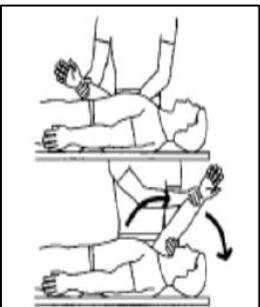
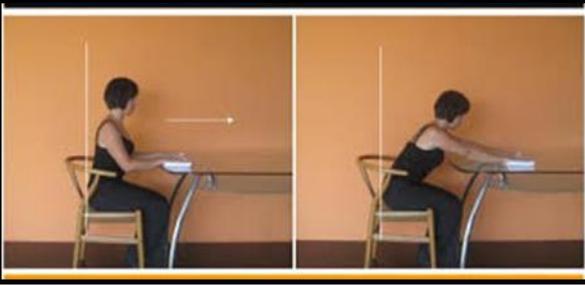


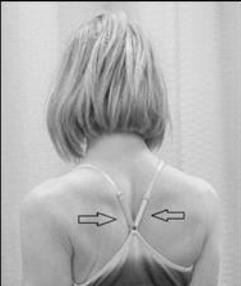
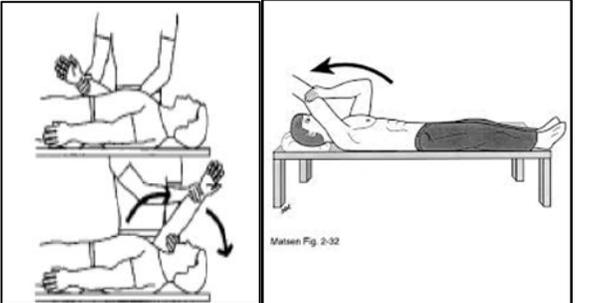
HARVARD MEDICAL SCHOOL AND  
BRIGHAM AND WOMEN'S HOSPITAL

Shoulder Arthroplasty Therapy Protocol for Hemiarthroplasty, Total Shoulder Arthroplasty, and Reverse Shoulder Arthroplasty

Patient to begin Phase 1 exercises at home daily, 5 times a day on the morning after surgery. Patient will begin an outpatient PT program 12 weeks after surgery.

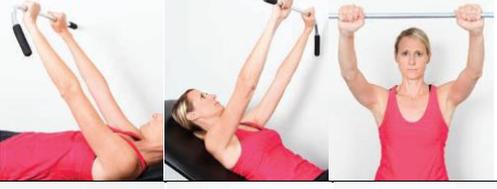
Do not add or skip any part of this program. If you have concerns please contact your surgeon, Carolyn Hettrich at (617)525-3427.

Phase 1	2 home-based exercises	
Goals	Primary goal is for the tissue to heal through rest and only the perform the two exercises below.	
Patient Instructions for Daily Life	<ol style="list-style-type: none"> <li>1. Remain in sling <u>at all times</u> unless showering or performing exercises.</li> <li>2. We encourage the use of the ice or the cryo-cuff to help control pain and inflammation after surgery for a minimum of 6 weeks.</li> <li>3. All exercises are performed 5 times a day for 5 repetitions.</li> </ol>	
Therapist Instructions	<ol style="list-style-type: none"> <li>1. Active assist shoulder exercises prevent stiffness and are critical for a good result.</li> <li>2. Only these 2 shoulder exercises are to be performed 5 times a day for 5 repetitions</li> <li>3. The following motions are not to occur:               <ol style="list-style-type: none"> <li>a) External Rotation past neutral</li> <li>b) Abduction</li> <li>c) Internal Rotation behind back</li> </ol> </li> </ol>	
0-6 weeks	<ol style="list-style-type: none"> <li>1. Supine passive assistive forward flexion to 140° (ear level), hold 5 seconds and repeat 5 times, 5 times a day. This needs to be achieved within 2 weeks to avoid stiffness.</li> </ol>	 
	<ol style="list-style-type: none"> <li>2. Table slides hold 5 seconds and repeat 5 times, 5 times a day. This needs to be done pushing a small towel, getting arm to ear.</li> </ol>	
Week 6	<b>Patient will see Dr. Hettrich prior to starting Phase 2 exercises</b>	

