

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

Musculoskeletal System:

Bones:

There are 206 bones in the body, and can be divided into shape, such as long, short, flat, irregular, or sesamoid.

The anatomy of a bone is best represented in a long bone. It consists of an epiphysis, diaphysis, and metaphysis. The epiphysis is the top wide region of the bone. This is where muscle attachment occurs and allows for greater weight distribution from the body. The diaphysis is the main shaft down the long bone and provides structural support. The metaphysis is the flared portion between the epiphysis and diaphysis. The periosteum is a layer over the bone that consists of fibrous connective tissue. In the center of the diaphysis, this contains red or yellow bone marrow. Red bone marrow is mainly in flat bones, and is involved in red blood cell production, or hematopoiesis. Yellow bone marrow is mostly in long bones, and holds triglycerides, or a type of fat.

Supporting Parts to Bones:

Joints- A joint is a place where two bones meet and move together. The category of joint depends on the movement that occurs there. These include hinge, ball and socket, pivot, condyloid, saddle, and gliding. Each joint has a synovial membrane lining with synovial fluid, that helps lubricate the joint during any movement.

Cartilage- Cartilage main purpose is to protect bone from rubbing on bone or act as a shock absorber. There are three main types, hyaline, elastic, and fibrous.

Muscle- There are three types of muscle, cardiac, smooth, and skeletal. Each muscle needs a different type of contraction to help stimulate it, and this depends on the area of the body it is in. Cardiac muscle contractions are spontaneous, smooth muscle needs neurologic or hormonal influences, and skeletal muscle requires neurologic influence. Muscles can also be divided into slow twitch or fast twitch muscle fibers. Slow twitch are good for longer activities such as long distance running, and fast twitch help for rapid muscle

Pathophysiology of Disease

Osteoarthritis is a non-inflammatory disease that affects synovial joints, and the cause is mainly unknown.

In this condition, the articular cartilage between joints is worn down over time, creating the formation of osteophytes and spurs at the joint line. This causes pain when the joint is moved. Most affected joints are your hips, distal interphalangeal and proximal interphalangeal joints (DIPS and PIPS). Deformities occur based on the joint, and this can be in the form of nodes from osteophytes, valgus or varus deformity, or shortening of one leg. Joint stiffness also occurs early in the morning but resolves after 30 minutes after awakening.

One resolution to osteoarthritis is a total hip arthroplasty, or a total hip replacement. In this surgery, an implant is put in to replace the ball and socket joint. This reduces the friction that creates the pain for the patient. The way that it is put in place can either be cemented or cementless. The surgery can also be taken place anteriorly or posteriorly, and depends on multiple factors from the patient.

NCLEX IV (7): Reduction of Risk

Anticipated Diagnostics
Labs

- Synovial Fluid Analysis
- ESR, CBC, Liver Function Tests (not a significant factor in diagnosing RA)

