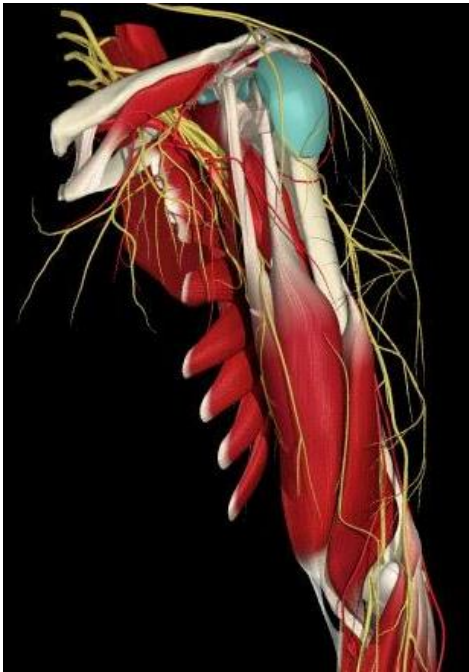


## CHRONIC PAIN OR SORENESS... DO YOU KNOW WHAT'S REALLY GETTING ON YOUR NERVES?

WHY YOU SHOULDN'T SAY "MUSCULAR" WITHOUT "NEURAL" IN FRONT OF IT.  
HERE'S THE PROOF...

**Problem:** In traumatic or repetitive overuse injuries neural tension may occur, which is the inability of the nervous system to move concurrently with changes in body position. Consequently scar tissue, tight muscles, and adhesions cause neural hypomobility, ultimately resulting in pain and decrease of function.



"Connective tissues are composed of 50% of nerves and are highly reactive to trauma, so that scarring and adhesions are common following injury" Gallant S. 1998

Research says that ANY nerve damage will clear <6 weeks regardless of treatment. Restart normal activity as soon as possible to retrain proprioceptors in a functional way.

"The nerve must adapt by as much as 20% in length in the upper extremity to accommodate motion." Millesi H 1986

Normal nerve function requires **movement** or else a thick gel like substance called axoplasm will form; which is why nerves have its own circulation. Neurons require 30% of oxygen pumped from the heart.

"Injury may cause inadequate blood flow to the nerves resulting in adaptive shortening from positioning or scarring. Connective tissues of the nervous system are innervated, therefore inflammation and ischemia can cause symptoms." Walsh MT 2005

"75% of patients who did not complete upper limb neural tension test (ULTT) stretches along with their treatment exercises still had a positive test for neural tension after 4 weeks of rehabilitation." Turl S and George K 2007

**Consider the secondary associated injury- Neural tension.** "If neural tension is present and not treated, over time it will present as neurogenic pain." Butler D and Gifford L 1989

### Treatment Principles:

- **Train the proprioceptors** in a functional way. **Motion AND Stability**
  - Proprioceptors are the sensors that respond to movement and allow for motion and stability in our muscles, joints, and supporting soft tissue
- **Functional approach-** combination of active proprioceptive therapeutic exercises and functional manual therapy the patient receives individualized care designed to target the source of restriction rather than symptomatic care



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