



ORTHOPEDICS

Goals: The goal of the Orthopedics rotation is to provide learning opportunities that will enable students to develop the knowledge and skills necessary to:

1. Perform physical examinations of large and small joints of the body.
2. Diagnose acute and chronic musculoskeletal problems.
3. Diagnose and treat urgent/emergent musculoskeletal problems.
4. Understand the roles of the orthopaedic surgeon, physiatrist, and physical therapist.
5. Appropriate use of such sub-specialists.

Objectives: Upon completion of the rotation, students will demonstrate the ability to:

1. Describe the most important features of the normal anatomy of the joints and spine
2. Describe normal musculoskeletal growth and development and the most common abnormalities
3. Perform a musculoskeletal history
4. Perform an osteopathic palpatory and range of motion examination of:
 - a. Large and small joint.
 - b. Cervical, thoracic, and lumbar spine.
5. Interpret and apply the most common basic laboratory tests, including:
 - a. ESR.
 - b. ANA.
 - c. Rheumatoid factor.
 - d. CBC.
 - e. Joint fluid etc.
6. Interpret basic musculoskeletal radiographs
7. Appropriately use CT, MRI, & radionuclide scanning
8. Understanding of the indications and techniques of:
 - a. Arthrograms.
 - b. Myelograms.
 - c. Arthroscopy.
9. The osteopathic palpatory ability to recognize pathogenesis/pathophysiology in the musculoskeletal system, including:
 - a. Joint pain, swelling, and erythema.
 - b. Muscular pain, swelling and injury.
 - c. Minor and major musculoskeletal trauma.
 - d. Major long bone fractures.

- e. Hand/foot/wrist/ankle fractures.
 - f. Major joint dislocations.
 - g. Finger/toe dislocations.
 - h. Major tendon injuries.
 - i. Knee mechanics and common injuries.
 - j. Bone and joint deformities.
 - k. Bone and joint infections.
 - l. Metabolic bone diseases.
 - m. Musculoskeletal congenital anomalies.
 - n. Compartment syndromes.
 - o. Somatic Dysfunction.
 - p. Avascular necrosis of hip/lunate/scaphoid/navicular/calcaneus.
 - q. Child battering.
10. Identify the most common pediatric orthopedic conditions, including:
- a. Congenital hip dislocation.
 - b. Legg-Calve-Perthes disease.
 - c. Osgood-Schlatter disease.
 - d. Slipped capital epiphysis.
 - e. Clubfoot.
 - f. Intoeing (metatarsus adductus, tibial torsion, femoral torsion).
 - g. Knees: genu varus and valgus, chondromalacia patellae.
 - h. Salter-Harris classification of fractures.
11. Identify the diagnostics criteria and most common treatment for the following basic orthopaedic conditions:
- a. Treatment of lateral epicondylitis, elbow.
 - b. Entrapment syndromes.
 - c. Baker's cyst.
 - d. Osgood-Schlatter disease.
 - e. Osteoarthritis.
 - f. Metabolic bone disease: osteoporosis, Paget's disease.
 - g. Acute and chronic low back pain.
 - h. Sciatica.
12. Identify the appropriate use of:
- a. Pharmacology: NSAIDS, steroids, muscle relaxants, and antibiotics.
 - b. Supportive devices: braces of back, knees, ankles, and wrists.
 - c. Rehabilitation.
 - d. Physical therapy.
 - e. Occupational therapy.
 - f. Work hardening and disability.
 - g. Osteopathic manipulation.

13. Identify the indications and contraindications for:
 - a. Placement of wires and/or pins.
 - b. Artificial joint replacement.
14. Identify those conditions most commonly managed in primary care and the following techniques and procedures:
 - a. Managing simple-nondisplaced fractures, including:
 - Simple, stable, closed, nondisplaced Metacarpal, metatarsal, phalangeal.
 - Forearm, single bone, midshaft, nondisplaced.
 - Humerus, midshaft nondisplaced.
 - Clavicle.
 - Ribs.
 - Compression fracture of thoracic or lumbar vertebra.
 - Simple pelvic rami fracture.
 - Patella.
 - Tibia.
 - Fibula.
 - Unimalleolar ankle.
 - Calcaneus (simple fracture).
 - b. Osteopathic techniques and standard of care protocols for managing sprains and strains, including:
 - Finger, Toe.
 - Ankle.
 - Knee.
 - Vertebral column.
 - Wrist.
 - Elbow.
 - Shoulder.
 - Neck.
 - c. Osteopathic techniques and physical medicine protocols for managing tendonitis.
 - d. Joint aspiration.
 - e. Joint and musculoskeletal injections of local anesthesia and steroids.
 - f. Wrapping and taping, including:
 - ACE type bandage, ankle taping, slings.
 - g. Upper and lower extremity splinting.

h. Identify the need for and procedures used in dislocation reduction, including:

- Finger.
- Toe.
- Subluxed radial head.
- Anterior shoulder dislocation.

i. Simple casts, including:

- Gauntlet.
- Thumb spica.
- Below-knee walking cast.

15. Demonstrate understanding of indications and contraindications for the following techniques and procedures:

- Management of complicated fractures in pediatrics and adults.