



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

Dr. Grove Higgins & Master Trainer Pat Marques

# 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

# Shoulder Replacement Surgery

- **Prosthetic** (screws and other hardware too)
  - Materials: inert/immunologically inactive, low elastic, high corrosion and wear resistance
    - Metal Alloys, Polymers, Ceramics, Cements
- **Types**
  - Hemi, Regular vs. Reverse: Which side the “Ball” is installed on
- **Installation Approaches** – depends on damage, appliance, preference
  - Anterior – Deltopectoral
  - Anterosuperior
  - Posterior Approach
  - Transacromial
  - Low Anterior Approach
  - Superior

# Shoulder Replacement Surgery

## ○ Prosthetic Parts

| Regular                                                                                            | Reverse                                                                             |
|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <u>Humerus</u><br>Humeral Component/Stem (Metal)<br>Joint Spacer (Polymer/Plastic)<br>Ball (Metal) | <u>Humerus</u><br>Humeral Component/Stem (Metal)<br>Humeral Cap/Cup (Metal/plastic) |
| <u>Scapula</u><br>Glenoid Component/Socket<br>(Metal/Plastic)                                      | <u>Scapula</u><br>Glenoid Sphere (ball) (Metal/Plastic)                             |

# Shoulder Replacement Surgery

## Regular

### Humerus

Ball (Metal)

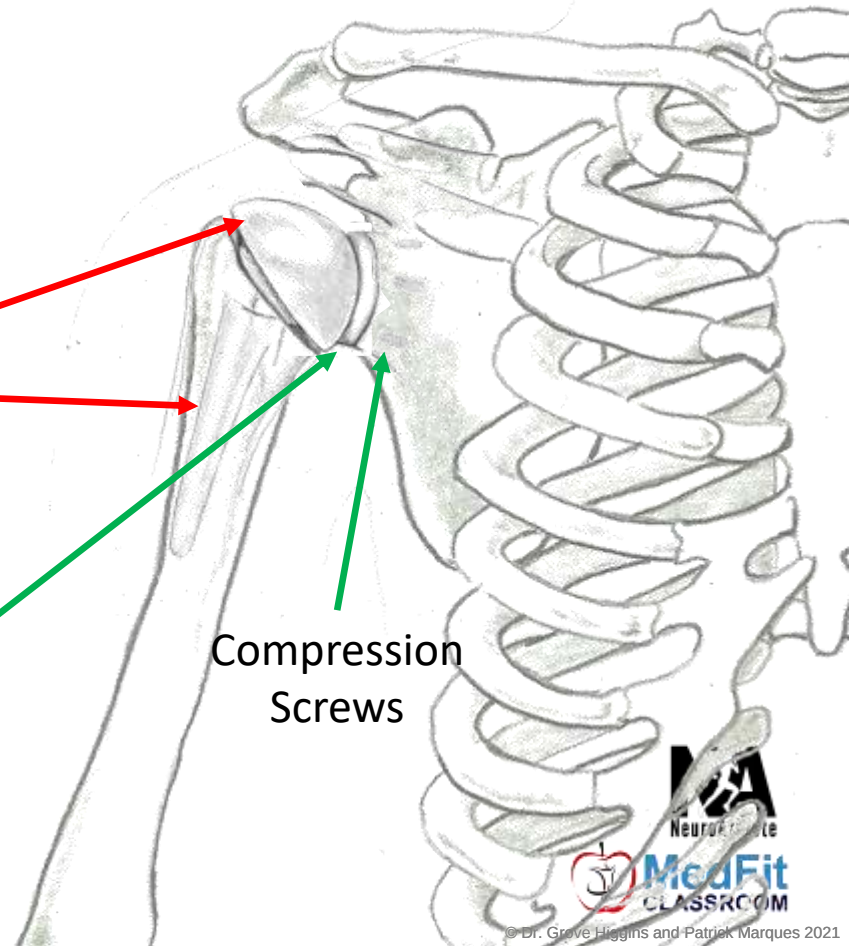
Humeral Component/Stem (Metal)

