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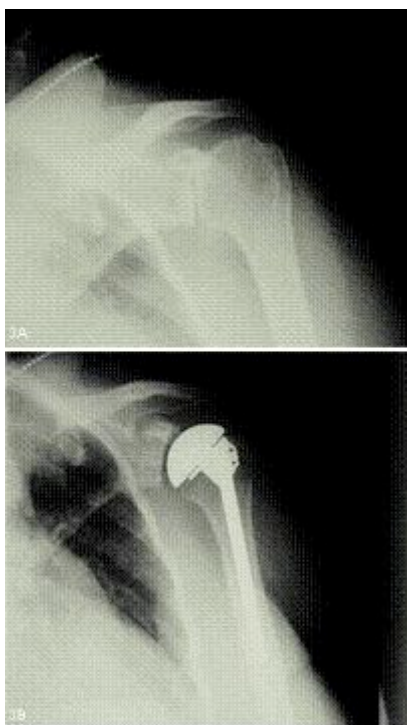
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## **Rehabilitation Protocol After Total Shoulder Replacement**

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1. **Goal:** to restore range of motion (ROM), strength, and confidence to the shoulder while avoiding the pain and swelling commonly caused by active use of the arm before scapulo- humeral rhythm has been restored.
2. **Pre-op medical evaluation:** All patients must be evaluated by their primary care physician (PCP) within 3 months prior to surgery. Please contact your family doctor or internist to arrange for a preoperative medical evaluation (pre-op clearance) to ensure the surgery does not carry an undue risk. Diabetics should have their blood sugars under control (hemoglobin A1C levels <6.9%). Patients with inflammatory arthritis (e.g. rheumatoid arthritis) should contact their rheumatologist or PCP about reducing or discontinuing immunosuppressive medications several weeks before and after surgery.

3. **Personal preparation for surgery:** If you are a smoker, stopping for a few weeks before and after surgery will lessen risk of complications such as blood clots or pneumonia. Dental work and kidney or bladder problems and procedures should be taken care of prior to the shoulder replacement if possible, as these procedures can cause a temporary bacteremia (bacteria in the bloodstream). Addressing these conditions prior to shoulder replacement lessens risk of infection after surgery.
4. **Facts:**
  - a. It takes 4-6 weeks for the subscapularis repair to heal. To prevent disruption of the repair the shoulder must not be externally rotated past neutral (arm pointing straight ahead with the elbow bent) for 3 weeks post-op or past 30 degrees external rotation until 6 weeks post-op. The *supraspinatus* and *infraspinatus* or “rotator cuff” muscles and also the deltoid muscles are normally weak, and shoulder atrophy is usually present, after the first 6 weeks.
  - b. Supraspinatus function can be restored with minimal pain or discomfort by ensuring that the elbow is supported during range of motion and strengthening exercises. *Trapezius spasm and dysfunction* leads to superior placement of the arm against the underside of the acromion and delays recovery. *Strengthening* exercises are most successful and cause the least pain when done in a mid-range arc of motion.

### REMINDER:

When the patient agrees to undergo replacement shoulder surgery they willingly commit to a 3 to 6 month, structured rehabilitation program. They should understand that the end-result depends to a great extent on their discipline, motivation, and perseverance in performing the exercise program. Without their commitment and energy, the surgery is assured to fail to meet their expectations. With their cooperation and dedication they have an excellent chance to regain the strength, motion, and confidence in their shoulder to participate in most activities of daily living, including reaching, personal hygiene, hooking a bra behind the back.

A physical therapist’s treatment and supervision is recommended for optimal results. Initially Home Health Physical Therapy is arranged to prevent elbow, hand & wrist stiffness. Outpatient Physical therapy visits are typically 3 times a week for 4 weeks beginning 3 weeks after surgery, then 2-3 times a week for a 2<sup>nd</sup> 4 weeks. The following exercise program should be followed **daily on your own** to achieve the goals expected at the end of each time interval. This detailed protocol has been designed as a reference specifically for you and your physical therapist.

### TIMING OF POST-SURGICAL VISITS:

1. 1<sup>st</sup> 2 DAYS post-op are usually spent in the hospital.
2. WEEK 3 or 4– wound check & X-ray, arrange outpatient physical therapy
3. WEEK 8- strength check
4. WEEK 12- if necessary

