



# Orthopedics

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## Overview

Orthopedics is the branch of medicine that focuses on the diagnosis and management of diseases of the bones, muscles and related soft tissues. Since management of these ailments can take the form of surgical interventions, the field is also referred to as orthopedic surgery. Fractures, sprains, and other musculoskeletal conditions are often encountered in emergency settings. Thus, basic knowledge in orthopedics is required of any competent physician. In this course, the student will be given a tour of commonly encountered pathologies in orthopedics. For optimal understanding, the student is required to be familiar with the anatomy and physiology of the musculoskeletal, or locomotor, system, along with the histology of bone, muscle and soft tissue.

Pediatric orthopedics is the study of diseases affecting the joints, bones, and musculature of children. A pediatric orthopedist, also called a pediatric orthopedic surgeon, is a doctor who specializes in the treatment of those areas in patients ranging from infants to teenagers. They can perform surgery when necessary but also provide other kinds of treatment, such as casts and limb braces. Importantly, children's bodies change significantly throughout childhood, and it is easy to mistake growing pains for abnormalities, which is why these symptoms should be taken seriously and approached with a broad differential.

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# Muscle and Soft Tissue: Pathology

- Dystrophin-associated Protein Complex
- Duchenne vs. Becker Muscular Dystrophy
- Myotonic Dystrophy and Ion Channel Myopathy
- The Neuromuscular Junction
- Myasthenia Gravis: Lambert-Eaton Myasthenic Syndrome
- Introduction to Soft Tissue Pathology: Tumors in Lipid Tissue
- Fibroblast, Muscle Tissue & Synovial Cell Sarcoma
- Primary vs. Specific Amyloidosis

# Physical Examination of the Limbs

- Examination of the Upper Extremities
- Examination of the Lower Extremities

# Trauma Triage

- Trauma: Primary Survey, Airway & Breathing
- Trauma: Circulation, Disability & Exposure

# Shock

- Circulation: Primary Survey
- Hemorrhagic Shock: Diagnosis
- Hemorrhagic Shock: Management
- Shock: General Management
- Sepsis and Septic Shock: Treatment

## Soft Tissue Injuries

- Extremity Injuries Principle #1: H&P Predicts Diagnosis
- Extremity Injuries Principle #2: Assessment of Neurovascular Status
- Extremity Injuries Principle #3 & #4: X-ray & Safe Disposition
- Extremity Injuries Principle #5: Complications
- Lacerations, Wounds and Bites in Children
- Treatment of Lacerations

## Common Fractures & Dislocations

- Greenstick-, Buckle-, Apophyseal Avulsion-, Supracondylar & Toddler's Fractures
- Types of Fractures
- Posterior Knee Dislocation

## Pelvic Injuries

- Case: 24-year-old Man with Multiple Trauma after Motor Vehicle Accident (MVA)
- Pelvis, Bladder and Urethra Injury

## Spine Injuries

- Cervical Spine Injury
- Spinal Trauma

## Compartmental Syndrome

- Compartmental Syndrome

## Infectious Diseases of the Bones & Joints

- Osteomyelitis (Bone Infection) & Septic Arthritis in Children: Pathology
- Osteomyelitis (Bone Infection) and Chronic Recurrent Multifocal Osteomyelitis (CRMO) in Children
- Septic Arthritis in Children
- Septic Arthritis
- Rheuma Case: 48-year-old Man with Fevers, R Knee Pain and Swelling
- Non-gonococcal Septic Arthritis: Initial Treatment and Management
- Quick Review: Septic Arthritis
- Infections by Bacteria in Different Groups: Eubacteria, Actinomycetales and Spirochaetes
- Clinical Manifestations and TB Case Histories

## Metabolic Bone Disorders

- Parathyroid Gland Disorders
- Bone Disease
- Metabolic Bone Disorders

## Peripheral Nerve Injuries

- Entrapment, Compressive and Peripheral Neuropathy
- Nerve Injuries

# Pediatric Rheumatology & Orthopedics

- Juvenile Idiopathic Arthritis (JIA)
- Juvenile Idiopathic Arthritis (JIA): Diagnosis & Management
- Swollen Joint in Children: Reactive Arthritis & Transient Synovitis (TS)
- Systemic Lupus Erythematosus (SLE) in Children
- Systemic Lupus Erythematosus (SLE) in Children: Labs and Management
- Granulomatosis with Polyangiitis and Goodpasture Syndrome
- Henoch-Schönlein Purpura (HSP, Spring Fever)
- Kawasaki Disease (Mucocutaneous Lymph Node Syndrome)
- Developmental Dislocation (Dysplasia) of the Hip (DDH)
- Clubfoot (Talipes Equinovarus) and Metatarsus Adductus
- Pediatric Orthopedic Leg Problems: Blount's Disease, Legg-Calvé-Perthes Disease (LCPD), Slipped Capital Femoral Epiphysis (SCFE) and Osgood-Schlatter Disease (OSD)
- Nursemaid's Elbow
- Scoliosis in Children
- Osteogenesis Imperfecta (Brittle Bone Disease) in Children

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Lifetime certificate validity	✓ Yes	✓ Yes
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Admission process	✓ Smooth, Transparent & all details provided	⚠ Spamming through multiple channels.
Data and privacy protection	✓ Yes	✗ No
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National Level Felicitation Award (for Mediversal Alumni)	✓ Yes	✗ No



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