

UEMS Orthopaedics**Minimal Requirements for Orthopaedic Training**

Approved by the UEMS section for Orthopaedics and Traumatology
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Definition of the speciality

Orthopaedics embraces the diagnosis and management of all disorders and injuries of bones, joints and associated soft tissues. In addition to patient diagnosis, treatment and care individual and general prophylactic measures form part of the speciality.

Orthopaedics comprises both acute and non-acute disorders and injuries as well as acute and planned non-operative and surgical treatment. The diagnostics is to a high degree based upon analysis of the patient history and advanced physical examination in combination with imaging modalities, endoscopy and laboratory investigations. The treatment consists of non-operative and surgical procedures, pharmacological treatment, physical therapy and occupational therapy, orthotic and prosthetic aids, social measures, rehabilitation and health education.

Orthopaedics co-operates particularly with other surgical specialities, anaesthesiology and intensive care, radiology, rheumatology, rehabilitation medicine, neurology, paediatrics, internal medicine and geriatrics in the management of patients.

The orthopaedic training should lead to broad and general knowledge in epidemiology, diagnostics, treatment and follow up of diseases and injuries to the locomotion system and good practical skills in most diagnostic and surgical methods. Special attention should be paid to the ability to handle acute conditions independently. Structured training in diagnostic and therapeutic procedures is particularly important.

The orthopaedic trainee should strive to become a surgeon of high quality with professional conduct in his/her attitude in all relations to patients and colleagues

Basic surgical training

The surgical specialities have a common base of knowledge. Every specialist must have certain basic surgical skills, anaesthesiology knowledge and be oriented about developments in other surgical disciplines. The basic surgical training mainly consists of surgical technique,

acute life saving measures and resuscitation in trauma, prevention of common complications and knowledge of different forms of anaesthesia and pain relief.

Every specialist should also be familiar with surgical exposures in all regions of the musculoskeletal system.

Depending upon local conditions time spent serving in other surgical specialities (e.g. neurosurgery, plastic surgery, general and vascular surgery) may be necessary.

There are three levels of knowledge and skill (A, B and C) which are defined as follows

A: things to have thorough knowledge of or be able to handle/perform independently

B: things to have good knowledge of or some experience of

C: things to have some theoretical knowledge of or have seen

Theoretical education

Theoretical knowledge is as important as practical skill and should be acquired through regular educational activities (department conferences, case discussions, journal clubs etc.) at the training centre, literature studies, courses and attendance at national and international meetings to keep up with the progress in orthopaedics. This requires free access to a medical library and literature search on the Internet.

The orthopaedic specialist should independently be able to handle/perform

The management of

- Sprains, dislocations and fractures
- Circulatory and neurological disturbances in the extremities
- Basic fluid balance problems and shock treatment
- Inflammatory and infectious diseases of the locomotor system
- Acute and chronic pain in the locomotor system
- Degenerative and systemic diseases of the locomotor system
- Pre- and postoperative care, complications and rehabilitation

Basic knowledge of domestic medico-legal and insurance aspects of orthopaedic conditions and injuries

The orthopaedic specialist should have a good knowledge of

- Basic science of the locomotor system (e.g. anatomy, physiology and pathology of the tissues in the locomotion system, biomechanics and bioengineering)
- The pathophysiology, diagnostics and treatment of the polytrauma patient
- Basic principles of epidemiology, data analysis and statistics, design and conduct of clinical trials
- Organisation of trauma care and major incidents
- Common malformations and congenital and hereditary diseases with manifestations in the locomotion system

- Diagnosis of tumours in the locomotor system
- Principles and use of common orthoses and prostheses
- Principles, application and side effects of commonly used radiological and electrophysiological investigation modalities
- Medical ethics

The orthopaedic specialist should be oriented about

- Less common orthopaedic diseases
- Advanced orthopaedic operations

DEFINED SKILLS

Basic surgical training

- Basic tissue handling and surgical techniques
- Initial handling of acute surgical conditions and head trauma
- Prevention and treatment of complications such as infection and thrombosis
- Basic knowledge of various forms of anaesthesia and pain relief
- Establishing free airway by endotracheal intubation and tracheotomy (coniotomy)
- Insertion of thoracic drain for pneumo- and hemo-thorax
- Basic knowledge of intensive care with fluid and shock treatment

