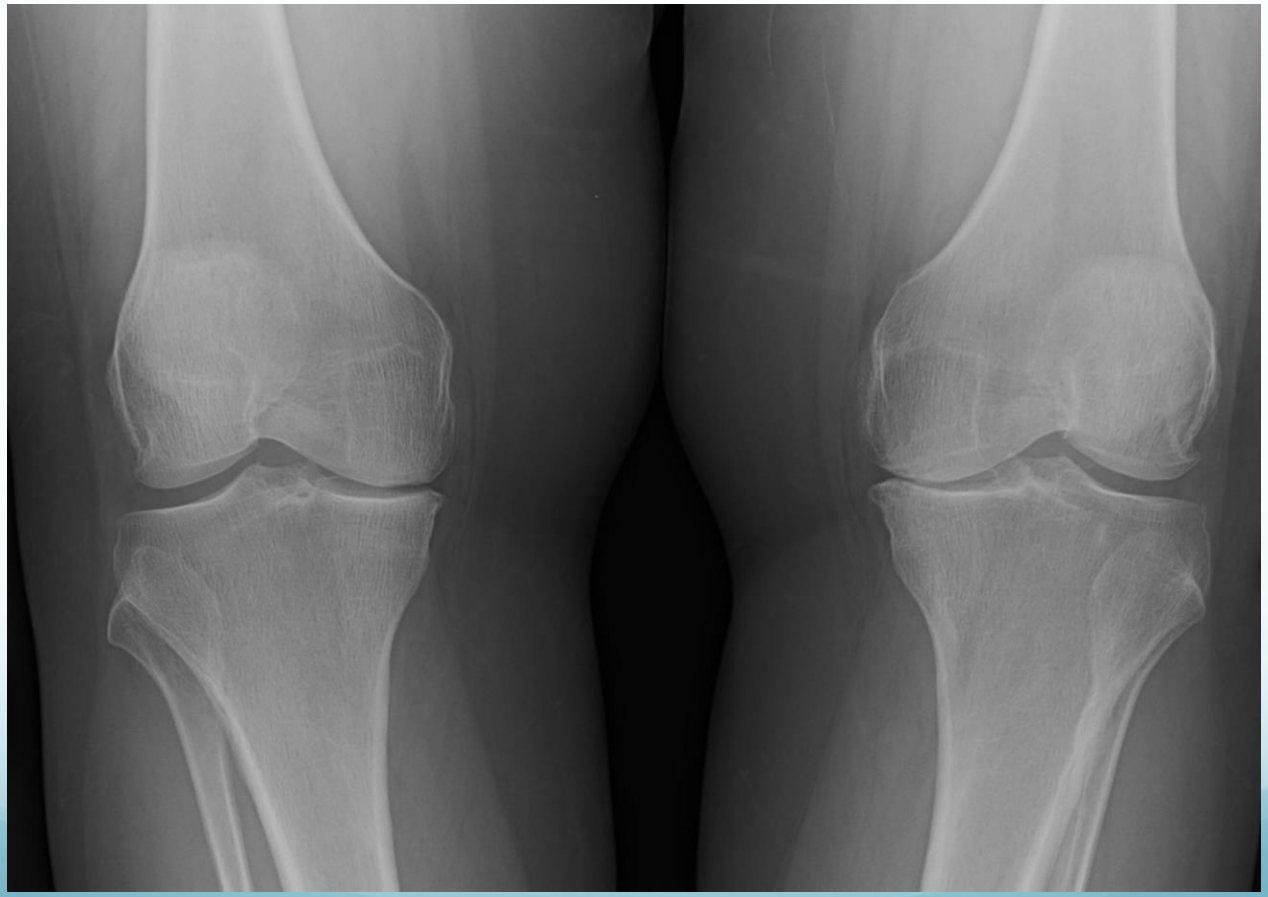
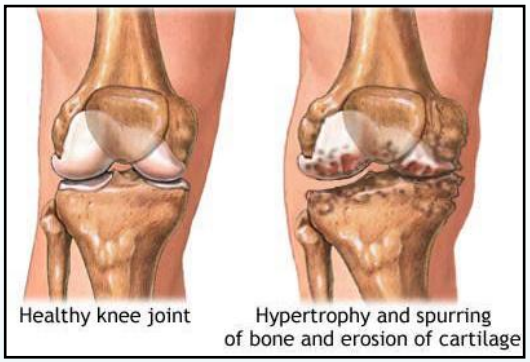
Osteoarthritis



