive (6 Stations/1 Set)
- 410.1 Oscillating Saw Attachment for CAD (6 Stations/1 Set)

Additional instruments:
- from 110.23 Small Fragment Instrument Set, for course
    - 310.250 Drill Bit Ø 2.5 mm, length 110/85 mm, 2-flute, for Quick Coupling
    - 311.320 Tap for Cortex Screws Ø 3.5 mm, length 110/50 mm
    - 311.440 T-Handle with Quick Coupling
    - 312.280 Double Drill Guide 3.5/2.5
    - 314.070 Screwdriver, hexagonal, small, Ø 2.5 mm, with Groove
    - 319.010 Depth Gauge for Screws Ø 2.7 to 4.0 mm, measuring range up to 60 mm
- 399.420 Hammer 500 g
- 399.092 Reduction Forceps, large, with Points, soft lock, length 222 mm
- C000013 Felt Pens

Synbone bone model for this exercise:
- PR0768 Foot 4-part, light dense, ligaments
- Entire left foot with Tibia, Fibula, Talus, Calcaneus, intact model

Media support:
- Video 24029 Ankle and hindfoot—Deformity Reconstruction Using the Hindfoot Arthrodesis Nail Expert Nailing System

Key teaching points:
- Review the lateral transfibular approach to the tibiotalar and subtalar joints. Mention pros and cons over anterior approach
- Describe the indications of a tibiotalocalcaneal arthrodesis
- List Hindfoot Arthrodesis Nail features
- Prepare the tibiotalar and subtalar joints surfaces for fusion
- Prepare the fibula to be used as an onlay graft
- Correct malalignment
- Choose the correct entry point for the nail
- Drill the distal and proximal tunnels
- Insert and block the nail with spiral blade/screws
- Fix the fibula
- Discuss the correct fusion alignment
- Remove the implant

Notes for practical director:
Divide the video into three parts followed by take-home messages:
- **Part 1**: Perform the transfibular approach and fibular osteotomy
- **Part 2**: Placement of the guidewire and reaming (the decisive step)
- **Part 3**: Nailing, locking and fixation of the fibula
- **Take-home messages**

11 Module 9/10: Calcaneal tuberosity malalignment

Duration
- approx. 30 min

Sets:
- Power Tool
- Oscillating Saw Attachment (one per 2 station)

Additional instruments:
- 312.050 Protection Sleeve 12.0/8.5
- 312.080 Drill Sleeve 8.5/2.8
- 399.180 Bone Lever, small, short narrow tip, width 6 mm, length 160 mm
- 399.980 Reduction Forceps, large, with Points, ratchet lock, length 200 mm
- 03.111.002 Drill Bit Ø 5.0 mm, cannulated, calibrated, length 300/250 mm, 3-flute, for Quick Coupling
- 03.227.030 Direct Measuring Device for HCS - Headless Compression Screw Ø 6.5 mm
- 03.227.033 Compression Sleeve for HCS - Headless Compression Screw Ø 6.5 mm
- 03.227.034 Sleeve for Compression Sleeve for HCS - Headless Compression Screw Ø 6.5 mm
- 03.227.037 Handle for Compression Sleeve for HCS - Headless Compression Screw Ø 6.5 mm
- 03.227.038 Attachment for Compression Sleeve for HCS - Headless Compression Screw Ø 6.5 mm
- 03.227.041 Screwdriver, hexagonal, cannulated, for HCS - Headless Compression Screw Ø 6.5 mm
- 03.227.042 Drill Bit for predrilling of bone for Screw Head, cannulated, for HCS—Headless Compression Screw Ø 6.5 mm
- 02.227.001 Guide Wire Ø 2.8 mm with trocar tip, length 300 mm, Stainless Steel (4 pieces)
- C000013 Felt Pens

