

Understanding Cervical Instability

Cervical spine instability, a common yet often overlooked complication in hypermobile Ehlers-Danlos syndrome, can give rise to a range of neurological and musculoskeletal symptoms. Cervical instability often co-occurs with tethered cord syndrome.

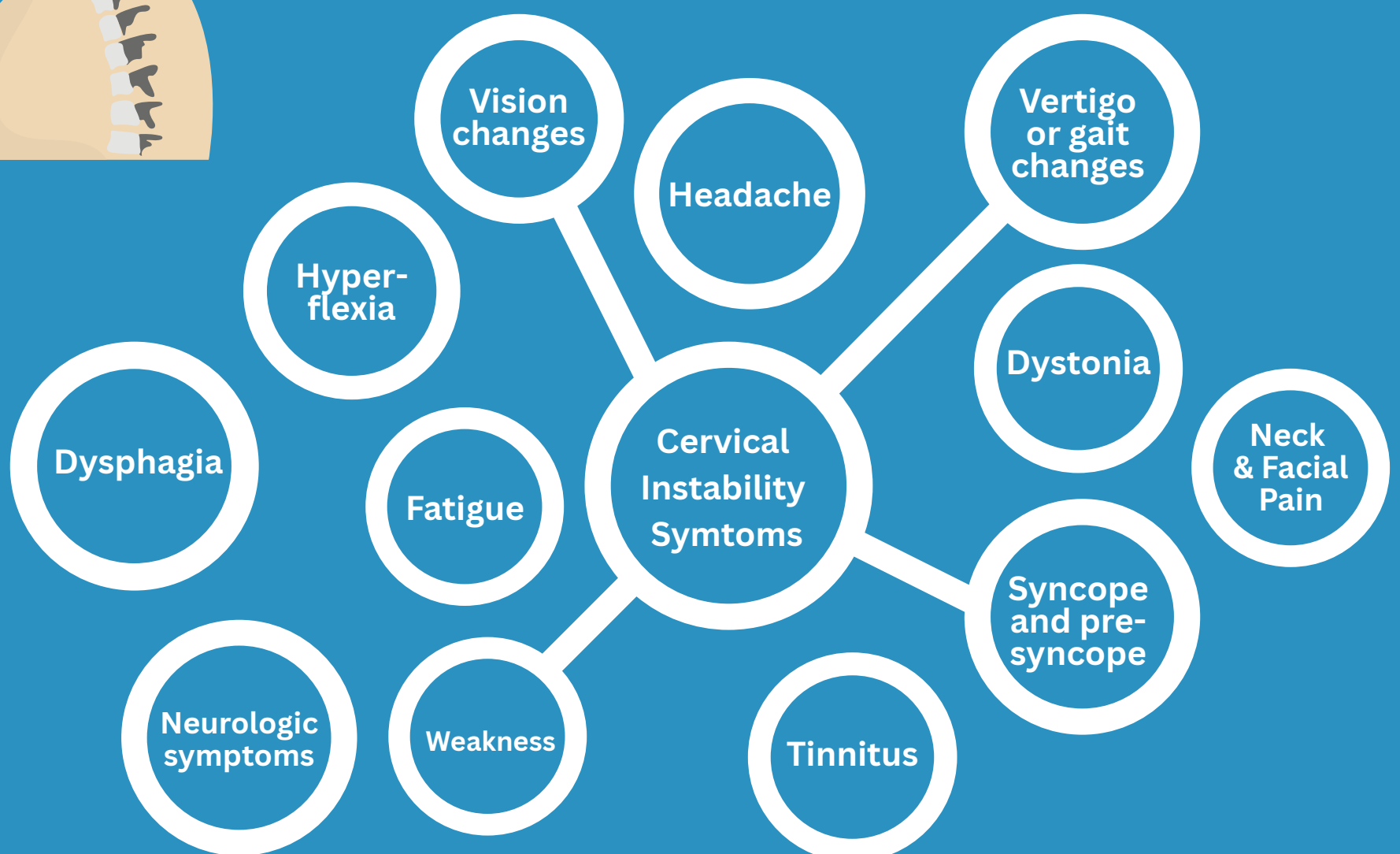
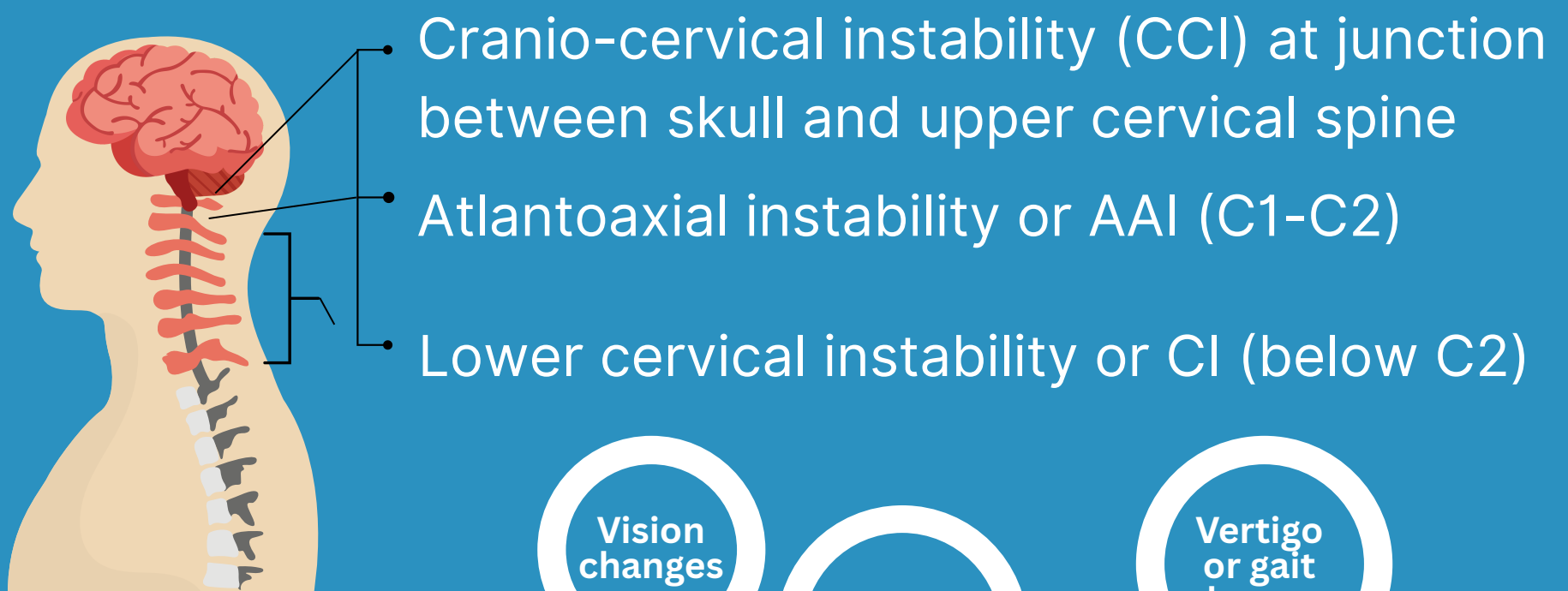