Joint Spacer (Polymer/Plastic)

### Scapula

Glenoid Component/Socket  
(Metal/Plastic)

Compression  
Screws



# Shoulder Replacement Surgery



[Lucien Monfils,  
https://commons.wikimedia.org/wiki/File:Shoulder  
prothesis.jpg](https://commons.wikimedia.org/wiki/File:Shoulder_prothesis.jpg)  
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# Shoulder Replacement Surgery

## Reverse

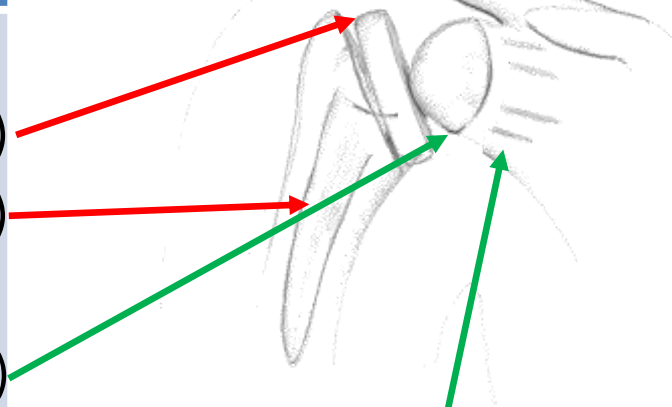
### Humerus

Humeral Cap/Cup (Metal/plastic)

Humeral Component/Stem (Metal)

