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## DISORDERS

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### NECK PAIN & DIZZINESS

Neck and head injuries, such as whiplash and concussion, can damage the inner ear and brain, causing dizziness and vertigo.

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## ARTICLE

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# Cervicogenic Dizziness

By Diane M. Wrisley, PhD, PT, NCS, with edits by Nicole Acerra, PhD, BScPT, BA and Amy Downing, PT

## NECK PAIN AND DIZZINESS

Many people experience neck pain and dizziness. It may be difficult to tell whether the dizziness and the neck pain are related or just coincidental. Neck position has been known to be related to balance since the mid-1800s.<sup>1</sup> However, the precise relationship between neck pain and dizziness was not debated until the 1950s.

Ryan and Cope<sup>2</sup> described a syndrome of imbalance and disorientation in people with many different neck diagnoses, including cervical trauma, cervical spondylosis or cervical arthritis. They called this syndrome cervical vertigo. However, we currently use the term cervicogenic dizziness, as true spinning vertigo is rarely associated with neck-related dizziness.

## CERVICOGENIC DIZZINESS (CGD)

Cervicogenic dizziness is a difficult and sometimes controversial diagnosis because there is no single diagnostic test to confirm that it is the cause of the dizziness.<sup>3</sup> It can take time for clinicians to systematically rule out other causes of dizziness before a diagnosis of cervicogenic dizziness is confirmed.<sup>3,4</sup>

## Symptoms

People with cervicogenic dizziness tend to complain of dizziness or general disorientation (a sensation of movement of the self or the environment) that is often worse during head movements or after maintaining certain neck positions for a long time. Dizziness or lightheadedness usually occurs during or soon after experiencing neck pain, stiffness and/or decreased neck range of motion. It may be accompanied by an occipital (back of the head) headache and exacerbated by head movements, not by physical or cognitive activity. Often the dizziness decreases as the neck pain decreases. The symptoms usually last minutes to hours.

People with cervicogenic dizziness may also complain of general imbalance, which can increase with head movements or movement in the environment. Cervicogenic dizziness is thought to be uncommon.





## Diagnosis

As there is no single test for cervicogenic dizziness, the diagnosis is considered to be a diagnosis of exclusion.<sup>3</sup> Therefore, a thorough history and medical evaluation are needed because the symptoms are similar to other causes of dizziness. A thorough assessment of the neck is also important.

Healthcare providers need to rule out other conditions that can cause dizziness, including medical conditions (such as a heart condition), medications, neurological conditions (such as concussion or stroke), or vestibular (inner ear) disorders (such as benign paroxysmal positional vertigo). Clinical or laboratory tests can be used to test the peripheral and central vestibular systems. All test results need to be compared with the patient's history and presenting symptoms to determine if they are connected.<sup>5, 6</sup>

Cervicogenic dizziness often occurs as a result of a neck injury, such as a whiplash, or head injury, such as concussion, which can also injure the brain or inner ear.<sup>4, 7</sup> Healthcare providers must determine which clinical, laboratory, or imaging tests are needed to determine the diagnosis.<sup>3</sup> Clinicians do these tests to determine if the dizziness is caused by injuries to the vestibular system, brain, or neck (or sometimes a combination). This is a difficult process that can take time and may involve seeking the advice of more than one provider, especially if the person is dealing with more than one diagnosis.

Cervicogenic dizziness is thought to result from a sensory mismatch between somatosensory information (the part of the sensory system concerned with the conscious feeling of touch, pressure, pain, temperature, position, movement, and vibration, which arise from the skin, muscles, joints, and fascia of the neck/cervical spine), and input from the eyes and inner ear (our balance system).<sup>12</sup>

An important step in determining the right treatment plan is making an accurate diagnosis.

## Treatment

The majority of patients with cervicogenic dizziness improve with appropriate neck treatment.<sup>11</sup> Unfortunately neck massages alone rarely work in resolving the dizziness with the neck pain. Several studies have reported that approximately 75 percent of patients improve with conservative treatment of the neck, such as gentle mobilizations, exercises, and instruction in proper posture and neck positioning.<sup>8-10, 11</sup> For other patients, treatment requires both neck treatment and vestibular therapy. Vestibular rehabilitation exercises must be customized to address the problems found on the evaluation and may include eye exercises, balance exercises, walking, or graded exposure to neck movements or environments that make patients dizzy.<sup>4, 11</sup>

## Summary

Cervicogenic dizziness is a syndrome of neck pain accompanied by dizziness. This diagnosis is provided once all other causes of dizziness have been ruled out.

Cervicogenic dizziness will usually resolve with treatment of the neck problem but may also require vestibular rehabilitation for complete resolution of symptoms. In general, the prognosis for patients with cervicogenic dizziness is good, with most patients having improvement of neck symptoms, headaches, balance, dizziness, and quality of life.<sup>11</sup>

## REFERENCES

1. Brown JJ. Cervical contributions to balance: cervical vertigo. In: Berthoz A, Vidal PP, Graf W, editors. *The Head Neck Sensory Motor System*. Oxford University Press. 1992:644-647.
2. Ryan MS, Cope S. Cervical vertigo. *Lancet* 1955; 2:1355-1358.
3. Reiley AS, Vickory FM, Funderburg SE, Cesario RA, Clendaniel RA. How to diagnose cervicogenic dizziness. *Arch Physiother* 2017;7:12.
4. Furman JM, Cass SP. *Balance Disorders: A Case-Study Approach*. Philadelphia: F.A. Davis, 1996.
5. Wrisley DM, Sparto PJ, Whitney SL, Furman JM. Cervicogenic dizziness: a review of diagnosis and treatment. *J Orthop Sports Phys Ther* 2000;30:755-766.



6. Norre ME. Cervical vertigo. Diagnostic and semiological problem with special emphasis upon "cervical nystagmus". Acta Otorhinolaryngol Belg 1987;41:436-452.
7. van de Calseyde P, Ampe W, Depondt M. ENG and the cervical syndrome. Adv Otorhinolaryngol 1977;22:119-124.
8. Barnsley L, Lord S, Bogduk N. Whiplash injury. Pain 1994;58:283-307.
9. Galm R, Rittmeister M, Schmitt E. Vertigo in patients with cervical spine dysfunction. Eur Spine J 1998;7:55-58.
10. Karlberg M, Magnusson M, Malmstrom EM, Melander A, Moritz U. Postural and symptomatic improvement after physiotherapy in patients with dizziness of suspected cervical origin. Arch Phys Med Rehabil 1996;77:874-882.
11. Lystad RP, Bell G, Bonnevie-Svensen M, Carter CV. Manual therapy with and without vestibular rehabilitation for cervicogenic dizziness: a systematic review. Chiropr Man Therap 2011;19:21.
12. Luxon L.M. Vertigo: new approaches to diagnosis and management. British Journal of Hospital Medicine. 1996;56 (10):519-520.

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