Phase 2 Exercises	4 shoulder exercises are to be performed 2 times a day for 5 repetitions	
Goals	<ol style="list-style-type: none"> <li>1. Continue healing after your surgery, as this takes 12 weeks.</li> <li>2. Gain active motion of your arm with smooth movement without shrugging shoulders</li> </ol>	
Patient Instructions for Daily Life	<ol style="list-style-type: none"> <li>1. Use sling only in uncontrolled situations (crowds, around small children, animals) or on slippery surfaces (ice/snow)</li> <li>2. All exercises are performed 3 times a day for 5 repetitions</li> <li>3. Do not lift anything in your operated hand greater than 1 pound</li> <li>4. No pushing/pulling</li> <li>5. Need to keep arm in front of your body – no reaching to the side, reaching behind body, or pushing self-up from chair/bed</li> </ol>	
Therapist Instructions	1. Exercises are to be instructed during a single visit and then the patient is to perform the following 4 exercises at home on their own.	
7-12 weeks	1. Table slides hold 5 seconds and repeat 5 times, 3 times a day to 140°	
	2. Scapular squeezes – Squeeze shoulder blades together for 5 seconds, 5 repetitions, 3 times a day	
	3. Supine passive assistive forward flexion to 140° (ear level), hold 5 seconds and repeat 5 times, 3 times a day. If this has not been achieved it is imperative they do so ASAP.	
	4. Week 7-9: Ceiling Punches: Lie on your back reach your operated arm up toward the ceiling. Hold for 5 seconds repeat 5 times perform 3 times a day.	

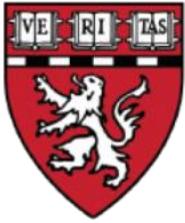
	<p>5. Week 10-12: Elevated Ceiling Punches: Replace exercise #4 with this exercise. Lie in a recliner or against propped up pillows. Lift your operated arm toward the ceiling and hold for 5 seconds, repeat 5 times perform this 3 times a day</p>	
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<b>12 weeks</b>	<b>Patient will see Dr. Hettrich prior to starting Phase 3 exercises</b>
<b>Milestone</b>	<ul style="list-style-type: none"> <li>• <b><i>If Active Elevation to 90° in upright position cannot be performed 5 times in a row without scapular compensation start “Inability to Lift Arm Protocol” (Page 6)</i></b></li> <li>• <b><i>If Active Elevation to 90° is performed without difficulty, then start Phase 3 exercises</i></b></li> </ul>
Phase 3 Exercises	<ol style="list-style-type: none"> <li>1. Active motion exercises are to be performed for 10 repetitions, 3 times/day</li> <li>2. Posture exercises should be held for 5-10 seconds and repetitions progress from 10-30 as tolerated, 3 times/day</li> <li>3. Resistance exercise should be performed without substitution with light resistance progressing from 10-30 repetitions as tolerated 1 time/day</li> </ol>
Goals	<ol style="list-style-type: none"> <li>1. Restore active motion in multiple planes without pain or scapular substitution over the next 6 weeks</li> <li>2. Initiate light strengthening exercises with short lever arm resistive exercises</li> </ol>
Patient Instructions for Daily Life	<ol style="list-style-type: none"> <li>1. No sling at all unless ice/snow or fall risk</li> <li>2. Use arm for normal daily tasks</li> <li>3. Do not lift anything greater than 10 pounds with operated arm</li> </ol>
Therapist Instructions	<ol style="list-style-type: none"> <li>1. Patients may begin to restore their active range of motion by using active assistive devices such as a cane, pulley or the uninjured arm in all planes.</li> <li>2. Work on postural exercise and scapular retraction without overloading the shoulder</li> <li>3. Progress active assisted motion from supine to wedge to upright as patient demonstrate smooth motion with no increasing in pain. Active motion may be performed in front of a mirror or using the opposite hand on the trapezius to prevent hiking of the shoulder.</li> <li>4. Once active motion is well established and is pain free then light resistive exercises can be started.</li> <li>5. The patient should work with therapist 1-2 times per week until released by surgeon, taking into consideration individual challenges, distance</li> </ol>
Active Assistive Motion	4 exercises can be progressed from lying supine to wedge to upright as tolerated by the patient without increasing pain. Hold the cane with both hands.