Osteoarthritis:

- **Degenerative joint disease that develops as a result of normal aging and wear & tear on the joints**
- **Causes breakdown and/or loss of cartilage in synovial joints, especially those of the knee, hip, & hands.**

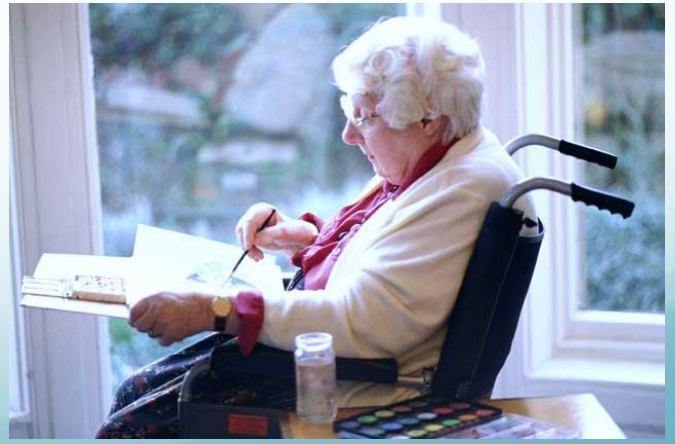


Cartilage deteriorates → **Adjacent bones become inflamed** → **Bone is stimulated to produce more bone** → **Formation of osteophytes (bone spurs)**

Osteoarthritis:

Prevalence / Populations

- **Most common form of arthritis (over 100 different types)**
- **OA affects > 20 million in the U.S. alone**
- **Leading cause of chronic pain & disability in the U.S.**
- **Most prevalent in the elderly population (85% of U.S. population has evidence of the disease by age 75.)**
- **Women are more commonly affected than men**



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Osteoarthritis:

Etiology

- **Exact cause of OA is unknown**
- **Development involves multiple factors that contribute to excessive joint loading & inflammation**

Most Common Risk Factors

- **Heredity (tends to run in families)**
- **Mechanical stress**
- **Obesity**
- **Trauma**
- **Previous joint injury**
- **Joint misalignment**
- **Decreased estrogen levels**
- **Vocational & recreational activities that involve prolonged high impact & repetitive motion, kneeling, squatting, or heavy lifting**

4

Osteoarthritis:

Diagnosis

- **Diagnosis of OA can be made clinically & confirmed by radiography**

Signs / Symptoms

- **Pain with movement**
- **Stiffness**
- **Crepitation (cracking sound)**
- **Synovial swelling**
- **Joint instability & muscle weakness**
- **Limited ROM**
- **Bony proliferation**
- **Osteophytes**
- **Loss of cartilage**

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Osteoarthritis:

Heberden's & Bouchard's Nodes

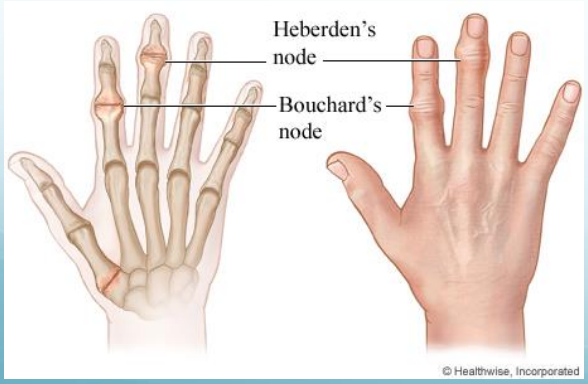
Node = bony protrusion caused by progression of cartilage loss, bone inflammation, & formation of bone spurs (osteophytes)

Heberden's Nodes:

- **nodes present on distal interphalangeal (DIP) joints of hand**

Bouchard's Nodes:

