



# PATIENT EDUCATION HANDOUT

## ORTHOPEDICS

# Understanding Carpal Tunnel Syndrome

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### BACKGROUND

Carpal tunnel syndrome (CTS) is one of the most common nerve disorders, affecting approximately 3%-6% of adults in the United States, with a higher prevalence among women and individuals in certain occupations, such as office work.<sup>1</sup> It occurs when the median nerve is compressed within the carpal tunnel—a narrow passageway located at the wrist.<sup>2</sup> Risk factors for developing CTS include lifestyle factors such as activities or occupations that aggravate the median nerve, like typing, or driving with your wrists flexed.<sup>1</sup> Some medical conditions that increase risk for developing CTS include diabetes, pregnancy, inflammatory conditions such as rheumatoid arthritis, and hypertension.<sup>1</sup> To minimize these risks and prevent CTS, it is important to optimize underlying medical conditions with guidance from your physician and be mindful of wrist positioning and aggravating activities. Examples include using a wrist mat when typing or switching to an ergonomic mouse.<sup>1</sup> However, it is still possible to develop CTS despite minimizing medical, occupational, and lifestyle risks.

### SYMPTOMS

- Numbness and tingling: commonly felt in the thumb, index finger, middle finger, and part of the ring finger. These sensations often occur at night.<sup>1</sup>
- Weakness: difficulty gripping objects, performing fine motor tasks, or a feeling that the hand is clumsier than usual.<sup>3</sup>
- Pain: discomfort or aching in the wrist or hand that may radiate to the arm.<sup>2</sup>

### DIAGNOSIS

- History and physical examination: physicians will review the patient's symptoms, occupational risks, and any underlying health conditions. A physical exam may include Tinel's sign (tapping on the median nerve) or Phalen's maneuver (flexing the wrist to reproduce symptoms).<sup>2</sup>
- Electrodiagnostic testing: nerve conduction studies or electromyography confirm the diagnosis by measuring the electrical activity traveling through the median nerve.<sup>2</sup>

### SOURCES

1. Joshi A, Patel K, Mohamed A, et al. Carpal tunnel syndrome: pathophysiology and comprehensive guidelines for clinical evaluation and treatment. *Cureus*. 2022;14(7):e27053. doi: 10.7759/cureus.27053
2. Padua L, Coraci D, Erra C, et al. Carpal tunnel syndrome: clinical features, diagnosis, and management. *Lancet Neurol*. 2016;15(12):1273-1284. doi: 10.1016/S1474-4422(16)30231-9
3. Ashworth NL, Bland JDP, Chapman KM, Tardif G, Albarqouni L, Nagendran A. Local corticosteroid injection versus placebo for carpal tunnel syndrome. *Cochrane Database Syst Rev*. 2023;2(2):CD015148. doi: 10.1002/14651858.CD015148
4. Burnham T, Higgins DC, Burnham RS, Heath DM. Effectiveness of osteopathic manipulative treatment for carpal tunnel syndrome: a pilot project. *J Am Osteopath Assoc*. 2015;115(3):138-148. doi: 10.7556/jaoa.2015.027
5. Orhurhu V, Orman S, Peck J, et al. Carpal tunnel release surgery- a systematic review of open and endoscopic approaches. *Anesth Pain Med*. 2020;10(6):e112291. doi: 10.5812/aapm.112291

- Imaging: although not always necessary, ultrasound or magnetic resonance imaging (MRI) may be used to evaluate the structures within the wrist or rule out other conditions.<sup>2</sup>

### TREATMENT

#### Nonsurgical Treatment

- Lifestyle changes: adjust activities to reduce repetitive wrist strain and take regular breaks.<sup>2</sup>
- Wrist splinting: wearing a wrist brace, especially at night, helps keep the wrist in a neutral position and relieves pressure on the median nerve.<sup>1</sup>
- Medications: nonsteroidal anti-inflammatory drugs (NSAIDs) are an option and can be found in both oral and topical formulations. NSAIDs may alleviate pain and inflammation, though they are not a long-term solution.<sup>1</sup>
- Corticosteroid injections: corticosteroids work by reducing inflammation in the carpal tunnel, thus, alleviating pressure on the median nerve.<sup>1,3</sup>

OMT: there are a variety of techniques that have been shown to relieve symptoms of CTS.<sup>4</sup>

#### Surgical Treatment

- In severe cases of CTS, a procedure called carpal tunnel release may be necessary. This involves cutting the transverse carpal ligament, a ligament that is located directly above the carpal tunnel, to reduce pressure on the median nerve. The surgery is effective and is sometimes the best long-term solution.<sup>5</sup>

### CONCLUSION

Early recognition of symptoms, followed by evaluation by a physician for diagnosis and management, is essential to ensure the best possible prognosis for individuals with CTS. If left untreated, CTS can lead to long-term complications such as persistent weakness, muscle atrophy, and irreversible nerve damage.<sup>1</sup> Understanding CTS, its symptoms, and treatment options empowers patients to take an active role in their care. If you experience symptoms of CTS, consult your health care provider for an accurate diagnosis and individualized treatment plan.