## REHABILITATION PROGRAM

### IMMEDIATELY POST-OP

1. **ACTIVITY:** A shoulder immobilizer (sling with a strap to keep the arm against the body) is provided for comfort. The shoulder immobilizer should be used except for bathing & exercises for the first 6 weeks after surgery to ease pain & to remind the patient that they are not to reach using the operated arm for at least 6 weeks post-op. Sitting up in bed or chair is usually the most comfortable position, even to sleep. Ice is important for 3 days after surgery to keep swelling and pain to a minimum. Put a bag of ice on the shoulder, covering the dressing with a towel to keep it dry. Change it every 4 hours. Some patients will have a shoulder immobilizer with integrated pockets holding dry ice packs; these packs are rotated in & out of the freezer (every 4 hours in the early post-operative period). Other patients will have a Thermos-type ice machine, which is started at the coldest setting, then adjusted to comfort.
2. **DIET:** Start with clear liquids then advance slowly as tolerated. Avoid greasy or rich foods in the 1<sup>st</sup> 48 hrs. after surgery.
3. **RANGE OF MOTION:** The patient should open and close their fist several times each hour while awake to prevent swelling and stiffness of the hand. If comfortable, they may begin removing the shoulder immobilizer the day after surgery to dangle their arm and straighten and bend the elbow. This should be done twice a day if pain allows.
4. **WOUND CARE:** Do not get the incisions wet in the 1<sup>st</sup> 10 days after surgery. If the bandage accidentally gets wet, change it with a dry, sterile dressing such as 4x4 gauzes & tape.
5. **GOAL:** The goal in the first 3 days after surgery is comfort. You will likely need fewer pain pills in the long run if you take them every 4 hours in the 1<sup>st</sup> few days after surgery, to stay ahead of the pain, rather than trying to “catch up”. A good night’s sleep is essential. Prescription sleeping pills are often provided and should be used if necessary.

### WEEKS 1-6

1. **ACTIVITY:** You may remove the shoulder immobilizer for bathing and exercises. Exercises include dangling your arm and sliding your hand on your thigh from hip to knee slowly (and only if there is little or no pain!). Do not reach for anything!
2. **RANGE OF MOTION:** It takes 4-6 weeks for the subscapularis repair to heal. To prevent disruption of the repair the shoulder must not be externally rotated past neutral (arm pointing straight ahead with the elbow bent) for 3

weeks post-op or past 30 degrees external rotation until 6 weeks post-op. It is better to let the shoulder get stiff than to risk tearing the repair by overdoing it. The shoulder immobilizer may be removed for bathing and if you are resting quietly. Please also wear the immobilizer at night for the 1<sup>st</sup> 4 weeks post-op to prevent inadvertent rotation away from the body (and rupture of the subscapularis repair).

3. **WOUND CARE:** You may get the incisions wet, in a shower, 10 days after surgery, if there is no drainage. Do not soak the shoulder in a bathtub, hot tub, or swimming pool until at least 3 weeks after surgery. Don't be surprised if bruising develops 3 to 7 days after the operation in the upper arm or even to the elbow. If staples or sutures are present, they are to be removed 13 days post-op by the Home Health Nurse.

### **WEEKS 6-8 (Begin Physical Therapy)**

1. **PAIN & SWELLING:** It is helpful to reduce pain and swelling throughout rehabilitation with the use of specific modalities, such as ice packs after exercise, electrical stimulation-ultrasound at the beginning of therapy sessions, and gentle mobilizations, as recommended by your physician or physical therapist.
2. **ACTIVITY:** Gradually increase the time out of the immobilizer, as comfort allows. You may use the arm at waist level. Do not reach for anything until the doctor or therapist gives the OK. You may slowly raise your arm if your hand is touching your chest up to the level of your ear or face; do this laying flat on your back until it is comfortable to do sitting up. You should be tapering your use of prescription pain pills and discontinuing their use by 6 weeks after surgery.
3. **RANGE OF MOTION:** The shoulder immobilizer is for the patient's comfort. You may stop using it when it no longer is necessary to help you stay comfortable. Three to five days after surgery, begin active assisted and passive motion using counter top slides and rotation with the elbow supported, within the tolerance of comfort; 4 to 6 weeks after surgery, the shoulder should move to **90 degrees flexion, neutral external rotation 0 to 10 when arm is slightly abducted (30-45) at the side in supine position.**
4. **STRENGTHENING:** Strengthen the shoulder using yellow or red theraband and isometric exercises that the physical therapist shows you, i.e., arm curls with free weights, elbow slightly abducted; no activities against gravity.
5. **WOUND CARE:** You may shower 5 days after surgery if you cover your dressing with a plastic bag and waterproof tape. You may remove the dressing 7 days after surgery, but continue covering with a washcloth and plastic for 2 more days when showering. If drainage occurs keep the wound dry and covered. If it doesn't stop within 5 days of surgery, call the office. You may get the incisions wet, in a shower, 10 days after surgery, if there is no drainage.
6. **GOAL:** By 8 weeks, the shoulder should move past 90 degrees flexion, but may still be sore, stiff, and swollen. Do not be discouraged if some swelling persists.

