

Why Does my Hand Go Numb? Carpal Tunnel Syndrome

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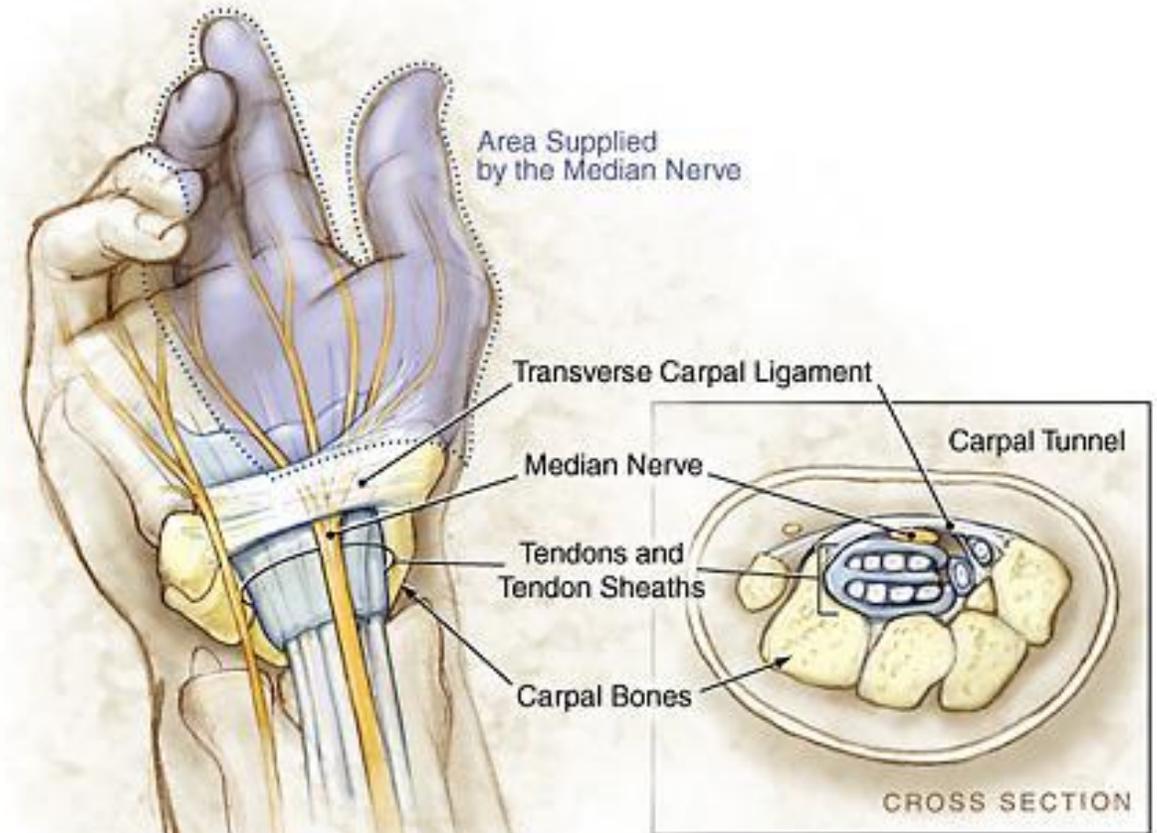
Objectives

1. Define CTS
2. Understand what causes CTS
3. Identify the signs and symptoms of CTS
4. Understand the physical therapy management for CTS
5. Understand the medical and surgical management of CTS
6. Compare the outcomes of surgical versus physical therapy management for CTS.



Anatomy of the Carpal Tunnel?

- Where is the Carpal Tunnel?
- What's in the Carpal Tunnel?
- Median Nerve
 - Motor Fibers – Thumb muscles
 - Sensory Fibers - Skin