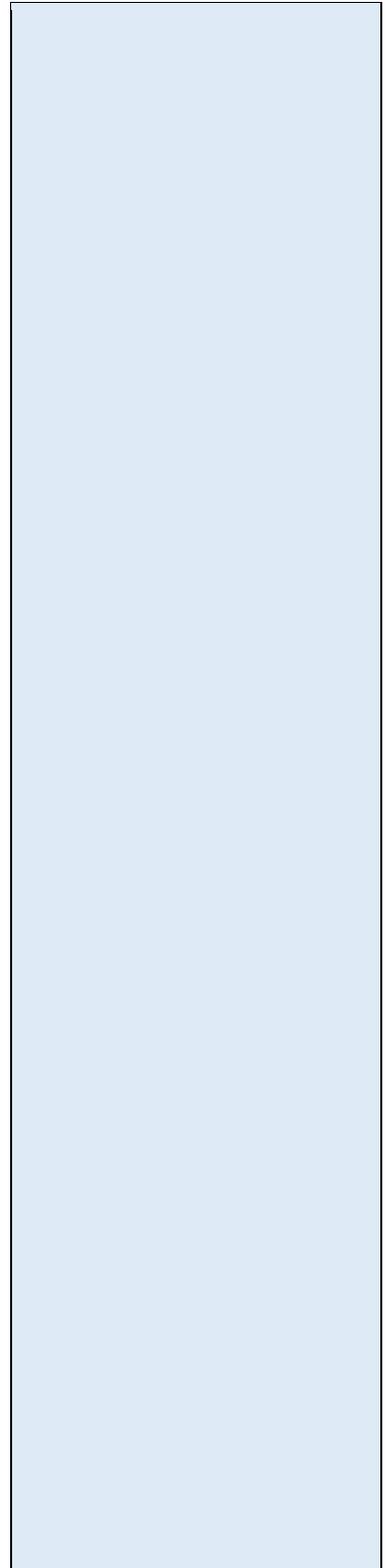
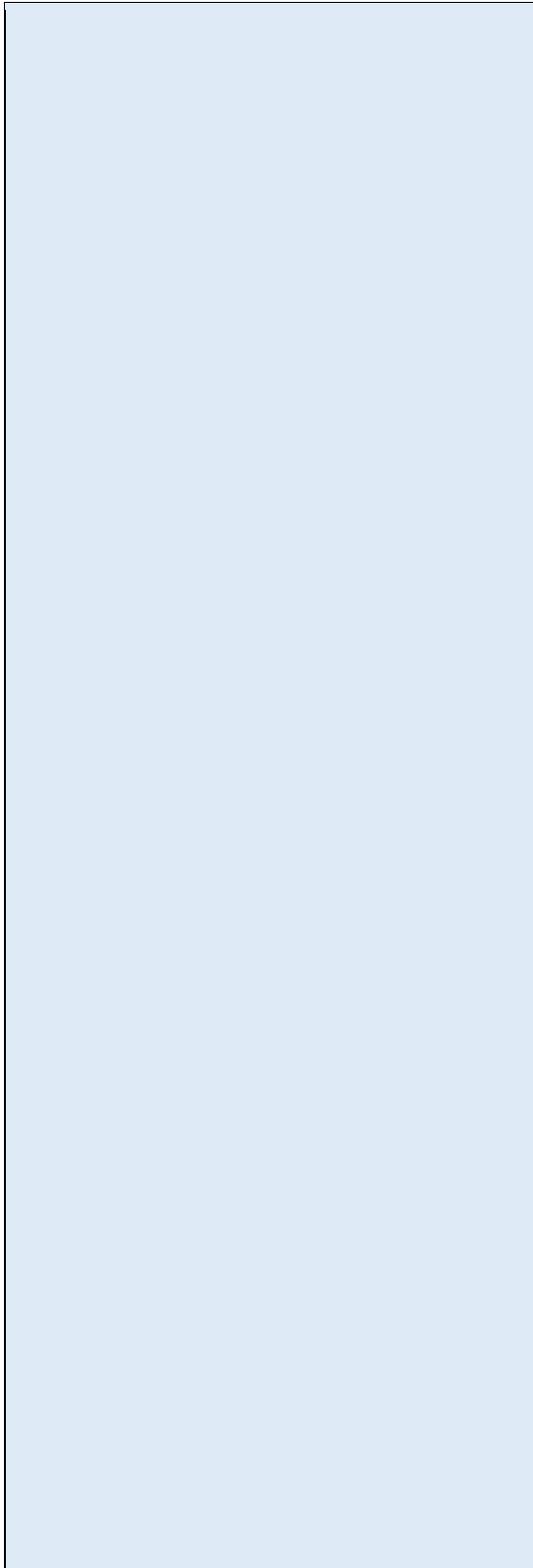
Additional Diagnostics

- X-Ray
- DEXA Scan
- CT Scan
- MRI

contractions such as sprinting. Nerve stimulation is also needed for certain muscle groups to contract, such as skeletal. ATP is the main energy source for these contractions to happen.

Ligaments and Tendons- Both are made up of fibrous connective tissue. Tendons attach muscles to bones, and ligaments attach bones to bones.

Bursae and Fascia: These are layers of connective tissue that can help with overstretching or relieve pressure at bony prominences.



NCLEX II (3): Health Promotion and Maintenance

<u>Contributing Risk Factors</u>
Age
Gender (Females)
Obesity
Joint Injuries
Repeated Stress to Joints
Genetics
Occupation
Bone deformities
Metabolic diseases

<u>Signs and Symptoms</u>
Joint Pain
Early Morning Stiffness (resolves after 30 minutes)
Loss of Function of Joint
Only one side of body is affected
Crepitation
Swelling, Tenderness in Joint
Bumps present at joint

NCLEX IV (7): Reduction of Risk

<u>Possible Therapeutic Procedures</u>
<u>Non-surgical</u>
Drug Therapy (NSAIDs, Corticosteroids, DMOADs, Topical agents)
Physical Therapy
Injections (Corticosteroids)
<u>Surgical</u>
Reconstructive Surgeries (Joint replacements)

<u>Prevention of Complications</u>
(What are some potential complications associated with this disease process)
Pinched nerves
Cartilage breakdown
Bone damage
Bleeding
Infection
Fractures

NCLEX IV (6): Pharmacological and Parenteral Therapies

<u>Anticipated Medication Management</u>
DMOADs (Tanezumab)
NSAIDs (Ibuprofen)
Corticosteroids
Topical Agents

NCLEX IV (5): Basic Care and Comfort

<u>Non-Pharmacologic Care Measures</u>
Acupuncture
Nutritional Supplements (Fish oil, ginger)
Yoga
Weight loss
ROM Exercises

NCLEX III (4): Psychosocial/Holistic Care Needs

<u>What stressors might a patient with this diagnosis be experiencing?</u>
Chronic Pain
Difficulty with ADLs
Limitations socially
Body image issues
Financial Issues



Low Impact exercises



Client/Family Education

- List 3 potential teaching topics/areas
- How to manage symptoms at home
 - How to manage weight
 - The progression of osteoarthritis

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
 - Occupation Therapy
 - Orthopedic Doctor
 - Orthopedic Surgeon
 - Case management**
 - Nutritionist