

TRANSCENDENT Speaker Series

Concussion rehabilitation – insights on cervicovestibular rehabilitation

Concussions and dizziness

When we move, we rely on information and feedback from many sources, particularly our visual, vestibular and proprioceptive systems. This feedback needs to be aligned between systems, or it can lead to difficulties with controlling your ability to be upright in space and your ability to direct eye movements. It can also lead to symptoms like dizziness.

After a concussion, there can be **damage to the vestibular system** which may be why many individuals experience dizziness post-injury.

Different types of dizziness can require different treatments, but in most cases of dizziness, there is evidence for the use of **cervicovestibular therapy**.

Nature of dizziness

Light headed
Vertigo
Unsteady
Foggy
Feel faint
Oscillopsia



There can be many causes of dizziness (for example, medication side effects). A detailed medical history is important to understand the underlying cause(s) of dizziness.

Concussions and vestibulo-ocular reflex

The vestibulo-ocular reflex (VOR) is a reflex where your eyes move equal and opposite to your head so that you can see clearly, even when in motion.

In the case that the VOR reflex is not working correctly (for example, after a concussion), the brain will sense this issue, and you may feel lightheaded, have vertigo or experience nystagmus, which can lead to unsteadiness.



After a concussion, performing tests to assess VOR can help you **detect vestibular problems that may be contributing to symptoms**. These tests could include a dynamic visual acuity test or a VOR test.

Don't forget about the neck!



The neck, or cervicogenic system, provides a lot of input around where you are in space. This system compensates when the VOR is not working well. The function of the cervicogenic system can vary with things like neck pain and stiffness. With that in mind, it is important to assess the neck after a concussion.

Examples of cervicovestibular rehabilitation components

- Habituation exercises
- Gaze stabilization retraining
- Static and dynamic balance retraining
- Manual therapy
- Neuromuscular control

Key points

- Perform multifaceted assessments as it will help inform differential diagnosis
- Always take an individualized approach to rehabilitation and do sport and activity-specific progressions
- Get to know other health care professionals with competencies in cervical and vestibular rehabilitation in your area and refer as needed - rehabilitation is a team sport!

This information is based on a talk done by TRANSCENDENT team member, Dr. Kathryn Schneider. For more information watch the recording on our website!