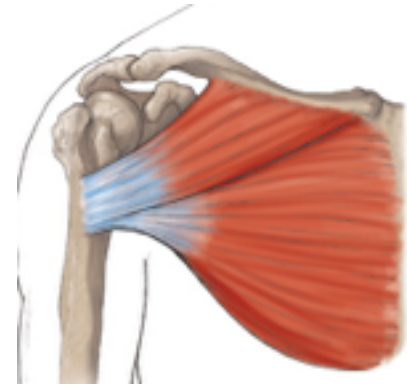


Pectoralis Major Repair

The pectoralis major muscle is the large muscle in front of the upper chest. There are two parts of the pectoralis muscle, the pectoralis major and the pectoralis minor. The pectoralis major is the larger of the two, and works to push the arms in front of the body, such as in doing a push-up or bench press exercise.



Pectoralis Major Muscle Rupture

The pectoralis major muscle, or most commonly its tendon that attaches to the arm bone (the humerus), can rupture. Athletes commonly call this a "pec rupture" but it is more accurately called a pectoralis major muscle rupture. Pectoralis major ruptures are uncommon injuries that occur almost exclusively in men between the ages of 20 to 50. While partial tears can occur, these are less common, and usually a complete rupture of the tendinous attachment of the muscle to the bone occurs.

How does a pectoralis major muscle rupture occur?

These injuries generally occur during forceful activities. A large number of pec major ruptures occur during weightlifting, particularly during a bench press exercise. Other causes of a pectoralis major rupture include football, wrestling, rugby, and other causes due to trauma.

What are the symptoms of a pectoralis major muscle rupture?

Patients who experience a pectoralis major rupture feel sudden pain, and often a tearing sensation in their chest. Symptoms include:

- Pain in the chest and upper arm
- Weakness in pushing the arms out in front of the body
- Bruising in the chest and arm
- A dimpling, or pocket, formed just above the arm pit where the rupture occurred

Treatment of Pectorals Muscle Rupture

Surgery is most often recommended for complete tears of the pectorals muscle tendon. People who have partial tears, tears within the muscle or low-demand patients may be able to avoid surgical treatment.

By repairing the torn tendon, patients have a good chance at returning to high-level sports and activities. Ideally the repair is performed in the early period following the injury. By performing the repair within several weeks of the injury, scar tissue and muscle atrophy are minimized.

The repair is performed by placing sutures in the torn tendon, and then securing these sutures to the arm bone with either holes in the bone or anchors inserted into the bone.

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Rehab after Pectoralis major repair

Phase 0: 0-2 weeks after surgery.

POSTOPERATIVE INSTRUCTIONS

You will wake up in the operating room. A sling and an ice pack will be in place. You will go to the recovery room and generally will be discharged after 1-2 hours. You can get out of bed when you wish. Apply ice to the front of the shoulder to reduce pain and swelling. You may remove the sling whenever you wish and gently move the elbow, wrist and fingers. Please follow Dr. Nelson's post operative instructions regarding moving your shoulder after surgery.

GOALS:

1. Control pain and swelling
2. Protect the repair
3. Begin early shoulder motion

ACTIVITIES WHEN YOU GO HOME:

1. Apply ice to the shoulder as tolerated to reduce pain and swelling. You can change the dressing to a smaller one to allow the cold therapy to reach the shoulder.
2. Remove the sling on the first day after surgery. Move your elbow, fingers and hand several times a day.
3. Begin the pendulum exercise several times a day:
Bend over at the waist and let the arm hang down. Using your body to initiate movement, swing the arm gently forward and backward and in a circular motion. Repeat for 2 to 3 minutes at a time.



4. Remove the outer dressing on the second day after surgery and shower. Leave the little pieces of tape (steri-strips) in place. You can get the wound wet after 2 days in a shower, but do not soak in a tub. To wash under the operated arm, bend over at the waist and let the arm passively swing away from the body. It is safe to wash under the arm in this position.
5. Keep your elbow slightly in front of your body; **do not reach behind your body**. When putting on clothing, lean forward and pull the shirt up and over the operated arm first. Then put the other arm into the opposite sleeve. To remove the shirt, take the unoperated arm out of the sleeve first, and then slip the shirt off of the operated arm.
5. Call or email Dr. Nelson with any questions or concerns.

OFFICE VISIT: Please arrange to return to Dr. Nelson's office in the office 10-14 days after surgery.

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Rehab after Pectoralis major repair

Phase 1: 2-6 weeks after surgery.

Goals:

1. Protect the repair
2. Ensure wound healing
3. Prevent shoulder stiffness

Activities:

1. Sling

Use your sling as instructed by your doctor. You may remove it whenever you wish if you are careful and keep the shoulder safe. Put the sling on when you are outside or in a crowd. Keep the sling on when sleeping at night for the first three or four weeks.

2. Use of the operated arm

You may use your hand on the operated arm as long as you **do not** rotate the arm externally or away from your body. You should bend your arm at the elbow and use your fingers and hand, such as to reach up and touch your face. Keep your elbow in front of you.

3. Bathing and showering

You may shower or bath and wash the incision area. To wash under the operated arm, bend over at the waist and let the arm passively swing away from the body. It is safe to wash under the arm in this position. This is the same position as the pendulum exercise. **Do not** submerge the incisions under water

ICE

Ice the arm 15-20 minutes duration 4-5 times per day as needed to decrease swelling and pain.