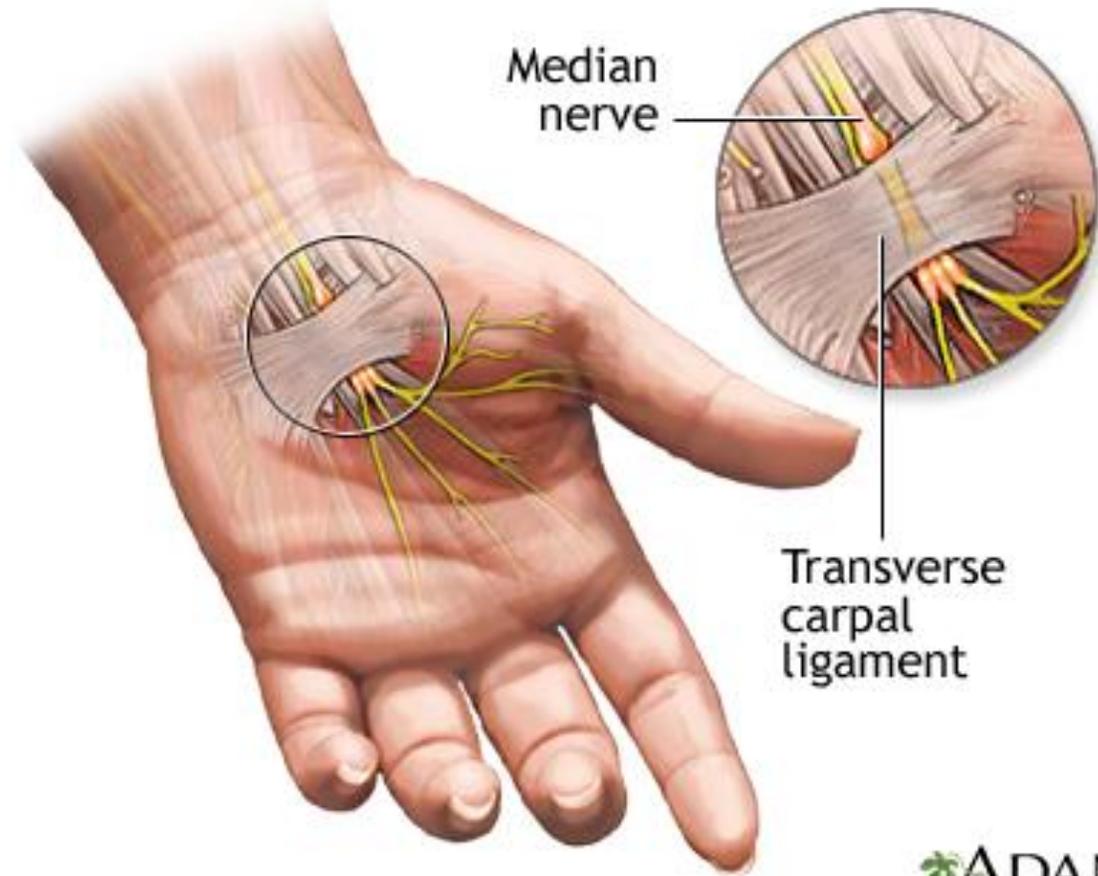


Cross Section of the Carpal Tunnel



What is Carpal Tunnel Syndrome?

- Compression of the Median Nerve within the carpal tunnel.
- Fun Facts
 - 3% of population
 - W>M
 - 40-50 year olds



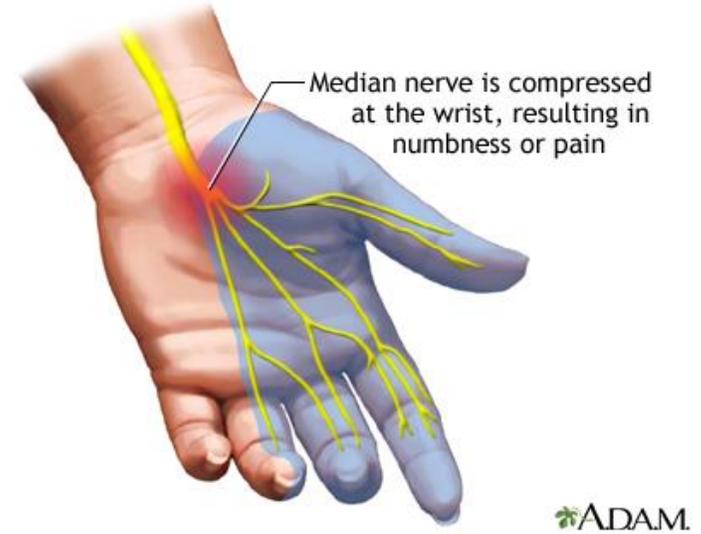
What Causes Carpal Tunnel Syndrome?