- **nodes present on proximal interphalangeal (PIP) joints of hand**



- **Nodes are not always painful, but cause limited joint motion (ROM).**

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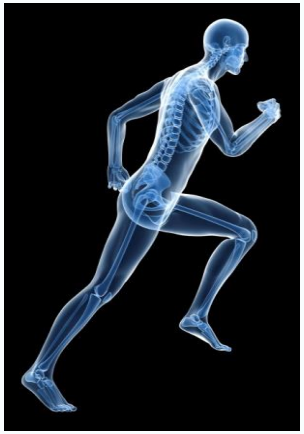
Osteoarthritis:

Complications & Performance Skills



Motor & Praxis:

- **Pain, stiffness, swelling, & loss of joint movement can cause varying degrees of physical dysfunction.**
- **Negatively impacts patient's ability to perform activities of daily living (ADL's).**
- **Fine motor skills are greatly reduced in individuals who suffer from OA of the interphalangeal joints of the hand.**

Communication & Social Skills:

- **Pain & physical dysfunction can cause social isolation.**
- **Individuals with OA are more susceptible to increased anxiety & depression.**

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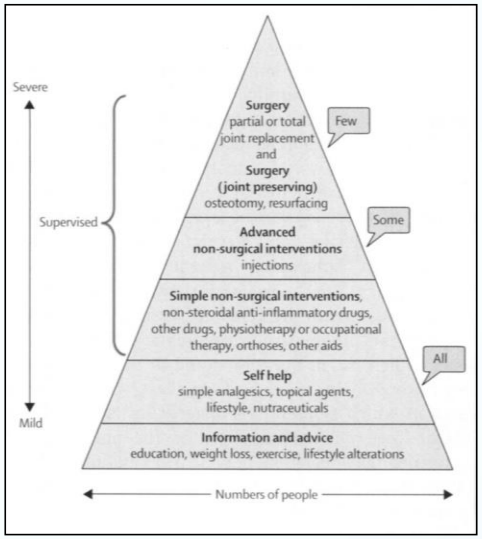
Osteoarthritis:

Medical Management



- **There is no cure for OA, so treatment is symptomatic**

- **Treatment focuses on:**
  - **controlling pain & inflammation**
  - **preventing disease progression**
  - **Maintaining joint function**

- **Medical treatment options vary depending on the severity of symptoms**

  - **NSAIDS & analgesics to reduce pain and inflammation**
  - **intra-articular injections of steroids or hyaluronic acid**
  - **surgical techniques**
    - **debridement (removal of damaged tissue)**
    - **osteotomy (removal of pieces of bone)**
    - **total joint replacement**

- **OA is the biggest cause of knee & hip replacement**

Osteoarthritis:

Related Disorders

* **Many individuals with OA also suffer from comorbidities**

- **hypertension**
- **cardiovascular disease**
- **peripheral vascular disease**
- **congestive heart failure**
- **renal function impairment**
- **diabetes**
- **respiratory disease**

Precautions

- **Gastrointestinal & renal toxicity of non-steroidal anti-inflammatory drugs (NSAIDS)**
- **Side effects and/or addiction from long-term opioid use**
- **Surgical complications**

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Osteoarthritis:

Occupational Therapy Interventions

Therapeutic Exercise:

- **Normal joint loading is necessary for the maintenance of healthy cartilage.**
  - **Regular exercise can increase the strength & flexibility of joints.**
  - **This further improves joint function.**
- **Therapeutic exercise programs should focus on activities that:**
  - **increase muscle strength & range of motion (ROM)**
  - **minimize or alleviate pain in & around the affected joint(s)**

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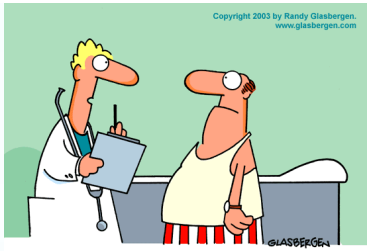
Osteoarthritis:



"What fits your busy schedule better, exercising one hour a day or being dead 24 hours a day?"

