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## What is Adverse Neural Tension?

### CHAPTER 1 - THEORY

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## What Is Adverse Neural Tension

- Also known as a interference in “Neural Dynamics”.
- In adverse neural tension the peripheral nerve has one to multiple associated adhesions to an interfacing structure, that structure could be soft tissue, fascia, bone & associated ligaments.
- These adhesions lead to a interference in neural dynamics by preventing that region of the nerve to glide & slide during movement

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## What Is Adverse Neural Tension

- Nerves are mobile structures that need to glide & slide during basic anatomical motions that are performed in day to day living, once the neuro dynamics of that peripheral nerve is changed due to one or multiple adhesions a peripheral neural pathology will start to build.
- Also known as a “Crush Syndrome” or a “Multiple Crush Syndrome”

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## What Is Adverse Neural Tension

- A peripheral nerve that cant glide or slide during motion due to adhesions to interfacing structures will be exposed to increased tension during motion, this will lead to a restriction in local blood supply resulting in pain, altered sensation, weakness & loss of motion over a period of time.
- The peripheral nerves do not like to be stretched, they like to glide & slide.

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## What Is Adverse Neural Tension

- Repetitive movements in the form of traction leading to increased tension levels to a region that has neural adhesions will result in peripheral nerve irritation & local inflammation
- Early S & S can be recognised through restricted range of motion associated with a deep stretching or aching feeling with or without minor altered sensation

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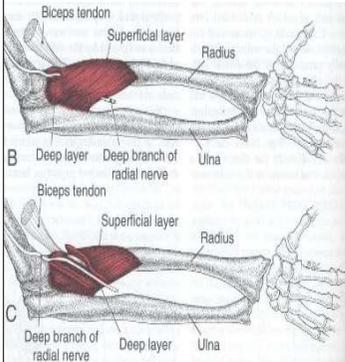








## Neural Pathway Entrapment Points



### Radial Nerve

- Tricep Muscle
- Radial Fossa
- Lateral Capitulum
- Supinator Muscle

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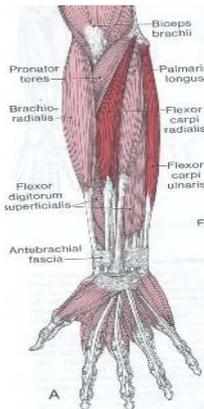
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## Neural Pathway Entrapment Points



### Medium Nerve

- Scalene Muscles
- Pec Minor Muscle
- Pronator Teres Muscle
- Anterior Forearm/CT

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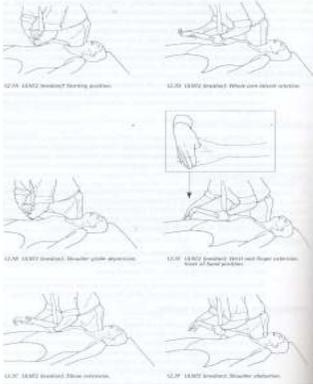
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## ULTT1 Median Nerve



- Each movement is broken into segments
- Each movement increases the tension of the median nerve
- The aim is to reproduce your clients pain/symptoms

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## UPPER LIMB NEURAL TENSION TEST Medium Nerve

- Client supine with there arms by there side
- Therapist stands to the side of the client at shoulder level on the affected side
- Therapist positions the elbow at 90 degrees of flexion with the forearm in supination & the wrist in extension, therapist intertwines there fingers with the clients

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## UPPER LIMB NEURAL TENSION TEST Medium Nerve

- The client laterally flexes their neck to the opposite side being tested
- Therapist depresses the shoulder girdle until R1 is encountered
- Then the therapist passively extends the elbow while applying external rotation at the GHJ

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## UPPER LIMB NEURAL TENSION TEST Medium Nerve

- During the test it's important to maintain all these positions as this will increase the tension per region as we progress through the test
- To increase the tension further passively abduct the upper arm either after extending the elbow or during the process of extending the elbow

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## UPPER LIMB NEURAL TENSION TEST Medium Nerve

- The test is positive if altered sensation is reproduced or tension is created affecting the range of motion of the limb
- To de-sensitise or to confirm that neural tension is present or altered sensation is present alter the tension slightly by decreasing the tension on the limb. This will alter the sensation if the test is positive

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## NEURAL MOBILISATION Medium Nerve

- To mobilise the medium nerve follow the instructions of the ULTT
- Client supine with there arms by there side
- Therapist stands to the side of the client at shoulder level on the affected side
- Therapist positions the elbow at 90 degrees of flexion with the forearm in supination & the wrist in extension, therapist intertwines there fingers with the clients

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NEURAL MOBILISATION  
Medium Nerve

- The client laterally flexes their neck to the opposite side being tested
- Therapist depresses the shoulder girdle until R1 is encountered
- Then the therapist passively extends the elbow & wrist while applying external rotation at the GHJ until R2 is encountered, hold for 10-20 seconds

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NEURAL MOBILISATION  
Medium Nerve

- The therapist can then further abduct the arm until R3 is encountered & hold for 10-20 seconds
- The therapist can repeat the treatment by incorporating small dynamic movement patterns under tension instead of static holding patterns

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## ULTT2 Radial Nerve



- Each movement is broken into segments
- Each movement increases the tension of the radial nerve
- The aim is to reproduce your clients pain/symptoms

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## UPPER LIMB NEURAL TENSION TEST Radial Nerve

- Client supine with their arms by their side
- Therapist stands to the side of the client at shoulder level on the affected side
- Therapist places client's elbow at 90 degrees

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**UPPER LIMB NEURAL TENSION TEST**  
**Radial Nerve**

- Ask client to laterally flex their neck to the opposite side
- Therapist depresses the shoulder girdle until R1 is encountered
- Therapist then extends the elbow, pronates the forearm & flexes the thumb towards the little finger

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**UPPER LIMB NEURAL TENSION TEST**  
**Radial Nerve**

- Therapist ulnar deviates the client's wrist
- Therapist abducts the arm approximately 10-20 degrees
- The test is positive if altered sensation is reproduced or tension is created affecting the range of motion of the limb

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## UPPER LIMB NEURAL TENSION TEST Radial Nerve

- To de-sensitise or to confirm that neural tension is present or altered sensation is present alter the tension slightly by decreasing the tension on the limb . This will alter the sensation if the test is positive

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## MOBILISATION Radial Nerve

- To mobilise the radial nerve ask the client to laterally flex the neck to the opposite side
- Depress the shoulder girdle until R1 is encountered, extend the elbow, pronate the forearm & flex the thumb towards the little finger, & ulna deviate. Then abduct the arm to approximately 10-20 degrees until R2 is encountered

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