- Repetitious motions - inflammation or damage
- Trauma
- Arthritis of the carpal bones
- Congenital – wide or small wrist
- Systemic conditions – diabetes, thyroid/kidney/liver
- Pregnancy



Signs and Symptoms of Carpal Tunnel Syndrome

- Numbness & Tingling (Digits 1-3 ½)
- Pain – wrist, hand, finger, or even forearm
- Fine movements of fingers (buttons, coins)
- Weakness – grip & pinch (drop things)
- Thumb muscle atrophy
- Occasional swelling or inability to make a full fist (stiff hand)



Diagnosis & Treatment of Carpal Tunnel Syndrome

- Evaluation (PT or MD)
- EMG/NCS test
- Brace
- Meds
 - Ibuprofen
 - NSAID's (Mobic, Celebrex, Naproxen)
 - Oral Steroid
 - Gabapentin – nerve pain med
- Physical Therapy
- Injection (steroid) into the Carpal Tunnel – if above are not successful
- Surgery



Conservative Physical Therapy Treatment

- Get a good physical therapy evaluation
- Look for a [Orthopedic Board Certified Physical Therapist](#) or [Certified Hand Therapist](#)
- Brace – custom or over the counter (day vs. night)
- Tendon Glide Exercises
- Nerve Glide Exercises
- Treat the neck
- Address Posture and Ergonomics



Bracing – Neutral Wrist Splint

- Neutral!
- OTC
- Fingers and thumb free
- Night (best results)



Tendon Glides

1 - Straight

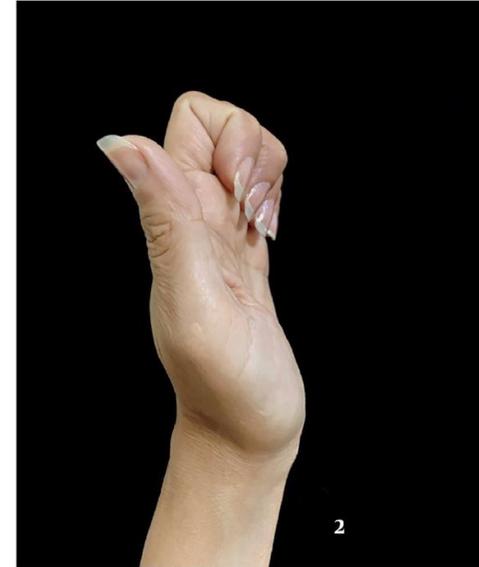
2 - Hook Fist

3 - Table Top

4 - Flat Fist

5 - Full Fist

Perform – 5-10 times, 2 times a day.



Nerve Glides

A - Full Fist

B - Straight hand

C - Extend wrist (thumb to hand)

E - Extend thumb away from hand

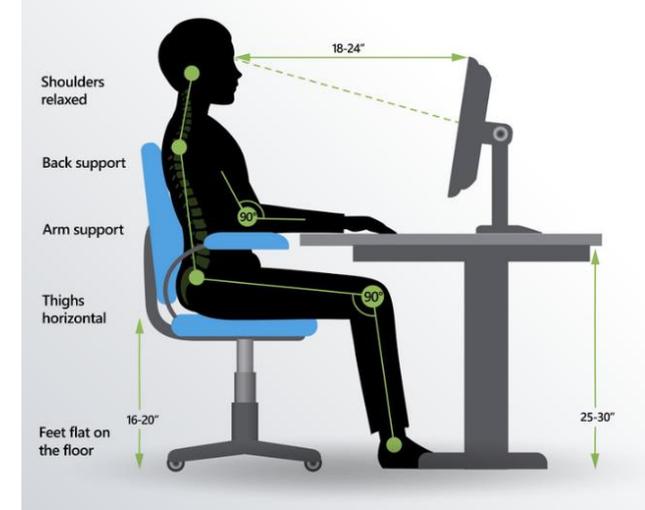
F - Stretch Thumb Back

Perform – 5-10 times, 2 times a day.