Occupational Therapy Interventions

Therapeutic Exercise:

- **Aerobic exercise such as walking, biking, & swimming can effectively increase muscular strength.**
- **Swimming & aerobic pool exercises cause less stress on the affected joints.**
- **Isometric exercises can improve strength without exacerbating the condition of the joint.**
- **Quadriceps-strengthening exercises can increase function & reduce pain in patients with OA of the knee (Barnes & Edwards, 2005).**
- **Range-of-motion exercises should be carried out daily, using a slow motion, with the joint as close to full ROM as possible (Clark, 2000).**

➢ **Combining low level laser therapy with exercise can lead to a greater level of pain reduction and function in patients suffering from OA of the knee (Alfredo, et al., 2012).**

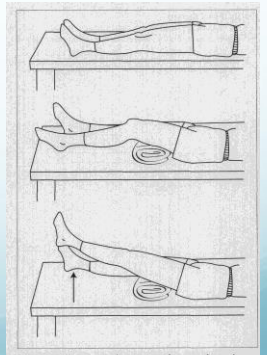


Fig. 2: Quadriceps exercise to strengthen muscles acting on the knee joint. The leg above the knee is rested on a shallow block, and the joint is moved 10°–15°.

Osteoarthritis:

Occupational Therapy Interventions

Rest & Activity Pacing:

- **Joint pain related to OA is typically exacerbated by activity & alleviated or diminished by rest.**
- **Rest is often used as a coping strategy to deal with symptoms of pain related to OA.**
- **Study of women with knee & hip OA revealed that rest is more than just a passive strategy used to reduce pain by offsetting periods of productive activity (Gibbs & Klinger, 2011).**
  - **Study participants actively used rest as a behavioral strategy to conserve energy for future participation in meaningful activities & to prevent physical harm.**
  - **Used rest as a strategy to adapt to their OA symptoms, rather than trying to control them, which allowed them to obtain a greater lifestyle balance.**
  - **Were also able to engage in other passive, yet equally meaningful, occupations while resting.**

Osteoarthritis:

Occupational Therapy Interventions

Rest & Activity Pacing:

- **In the advanced stages of OA, pain can persist even during times of rest.**

Activity Pacing = performing a task at a slower pace, breaking the task into smaller pieces, or taking breaks

- **Study of individuals with OA in at least one knee or hip revealed:**
  - **Those who paced their activities had a decrease in pain at the end of the day**
  - **Those who did not pace their activities suffered from escalating pain**

(Murphy, Smith, & Alexander, 2008)

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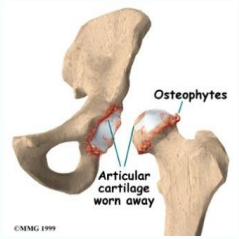
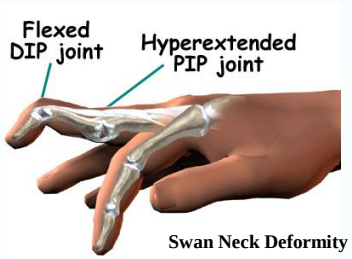
Osteoarthritis vs. Rheumatoid Arthritis



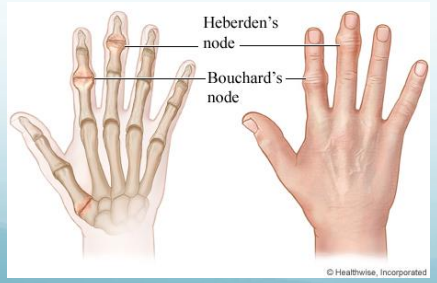


Osteoarthritis (OA):

- normal aging / wear & tear
- over 20 million in U.S. affected
- affects mostly knee, hip, & hands
- Heberden's & Bouchard's nodes
- Inflammation of bones & synovial joints only

Rheumatoid Arthritis (RA):

- autoimmune disease
- 1.5 million in U.S. affected
- affects mostly hands & feet
- Swan neck & Boutonniere's deformities
- Systemic inflammation
- Symmetrical (bilateral) affliction



Osteoarthritis:

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Questions

Compiled by: T. Lazauski – Peer Tutor

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