UNIT 10
Musculoskeletal Systems
Pathological Conditions
MUSCULAR DYSTROPHY

- Group of hereditary diseases characterized by gradual atrophy and weakness of muscle tissue.
  - There is no cure for muscular dystrophy. Duchenne dystrophy is the most common form with an average lifespan of 20 yrs.
MYASTHENIA GRAVIS (MG)

- Autoimmune neuromuscular disorder characterized by severe muscular weakness and progressive fatigue.
ROTATOR CUFF INJURIES

- Injuries to the capsule of the shoulder joint, which is reinforced by muscles and tendons; also called musculotendinous rotator cuff injuries.
  - Rotator cuff injuries occur in sports in which there is a complete abduction of the shoulder, followed by a rapid and forceful rotation and flexion of the shoulder. This type of injury occurs most commonly in baseball injuries when the player throws a baseball.
SPRAIN

- Trauma to a joint that causes injury to the surrounding ligament, accompanied by pain and disability.
TALIPES EQUINOVARUS

- Congenital deformity of the foot; also called clubfoot.
  - In talipes, the heel never rests on the ground. Treatment consists of applying casts to progressively straighten the foot and surgical correction for severe cases.
TENDINITIS

- Inflammation of a tendon, usually caused by injury or overuse; also called *tendonitis*.
TORTICOLLIS

- Spasmodic contraction of the neck muscles, causing stiffness and twisting of the neck; also called wryneck.
  - Torticollis may be congenital or acquired.
CARPAL TUNNEL SYNDROME

- Pain or numbness resulting from compression of the median nerve within the carpal tunnel (wrist canal through which the flexor tendons and median nerve pass).

Carpal Tunnel Syndrome
CONTRACTURE

- Fibrosis of connective tissue in the skin, fascia, muscle, or joint capsule that prevents normal mobility of the related tissue or joint.
CREPITATION

- Grating sound made by movement of bone ends rubbing together, indicating a fracture or joint destruction.
EWING SARCOMA

- Malignant tumor that develops from bone marrow, usually in long bones or the pelvis.
  - *Ewing sarcoma occurs most commonly in adolescent boys.*

![Image of Ewing sarcoma X-ray]
GOUT

- Hereditary metabolic disease that is a form of acute arthritis, characterized by excessive uric acid in the blood and around the joints.
Herniation or rupture of the nucleus pulposus (center gelatinous material within an intervertebral disk) between two vertebrae; also called prolapsed disk.

- A herniated disk places pressure on a spinal root nerve or the spinal cord. Displacement of the disk irritates the spinal nerves, causing muscle spasms and pain. It occurs most commonly in the lower spine.
OSTEOPOROSIS

- Decrease in bone density with an increase in porosity, causing bones to become brittle and increasing the risk of fractures.
PAGET DISEASE

- Skeletal disease affecting elderly people that causes chronic inflammation of bones, resulting in thickening and softening of bones and bowing of long bones; also called osteitis deformans.
RHEUMATOID ARTHRITIS (RA)

- Chronic, systemic inflammatory disease affecting the synovial membranes of multiple joints, eventually resulting in crippling deformities.
  - As RA develops, there is congestion and edema of the synovial membrane and joint, causing formation of a thick layer of granulation tissue. This tissue invades cartilage, destroying the joint and bone. Eventually, a fibrous immobility of joints (ankylosis) occurs, causing visible deformities and total immobility.
SUBLUXATION

- Partial or complete dislocation.
SEQUESTRUM

- Fragment of a necrosed bone that has become separated from surrounding tissue.
ANKYLOSING SPONDYLITIS

- Chronic inflammatory disease of unknown origin that first affects the spine and is characterized by fusion and loss of mobility of two or more vertebrae; also called rheumatoid spondylitis.

- Treatment includes nonsteroidal anti-inflammatory drugs and, in advanced cases of a badly deformed spine, surgery.
KYPHOSIS

- Increased curvature of the thoracic region of the vertebral column, leading to a humpback posture; also called hunchback.
  - Kyphosis may be caused by poor posture, arthritis, or osteomalacia.
**LORDOSIS**

- Forward curvature of lumbar region of the vertebral column, leading to a swayback posture.
  - *Lordosis may be caused by increased weight in the abdomen, such as during pregnancy.*
SCOLIOSIS

- Abnormal sideward curvature of the spine to the left or right.

  - Scoliosis eventually causes back pain, disk disease, or arthritis. It is commonly a congenital disease, but may result from poor posture.
SPONDYLOLISTHESIS

- Partial forward dislocation of one vertebra over the one below it, most commonly the fifth lumbar vertebra over the first sacral vertebra; also called *spinal cord compression*. 
ARTHROCENTESIS

- Puncture of a joint space with a needle to remove fluid.
  
  Arthrocentesis is performed to obtain samples of synovial fluid for diagnostic purposes. It may also be used to instill medications and remove accumulated fluid from joints to relieve pain.
RHEUMATOID FACTOR

- Blood test to detect the presence of rheumatoid factor, a substance present in patients with rheumatoid arthritis.
ARTHROPLASTY

- Surgical reconstruction or replacement of a painful, degenerated joint to restore mobility in rheumatoid or osteoarthritis or to correct a congenital deformity.
SEQUESTRECTOMY

- Excision of a sequestrum (segment of necrosed bone).