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**MedFit Education Foundation**  
*Committed to the Health of Our Nation*

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# Joint Replacement Fitness Specialist



# Module 4

## Understanding Joint Replacement of the Shoulder

### Lessons:

- 24. Anatomy & physiology of the shoulder
- 25. Pathophysiology of the shoulder
- 26. Shoulder replacement surgery
- 27. Shoulder replacement rehabilitation
- 28. Assessing the post-medical shoulder replacement client
- 29. Training the post-medical shoulder replacement client
- 30. Programming for the post-medical shoulder replacement client

# Pathophysiology of the shoulder

- Causes
  - Osteoarthritis
  - Rheumatoid Arthritis
  - Chronic shoulder instability and unresponsive to Tx.

# Pathophysiology of the shoulder

- Shoulder is Unique (vs Hip and Knee)
  - Non-weightbearing
  - 17% of GH pain is OA related
  - “The pathogenesis of GHOA is a complex and still incompletely understood process with various factors affecting joint damage and joint pain.”

# Pathophysiology of the shoulder

- Causes
  - Osteoarthritis
    - Intrinsic Factors
      - Aging, sex, obesity, heredity, reproductive, geography
    - Mechanical Factors
      - Past joint trauma, occupation, recreation, alignment, previous surgeries (meniscectomy)

# Pathophysiology of the shoulder

- Causes

- Osteoarthritis

- Intrinsic Factors

- Aging – More prevalent later than Knee or Hip, Age is #1 Risk Factor for GHOA
      - Sex – General OA risk Female 10% higher risk than Male 19%
      - Racial – Different expressions, otherwise inconclusive at this point
      - Obesity – Inconclusive link (non-weightbearing joint, inflammation causation??)
      - Heredity – May account for 35-80% of GHOA risk
      - Reproductive – Inconclusive
      - Geography – Possibly ties to socio-economic factors – education and \$\$ - increases risk by 50% possibly

# Pathophysiology of the shoulder

- Causes

- Osteoarthritis

- Mechanical Factors

- Past joint trauma – Fx, rotator cuff pathologies
      - Sedentary Lifestyle
      - Occupation – Increased with labor activities and loads
      - Recreation – Better than sedentary, high overhead and throwing sports increased risk
      - Alignment and Rotator muscle weakness
      - Previous surgeries (i.e. Instability Repairs Tears) – 56-68% increased risk

# Pathophysiology of the shoulder

- Causes

- Rheumatoid Arthritis

- “91% of patients with long-standing RA (>5 years' duration) develop shoulder symptoms.”

