# Neuromuscular Therapy Massage for Adult Female with Costochondritis: A Case Report

## Introduction

Costochondritis is an inflammatory condition of the junctions of the upper ribs that causes localized chest pain. It is a fairly common injury among some athletes, particularly when athletic activities involve strenuous upper body movements. Costochondritis often responds to nonsteroidal anti-inflammatory medications such as ibuprofen (Advil or Motrin) and naproxen (Aleve). Some patients may be given a local anesthetic and steroid injection in the area that is tender if the pain does not respond to drugs. The chest pain is variable, often sharp and can be confused with heart pain or heart attack and can last from hours to weeks. Costochondritis has no definite cause.

Although costochondritis does not have a confirmed etiology, contributing factors frequently include upper body overuse, inflammatory conditions and trauma. Typically, costochondritis patients seek medical attention because they believe they're having a heart attack. However, once imaging studies have ruled out a cardiovascular event, it becomes clear that the cause is musculoskeletal as opposed to cardiovascular.

## Case Presentation

A 42-year-old female licensed massage therapist (LMT) of 5 years presented with achy chest pain. She reported an inability to perform pain-free upper body movements when engaging in the activities of daily life, and when performing her professional LMT duties. She reported aching pain in anterior thoracic, with random cracks or pops, yet no problem with breathing. Recent imaging studies had ruled out heart disease and any other 'red flags'.

Observation confirmed that there was no asymmetry of the shoulders or iliac crest, the Adams Test for scoliosis was negative, and range of motion was normal. The sternum and ribs were mildly depressed with the shoulders pulled forward. Anti-inflammatory pharmaceutical medicine was prescribed for immediate relief. Next, a treatment plan to identify and treat any short, tight muscles or fibrous tissues was developed. The six-week treatment plan included one-hour of neuromuscular therapy each week targeted to hypersensitive nodules, taut bands and muscles that may have been shortened. The neuromuscular therapy also targeted treatment to the fibrocartilage as well as muscles of the chest, neck and shoulders.

The following muscles were addressed: pectoralis major (clavicular, sternal and costal attachments), pectoralis minor, subclavius, sternalis, internal and external

intercostals, serratus posterior superior, trapezius, levator scapula, supraspinatus, rhomboids, latissimus dorsi, serratus anterior, scalenes, sternocleidomastoid, external and internal abdominal oblique, diaphragm, infraspinatus, teres major and minor, and deltoids. Treatments were supine, prone and side lying.

The client reported that the left lateral costochondral joints and overlaying muscles and cartilage had irritation. This cartilage serves as an elastic bridge between the bony portion of the rib and sternum. The most pronounced area of tenderness was the left lateral costolchondral junction which connects the ribs to the costal cartilage. Not the medial chondrosternal or manubriosternal joints which connect the costal cartilage and the sternum.

This left lateral location is consistent with findings reported in Travell. These discrete areas of tenderness were localized by palpation with a single digit. The muscles and cartilage felt thick and gristly. As treatment progressed, stronger pressure and deeper amplitude was applied, returning a normal feel to the tissues. Range of motion was encouraged, but the client discontinued her practice of power yoga specifically because of its strong and forceful upper body component. Frequent deep breathing encouraging rib articulations and gentle mobilization was encouraged to decrease hypertonicity in the shoulders and ribs. Treatments were slow with careful consistent pressure and movements held for about 20 seconds.

## Results

The client's most pronounced symptom of tenderness over the costochondral joint was relieved by directly addressing the overlaying musculature and cartilage through neuromuscular therapy and range of motion stretching and circulatory exercises. This short term intervention was successful and we were able to dissolve adhesions and change the story of the pain. A recommended self-care plan was provided. It included postural training, strengthening exercise for lower trapezius and scapular stabilizers and stress management. Six hourly treatments, performed once a week for six weeks, yielded direct, immediate, effective reduction of pain symptoms and pain free return to normal activities.

## Discussion

This success highlights the importance of understanding the relevance of muscles as a contributor to pain, and the many benefits of neuromuscular therapy. Many studies

validate massage and neuromuscular therapy to reduce inflammation in muscles and promote recovery of injured muscles. Neuromuscular massage may have moderated inflammation, improved blood flow, and reduced tissue stiffness, all contributing to pain reduction. To be noted, some costochondritis cases are short lived and may heal over time and some cases are extremely chronic.

An additional note, this LMT treating the client has 30 years of experience in therapeutic massage. She was able to use the pad of her fingers to pick up subtle palpatory clues to adhesive tissue. This kinesthetic skill & palpatory listening may have contributed to the positive outcome of this case. In addition, the palpation and with rhythmic breathing was able to calm the client and may have also contributed to restored function. At the end of the six weeks the client reported a change in self reported pain and was able to resume normal duties. The evidence suggests and further research would be helpful and that NMT by an experienced practitioner may be beneficial to change the story of pain.

## Key Terms

Neuromuscular Therapy is the manual application of focused strokes and pressure by the fingers or thumbs for diagnostic or therapeutic purposes. Neuromuscular therapy is used here to release areas of strain in the muscle, tendon.

Adams Test is viewing the patient for abnormalities of the spinal curve.

Costochondritis: Diagnosis and Treatment

What is costochondritis?

Massage reduces inflammation and promotes growth of new mitochondria following strenuous exercise, study finds

## References


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