STRETCHING/PASSIVE MOTION

Days per week: 7 Times per day: 4-5

Exercises:

- Pendulums
- Supine External rotation (week 2-4 limit to 0 degrees or straight up and 5-6 limit to 30 degrees)
- Supine forward elevation as tolerated start week 3

STRENGTHENING EXERCISES

Days per week: 7 Times per day: 4-5

Exercises:

- Isometric External rotation at neutral
- Prone row
- prone extension do not extend past hip
- Side-lying external rotation to above stated limits
- Rhythmic stabilization and proprioceptive training drills
- Ball squeeze exercise

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Rehab after Pectoralis major repair

Phase 2: 7-12 weeks after surgery.

Goals:

1. Protect the shoulder repair
2. Regain full range of motion
3. Continue gentle strengthening

Activities:

1. Use of the operated arm

You may now use your arm in a more normal fashion. You may move the arm into all positions including external rotation and behind the back if it is comfortable. Avoid having the arm forcefully pulled behind you. Continue to avoid heavy weight lifting or manual labor. Follow any further instructions given to you by your doctor.

2. Precautions

Do not lift heavy weights overhead with the weight going behind the head. In other words, keep the weights in front of you where you can see them.

Exercise Program:

STRETCHING / MOTION

Days per week: 7 Times per day: 1-2

- Pendulum exercises
- Standing external rotation
- doorway Wall slide stretch
- Hands-behind-head stretch

(Starting the 9th week after surgery)

- Behind the back internal rotation
- Supine cross-chest stretch
- Sidelying internal rotation

STRENGTHENING / THERABAND

Days per week 7 Times per day: 1

- Scapular stabilizer strengthening
- Biceps
- Triceps
- rotator cuff
- initiate closed-chain scapula exercises

- No resisted IR/ADDuction

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Rehab after Pectoralis major repair

Phase 3: 12-24 weeks after surgery.

Goals:

1. Protect the ligament repair
2. Regain full range of motion
3. Continue strengthening
4. Gradual return to full activity

Activities:

Use the arm for normal daily activities. There is no restriction on your range of motion unless exceptions are outlined in your discussions with your doctor. Weight training can gradually resume with caution being paid to exercises such as bench press, incline press, dips, pull-downs behind the neck or other exercises where the hands are repeatedly placed behind you. If you are returning to contact sports, you should wait until six months after surgery.

Exercise Program

STRETCHING / RANGE OF MOTION

Times per day: 1 Days: 5-7

- Standing External Rotation / Doorway Wall slide Stretch
- Hands-behind-head stretch
- Behind the back internal rotation
- Supine Cross-Chest Stretch
- Sidelying internal rotation
- External rotation at 90 Abduction stretch

STRENGTHENING / THERABAND

Times per day: 1 Days per week: 3

- Continue exercises from phase 2
- Internal Rotation
- Forward Punch
- Dynamic Hug
- Diagonal down

Optional exercises:

- External rotation at 90
- Internal rotation at 90
- Standing 'T's
- Diagonal up

STRENGTHENING / DYNAMIC

Times per day: 1 Days per week: 3

- Prone external rotation at 90 abduction "U's
- Biceps curls
- Resisted forearm supination-pronation Resisted wrist flexion-extension
- PNF manual resistance with physical therapist

Push-up progression

Return to play is approximately 6 months if strength and motion restored. Please refrain from starting sport specific exercises until 16 weeks post operative. Running may start at 12 weeks post operative.

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Dr. Nelson's Pectoralis Major Repair Rehabilitation Protocol															
Diagnosis:															
Procedure date:	S/P:														
	WEEK										MONTH				
	1	2	3	4	5	6	7	8	9	10	3	4	5	6	
PHASE 0 EXERCISES (week 0-2)															
Pendulum	•	•	•	•	•	•	•	•	•	•					
Continue Shoulder immobilizer	•	•	•	•	•	•									
PHASE 1 EXERCISES (week 2-6)															
Continue immobilizer except hygiene and exercise		•	•	•	•	•									
Supine external rotation (wk 2-4 0 deg 5-6 30 deg)		•	•	•	•	•	•	•	•	•					
Supine forward elevation as tolerated to 90		•	•	•	•	•									
Isometric External rotation at 0		•	•	•	•	•									
Prone Row, Prone extension to hip		•	•	•	•	•									
Ball Squeezes	•	•	•	•	•	•	•	•	•	•					
PHASE 2 (weeks 7-12) Active motion phase															
Standing ER as tolerated to 45, behind back IR								•	•	•	•	•	•	•	
Doorway wall slide stretch								•	•	•	•	•	•	•	
Hands-behind head stretch (start week 9)										•	•	•	•	•	
Begin incorporating Posterior capsular stretch (cross body adduction supine, sleeper stretch)								•	•	•	•	•	•	•	
Initiate strengthening Biceps, Triceps, Rotator cuff								•	•	•	•	•	•	•	
Initiate scapula stabilization (closed chain)								•	•	•	•	•	•	•	
PHASE 3 (weeks 12-24) continue previous plus															
External rotation at 90 abduction stretch											•	•	•	•	
continue phase 2 strengthening plus											•	•	•	•	
Theraband IR, Forward punch, Dynamic hug, Diag down											•	•	•	•	
Optional theraband: ER, IR at 90 abd, Standing T											•	•	•	•	
Dynamic strengthening Prone external rotation at 90 (U)											•	•	•	•	
Biceps curls											•	•	•	•	
Resisted forearm pronosupination wrist flexion/extension											•	•	•	•	
Progres return to upper extremity weight lifting program Focus (deltoid, lat, pec)												•	•	•	
Initiate plyometrics/interval sports program												•	•	•	
May initiate pre injury level activities with clearance by Dr. Nelson														•	
Return to play typically 5-6 months															
Call or email Dr. Nelson with any concern															
Additional Instructions:															