	Elevate the arms using the healthy arm to guide the injured arm. Increase the use of the injured arm as directed by comfort. These exercise can be progressed to upright when comfortable.	
	1. Assistive External Rotation – use stick if needed to rotate forearm away from the side hold for 5 seconds repeat 10 times 3 times/day.	
	2. Assistive Elevation – use stick if needed to reach overhead, hold for 5 seconds and repeat 10 times 3 times/day.	
	3. Assistive Abduction– use stick if needed to reach sideways overhead, hold for 5 seconds and repeat 10 times 3 times/day.	
	4. Assistive Hand behind back – use towel to gently pull your arm behind your back to gain motion in reaching behind you. Hold for 5 seconds and repeat 10 times 3 times/day.	 <p>Matsen Fig. 2-36</p>
Posture Exercises	Put hands on hips, lean back and hold for 5 seconds repeat 10 times, 3 times/day	
Resistive Exercises	<p>1. Resistance exercise should be performed without substitution with light resistance progressing from 10-30 repetitions as tolerated 1 time/day. Start with short lever arm and progress to elbow straight</p> <p>2. Elevation progression should be used if demonstrating compensation with active motion before progressing to elastic resistance exercises</p>	
	Scapular retraction with light elastic resistance. Squeeze shoulder blades together while rotating arms apart from each other. Hold for 5 seconds, repeat 10 times, 2 times/day	
	Elevation Progression	

	<p>a) Supine Punch – 0-2 pound weight punch up. Hold for 3 seconds, repeat for 2-3 sets of 10 repetitions. Once this is easy, progress to Wedge Punch.</p>	
	<p>b) Wedge Punch – 0-2 pound weight punch up. Hold for 3 seconds, repeat for 2-3 sets of 10 repetitions. Once this is easy progress to Standing Punch.</p>	
	<p>c) Standing Punch - 0-2 pound weight punch up. Hold for 3 seconds, repeat for 2-3 sets of 10 repetitions. Once this is easy progress to other resistive exercises.</p>	
<p>Elastic Resistance Exercise</p>		
<p>Resisted Outward Rotation</p>	<p>External Rotation</p> <p>While standing with involved elbow bent at 90°, place a towel between your side and elbow. Keeping the elbow in place at your side and bent at 90°, rotate involved arm outward to the side. Do not turn your body to the side as you rotate the arm outward.</p>	
<p>Resisted Inward Rotation</p>	<p>Internal Rotation</p> <p>While standing with involved elbow bent at 90°, place a towel between your side and elbow. Keeping the elbow in place at your side and bent at 90°, rotate involved arm inward toward your stomach. Do not turn your body to the side as you rotate the arm inward.</p>	

Resisted Forward Punch	<p>Flexion</p> <p>Anchor the ends of the theraband to the door to make a loop. Stand inside the loop with your back to the door. Place one-foot forward, use the left foot for the right arm and reverse for the left arm. Punch your arm forward.</p>	
Resisted Backward Shoulder Pull	<p>Shoulder Extension</p> <p>While standing with both arms straight at your side, grasp the theraband in both hands. Keeping your arms straight, pull the theraband backwards behind you with both arms. Squeeze or pinch your shoulder blades together as you pull arms back.</p>	
20-24 weeks/Phase 4 exercises	<ol style="list-style-type: none"> <li>1. Continue to progress with resistive exercises through available pain free range of motion without substitution patterns</li> <li>2. Initiate sport or work specific training activities</li> <li>3. May lift up to 40 pounds</li> </ol>	
	<p>Precautions for weight lifting:</p> <ol style="list-style-type: none"> <li>1. No overhead press exercises</li> <li>2. No bench press with elbow past body (Rolled Bath Towel on chest)</li> <li>3. No behind the neck squats</li> </ol>	

