

## Preconference Form

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Medical Diagnosis/Disease: Osteoarthritis

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

#### Anatomy and Physiology

##### Normal Structures

The skeletal system provides the body with structure, support, protection, and mobility, it stores minerals such as calcium and phosphorus, crucial in producing blood cells in the bone marrow. Bones are composed of compact (dense) and spongy (porous) tissue that work together to provide strength and flexibility. The main types of bone cells include osteoblasts (build bone), osteoclasts (break it down), osteocytes (maintain bone tissue). Each long bone has a diaphysis (shaft) and epiphysis (ends) and a periosteum that protects the bone surface. The medullary cavity within bones contains marrow, red marrow for hematopoiesis and yellow for fat storage. Joints are connections between bones that allow for varying degrees of movement. Different structures of joints include fibrous (immovable), cartilaginous (slightly movable), and synovial (freely movable) joints. Synovial joints, such as the knee, hip, or shoulder contain cartilage, synovial fluid, and ligaments for cushioning to stabilize movement.

#### Pathophysiology of Disease

Osteoarthritis is a progressive, noninflammatory disease of the synovial joints. It's a gradual loss of articular cartilage and formation of new bone where joint begins. Over time, mechanical stress causes softening and erosion of the cartilage, leading to exposure of subchondral bone. This underlying bone becomes dense and sclerotic, and cysts begin to form. Synovial inflammation can occur as cartilage fragments enter the joint space. Over time this will cause narrowed joint space and decreased mobility, leading to pain and stiffness.

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

#### Anticipated Diagnostics

##### Labs

ESR (erythrocyte sedimentation rate) - can help r/o other arthritic conditions. ESR levels may be elevated if present. CRP (C-reactive protein) - may be elevated with inflammation. Synovial fluid analysis - distinguishes osteoarthritis from inflammatory arthritis. Additional Diagnostics X-rays show joint space narrowing and osteophyte formation. MRI and CT scans can visualize early cartilage changes/soft tissue involvement. Arthroplasty - can directly visualize debridement or specimen collection.

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

#### Contributing Risk Factors

**Age** - cartilage regeneration decreases with age.  
Gender - Female's have higher incidence (especially after menopause)  
**Obesity** - extra joint load can fasten cartilage breakdown.  
Repetitive joint injury - from sport or occupation.  
Genetics - family history can increase risk.  
Metabolic disorders - that impact inflammation and tissue damage (such as diabetes).

#### Signs and Symptoms

Joint pain - worsens with activity.  
Stiffness - after periods of inactivity or in the morning.  
Crepitus - grating/crackling sensation during joint movement.  
Decreased range of motion.  
Enlargement of the joint.  
Tenderness of the joint.  
Trouble walking, climbing stairs, or performing ADL's.

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

#### Possible Therapeutic Procedures

##### Non-surgical

Rest  
Joint protection with assistive devices (such as braces, wraps, canes, **walkers**)  
**Heat** packs to reduce stiffness.  
Ice packs to decrease inflammation after movement.  
PT or OT for recommendations for ADL's.  
Weight management to decrease joint load.  
Exercise to strengthen

#### Prevention of Complications

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

Maintain safe mobility - use **assistive devices** to prevent joint injury or falls.  
Modifications - prevent joint overuse by **modifying activities/ADLs**.  
Monitor postop complications after joint replacement **by reassessing vital signs** every 4 hours.

and promote flexibility (walking, swimming, cycling).  
Surgical  
 Arthroscopic surgery – debride (cleans up) the joint by smoothing cartilage and removing loose fragments.  
 Osteotomy – to realign joint.  
 Joint arthroplasty – replaces a damaged joint with an artificial one.

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

Anticipated Medication Management  
**Analgesics** – such as Acetaminophen for mild/moderate pain.  
 NSAIDs – such as Ibuprofen or Naproxen to reduce pain and inflammation. Assess GI upset, bleeding risk and renal function beforehand.  
 Topical agents – for localized pain relief.  
**Opioids** – monitor sedation and RR.  
 Muscle Relaxants – if muscle spasms occur.

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

Non-Pharmacologic Care Measures  
 Weight management, use of assistive devices, **good nutrition**, utilizing **warm** and cool compresses, modified exercise and physical therapy for managed ADL's, utilizing splints or braces, **balance between activity and rest.**

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

What stressors might a patient with this diagnosis be experiencing?  
 Chronic pain, loss of independence in ADL's, fatigue from pain and limited mobility, fear of falling due to disability, depression due to loss of mobility, possibly **causing role changes**, financial stress of medication costs and adaptive equipment or PT, anxiety about progression of disease.

**Client/Family Education**

List 3 potential teaching topics/areas

- OA is a chronic disease that cannot be cured so proper management through lifestyle changes, exercise and medications can proficiently help.
- Home safety modifications – removing clutter, using non-skid socks, installing handrails or bars for fall prevention.
- Utilizing assistive devices for walking can significantly reduce joint strain. Avoiding heavy lifting and repetitive stress can preserve joint mobility.

**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)  
 Physical therapy, occupational therapy, primary care provider, nurses, pharmacy, orthopedic specialist, social workers/case managers.