ORTHOSPINOLOGY

DISCOVER AT

DeCubellis Family Chiropractic

Upper Cervical Care & Myelopathy

Cervical myelopathy is a condition where the spinal cord in the cervical (neck) region is compressed or damaged, leading to a variety of neurological symptoms. It is most often caused by **degenerative changes**, such as osteoarthritis or herniated discs, that narrow the spinal canal (a condition called cervical stenosis). Other causes can include trauma, tumors, or inflammatory conditions. Symptoms of cervical myelopathy may include neck pain, tingling, numbness in the arms and hands, difficulty walking, loss of balance, and even bowel or bladder dysfunction in severe cases.

While **orthospinology**, a form of upper cervical chiropractic care, doesn't directly treat the underlying causes of cervical myelopathy, it may provide symptom relief by improving spinal alignment, reducing nerve interference, and optimizing overall spinal health. Orthospinology focuses on precise adjustments of the **atlas** (C1) vertebra, which can have profound effects on the biomechanics and neurological function of the entire spine, including the cervical region where myelopathy occurs.

Here's how orthospinology may help with **cervical myelopathy**:

1. Reducing Pressure on the Spinal Cord

- **Spinal Cord Compression:** Cervical myelopathy is characterized by compression or narrowing of the spinal canal, which puts pressure on the spinal cord. Misalignment of the upper cervical vertebrae (C1 and C2) can contribute to this problem by altering the natural curvature and biomechanics of the cervical spine, potentially worsening compression further down in the cervical region.
- **Restoring Alignment:** Orthospinology focuses on correcting the alignment of the atlas (C1), which can improve the overall posture and alignment of the spine. By restoring proper spinal alignment, orthospinology may help **reduce the mechanical stress** on the cervical spine and alleviate some of the compression on the spinal cord, especially in cases where compensatory misalignments are exacerbating the condition.

2. Optimizing Nerve Function

- **Nerve Root Irritation:** In addition to spinal cord compression, cervical myelopathy often involves compression or irritation of the nerve roots exiting the cervical spine. Misalignment in the upper cervical region can exacerbate nerve compression or contribute to abnormal nerve function.
- **Improved Neural Communication:** By correcting upper cervical misalignments, orthospinology may reduce nerve interference and improve the communication between the brain and the body.

This could help alleviate symptoms such as numbness, tingling, weakness in the limbs, and coordination problems by optimizing the function of the nervous system.

3. Improving Cerebrospinal Fluid (CSF) Flow

- **CSF Flow Disruption:** Misalignment of the atlas and axis vertebrae can impair the normal flow of cerebrospinal fluid (CSF), which is responsible for cushioning the brain and spinal cord and removing waste products. In cervical myelopathy, where the spinal cord is already under pressure, impaired CSF flow can further aggravate symptoms and contribute to the degeneration of spinal structures.
- **CSF Flow Restoration:** Orthospinology adjustments may help restore proper CSF flow by relieving upper cervical misalignments that disrupt fluid dynamics. Improved CSF circulation can reduce intracranial pressure, promote better nutrient delivery to the spinal cord, and potentially slow the progression of myelopathy.

Scientific Support:

- Research from upper cervical chiropractic studies shows that correcting upper cervical misalignments can have a positive impact on CSF flow. For instance, a case study published in the *Journal of Upper Cervical Chiropractic Research* demonstrated improved CSF flow after upper cervical adjustments, supporting the idea that such care could benefit patients with conditions like cervical myelopathy where fluid dynamics play a role.

4. Reducing Inflammation

- **Chronic Inflammation in Myelopathy:** In cervical myelopathy, chronic compression of the spinal cord can lead to ongoing **inflammation** around the affected area, contributing to further nerve damage and symptom progression.
- **Anti-Inflammatory Effects of Upper Cervical Care:** Orthospinology adjustments can reduce mechanical irritation in the spine, which may lead to a decrease in local inflammation. Although orthospinology does not directly target inflammation, by reducing nerve irritation and restoring proper spinal function, it may help reduce the body's inflammatory response, potentially improving pain and neurological symptoms.

