



**Mountain Land**  
PHYSICAL THERAPY

# THORACIC OUTLET SYNDROME

JAKE TODD, PT, DPT

# THORACIC OUTLET SYNDROME

Thoracic Outlet Syndrome (TOS) is the impingement of neurovascular bundle between the neck and the shoulder. Common areas of impingement occur within scalene triangle, costoclavicular space, and sub-coracoid space. Numbness, tingling, and radicular pain are common diagnoses that are often misdiagnosed leading to wasted time and resources for the patient. It is our goal at Mountain Land Physical Therapy to ensure that each patient is equipped with the knowledge of what may be causing their symptoms and the tools to manage them. It is most prevalent within men ages 20-30 and can often result after neck or shoulder trauma or a repetitive stress injury.

## COMPLAINTS THAT INDICATE A SCREENING FOR TOS INCLUDE BUT ARE NOT LIMITED TO:

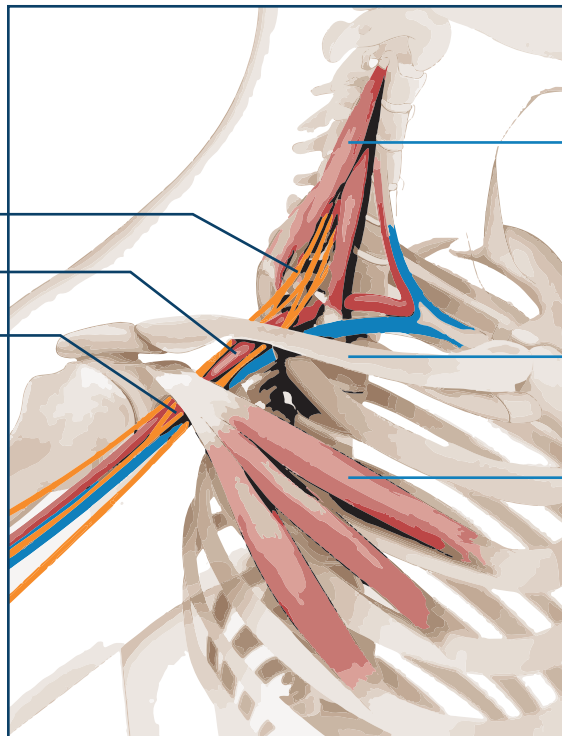
- ✓ Shoulder pain radiating down the arm
- ✓ Arm and hand feeling weak
- ✓ Numbness and tingling in upper extremity between shoulder and hand
- ✓ Numbness at night
- ✓ Cold sensation and poor circulation on one side

## COMMON POINTS OF COMPRESSION:

Scalene Triangle

Costoclavicular Junction

Interpectoral Space

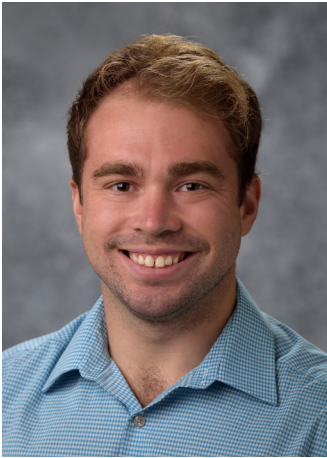


Scalene Muscles

Collarbone

Pectoralis Minor Muscle

# THORACIC OUTLET THERAPIST



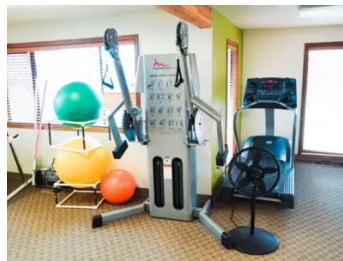
## Jake Todd, PT, DPT Clinic Director, Physical Therapist

Jake Todd earned his Doctorate of Physical Therapy from the University of North Dakota in 2021.

Through training and research on common causes of upper extremity numbness, I have developed a way to accurately evaluate to determine cause and create an effective treatment plan that can help patients avoid unnecessary surgery. The goal of each appointment is to have the patient leave more informed and with a tool to help them function easier in their day-to-day life.

Specializing in general orthopedics, Jake is trained in manual and manipulative therapy and treating patients experiencing neck pain, low back pain, sciatica and radiculopathy. Growing up playing sports, Jake knows the benefits of physical therapy. He is passionate about helping his patients understand what is happening within their bodies and giving them tools they will need to get back to doing the activities they enjoy pain-free.