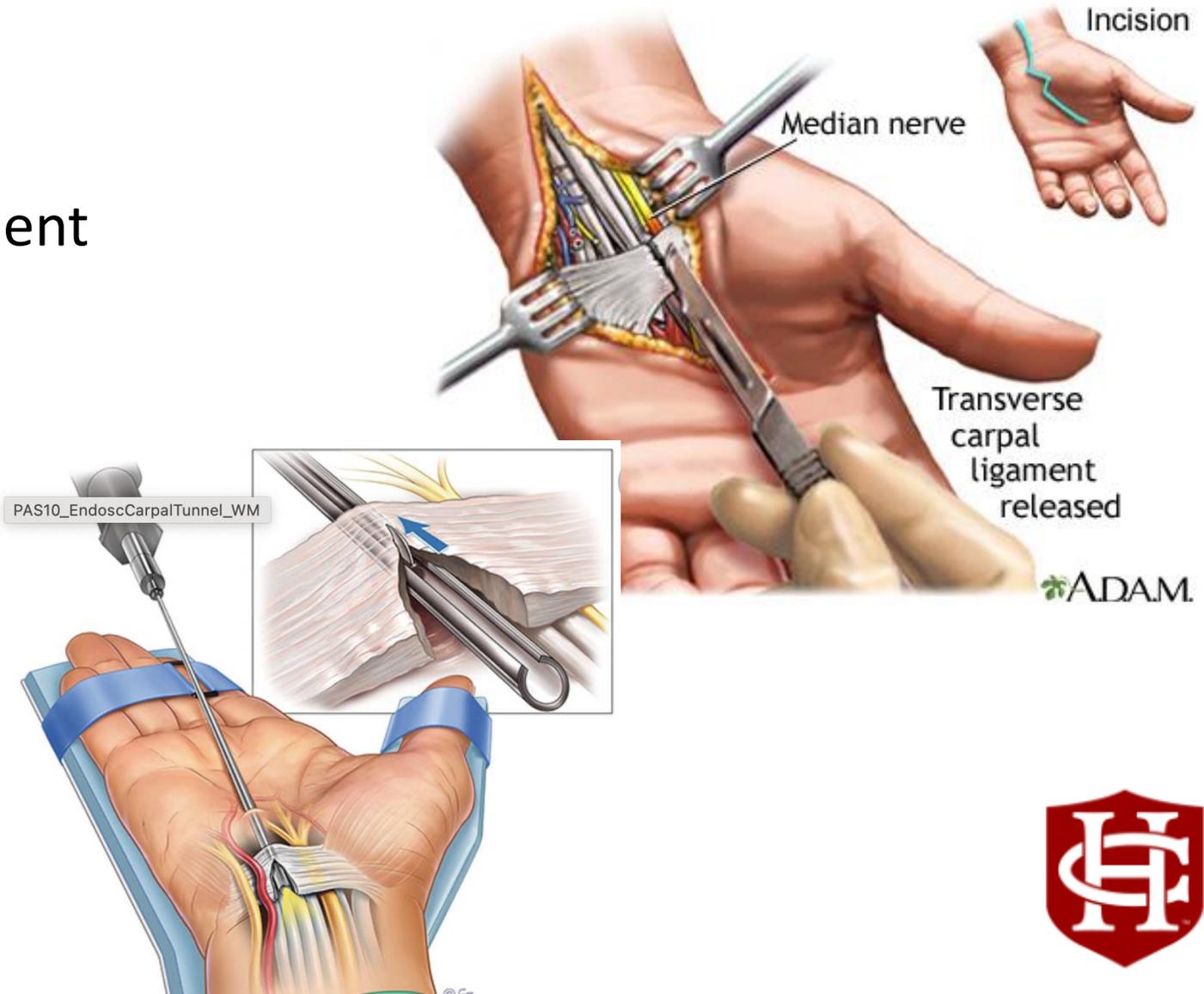
Other Areas to Treat

- Neck (Manual Therapy)
- Posture
- Ergonomics



Surgery for Carpal Tunnel Syndrome

- Open or Endoscopic
- Release the transverse ligament
- Suture & brace 7-10 days
- Bracing for 6 weeks
- Finger motion immediately
- Physical Therapy



Physical Therapy vs Surgery in the Treatment of Carpal Tunnel Syndrome

- 50 Surgery vs 50 PT
- At 1 month PT group had better hand function and better grip strength
- At 3, 6, and 12 months after treatment, patients in both the physical therapy and surgery groups showed similar improvements in pain reduction, function and grip strength.
- Physical therapy and surgery for carpal tunnel syndrome yield similar benefits.

