

## Reverse Ball and Socket Arthroplasty

<i>Phase I (surgery to 4 weeks after surgery)</i>	
<b>Rehabilitation appointments</b>	<ul style="list-style-type: none"> <li>• Physician appointment 1 week after surgery</li> <li>• Rehab begins 1 week after surgery</li> </ul>
<b>Rehabilitation goals</b>	<ul style="list-style-type: none"> <li>• Reduce pain and swelling in post-surgical shoulder</li> <li>• Maintain AROM of the elbow, wrist and neck</li> <li>• Protect surgical site</li> </ul>
<b>Precautions</b>	<ul style="list-style-type: none"> <li>• Wear sling while sleeping and out in public for 6 weeks</li> <li>• Rest to reduce inflammation</li> </ul>
<b>Suggested therapeutic exercises</b>	<ul style="list-style-type: none"> <li>• Elbow, wrist and neck active range of motion</li> <li>• Passive and active assistive range of motion for shoulder flexion and abduction to patient tolerance, progressing to active motion</li> <li>• Codmans/Pendulum exercises</li> <li>• Pain free submax isometrics for shoulder flexion, abduction, extension and external rotation</li> </ul>
<b>Cardiovascular exercise</b>	<ul style="list-style-type: none"> <li>• Walking or stationary bike with sling on</li> <li>• No treadmill</li> </ul>
<b>Progression criteria</b>	<ul style="list-style-type: none"> <li>• 4 weeks after surgery</li> </ul>

## Reverse Ball and Socket Arthroplasty

<i>Phase II (begin after meeting Phase I criteria, usually 4-8 weeks after surgery)</i>	
<b>Rehabilitation appointments</b>	<ul style="list-style-type: none"> <li>• 1 time per week</li> </ul>
<b>Rehabilitation goals</b>	<ul style="list-style-type: none"> <li>• Controlled restoration of passive and active assistive range of motion</li> <li>• Activate shoulder and scapular stabilizers in a protected position of 0 degrees to 30 degrees</li> <li>• Correct postural dysfunctions</li> </ul>
<b>Precautions</b>	<ul style="list-style-type: none"> <li>• Wean out of sling slowly based on safety of environment during weeks 5 and 5. Discontinue sling use by end of week 6.</li> <li>• Wear sling while sleeping for 6 weeks</li> </ul>
<b>Suggested therapeutic exercises</b>	<ul style="list-style-type: none"> <li>• Passive and active assistive range of motion for the shoulder in all cardinal planes</li> <li>• Pain free, progressive, low resistance shoulder isotonic- begin Jackins exercises for deltoid strengthening</li> <li>• Gentle, low velocity rhythmic stabilization to patient tolerance</li> <li>• Scapular strengthening with the arm in neutral</li> <li>• Cervical spine and scapular active range of motion</li> <li>• Postural exercises</li> <li>• Core strengthening</li> </ul>
<b>Cardiovascular exercise</b>	<ul style="list-style-type: none"> <li>• Walking or stationary bike</li> <li>• No treadmill or stair master</li> <li>• Avoid running and jumping because of landing impact</li> </ul>
<b>Progression criteria</b>	<ul style="list-style-type: none"> <li>• 8 weeks after surgery</li> </ul>

## Reverse Ball and Socket Arthroplasty

<i>Phase III (begin after meeting Phase II criteria, usually 8 weeks after surgery)</i>	
<b>Rehabilitation appointments</b>	<ul style="list-style-type: none"> <li>• Physician appointment 8-10 weeks after surgery</li> <li>• Every 1 to 2 weeks</li> </ul>
<b>Rehabilitation goals</b>	<ul style="list-style-type: none"> <li>• Functional shoulder active range of motion in all planes</li> <li>• Normal (rated 5/5) strength for shoulder internal rotators and deltoid</li> <li>• Correct any postural dysfunction</li> </ul>
<b>Precautions</b>	<ul style="list-style-type: none"> <li>• External rotation range of motion limited to 60 degrees</li> </ul>
<b>Suggested therapeutic exercises</b>	<ul style="list-style-type: none"> <li>• Shoulder internal rotation</li> <li>• Deltoid strengthening-progression of the Jenkins exercises</li> <li>• Open kinetic chain shoulder stabilizations in supine (ie. starts or alphabet exercises)</li> <li>• Gentle closed kinetic chain shoulder and scapular stabilization drills-wall ball circles and patterns</li> <li>• Proprioceptive neuromuscular facilitation patterns</li> <li>• Side lying shoulder flexion</li> <li>• Scapular strengthening</li> <li>• Active, active assistive and passive range of motion at the shoulder as needed</li> <li>• Core strengthening</li> <li>• Begin trunk and hip mobility exercises</li> </ul>
<b>Cardiovascular exercise</b>	<ul style="list-style-type: none"> <li>• Walking or stationary bike</li> <li>• No treadmill or stair master</li> <li>• Avoid running and jumping because of landing impact</li> </ul>
<b>Progression criteria</b>	<ul style="list-style-type: none"> <li>• 12 weeks after surgery</li> </ul>