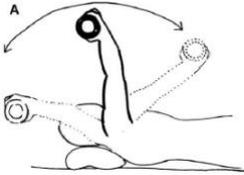


**Inability to lift arm Physical Therapy Protocol (Levy Protocol)**

Instructions for Therapist

The patient should work with therapist 1-3 x per week until released by surgeon

Goals	<p>The main goals of this physical therapy program are to:</p> <ol style="list-style-type: none"> <li>1) Have the patient regain the ability to lift their arm against gravity without pain or substitution by progressing the patients through a progression of active arm mobility from gravity-minimized activities in supine to incline to upright active arm motion.</li> <li>2) Although full motion may not be achieved by all patients the goal is to increase active arm mobility to normalize activities of daily living</li> </ol>
Ice	<p>We encourage the use of the ice or the cryo-cuff to help control pain and inflammation if needed</p>
Questions/Concerns	<p>If you have questions or concerns, please contact the patient's physician, Carolyn Hettrick at 859-218-3054</p>
Phase 1	<ul style="list-style-type: none"> <li>• Perform exercises 5 times a day for 5-10 repetitions</li> <li>• Lie on back with head on pillow for comfort</li> <li>• Support or assist arm to straight up toward ceiling (90°)             <ul style="list-style-type: none"> <li>- May flex elbow if having difficulty with arm straight</li> </ul> </li> <li>• Hold arm and gradually elevate toward head and lower toward feet with ability to return to straight up in the air, progress 1 inch at a time, to gain control of arm.             <ul style="list-style-type: none"> <li>- Start by using opposite hand for support</li> </ul> </li> </ul> <div> </div> <ul style="list-style-type: none"> <li>- Progress to performing without use of opposite hand through arc of motion (Therapist hands)</li> </ul> <div> </div>
Phase 2	<ul style="list-style-type: none"> <li>• Perform exercises 5 times a day for 5-10 repetitions</li> <li>• Lie on back with head on pillow for comfort</li> </ul>

	<ul style="list-style-type: none"> <li>• Hold a can of soup in hand (dumbbell) with arm straight up to ceiling</li> <li>• Move arm through arc of motion with resistance. Start with 2 inches up and down, gradually increasing the arc as strength increases.</li> </ul>  <ul style="list-style-type: none"> <li>• In some patients, squeezing a ball between hands (subscapularis activation) or pulling light elastic resistance (infraspinatus activation) will overcome sticking points in the arc of motion. Return to using one are a soon as possible.</li> </ul>
Phase 3	<ul style="list-style-type: none"> <li>• Perform exercises 5 times a day for 5-10 repetitions</li> <li>• Lie on a wedge at 30° incline (or on top of approximately 2 pillows)</li> <li>• Move arm up and down through arc of motion <ul style="list-style-type: none"> <li>1. Opposite hand supporting</li> <li>2. No assistance from opposite hand <ul style="list-style-type: none"> <li>○ With a soup can through an increasing arc of motion</li> </ul> </li> </ul> </li> </ul>
Phase 4	<ul style="list-style-type: none"> <li>• Perform exercises 5 times a day for 5-10 repetitions</li> <li>• Lie on a wedge at 60° incline (approximately 2 pillows against headboard/wall or in a recliner)</li> <li>• Move arm up and down through arc of motion <ul style="list-style-type: none"> <li>1. Opposite hand supporting</li> <li>2. No assistance from opposite hand <ul style="list-style-type: none"> <li>○ With a soup can through an increasing arc of motion</li> </ul> </li> </ul> </li> </ul>
Phase 5	<ul style="list-style-type: none"> <li>• Perform exercises 5 times a day for 5-10 repetitions</li> <li>• Standing or sitting upright</li> <li>• Move arm up and down through arc of motion <ul style="list-style-type: none"> <li>1. Opposite hand supporting</li> <li>2. No assistance from opposite hand <ul style="list-style-type: none"> <li>○ With a soup can through an increasing arc of motion</li> </ul> </li> </ul> </li> </ul>