Unraveling the Mystery of Shoulder Pain #1: Subscapularis Muscle-Tendon Injuries

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Webinar Goal

Explore the assessment and treatment of one of the most common shoulder injuries.

Logistics

• Time: 1 hour
• Schedule:
  • Presentation 30–40 min
  • Questions 15–20 min
• Ongoing questions: Use Question box. If I don’t get to your question, ask me on my Dr Ben Benjamin Facebook page after the webinar.
• Get a pen and paper please

Pretest

1. What is the most common shoulder injury?
2. What muscle do you use to throw a ball?
3. What does a painful arc mean?
4. What do passive tests of the shoulder tell you? What do passive tests of the shoulder tell you?
5. Which rotator cuff muscle is the strongest?
Anatomy

Subscapularis Anatomy

- Covers the subscapular fossa
- Inserts onto the lesser tubercle of the humerus
- Strongest rotator cuff muscle

Subscapularis Function

- Medially rotates the head of the humerus in internal rotation
- Helps support the anterior portion of the shoulder joint
Subscapularis Tendon
- ¾-1 inch wide
- Can be injured in lower half or the upper half

Tenoperiosteal Junction
- Where the tendon attaches to the bone (its periosteal cover)
- Most frequently injured segment of muscle-tendon units
- Pain often refers beyond this area

Rotator Cuff Support
- 4 rotator cuff tendons
- the greater the mobility, the greater the vulnerability
Anatomy Drawing

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Movement Anatomy

- Hand at your side, palm facing down.
- Bend elbow to 90 degrees, palm forward
- Bring hand to abdomen

Assessment Theory
Assessment Tests and Indicators

- Resisted Tests
- Passive Tests
- Active Tests
- Major Indicator
- Auxiliary Indicator

Resisted Tests

Passive Tests
**Active Test**

**Major Indicator**
- Tells you the most important information: **WHAT** is injured

**Auxiliary Indicator**
- Tells you which part of the muscle-tendon unit is damaged
Assessment Tests for the Subscapularis

Resisted Medial Rotation

Passive Elevation
Passive Horizontal Adduction

Painful Arc

“Slowly raise your arm to the side and stop if it causes any pain.”

If there is pain, say:
“Continue raising your arm and let me know if the pain goes away.”

Why do we test in different positions?
Theory

Assessment Test Results for the Subscapularis
• MI: Resisted medial rotation is painful
• AUX: Passive elevation is sometimes painful
• AUX: Passive adduction is sometimes painful
• AUX: Painful arc is sometimes painful

Four Rules of Referred Pain
• Distal Reference
• Doesn’t cross the midline
• Is referred in the dermatomes
• The distance is proportional to the severity of the injury
Four Rules of Referred Pain

Rule #1. Pain refers distally.

Rule #2. Pain does not cross the midline.

Rule #3. Pain is referred within the dermatomes.
Four Rules of Referred Pain

Rule #4. The distance the pain refers is directly proportional to the severity of the injury.

Clinical Application

• Which muscle throws a ball?

How Does This Injury Occur?

• A fall onto the side of the shoulder
• Overuse
• Anterior shoulder dislocation
• Tennis forehand and serving
• Throwing a ball side-arm or overhead
• Nautilus machine starting too far back
• An excessive kyphotic curve, which forces the arm to strain overhead
Treatment

Friction Therapy
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AIS: Stretching the Subscapularis
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Self-Treatment: Tendon Injury Exercise Program (TIEP)

- This program must be done every day.
- It can be increased to twice a day after about two weeks.
- The client must feel some fatigue at the end phase of the exercises.

General Exercise Guidelines:

The five steps

1. Warm up 2-3 minutes—move the relevant body part around.
General Exercise Guidelines:

The five steps

2. Stretch affected area 5 times, 20-30 seconds each time. Rest between stretches.

3. Use a light weight to do 3 sets of 10 of the assigned exercise. Rest between each set of 10. Last set should cause slight fatigue.

4. Stretch 5 times for 20-30 seconds.
General Exercise Guidelines:

The five steps

5. Apply ice or heat for 5-10 minutes.

General Exercise Guidelines:

• If the last ten repetitions do not cause any fatigue in the first session, add a pound the next day.

• Keep adding a pound per day each day until a sense of fatigue is present.

General Exercise Guidelines:

• On the first day of the second week, increase the amount of weight to that which will cause slight fatigue in the last ten repetitions (usually one or two additional pounds).
General Exercise Guidelines:

- Of course, if there is still fatigue at the present level of weight, the client should stay at that level a little longer.
- At the beginning of each new week, increase the weight again if it’s appropriate.

TIEP: Subscapularis Stretch

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TIEP: Subscapularis Exercise

Watch the video at the end of the Webinar
Questions
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Reviews
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Post-test
1. What is the most common shoulder injury?
2. What muscle do you use to throw a ball?
3. What does a painful arc mean?
4. What do passive tests of the shoulder tell you? What do passive tests of the shoulder tell you?
5. Which rotator cuff muscle is the strongest?
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