Joint Surgery

- **Goals of surgery**
  - Relieve pain
  - Improve joint motion
  - Correct deformity & malalignment
  - Remove debris
- Reasons for surgery
  - Trauma, Arthritic processes, Painful conditions causing functional disability

- **Arthroscopy**
  - Insertion of an endoscope into a joint for direct visualization of the joint
  - Used for diagnosis, biopsy, and treatment
  - Usually for the knee joint
  - Tourniquet : ↓ blood flow to area
    - Better visualization
  - Post-Op Care:
    - ✓ bleeding & S/S of infection
    - NV assessments
    - Ice & avoid excessive exercises 1-2 days
    - ✓ WB status
    - Analgesics
    - Assistive devices, PT
  - Complications:
    - Hemorrhage
    - Infection
    - Thrombophlebitis
    - NV compromise

- **Synovectomy**
  - Removal of synovial membrane
  - Used as a prophylactic measure & palliative treatment for RA
  - Helps prevent further damage
  - Best if done early in disease process to prevent serious joint destruction
  - Prevents extension of the inflammation into adjacent cartilage, ligaments & tendons
  - Cannot remove all the joint synovium, therefore disease is still present & will affect the regenerating synovium
  - Improvement in pain, weight bearing, ROM
  - Common: knees, elbow, wrist, & fingers

- **Osteotomy**
  - Cutting a bone to change its alignment
  - Used to correct deformity, relieve pain, & shift WB load to a less damaged area in the joint
  - Knee and hip joint
  - OA & RA
  - Post-op care is similar to internal fixation of a fracture (wires, screws, plates, bone grafts).

- **Debridement**
  - Degenerative debris
  - Usually Knee
  - Seen with arthroscopy

- **Arthrodesis**
  - Surgical fusion of a joint
  - Used to relieve pain & provide a stable joint
  - Last resort
  - Fusion occurs by removal of articular cartilage & adding bone grafts across the joint surface
  - Immobilize until bone healing occurs
  - Common sites = wrist, ankle, cervical & lumbar spine

- **Arthrotomy**
  - Joint exploration
  - Opening a joint → surgical incision
- **Tenotomy**
  - Cutting a tendon
- **Tendon Transfer**
  - Movement of a tendon insertion to improve function

- **Arthroplasty**
  - Reconstruction or replacement of a joint
  - Used to relieve pain, improve or maintain ROM, & correct deformity
  - Seen with OA, RA, avascular necrosis, congenital deformities, or dislocations

  - Types of Arthroplasty:
    - Hemiarthroplasty – part of a joint
      - Either femoral head or acetabulum of hip replaced
    - Total Joint Replacement
      - Any synovial joint
      - Elbow, shoulder, fingers, hips, knee, & ankle
  - Contraindications:
    - Infection
    - Severe inflammation
    - Advanced osteoporosis
    - Medically unstable

  - <u>Cemented vs Cementless</u>
    - Cemented = prosthesis held into bone with polymethylmethacrylate
    - Uncemented = prosthesis is treated with a special porous coating that promotes ingrowth of bone
    - Combo = implant a cementless cup & a cemented femoral component

  - Complications:
    - Thrombophlebitis
    - Wound Infection
    - Loosening of the cement
    - Dislocation
    - Fat Emboli –peak time 4th post-op day
  - Pre-Op:
    - Identify possible risk factors
    - Treat infections preoperatively
    - Teaching

- Post-op expectations, crutch/walker teaching

- Post-Op:
  - Proper positioning to prevent dislocation
  - NV assessments
  - ✓ dressing & reinforce prn
  - PT as ordered
  - Wound drainage assessments
  - Hemovac – closed wound drainage system
    - Need a vacuum (suction) to withdraw accumulated drainage
    - Promotes healing → without these, may develop abscesses
    - Need to be careful because it may not be sutured in place
    - Will not drain without the vacuum suction
    - If no drainage, ✓ air leaks
  - Autotransfusion
    - Transfuse the patient's own blood & collect excess drainage
    - Must transfuse blood within 8 hours after insertion → whole blood
    - Drainage after 8° is usually old blood & debris

- **Total Joint Replacement**
  - **<u>KNEE</u> (TKR)**
    - Removal of diseased bone & articular cartilage of joint & replacement with artificial tibial and femoral components & a patellar button
    - Complications:
      - Loosening of components
      - Infection
      - Dislocation
      - Increased angulation
    - Post-Op Care:
      - Do not flex or hyper-extend the knee
      - Wound Care = maintain drain, assess dressing for drainage
      - CPM as ordered, helps with ROM
      - Exercises = plantar & dorsi-flexion of ankles, Isometric: quad / gluteal setting, straight leg raises
      - WB per MD – knee immobilizer when resting, walker when OOB
      - NV assessments
      - Pain management = ice, analgesics, positioning
      - Prophylactic antibiotics
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      - Discharge Instructions:
        - Continue WB restrictions & use assistive devices
        - Continue exercises (home CPM & PT)
        - VTE prophylaxis

- **Total Joint Replacement**
  - **<u>HIP</u> (THR)**
    - Replacement with artificial acetabular & femoral components
    - Complications:
      - Loosening of components
      - Infection
      - Dislocation
    - **Post-Op Care:**

- Proper positioning to avoid dislocation
  - No flexion > 90*, no adduction, no extreme internal or external rotation
  - No side-lying on operative side - prolonged
  - Abduction splint/pillow maintained – straps can compress peroneal nerve → foot drop
- Wound Care = maintain drain, assess dressing
- NV assessments
- Activity
  - WB as ordered
  - Exercises: Flexion of ankles, quad/glute setting
  - Avoid flexion & adduction
- Prophylactic antibiotics

- Pain management = ice, analgesics, positioning
- Discharge Instructions:
  - Position restrictions (4 – 6 weeks)
  - Equipment – raised toilet seat, long handled shoe horn
  - VTE prophylaxis
- Hip Dislocation
  - S/S = sudden severe pain, shortened extremity, NV changes, loss of function of affected extremity, hip deformity, palpable bulge at hip, swelling
- Hip Dislocation
  - Anterior = external rotation & abduction
  - Posterior = internal rotation & adduction
  - Need to notify MD immediately

- **Total Joint Replacement**
  - **Total Shoulder Replacement**
    - Most complex joint in body → greatest ROM
      - Ball & socket joint
      - Candidates: severe RA, OA, avascular necrosis, previous trauma, NEED adequate bone density and muscle strength
    - Post-Op Care:
      - Positioning = sling & abductor splint, pillow behind elbow, ROM limitations
      - Wound Care = maintain drain, assess dressing
      - Pain management
      - PT/OT as ordered: equipment, ADL's, exercises
      - NV assessments
      - Complications: infection, prosthetic loosening, dislocation, wrong size, nerve injury