

ORTHOSPINOLOGY

DISCOVER AT

DeCubellis Family Chiropractic

Upper Cervical Care & Carpal Tunnel Double Crush

Orthospinology, a form of upper cervical chiropractic care that focuses on precise adjustments of the atlas (C1) vertebra, may help in cases of **carpal tunnel syndrome (CTS)**, particularly when considering the concept of **double crush syndrome**. Double crush syndrome suggests that a nerve can be compressed or irritated in more than one location along its pathway, with the combined effect of multiple compressions leading to more pronounced symptoms. In the case of carpal tunnel syndrome, the median nerve may be compressed at the wrist (within the carpal tunnel) and also at the cervical spine.

Here's a detailed look at how orthospinology might benefit patients with carpal tunnel syndrome, particularly in the context of double crush syndrome:

Double Crush Syndrome: The Concept

Double crush syndrome occurs when a peripheral nerve, like the **median nerve**, is compressed in two or more locations, which reduces the nerve's ability to transmit signals efficiently. The primary compressions usually occur:

- **Proximal Nerve Compression:** This can occur at the cervical spine, especially between C5-C7 vertebrae, where the nerve roots that eventually form the median nerve originate.
- **Distal Nerve Compression:** This occurs at the wrist in the carpal tunnel, where the median nerve passes through the small space between the carpal bones and the flexor retinaculum.

When both compression sites coexist, it weakens the overall function of the nerve, making symptoms such as numbness, tingling, weakness, and pain more intense.

How Orthospinology Can Help

Orthospinology upper cervical care can potentially help with double crush syndrome, including carpal tunnel, by addressing the **proximal component** of nerve compression in the cervical spine. Here's how:

1. Cervical Spine Misalignment and Nerve Irritation:

- The median nerve originates from the **brachial plexus**, which receives input from nerve roots that exit the cervical spine (C5-T1). Misalignment of the upper cervical spine, particularly the atlas (C1) or axis (C2), may affect the overall alignment and function of the entire cervical spine.
- When the atlas is misaligned, it can create compensatory misalignments lower in the cervical spine (C5-C7), where nerve roots contributing to the median nerve exit. This can lead to irritation or compression of these nerve roots, affecting the entire length of the nerve, including its function in the arm and wrist.

2. Improved Nerve Flow and Communication:

- By correcting misalignment in the upper cervical spine, orthospinology may relieve pressure on the nerve roots and help restore normal nerve conduction. This could lead to reduced irritation in the cervical spine and improved overall nerve function, helping to alleviate symptoms of carpal tunnel syndrome.
- Restoring proper nerve function at the source (the cervical spine) reduces the overall burden on the median nerve, potentially lessening the impact of the distal compression at the carpal tunnel.

3. Postural Improvement:

- Cervical misalignment can affect posture, leading to increased tension in the shoulders, arms, and wrists. Poor posture, such as forward head posture or rounded shoulders, is associated with increased stress on the median nerve. Adjusting the atlas and correcting upper cervical misalignment can improve overall spinal alignment and posture, reducing stress on the entire upper extremity and alleviating pressure on the median nerve.

4. Reduction of Inflammation and Improved Circulation:

- Misalignment of the cervical spine can contribute to localized inflammation, which may extend down the nerve pathways, exacerbating the symptoms of nerve compression. Orthospinology may help reduce inflammation and improve circulation by

restoring proper alignment and allowing better nerve function and blood flow, both of which are important for nerve health and repair.

Scientific Support and Case Studies

While there is limited direct research on orthospinology and its impact on carpal tunnel syndrome specifically, there is some evidence from broader chiropractic and spinal manipulation studies that suggest a potential benefit for those with double crush syndrome and carpal tunnel symptoms:

1. **Case Studies on Cervical Spine Adjustments and CTS:**

Chiropractic case studies have shown that patients with carpal tunnel syndrome experience relief after chiropractic adjustments targeting the cervical spine. This supports the theory that addressing proximal nerve interference in the cervical spine can reduce the overall nerve compression burden.

2. **Double Crush Syndrome Research:** Studies have found that patients with CTS often have co-existing cervical spine nerve root compression, supporting the idea that a combined compression mechanism (proximal and distal) is at play in many cases of carpal tunnel. Chiropractic care that includes spinal adjustments has been found to reduce symptoms in these patients.

3. **Upper Cervical Chiropractic Impact on Nerve Function:** There is evidence that upper cervical chiropractic care, including orthospinology, can positively affect neurological function by

improving nerve signaling and reducing mechanical pressure on the spinal cord and nerve roots. This broader neurological benefit could extend to patients with nerve-related conditions such as carpal tunnel syndrome.

Mechanisms of Impact

1. **Restored Nerve Flow:** By realigning the upper cervical spine, orthospinology may help restore proper nerve flow and reduce irritation at the proximal source (cervical spine), reducing the likelihood of double crush syndrome.
2. **Decreased Pressure on Nerve Roots:** Correcting cervical spine alignment may relieve pressure on the nerve roots contributing to the median nerve, improving its function along its entire course to the wrist.
3. **Improved Overall Posture and Alignment:** By correcting misalignment at the atlas, patients may experience improved overall posture, which can reduce pressure on the median nerve at multiple points along its pathway, including the wrist.

Conclusion

Orthospinology, through precise upper cervical adjustments, may offer relief to patients with carpal tunnel syndrome who are experiencing double crush syndrome by addressing the cervical spine misalignment component. By relieving nerve compression at the cervical spine, improving nerve function, and enhancing posture, it may reduce the overall nerve irritation and alleviate symptoms related to carpal tunnel.

While further research specifically on orthospinology and CTS is needed, existing chiropractic and double crush syndrome literature support its potential