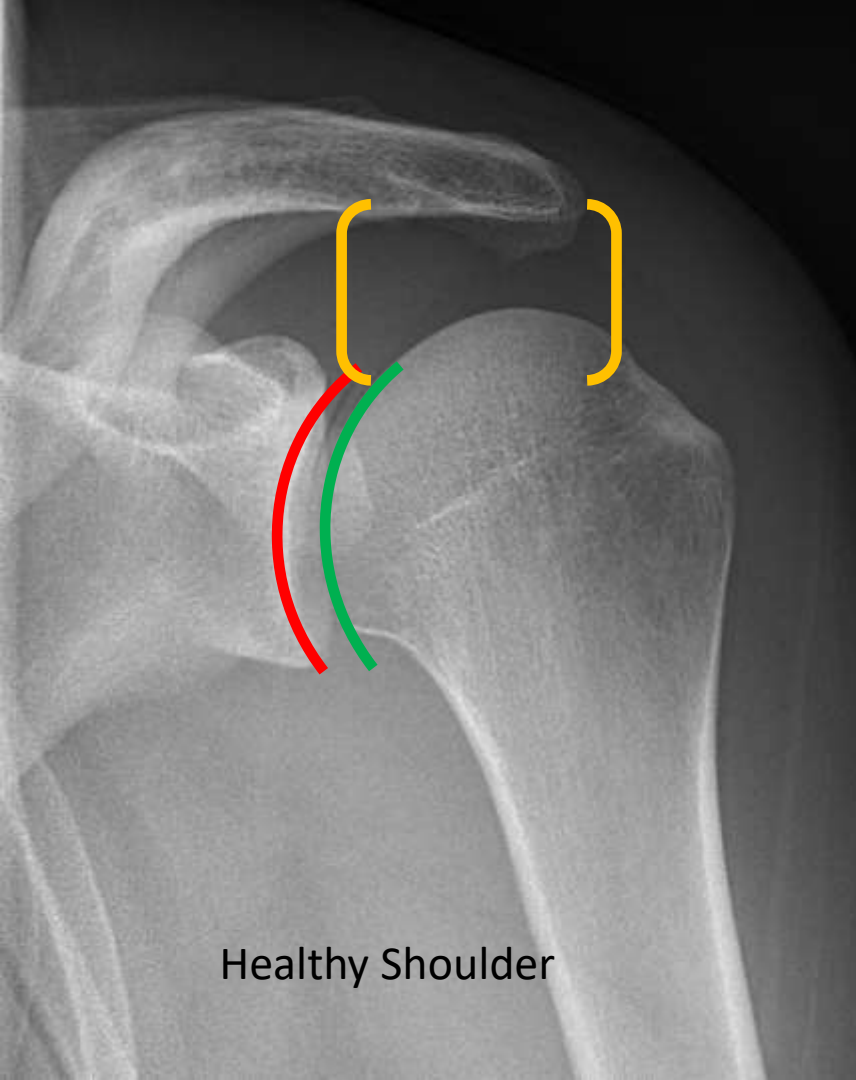
- Intrinsic Factors

- Age – Onset any age, >60yrs old
    - Sex – 3x > Females
    - Genetics/inherited traits – HLA (human leukocyte antigen) class II genotypes and increases with environmental stresses (smoking, chemical exposure, trauma)
    - Smoking – esp as children (2<sup>nd</sup> hand smoke)
    - Reproductive – Increased #pregnancies may be protective
    - Obesity – Epigenetic factors

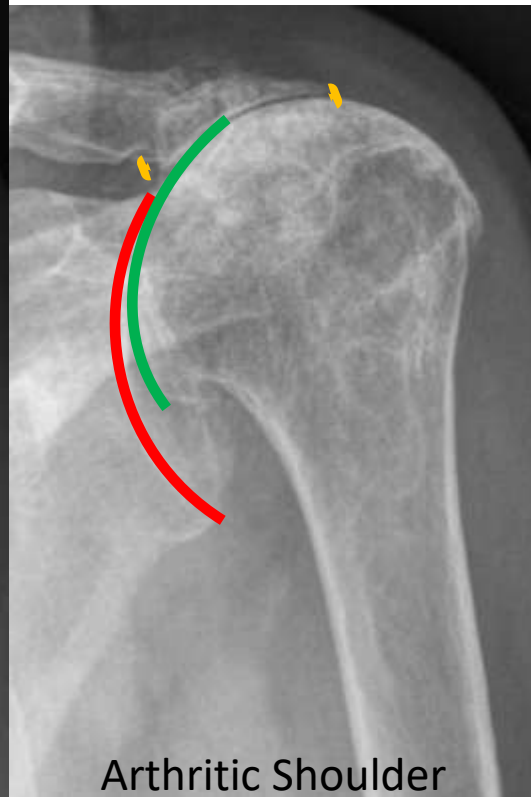


Course Author: Christine Conti, M.Ed.

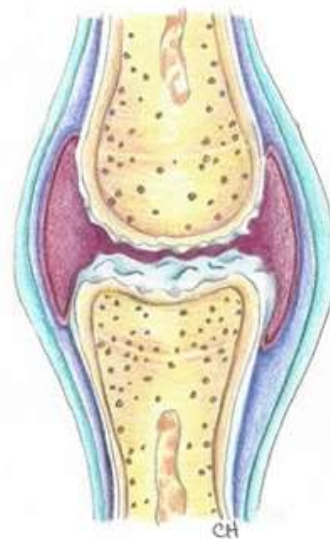




Healthy Shoulder



Arthritic Shoulder



# Resources

- Aging, sex, obesity, heredity, and reproductive variables), local adverse mechanical factors (e.g., joint trauma, occupational and recreational abuse, alignment, and postmeniscectomy), geography, and hereditary
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