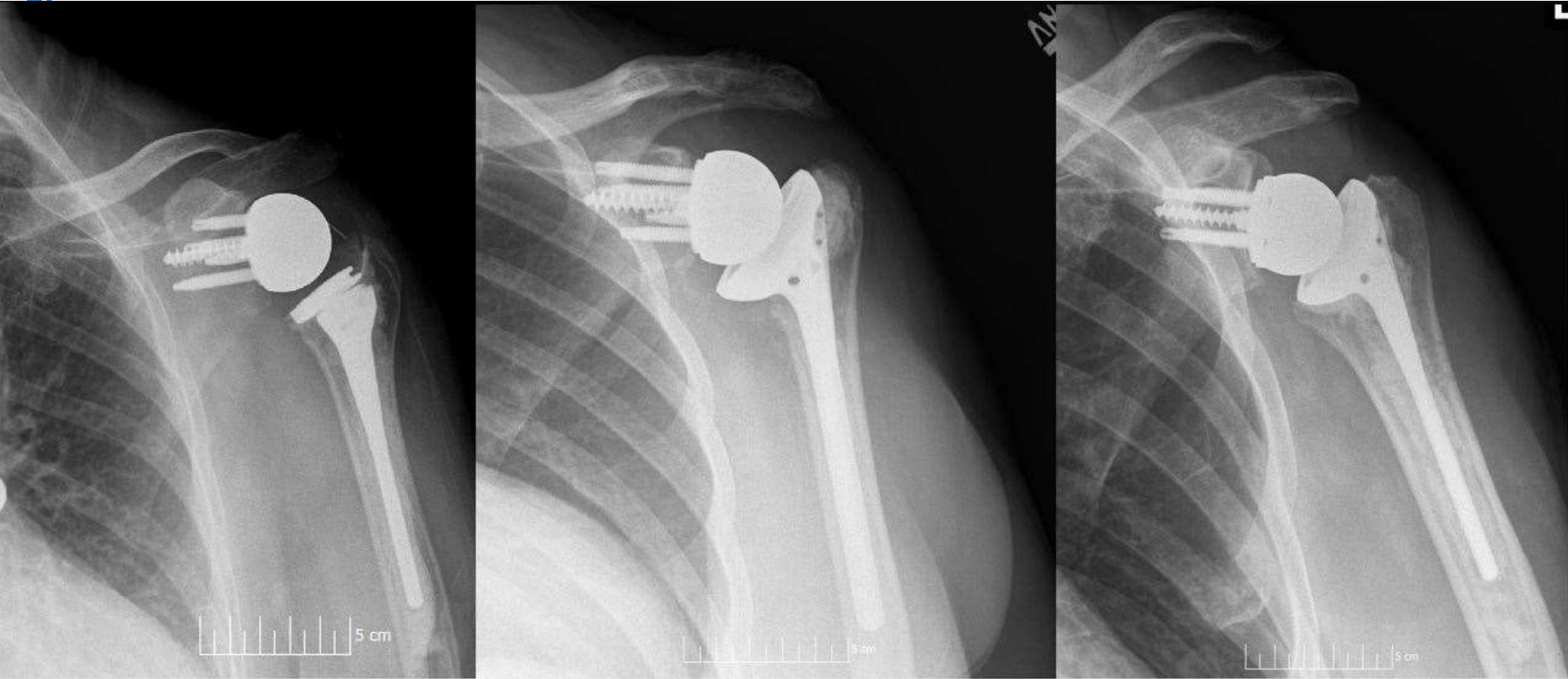
### Scapula

Glenoid Sphere (ball) (Metal/Plastic)



Compression  
Screws

# Shoulder Replacement Surgery



KChri75.  
[https://commons.wikimedia.org/wiki/File:3\\_Designs\\_of\\_Reverse\\_Shoulder\\_Arthroplasty\\_Prostheses\\_RSP\\_to\\_Monoblock\\_to\\_AltiVate.jpg](https://commons.wikimedia.org/wiki/File:3_Designs_of_Reverse_Shoulder_Arthroplasty_Prostheses_RSP_to_Monoblock_to_AltiVate.jpg),  
CC-BY-SA-4.0



# Shoulder Replacement Surgery

## ○ Process

1. Incision: dependent on approach
2. Underlying fascia & muscle is retracted or detached (with a bone flap for reattachment)
3. Muscular planes are separated, & nerves are identified and sequestered
4. Glenohumeral joint capsule is opened
5. Biceps tendon detached from labrum
6. Inferior tubercle (long head triceps) may be detached (reattached later)
7. Glenohumeral joint is dislocated

1. Anterior – Deltopectoral
2. Posterior Approach
3. Low Anterior Approach
4. Superior
5. Anterosuperior
6. Transacromial

# Shoulder Replacement Surgery

## ○ Process

1. Cleanup of the joint – remove osteophytes & fracture repair
2. Glenoid may only be reamed and resurfaced or cut depending on appliance
3. Humeral head is cut and prepared
  1. Stem inserted
4. Ball installed – depending on approach
  - Regular TJ – Humerus
  - Reverse – Glenoid
5. Reattachment & suturing of attachments

# Shoulder Replacement Surgery

- Post surgery

- No active motion of surgical shoulder
- Sling/immobilizer to be worn except when performing exercises - see above
- No support of body weight with involved hand
- Educate on wound care
- Educate patient on restrictions and timelines of restrictions following surgery
- Educate patient in preparations for home and assistance post-surgery
- Educate patient in donning/doffing immobilizer/brace
- Sling/immobilizer to be worn at all times except while doing prescribed exercises for 6 weeks, unless directed by MD
- Avoid light activities with wrist and hand for 2 weeks other than prescribed exercises

# Sources

1. MA, C. B. (n.d.). Total shoulder replacement surgical procedure. Arthritis. Retrieved August 30, 2020, from <https://www.arthritis-health.com/surgery/shoulder-surgery/total-shoulder-replacement-surgical-procedure>.
2. Nové-Josserand, L. (n.d.). Exposing the glenoid in shoulder arthroplasty. boneandjoint.org. Retrieved August 30, 2021, from <https://doi.org/10.1302/2058-5241.4.180057>.
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4. "Total Shoulder Arthroplasty/Hemiarthroplasty Protocol." The Cleveland Shoulder Institute. December 22, 2020. Accessed April 27, 2021. chrome-extension://oemmndcblldboiebfnladdacbfmadadm/http://www.clevelandshoulder.com/pdf/tsaRehabInstructions.pdf