Additional implants:
- 02.227.050 HCS—Headless Compression Screw Ø 6.5 mm, self-drilling, cannulated, length 50 mm (2 pieces)
- 02.227.065 HCS—Headless Compression Screw Ø 6.5 mm, self-drilling, cannulated, length 65 mm (2 pieces)

Synbone bone model for this exercise:
- PR0768 Foot 4-part, light dense, ligaments

Media support:
- Video 24030 Calcaneal Tuberosity–Malalignment. Correction osteotomy with Stabilization Using 6.5mm Headless Compression Screws (HCS)

Key teaching points:
- Perform a sliding calcaneal tuberosity osteotomy
- Place screws to fix a calcaneal osteotomy
- List HCS features
- Mention option of a minimal invasive procedure

Notes for practical director:
Divide the video into two parts followed by take-home messages:

- **Part 1**: Performing the osteotomy
- **Part 2**: Placement of the screws
- **Take-home messages**

12 Module 12: Midfoot fusion bolt

Duration
- approx. 60 min

Sets:
- 416.0 Colibri for Trauma (2 Stations/1 Set)
- MFB Instr./Impl. in card box;
- 02.111.210 Midfoot Fusion Bolt Ø 6.5 mm, length 110 mm, Stainless Steel
- 02.111.225 Midfoot Fusion Bolt Ø 6.5 mm, length 125 mm, Stainless Steel
- 03.111.001 T-Handle for Midfoot Fusion Bolt
- 03.111.002 Drill Bit Ø 5.0 mm, cannulated, calibrated, length 300/250 mm, 3-flute, for Quick Coupling
- 03.227.030 Direct Measuring Device for HCS - Headless Compression Screw Ø 6.5 mm
- 292.680 Guide Wire Ø 2.8 mm with threaded tip with trocar, length 300 mm, for Cannulated Screws Ø 6.5 mm
- 314.164 Screwdriver Stardrive® 4.5/5.0, T25, with Groove, length 240 mm
- 357.047 Drill Bit Ø 6.5 mm, cannulated, length 330 mm, for Quick Coupling No. 511.760

Additional instruments
- 532.021 Oscillating Saw Attachment 3 per table (3 pieces)
- 532.041 Saw Blade 30/15 x 6.0 x 0.4/0.3 mm
- 532.044 Saw Blade 33/18 x 4.0 x 0.4/0.3 mm
- 532.046 Saw Blade 37/22 x 12 x 0.4/0.3 mm
- 532.063 Saw Blade 42/27 x 14 x 0.6/0.4 mm
- 532.067 Saw Blade 65/50 x 27 x 0.6/0.4 mm
- 399.970 Reduction Forceps with Points, ratchet lock, length 130 mm
- 399.980 Reduction Forceps, large, with Points, ratchet lock, length 200 mm

Additional implants:
- 292.200 Kirschner Wire Ø 2.0 mm with trocar tip, length 150 mm, Stainless Steel (4 pieces)

Synbone bone model for this exercise:
- LDPR1220 Foot Charcot deformity

Media support:
- Video 24031 Midfoot–Profound Collapse or Instability Reconstruction and Realignment Using the Midfoot Fusion Bolt

Key teaching points:
- Explain the clinical indications for midfoot fusion
- Perform the surgical approach to a medial column fusion
- Correct midfoot malalignment
- Prepare joints for fusion and insertion of the bolt
- Fix the medial column using the bolt
- Achieve rotational stability with a plate
- Specify additional soft-tissue procedures and outline postoperative management

Notes for practical director:

Divide the video into three parts followed by take-home messages:
- **Part 1**: Perform the medial utility approach and dorsal approach

- **Part 2**: Perform midfoot osteotomy for correction of the deformity with preliminary fixation of the osteotomy
- **Part 3**: Insertion of guide wire, reaming for the bolt and insertion of the bolt
- **Take-home messages (must include necessity of additional fixation)**

