



# Adhesive capsulitis

By Glenna Knapp, ATC

Clinical Research done  
for Certification in PNMT

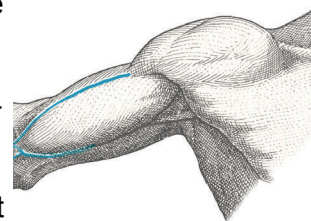
Adhesive capsulitis, commonly known as “frozen shoulder” is a condition that can affect the quality of life for 1 - 2 years. Characterized by restricted shoulder movement and progressive pain leading to the loss of passive and active range of motion of the glenohumeral (GH) joint in all planes. Joint inflammation and recurrent stresses produces scar tissue formation leading to significant joint contractures.(1)

Phases of this condition are divided into three stages:

- Stage 1: generalized pain occurring first with movement and later at rest.
- Stage 2: Pain lessens, but joint “freezing” begins and restrictions become severe.
- Stage 3: Recovery is usually spontaneous in this “Thawing” phase, but deficits may remain in some clients.

Frozen shoulder generally affects more women than men and this also found this to be true at a ratio of 2:1. The average age is generally 30 - 60 years old adding to the long list of other problems that show up in middle age.

Anatomic, histologic, and surgical specimens have shown that although the joint capsule appears to be involved in frozen shoulder, the primary pathology that decreases range of motion appears to be due to the soft tissue surrounding the capsule. Many studies have shown degrees of success in the treatment, but there is little evidence to support any benefits in long term outcome, or any treatment protocol that is far superior. In addition, because there is little known as to the cause of frozen shoulder; it can be speculated that it may be the result of accumulated traumas and somatic dysfunction which leads to fibrotic muscular changes as well as neural-response to muscle lengthening and shortening. The findings of Levin demonstrated that the underlying structure of all organic tissue determines its' responses to traumatic forces and may account for certain properties that can lead to persisting dysfunction. (2,3,4)



The objective of this study is to incorporate the use of Precision Neuromuscular therapy as a valuable addition to standard therapy in treatment outcomes. In addition, this study will shed a clearer picture on PNMT as a functional therapy and not classified as just massage therapy. The primary role of functional therapies does not alleviate or attempt to treat any tissue pathology, rather it is to relieve the somatic dysfunction which according to Levin is a nonlinear process (exerts an influence over a brief period of time). Nonlinear processes tend to be functional rather than pathological and respond rapidly to functional therapy establishing an environmental which linear healing can occur more efficiently.

Since muscles are the source and recipient of the greatest amount of neural activity in the body(2), restriction of motion may be directly attributed to abnormalities in the tone and activity

of the system. In addition, osseous structures are also classified as soft tissue (5); therefore, it stands to reason that therapeutic modalities used for muscle and fascia may be applied to the osseous component of the dysfunction.

This study began about June 2004 and continued through March 2005.

Patients used in the study were seen by Physicians within Beacon Orthopedics and physical therapy was performed by therapists within TriHealth (a joint health alliance between Good Samaritan and Bethesda Hospitals). All procedures were performed at the Beacon Orthopedic Center. Thirteen patients were used in the study, 8 females and 5 males with an average age of 50. Patients were all middle class citizens holding jobs as office workers, teachers, administrators, salesmen and homemakers. All met the criteria for frozen shoulder with 9 of the patients revealing a tear found on MRI, 1 as a result from a fractured humerus and 3 with no known mechanism of injury. In all cases, except the fracture, patients dealt with pain and restriction for several months prior to seeking regular treatment. When OTC medications and "working-it-out" methods stopped working, these individuals finally sought medical intervention.