The Effectiveness of Manual Therapy Versus Surgery on Self-reported Function, Cervical Range of Motion, and Pinch Grip Force in Carpal Tunnel Syndrome: A Randomized Clinical Trial *J Orthop Sports Phys Ther* 2017;47(3):151–161.



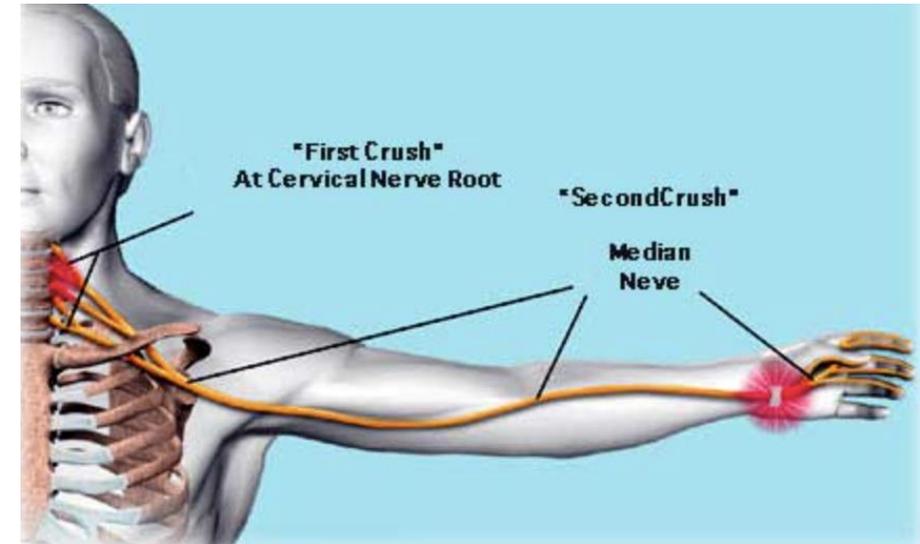
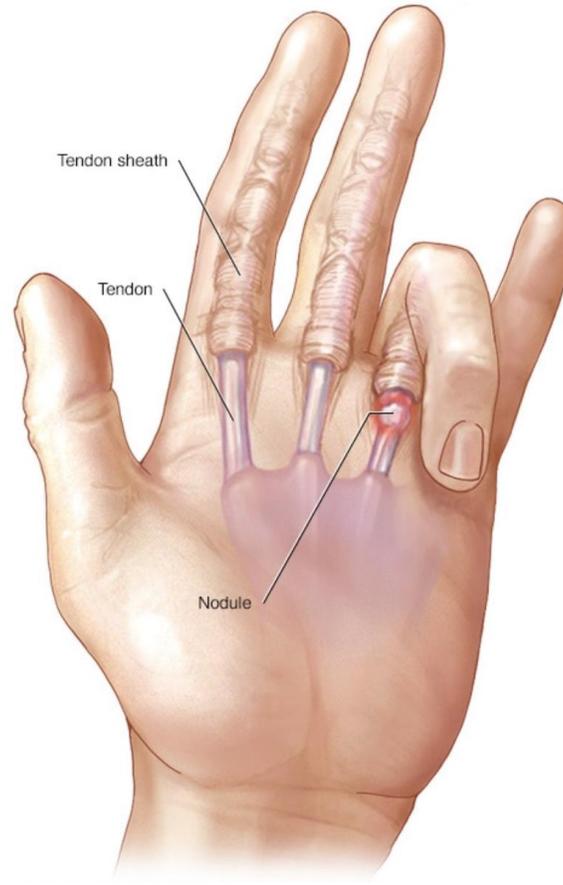
No/Limited Evidence to Support

- Vitamin B6
- Magnets
- Ultrasound / Iontophoresis
- Laser
- Dry-needling & Acupuncture
- Taping
- PRP injection



Other Things Associated with CTS

- Trigger Fingers
- Ganglion Cyst
- Cervical Radiculopathy



Questions

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References

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- Fernández-de-Las-Peñas C, Cleland J, Palacios-Ceña M, Fuensalida-Novo S, Pareja JA, Alonso-Blanco C. The Effectiveness of Manual Therapy Versus Surgery on Self-reported Function, Cervical Range of Motion, and Pinch Grip Force in Carpal Tunnel Syndrome: A Randomized Clinical Trial. *J Orthop Sports Phys Ther.* 2017 Mar;47(3):151-161.
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