Orthopaedics

A. Be able to independently manage

Acute

- Sprains, dislocations and fractures and their closed treatment in all ages
- Common techniques in osteosynthesis
- Circulatory and neurological disturbances in the extremities
- Acute compartment syndromes
- Infections in the skeleton, joints, tendons and soft tissues
- Inflammatory conditions in the skeleton, joints, tendons and soft tissues
- Pain conditions such as torticollis, calcifying tendinitis, sciatica and nerve entrapments
- Acute cauda equina syndrome
- Acute complications of tumours such as paraplegia and pathological fractures
- Common sports injuries and pain conditions

Elective

- Infectious and degenerative diseases of the locomotion system
- Common skeletal and joint deformities

- Low back pain
- Orthopaedic complications of osteoporosis
- Diabetic complications in the locomotion system
- Pre- and postoperative care and complications in orthopaedic conditions
- Preventive measures in orthopaedic conditions

Be able to perform basic and common operations in

The spine for

- Herniated lumbar disc

The shoulder and upper extremity for conditions such as

- Fractures in all parts of the humerus
- Supracondylar fracture of the humerus in children
- Olecranon fractures
- Forearm fractures
- Wrist fractures
- Acute compartment syndrome
- Metacarpal and finger fractures
- Septic tendovaginitis
- Extensor tendon rupture
- Ulnar collateral ligament rupture in the thumb
- Extremity fractures necessitating common casts
- Impingement syndrome
- Instability of the shoulder
- Osteoarthritis or dislocation of the acromioclavicular joint
- Epicondylitis of the elbow
- Entrapment of the ulnar nerve
- Carpal tunnel syndrome
- Trigger finger
- Split skin grafting

The pelvis and lower extremity for conditions such as

- Pelvic fracture in need of initial temporary stabilisation
- Femoral neck and trochanteric fractures
- Diaphyseal fractures of the femur and tibia
- Distal femoral fractures
- Patella fracture
- Proximal tibial fractures
- Ankle fractures
- Acute compartment syndrome
- Femoral traction in children
- Amputations through the thigh, knee and lower leg

- Osteoarthritis and similar diseases of the hip and knee
- Recurrent dislocation of the patella
- Meniscus injuries, open and arthroscopic techniques
- Hammer toe, hallux valgus and rigidus

B. Have good knowledge and some experience of

Acute

- The polytrauma patient
- Spinal trauma and peripheral nerve injuries
- Vertebral fractures
- Major pelvic fractures
- Fractures with severe soft tissue injuries
- Open and closed treatment of intraarticular fractures

Elective

- Treatment of developmental dysplasia of the hip and club foot
- Uncomplicated revision hip and knee arthroplasty
- Rheumatoid surgery
- Spine surgery
- Chronic osteomyelitis
- Pseudarthrosis surgery
- Arthroscopically assisted anterior cruciate ligament reconstruction
- Arthrodesis of large joints
- Leg lengthening and shortening
- Fasciectomy for Dupuytren's disease

C. Have seen or have theoretical knowledge of

- Less common malformations and congenital and hereditary diseases with manifestations in the locomotion system
- Advanced revision surgery in the hip and knee
- Arthroplasty of the shoulder, elbow and ankle
- Upper extremity and pelvic amputations
- Hip and pelvic osteotomies
- Orthopaedic treatment of musculo-skeletal consequences of neurological diseases
- Flexor tendon surgery in the hand

In order to acquire the knowledge and skills outlined above the training should preferably take place in institutions that have been recognized as training centres by the national orthopaedic association or similar organization.

The trainee should have a tutor during training. The tutor should control the achievements by regular appraisals at least every six months and control of the practical abilities annually.

These appraisals and controls should be performed by an independent observer and take the form of interviews and participation during surgery.

The trainee should keep a logbook of his/her educational activities and a list of operations performed independently, as assistant and as observer.
The orthopaedic training should take 5 to 6 years to complete and comprise a national examination.