**Preconference Form**

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Medical Diagnosis/Disease: Osteoarthritis/Total Hip Arthroplasty

**NCLEX IV *(8)*: Physiological Integrity/Physiological Adaptation**

## Anatomy and Physiology
### Normal Structures

-The musculoskeletal system provides stability for the body and facilitates movement. There are usually 206 **bones** in the human body. The types consist of **long** (femur, humorous), **short** (carpals and tarsals), **flat** (scapula), and **irregular** (the vertebrae). The bones can be dense, compact **cortical** bones, or spongey **cancellous** bones. Bone cells consist of **osteoblasts**, which are responsible for building new bone, **osteoclasts**, which breakdown bone, and **osteocytes**, which are mature bone cells. Bones consist of an **epiphysis**, which is the end of the bone that connects to **joints** (point where two bones meet to allow for motion) via **ligaments** which are a type of connective tissue that connects bone to bone, the **diaphysis** which is the middle shaft of the bone that contains yellow bone marrow, and the **metaphysis**, which stores the growth plate that is responsible for the growth of bones. The ends of the bones, or epiphysis, has **cartilage**, which acts as a cushion on the ends of the bones and joints to prevent friction. **Hyaline** cartilage lines joints and the ends od bones, contains a moderate amount of collagen fibers. **Elastic** cartilage contains both collagen and elastic fibers, and **flexible** cartilage acts as a shock absorber and is tough and full of collagen fibers. The **fascia** is a thin tissue that surrounds all structures of the body, and **bursae** are fluid filled sacs that act as a cushion and prevent friction between tissues. There are about 600 **muscles** in the body that aid in movement. The types consist of **cardiac**, **smooth**, and **skeletal**. **Tendons** are connective tissue that attach muscle to bone.

## Pathophysiology of Disease

- Gradual loss of articular cartilage
- Formation of osteophytes at joint margins
- Not normal part of aging process
- Cartilage destruction

In the early stages, there is inflammation in the synovium, and pain and stiffness that typically is worse in the morning and with decreased use and can be relieved with movement and use. In the later stages, pain worsens, there is uneven weight distribution, and bones are rubbing together, which can cause crepitus (crackling/grating sounds audible with movement). It is a non-inflammatory, non-systemic, slowly progressive (degenerative) disease. The two tissues involved are the articular cartilage and the synovial membrane. As articular cartilage is lost, there is bone on bone friction, which is very painful.

**NCLEX IV *(7)*: Reduction of Risk**

## Anticipated Diagnostics
### Labs

-There are no labs that definitively diagnose OA, but there are labs that can r/o Rheumatoid Arthritis (ESR, CRP, and WBCs, and procalcitonin).

Additional Diagnostics

-Bone Scan (DEXA Scan)
-CT Scan
-MRI (Magnetic Resonance Imaging)
-X-rays

**NCLEX II *(3)*: Health Promotion and Maintenance**

## Contributing Risk Factors

-Age
-Gender (more common in females)
-Post-menopausal hormone shift (estrogen decrease)
-Overuse – occupational
-Smoking
-Obesity – excess weight on joints

## Signs and Symptoms

-Crepitation with joint movement.
-Joint stiffness and tenderness.
-Loss of joint flexibility/mobility.
-Bone spurs (osteophytes).
-Swelling

**NCLEX IV *(7)*: Reduction of Risk**

## Possible Therapeutic Procedures

Non-surgical

-Transcutaneous Electrical Nerve Stimulation (TENS)
-Cortisone and lubrication injections

Surgical

-THA – Total Hip Arthroplasty
-TJA/TJR (Total joint arthroplasty/replacement – knee, ankle, shoulder, finger and toe joints).
-Arthroscopy to visualize joint.

## Prevention of Complications

(What are some potential complications associated with this disease process)

-Deformity
-Loss of mobility
-Acute pain
-Depression and lack of sleep due to pain.

**NCLEX IV *(6)*: Pharmacological and Parenteral Therapies**

**NCLEX IV *(5)*: Basic Care and Comfort**

**NCLEX III *(4)*: Psychosocial/Holistic Care Needs**

## Anticipated Medication Management

-DMOADs – disease-modifying osteoarthritis drugs
-NSAIDs
-Intracapsular corticosteroid injections into joint cavity
-Opioid analgesics
-Topical Capsaicin

## Non-Pharmacologic Care Measures

-ROM exercises
-PT/OT
-Incentive Spirometry
-Ice therapy to reduce swelling
-Heat therapy to reduce stiffness
-Balance between rest and activity
-Elevation
-Muscle strengthening around effected joint
-Balance exercises
-Weight loss

## What stressors might a patient with this diagnosis be experiencing?

-The amount of time it will take to heal/ how long they will be in the hospital.
-Taking care of family/pets.
-Financial burdens surrounding procedure.
-Management of pain.
-Prevention of complications post-op.
-Loss of mobility.

**Client/Family Education**

## List 3 potential teaching topics/areas

 It is important to move the effected joint but rest periods between periods of activity are important as well.

 Ice will reduce inflammation and heat will reduce stiffness, but report decreased sensation before using either.

 Report pain that is unrelieved with movement (use)/analgesics.

**NCLEX I *(1)*: Safe and Effective Care Environment**

## Multidisciplinary Team Involvement

(Which other disciplines do you expect to share in the care of this patient)
Surgeon, provider, RN, CRNA (or Anesthesiologist), PT/OT and CAN (post-op), pharmacy for meds and dosing, and Chaplin (if applicable). Possibly respiratory therapy if pulmonary complications occur post-op.