## WEEK 8-12

1. **PAIN & SWELLING:** Continue to use necessary modalities as needed to promote healing and progress complete recovery. Take ibuprofen or Tylenol as needed.
2. **RANGE OF MOTION:** Increase ROM using the exercises your therapist recommends. Shoulder should move past 120 degrees flexion at the end of 4 weeks.
3. **STRENGTHENING:** Continue with twice a day theraband exercises, cane press, free weight (not against gravity), gain 3+/5 strength with no substitution.
4. **GOAL:** By 12 weeks the shoulder should move nearly equal to the opposite shoulder. It is not unusual to still have some discomfort in the shoulder, which may limit motion. It is also not unusual to still have difficulty reaching behind the back (internal rotation/ extension).
5. **ACTIVITY:** You may use the arm for personal hygiene as your comfort permits. You will have a doctor's visit to check on your progress.

## WEEK 12-16

1. **PAIN:** The physical therapist will continue to use modalities as needed. Take ibuprofen or Tylenol as needed.
2. **RANGE OF MOTION:** Continue to increase ROM to improve quality of shoulder movement and eliminate substitute shoulder movement.
3. **STRENGTHENING:** You may use any exercise equipment available to you in your home, gym, and health club. Use lower weight and a higher number of repetitions (20 to 30) to build endurance. Repetitions should be done slowly until you are certain you can do the exercise comfortably. Try to exercise 1 hour a day (breaking it up into comfortable intervals), at least 3 to 5 times per week.
4. **GOAL:** By 16 weeks the range of motion of the shoulder should equal the normal side and feel well enough to resume light activities such as light tennis (no overhead serves until comfortable), golf, and light swimming. Do not attempt to lift anything heavy overhead. You should have full ROM including reaching behind the back.
5. **ACTIVITY:** Let discomfort be your guide. You may lift light weights from floor to waist but no lifting away from the body or above waist level.

## WEEK 16 - 24

1. **PAIN:** Continue to use modalities as needed.
2. **STRENGTHENING:** It's usually safe to begin some-restricted use of the arm at home and work.
3. **GOAL:** By 16 weeks, the shoulder should feel well enough to begin return to some restricted activities and sports including tennis, golf, running, etc.
4. **COMMENT:** It may take between six months and a year to regain full confidence in the operated shoulder. Confidence can only be regained by using the shoulder and subjecting it to the demands of the activity that you desire to return to.

Remember you have a metal & plastic shoulder that will loosen requiring revision surgery if you overdo it, trying to lift heavy objects above waist level or away from the body, or if you use the arm for strenuous pushing or pulling.

## **ANSWERS TO COMMON QUESTIONS:**

### **How long will I be in the hospital?**

Total Shoulder Replacement usually requires a short (2-3 day) hospital stay.

### **How long does the surgery take to perform?**

The surgery usually requires 2 hours to perform.

### **When can I drive a car?**

When you feel safe and confident behind the wheel so you can avoid getting into an accident. Generally, driving is often resumed within the first 8 to 10 weeks after surgery, but may take longer if you require pain medication frequently. Do not drive when you are taking pain pills.

### **When can I return to work or school?**

Motivated people who have a sitting or desk job can usually be back at work by 4 to 6 weeks after surgery.

### **What is the success rate of the surgery?**

90% of patients will have relief of pain and be able to use their arm for most normal day to day activities. Three of 4 athletes will be able to resume participation in sports activities such as fishing, swimming, golf, tennis and skiing; some will return to bowling, and a few will be able to play softball again.

### **Can my therapist watch the operation?**

Yes, the therapist can call 724-6169, ext. 203, and inform our medical assistant if they would like to observe the surgery. It is a hospital policy that non-medical personnel are not permitted in the operating room; this includes family and friends.

### **Will I set off the metal detector at the airport?**

Possibly. The United States Transportation Security Administration (TSA) regulations state: *“It is recommended (but not required) that you advise the screener that you have a metal implant and where the implant is located. Screeners will need to resolve all alarms associated with metal implants. Most alarms will be able to be resolved during a pat-down. Therefore, clothing will not be required to be removed or lifted as part of the inspection process.”*

### **Must I take an antibiotic before dental work or other procedures?**

Yes, it is recommended by the American Academy of Orthopaedic Surgeons (AAOS Bulletin Vol.45 No.3, July 1997) that antibiotics be taken prior to dental work in the 1<sup>st</sup> 2 years after a joint replacement. This includes cleanings. Patients that are

immunocompromised (e.g. rheumatoid arthritis or Type I diabetes) are at higher risk and may be considered for prophylaxis indefinitely. Prophylaxis is also recommended before endoscopy (e.g. colonoscopy).

**If you have any more questions, and you should, please write them down in the space below and call 724-6169 for our medical assistant, or ask Dr. Abrahamsen at your next office visit.**