

CONCUSSIONS AND PERSISTENT DIZZINESS

Why do some people experience persistent dizziness after a concussion? Good question, and while we are continuing to learn more about who is most likely to experience persistent dizziness post-injury, we do know that some people experience persistent symptoms associated with **vestibular system dysfunction** that will not improve without intervention – specifically, **vestibular therapy**.

The **vestibular system** is the sensory system that provides the leading contribution about the sense of balance and spatial orientation for the purpose of coordinating movement with balance. This system includes the eyes, senses, and vestibular centers in the ears.

From the Vestibular Disorders Association: “Trauma to the brain can result in abnormal vestibular system functioning, and the brain can receive abnormal signals regarding the position and movement of the head in space. When vestibular information is inaccurate, the brain most often relies on visual input to stabilize the head on the body. This means that the visual system becomes the most reliable system to quickly assess one’s position in space and to remain balanced. Relying upon vision alone as the primary source of balance often leads to fatigue and difficulty performing routine daily activities. Reliance on the visual system for balance can result in eyestrain and tension headaches. If the vestibular system is delivering inaccurate information to the brain about the head’s position in space, the brain must rely on visual input and joint sensors (proprioception) to feel the body in space. Failure to effectively compensate with use of visual references and being aware of the surface on which one is sitting or standing results in dizziness and a sense of instability. Dizziness encourages a person to refrain from moving the head, and leads to neck stiffness and headaches. Presence of a whiplash associated with the concussion further complicates the diagnosis and suddenly symptoms limit the ability to participate in life activities. Activities involving rapid head and eye movements, sudden positional changes, complex visual environments, and removing visual input (e.g., dark room, eyes closed) can lead to increased symptoms such as headache, dizziness, and nausea.

Physical evaluation by a physical therapist with specific expertise in the vestibular system will include examination of balance activities that involve the vestibular, vision and proprioceptive systems, which reveals how the brain interprets movement of the body and head relative to space and the visual surround. A cervical examination determines if neck sprain or dizziness from the neck is contributing to symptoms and perpetuating headaches.”

Based on examination findings, customized exercises will be prescribed to use at home to rehabilitate, to tolerate increasingly rapid and complex movements, until symptoms are fully resolved. With good compliance with the home exercise program and other lifestyle adjustments as recommended by the treating neuropsychologist, most people achieve full recovery within 6 weeks, though additional risk factors and medical conditions can prolong recovery.

Not all physical therapists have specific expertise in vestibular therapy, however, and not all vestibular therapists have specific expertise in working with individuals with concussions, so be sure that your provider has the appropriate training.

In addition to working with a skilled vestibular therapist, the following recommendations may also be helpful in minimizing persistent symptoms until recovery is complete:

For persistent **dizziness**, change positions slowly, and sit down if you feel too unsteady to walk. Increase surface contact – back to wall or chair, for example. Hold the rail while walking up or down stairs; if using stairs in a crowded school hallway, ask a friend to walk with you. Do not shower unattended, and be sure to have something to hold onto (a rail, or if not sit down), when closing your eyes. Find a stable reference point when walking – that is, focus on small objects 10-15 feet away. Avoid busy “box stores” and malls, crowded places such as school hallways between classes, and take walks in quiet areas without a rush of scenery.

For **nausea**, take cool sips of water, and apply a cool cloth to pulse points (e.g., wrist, neck). Ginger and sniffs of essential peppermint oil offer natural nausea remedies, too.

For **light sensitivity**, dim lights, and adjust computer and cell-phone brightness. Wear sunglasses inside and outside, and especially if bright lights inside can be a problem. Better to watch TV in a lit room with sunglasses than to turn off the lights, since the harsh contrast of a bright screen in a dark room can be a problem.

When rapid head and eye movements trigger worsening of symptoms, avoid driving or watching sporting events with a lot of back-and-forth movement (or sit far enough away that you can keep head and eyes steady). Video games can be problematic, too.

The most important thing that you can do to facilitate recovery is to do your home exercises as prescribed, and follow all of your doctors’ advice. When in doubt, or when symptoms do not improve, let us know so that we can help you get better!

For more information, go to www.vestibular.org and www.dizzy.com.