13 Module 12: Midfoot Charcot deformity correction

Duration
- approx. 60 min

Sets:
- 118.0 VA-LCP Mid / Hindfoot 3.5 (Charcot)
- 918.0 Screw Set VA-Locking Stardrive 3.5 Titanium (2 Stations/1 Set)
- 416.0 Colibri for Trauma (2 Stations/1 Set)
- 532.021 Oscillating Saw Attachment (3 per Table) (Saw Blades in Set 118.0)

Additional instruments:
- from set 110.23:
    - 319.010 Depth Gauge for Screws Ø 2.7 to 4.0 mm, measuring range up to 60 mm
    - 399.970 Reduction Forceps with Points, ratchet lock, length 130 mm
    - 399.540 Chisel Handle
    - 399.550 Chisel Blade, width 10 mm
- 399.420 Hammer 500 g
- C000013 Felt Pens black and red

Additional impants:
- 292.160 Kirschner Wire Ø 1.6 mm with trocar tip, length 150 mm, Stainless Steel (4 pieces)
- 292.200 Kirschner Wire Ø 2.0 mm with trocar tip, length 150 mm, Stainless Steel (4 pieces)

Synbone bone model for this exercise:
- LDPR1220 Foot Charcot deformity

Media support:
- Video 24038 Midfoot–Charcot Deformity Realignment Arthrodesis, Ostectomy and Fixation with a VA-LCP Medial Column Fusion Plate 3.5 TMT Fusion Plate 2.4/2.7, VA Locking

Key teaching points:
- List clinical indications to midfoot fusion
- Describe the surgical approach to a medial column fusion
- Correct midfoot malalignment
- Prepare joints to fusion
- List VA LCP Medial Column Fusion Plate features
- Fix the medial column using the VA LCP Medial Column Fusion Plate
- Specify additional soft-tissue procedures
- Outline postoperative management

Notes for practical director:
Divide the video into three parts followed by take-home messages:
- **Part 1**: Perform the medial utility approach and dorsal approach
- **Part 2**: Perform midfoot osteotomy for correction of the deformity with preliminary fixation of the osteotomy.
- **Part 3**: Insertion and fixation of medial column fusion plate.
- **Take-home messages**

14 Module 14: First MTPJ fusion

Duration
- approx. 60 min in anatomical specimen lab

Sets:
- Variable angle LCP 1 MTP fusion plate 2.4–2.7

Additional instruments:
- 416.0 Colibri for Trauma (2 Stations/1 Set)
- Screw drivers
- Handles
- Measuring device
- Screws

Additional implants:
- 292.160 Kirschner Wire Ø 1.6 mm with trocar tip, length 150 mm, Stainless Steel (4 pieces)

Synbone bone model for this exercise:
Not applicable

Media support:
- Video 24035 1st Metatarsophalangeal Joint (MTPJ)—Arthritis/ Deformity Joint Fusion Using a Lag Screw and a Variable Angle LCP 1st MTP Fusion Plate 2.4/2.7

Key teaching points:
- Review clinical indications and contraindications for first metatarsophalangeal joint fusion
- Describe the dorsal approach to the first metatarsophalangeal joint
- Prepare the joint surfaces to fusion
- Define the optimal position of the arthrodesis
- Perform the arthrodesis fixation with a lag screw and a dorsal neutralization plate

Notes for practical director:
Divide the video into three parts followed by take-home messages:
- **Part 1**: Perform the dorsal approach and dislocation of 1st MTP joint.
- **Part 2**: Perform mechanical reaming for the articular surface and preliminary fixation of the joint by K-wire in proper position of the fusion.
- **Part 3**: Application of interfragmentary screw and MTP fusion plate.
- **Take-home messages**

15 Module 14: Scarf and Akin osteotomy

Duration
- approx. 60 min

Sets:
- 115.0 VA-LCP Forefoot/Midfoot System 2.4/2.7
- 914.0 Screw Set VA-Locking Stardrive 2.7 / Cortex 2.4 Titanium (2 Stations/1 Set)
- 416.0 Colibri for Trauma (2 Stations/1 Set)
- 532.021 Oscillating Saw Attachment (3 per Table) (Saw Blades in Set 115.0)