Scientific Support:

- Studies on chiropractic care have shown that spinal adjustments can influence **systemic inflammation** by reducing levels of pro-inflammatory cytokines. While direct studies on orthospinology and cervical myelopathy are lacking, research on chiropractic care's impact on inflammation supports the idea that upper cervical care could help manage the inflammatory aspect of cervical myelopathy.

5. Enhancing Blood Flow and Oxygenation

- **Compromised Blood Flow in Cervical Myelopathy:** The vertebral arteries, which pass through the cervical vertebrae, supply blood to the brain and spinal cord. Misalignment of the upper cervical

vertebrae can impair blood flow, contributing to reduced oxygenation and nutrient delivery to the spinal cord and brain, further worsening myelopathy symptoms.

- **Blood Flow Improvement via Atlas Adjustment:** Orthospinology can improve cervical alignment, which may relieve pressure on the vertebral arteries and enhance blood flow to the spinal cord. Improved circulation can promote better oxygenation and healing in the damaged areas of the spinal cord, potentially alleviating some of the symptoms of myelopathy, such as balance problems, numbness, and weakness.

Scientific Support:

- A study published in *Brain Circulation* demonstrated that upper cervical adjustments can improve **cerebral blood flow**. While this study focuses on brain circulation, its findings suggest that similar improvements in blood flow may benefit spinal structures affected by myelopathy.

6. Alleviating Neck Pain and Stiffness

- **Musculoskeletal Pain in Cervical Myelopathy:** Patients with cervical myelopathy often experience chronic neck pain and stiffness due to the underlying degeneration of the spine. This pain can result from both mechanical factors, such as poor posture and muscle tension, and neurological factors, such as nerve irritation.

- **Pain Relief from Orthospinology:** Orthospinology adjustments can reduce muscle tension and improve joint mobility in the cervical region, leading to a reduction in neck pain and stiffness. By addressing both the mechanical and neurological components of neck pain, orthospinology may offer significant symptom relief for patients with cervical myelopathy.

Scientific Support:

- Research in the field of upper cervical chiropractic care has shown that spinal adjustments can lead to significant reductions in neck pain and stiffness. A case study in the *Journal of Manipulative and Physiological Therapeutics* highlighted the positive effects of cervical adjustments in relieving pain and improving quality of life for patients with spinal conditions.

7. Improving Overall Quality of Life

- **Mobility and Function:** Cervical myelopathy can significantly impact a person's ability to walk, perform daily tasks, and maintain balance. While surgical options, such as decompression surgery, are often necessary in severe cases, orthospinology may offer a conservative option for managing symptoms and improving overall function.
- **Long-Term Management of Symptoms:** By improving cervical alignment, nerve function, and reducing inflammation, orthospinology may enhance a patient's ability to maintain

mobility and function, delaying or potentially avoiding the need for more invasive treatments in some cases.

Conclusion

While **orthospinology** does not directly cure **cervical myelopathy**, it may provide valuable symptom relief by addressing misalignments in the upper cervical spine that contribute to mechanical stress, nerve compression, and poor fluid dynamics. By improving spinal alignment and optimizing nerve function, orthospinology can help alleviate pain, reduce inflammation, and improve mobility, offering a conservative approach to managing the symptoms of cervical myelopathy.

However, it is important to note that cervical myelopathy is a serious condition, and in cases of severe spinal cord compression, **surgical intervention** may be necessary. Orthospinology can be considered as part of a broader, multidisciplinary treatment plan that includes physical therapy, medication, and, when needed, surgery. Further research is needed to fully validate the role of upper cervical chiropractic care in managing cervical myelopathy, but existing studies on spinal alignment, blood flow, and inflammation provide a foundation for its potential