## BOISE CLINIC



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# THORACIC OUTLET SYNDROME TESTING

## THORACIC OUTLET SYNDROME TESTING TO RULE IN:

- ✓ Upper Extremity (UE) ROM including shoulder, elbow, wrist and hand
- ✓ Cyriax release
  - Can indicate scalene mm, clavicle, first rib, or pec minor involvement
- ✓ Allen test
  - Indicates pec minor involvement and impingement within sub-coracoid space
- ✓ Adson's test
  - Indicates scalene mm and first rib involvement
  - Specificity 18% to 87%, and sensitivity of up to 94%
- ✓ UE nerve tension testing including Median, Radial and Ulnar nerves
- ✓ UE peripheral nerve cutaneous innervation
  - TOS will typically present along these distribution lines

## DIFFERENTIAL DIAGNOSIS TESTING TO RULE OUT THORACIC OUTLET SYNDROME

### CERVICAL IMPINGEMENT

- ✓ Cervical ROM testing
- ✓ Spurling's compression and distraction
- ✓ Myotomes
- ✓ Dermatomes
  - If symptoms are felt along these distribution it will usually indicate cervical impingement at the nerve root

### CUBITAL TUNNEL

- ✓ Tinel's percussion over cubital tunnel (will reproduce symptoms down forearm to digits 4-5 if impingement is occurring at elbow) (sensitivity of 62% and specificity of 53% so not specific) takes <10 seconds

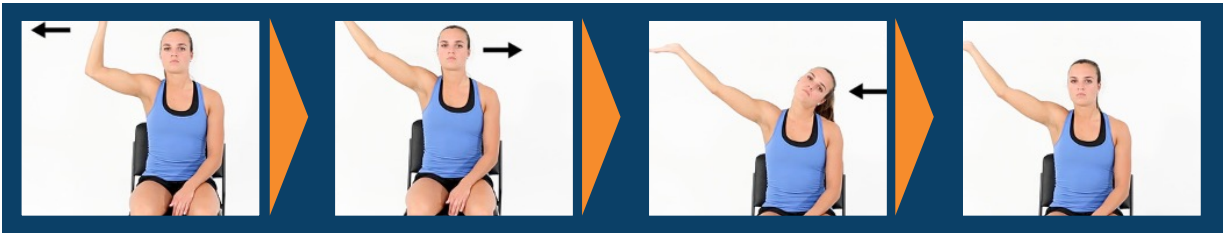
### CARPAL TUNNEL

- ✓ Tinel's percussion over carpal tunnel (will reproduce symptoms into digits 1-3 if impingement is occurring at the wrist) (sensitivity 38%-100% and specificity 55%-100%) takes <10 seconds

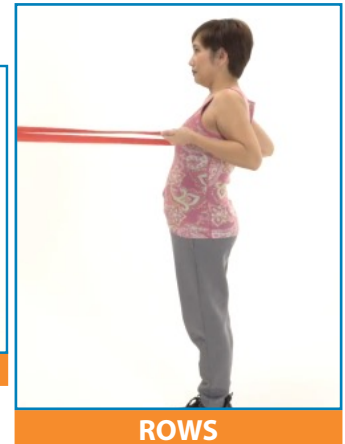
# TREATMENT OPTIONS

## MANUAL THERAPY

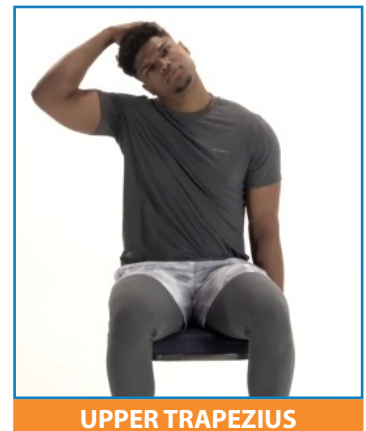
- ✓ Cervical distraction and traction
- ✓ Nerve Glides: ulnar, median and radial
- ✓ Joint mobilization: 1st rib, cervical spine and shoulder
- ✓ Cyriax release maneuver



## CERVICAL AND SCAPULAR STABILIZATION TRAINING



## STRETCHING FOR POSTURAL RESTORATION



# FREQUENTLY ASKED QUESTIONS

**Q: How long will it take for me to see any symptom improvements once I begin physical therapy?**

Generally, the patient will start seeing improvement in 1-4 treatments. Symptoms typically resolve completely in 6-10 weeks of PT and a home exercise program will be provided to help the patient avoid reoccurrence.



**Q: How can you tell the difference between carpal tunnel vs neck**

**A:** There are specific tests that your physical therapists will perform in order to identify the root cause of your symptoms. Based on the findings of these tests, your therapist will create a unique and individualized treatment plan to address these symptoms.

**Q: Can the way that I sit at my desk affect my symptoms?**

**A:** Yes, improper sitting or standing posture at your desk can negatively impact your symptoms. The image below shows correct standing and sitting desk ergonomics to reduce your symptoms



# FUNCTIONAL ASSESSMENT

## Instructions:

Please review and answer the questions below with yes, no and sometimes. If you answer yes to any of these questions you may be a strong candidate for physical therapy to address these symptoms

	Y	N	S
Do you drop things often?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have neck pain?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have numbness anywhere from the shoulder down to the finger tips?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do work duties increase in your symptoms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have one arm/hand that feels weaker than the other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does head or shoulder movement cause numbness down your arm?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does arm numbness affect your sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**SCAN OR VISIT TO LEARN MORE**



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