Additional instruments:
- from set 110.23
    - M060514 Medicon Tweezers, surgical, 1 x 2 teeth, length 145 mm, standard
    - 399.970 Reduction Forceps with Points, ratchet lock, length 130 mm
    - 399.540 Chisel Handle
    - 399.550 Chisel Blade, width 10 mm
- 399.420 Hammer 500 g
- 399.970 Reduction Forceps with Points, ratchet lock, length 130 mm
- C000013 Felt Pens red and black

Additional implants:
- 292.160 Kirschner Wire Ø 1.6 mm with trocar tip, length 150 mm, Stainless Steel (3 pieces)

Synbone bone model for this exercise:
- LDPR 1109 Foot single bone Hallux Valgus fracture

Media support:
- Video 24037 1st Metatarsal–Hallux Valgus Deformity Realignment Using Scarf Osteotomy and Fixation with Cortex Screws Ø 2.4 mm

Key teaching points:
- Review clinical indications and contraindications for scarf and Akin osteotomies
- Describe lateral soft-tissue release of the first metatarsophalangeal joint
- Describe the medial approach to the first metatarsal and first metatarsophalangeal joint
- Perform resection of the medial eminence
- Perform the scarf osteotomy and correct the deformity
- Fix the scarf osteotomy with screws
- Perform an Akin osteotomy and fix it with a screw
- Describe the postoperative care

Notes for practical director:
Divide the video into three parts followed by take-home messages:
- **Part 1**: Perform lateral modified McBride soft-tissue release, perform medial approach and bunionectomy
- **Part 2**: Perform scarf osteotomy and fixation with screws, removal of medial excess bone.
- **Part 3**: Perform Akin Osteotomy and fixation
- **Take-home messages**

16 Module 14: Lapidus (1st TMT joint fusion)

Duration
- approx. 60 min

Set:
- 115.0 VA-LCP Forefoot/Midfoot System 2.4/2.7
- 914.0 Screw Set VA-Locking Stardrive 2.7 / Cortex 2.4 Titanium (2 Stations/1 Set)
- 416.0 Colibri for Trauma (2 Stations/1 Set)
- 532.021 Oscillating Saw Attachment (3 per Table) (Saw Blades in Set 115.0)

Additional instruments:
- None

Additional implants:
- 292.200 Kirschner Wire Ø 2.0 mm with trocar tip, length 150 mm, Stainless Steel (3 pieces)
- C000013 Felt Pens red
- C000013 Felt Pens black
- Plastilin

Synbone bone model for this exercise:
- LDPR 1109 Foot single bone Hallux Valgus fracture

Media support:
- Video 24036 1st Tarsometatarsal TMT Joint—Hallux Valgus Deformity Lapidus Procedure Realignment Arthrodesis and Fixation with 4mm Cortex Screws and a 1st TMT Fusion Plate 2.4/2.7, VA Locking

Key teaching points:
- Review clinical indications and contraindications to a Lapidus procedure
- Describe the dorsal and medial approaches used to a Lapidus procedure
- Describe lateral soft-tissue release of the first metatarsophalangeal joint
- Make a pocket hole for insertion of the lag screw
- Perform resection of the medial eminence
- Prepare the joint surfaces to fusion correcting the deformity
- Fix the fusion with lag screws and a neutralization plate
- Describe the postoperative care

Notes for practical director:
Divide the video into three parts followed by take-home messages:
- **Part 1**: Perform dorsomedial approach and medial approach.
- **Part 2**: Creation of dorsal cortical pocket hole and corrective osteotomy of 1st TMT joint, fixation with interfragmentary screws
- **Part 3**: Application of the plate
- **Take-home messages**