## Reverse Ball and Socket Arthroplasty

<i>Phase IV (begin after meeting Phase III criteria, usually 12 weeks after surgery)</i>	
<b>Rehabilitation appointments</b>	<ul style="list-style-type: none"> <li>• Physician appointment 12 weeks after surgery</li> <li>• Every 2-3 weeks</li> </ul>
<b>Rehabilitation goals</b>	<ul style="list-style-type: none"> <li>• Normal strength and endurance of deltoid at 90 degrees of shoulder abduction and scaption</li> <li>• Advance proprioceptive and dynamic neuromuscular control retraining</li> <li>• Achieve 75 degrees of shoulder external rotation</li> <li>• Correct postural dysfunctions with work and sport specific tasks</li> <li>• Develop strength and control for movements required for work/sport</li> </ul>
<b>Precautions</b>	<ul style="list-style-type: none"> <li>• Soreness should go away within 12 hours of exercise</li> </ul>
<b>Suggested therapeutic exercises</b>	<ul style="list-style-type: none"> <li>• Multi-plan shoulder active range of motion with a gradual increase in the velocity of movement while making sure to assess scapular rhythm</li> <li>• Shoulder mobilizations as needed</li> <li>• Rotator cuff strengthening in 90 degrees of shoulder abduction and overhead (beyond 90 degrees of shoulder abduction)</li> <li>• Scapular strengthening and dynamic neuromuscular control in open kinetic chain and closed chain kinetic positions</li> </ul>
<b>Cardiovascular exercise</b>	<ul style="list-style-type: none"> <li>• Walking, stationary bike or stair master</li> <li>• No treadmill or swimming</li> <li>• May begin light jogging or running if the patient has normal (rated 5/5) rotator cuff strength in neutral and normal shoulder active range of motion</li> </ul>
<b>Progression criteria</b>	<ul style="list-style-type: none"> <li>• Full shoulder active range of motion in all planes and multi-plane movements</li> <li>• Normal (rated 5/5) strength at 90 degrees of shoulder abduction</li> </ul>

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<b>Phase V (begin after meeting Phase IV criteria, usually 18 weeks after surgery)</b>	
<b>Rehabilitation appointments</b>	<ul style="list-style-type: none"> <li>• Physician appointment 18 weeks after surgery</li> <li>• Rehab every 2-3 weeks</li> </ul>
<b>Rehabilitation goals</b>	<ul style="list-style-type: none"> <li>• Normal strength and endurance of deltoid at 90 degrees of shoulder abduction and scaption</li> <li>• Advance proprioceptive and dynamic neuromuscular control retraining</li> <li>• Correct postural dysfunctions with work and sport specific tasks</li> <li>• Develop strength and control for movements required for work/sport</li> <li>• Develop work capacity cardiovascular endurance for work/sport</li> </ul>
<b>Precautions</b>	<ul style="list-style-type: none"> <li>• Soreness should go away within 12 hours of exercise</li> </ul>
<b>Suggested therapeutic exercises</b>	<ul style="list-style-type: none"> <li>• Multi-plan shoulder active range of motion with a gradual increase in the velocity of movement while making sure to assess scapular rhythm</li> <li>• Shoulder mobilizations as needed</li> <li>• Rotator cuff strengthening in 90 degrees of shoulder abduction and overhead (beyond 90 degrees of shoulder abduction)</li> <li>• Scapular strengthening and dynamic neuromuscular control in open kinetic chain and closed chain kinetic positions</li> <li>• Work/sport specific strengthening</li> <li>• Core and lower body strengthening</li> <li>• Work specific program, swimming program or overhead racquet program as needed</li> </ul>
<b>Cardiovascular exercise</b>	<ul style="list-style-type: none"> <li>• Design to use work/sport specific energy systems</li> </ul>
<b>Progression criteria</b>	<ul style="list-style-type: none"> <li>• May return to sport after receiving surgeon, athletic trainer or PT clearance</li> <li>• Return to sport are based on meeting the goals of this phase</li> </ul>

## UW Health sports rehabilitation guidelines

These rehabilitation guidelines were developed by the UW Health Sports Medicine group.

1. Izquierdo R, Voloshin I, Edwards S, FreehillMQ, Stanwood W, Wiater JM, Watters WC 3rd, Goldberg MJ, Keith M, Turkelson CM, Wies JL, Anderson S, Boyer K, Raymond L, Sluka P; American Academy of Orthopedic Surgeons.

Treatment of glenohumeral osteoarthritis. *J Am Acad Orthop Surg.* 2010 Jun;18(6):375-82

2. Ramirez MA, Ramirez J, Murthi AM. Reverse total shoulder arthroplasty for irreparable rotator cuff tears and cuff tear arthropathy *Clin Sports Med.* 2012 Oct;31(4):749-59. Review.

3. Smith CD, Guyver P, Bunker TD. Indications for reverse shoulder replacement: a systematic review. *J Bone Joint Surg Br.* 2012 May;94(5):577-83.

4. Wand RJ, Dear KE, Bigsby E, Wand JS. A review of shoulder replacement surgery. *J Perioper Pract.* 2012 Nov;22(11):354-9

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