Breaking Down the Data: Part one

Co-occurrence of Tethered Cord Syndrome and Cervical Spine Instability in Hypermobile Ehlers-Danlos Syndrome



Cervical Instability



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Cervical Instability

CI can occur due to a spinal injury or ligament laxity.



As high as 31.6% of hEDS patients have cervical instability.

Cervical instability can also overlap with comorbidities like a Chiari Malformation.

Complications can include vertebral artery kinking, autonomic dysfunction, and compromised vertebral blood and/or CSF flow.

Breaking Down the Data:

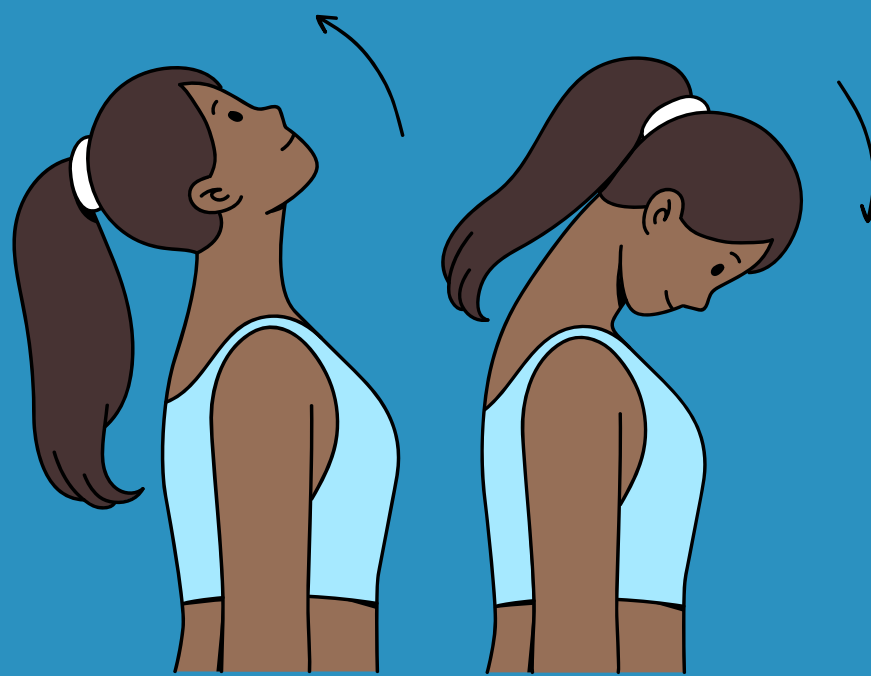
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Cervical Instability *Evaluation*

Hypermobility or instability typically becomes apparent on dynamic imaging performed in **upright** position.

Signs of CI emerge when lax ligaments are stressed by the head's weight under gravity.



Physicians may evaluate for CCI using measurements such as the clivo-axial angle, the horizontal Harris measurement (Basion-Axias Interval), & the Grabb-Mapstone-Oakes measurement. AAI may be evaluated by the rotation of C1 on C2, vertebral displacement, and horizontal displacement. CI below C2 may be identified via evaluation for spondylosis and disc degeneration.

If no instability is identified on the Upright MRI, abnormal spinal cord motion may be present at craniocervical junction in hEDS patients, causing CCI-like symptoms.

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Treatment Guidelines

Cervical Instability

Conservative approaches are usually recommended first. These approaches include immobilizing the neck with a cervical collar/neck brace, resting, avoiding activities that exacerbate symptoms, and doing physical therapy focusing on dynamic strengthening of the smaller cervical stabilizing muscles with an experienced therapist. If non-operative approaches fail, physicians may consider surgery to stabilize the upper spine by fusing parts of the neck and skull together.



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Key Takeaways

- Cervical instability like CCI and AAI is frequently seen due to connective tissue laxity in hEDS patients.
- Upright or flexion-extension scans are key for accurate diagnosis.
- CI sometimes co-occurs with TCS: Instability may overlap with tethered cord syndrome and influence treatment decisions.

Reference

Gensemer, C., Daylor, V., Nix, J., Norris, R. A., & Patel, S. (2024). Co-occurrence of tethered cord syndrome and cervical spine instability in hypermobile Ehlers-Danlos syndrome. *Frontiers in neurology*, 15, 1441866.
<https://doi.org/10.3389/fneur.2024.1441866>

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