Once in the system, standard therapies were initiated and 9 underwent surgery right away for repair and debridement as well as manipulation under anesthesia, 2 underwent a manipulation after 3-4 PNMT visits, and 2 chose PNMT only. All 13 clients remained under the care of a physical therapist due to insurance restrictions, but therapies varied dependent on the results provided from the PNMT treatment. All 9 patients that underwent surgery immediately had no PNMT treatment for 1-3 weeks post-surgery, but finally got referred when the therapist could not get positive results or the patient was so frustrated with therapy they were ready to quit. Once PNMT was started, within 2-3 weeks (4-6 visits @30-60 min.) the patients felt ready to resume P.T. The remaining 4 patients that underwent PNMT prior to surgery or no surgery tolerated P.T. after at least 4 visits were provided. In all instances (patients), the repeating theme was postural dysfunction. Once it was addressed through PNMT, the patient got better.



Summary of PNMT sessions are as follows:

Session 1: pain relieved, patient left feeling better and moving, daily living became functional, and sleeping was accomplished without waking up in pain. Pain medication usage began to decrease. Pain and restriction began to return within 24-48 hours.

Session 2: Pain relieved more quickly and muscle tissue responded more easily and rapidly to neural changes. More ROM obtained. Pain and restriction began to return 48 to 72 hours post-treatment.

Session 3: Continued improvement in pain relief and increase in motion. Patients came off all pain meds and results remained lasting between sessions up to a week.

Session 4: Measurements were taken passively and actively and showed a 50-60% change from virtually no movement. Patients were basically pain free all the time at this point.

Sessions 5 -10: Continued to show improvements. Most individuals were done with PNMT after 6 visits, those that needed additional had underlying medical problems such as diabetes, fibromyalgia, etc. Without PNMT, these patients saw no light at the end of the tunnel.

The human body has an incredible ability to adapt to minor stresses, but as soon as the number increases above a certain range, different in every individual, the body has less room to adapt. Once this physiologic adaptive range has been reached, there is a greater suscepti-

bility for injury. The injury is usually not caused by one particular movement but the accumulated stresses to the body over the lifetime. Muscle guarding, joint hypo-mobility and fascia tension affects functional mobility and flexibility and can lead to faulty posture. This preexisting dysfunction influences the resulting condition of the body. PNMT attempts to identify these areas of dysfunction and normalize the somatic tissues to improve the general condition and stability of the body. PNMT methodology involves total body evaluation through goniometric measurements and orthopedic testing as well as the clients verbal complaints to resolve the associated dysfunction. Through the use of tender points and passive movements at the comfort level of the client, there is a decrease in muscle and fascia tension and joint hypo-mobility. As a result, there is a significant measurably increase in functional ROM and decrease in pain.

The positive results from this study place PNMT as a viable modality for the treatment of frozen shoulder. Classifying PNMT as “massage therapy” confuses other healthcare professionals. As stated earlier, PNMT is a functional therapy and addresses restoration of nonlinear processes. Massage is a modality that can be used to address the restoration of linear processes. Both issues may be addressed in a session, but the difference must be clearly understood.

In conclusion, this study proved invaluable for all those involved on all levels. All clients responded well and have since been discharged with no return to therapy and are back to normal lives; many physical therapists were in awe at the results achieved in such a short time; physicians received reports that the “massage therapy” fixed them. As for me, performing the PNMT sessions allowed my business to grow and provided me with many opportunities to share these skills and help decrease injuries in the future.

## Bibliography

1. Athletic Training and Sports Medicine; 3rd Edition  
Robert C. Schenck, Jr., MD
2. Positional Release Therapy  
Kerry J. D'Ambrogio, B.Sc., PT  
George B. Roth, B.Sc.; DC, ND
3. Levin SM: The Icosohedron as a 3-dimensional finite element in biomechanical support. Proceedings of the society of General Systems research on mental images values and reality, Philadelphia, Society of general systems research, May 1986.
4. Levin SM: The Importance of soft Tissue for structural support of the body, Spine: state of the art reviews, 9(2): 357, 1995.
5. Myoskeletal Alignment Techniques  
Erik Daulton
6. Precision Neuromuscular Therapy- Upper Extremity  
Form and Function  
Doug Nelson

