

Sensory Sensitivity after mild Traumatic Brain Injury (mTBI) or concussion

Increased sensitivity to different sights, sounds, movements and environments is common after mTBI or concussion. This can be caused by changes in how the brain processes incoming information from our senses. This change can cause your brain to interpret normal things that are seen or heard as something that is unpleasant, irritating, or uncomfortable. This increased sensitivity, also referred to as sensory sensitivity, can then lead to other common physical symptoms to include:

- Headache
- Dizziness or lightheadedness
- Balance problems
- Eye Strain
- Nausea
- Fogginess or trouble concentrating
- Difficulty paying attention to conversations
- Feeling overwhelmed, irritated, or anxious

Changes to how your brain processes incoming information after mTBI or concussion can affect sensory systems in different ways. Sensory systems affected include vision, the vestibular system, and listening:

- Vision
 - You use your eyes for almost everything you do on a day-to-day basis.
 - The muscles that control your eye movement can be affected after mTBI or concussion. This can cause eye strain, blurriness, trouble focusing, and other vision changes.
 - Examples of common challenges with the vision sensory system include trouble with driving, looking at screens on a computer or smart phone, reading, or focusing in a classroom
- Vestibular System
 - The vestibular system inside the inner ear plays a role in balance and keeping your eyes focused on objects as you move.
 - After mTBI or concussion, you may not be able to focus your vision as effectively while you are moving.
 - You may also become more sensitive to different movements, including moving your head.
 - Changes in the vestibular system can also cause dizziness, vertigo (sensation of spinning), lightheadedness, objects seeming to “jump around”, motion sensitivity, nausea, and balance problems.
 - Examples of common challenges with the vision sensory system include: Feeling poorly with head or body movements, feeling unsteady; increase in symptoms when grocery shopping, riding in a car, being in an elevator, or going downstairs
- Listening and Paying Attention
 - Hearing, listening, and paying attention are involved in many everyday activities.
 - It can also be harder to listen in places with background noise or distractions



- Sensitivity to certain types of noise like constant chatter (people talking around you in a restaurant) or noises of different volumes or pitches may also occur
- Changes in attention, which is a thinking process that involves being alert and focusing on information in the environment or on thoughts, can also impact listening and understanding.
- Examples of common challenges with listening or paying attention include difficulty having a conversation in a busy restaurant, misunderstanding what people are saying, or becoming overwhelmed or irritated when in louder environments.

Tools for Managing Sensory Sensitivity after mTBI or Concussion:

Sensory sensitivity usually improves within the first several weeks after injury for most people. There are also effective treatments and tools to reduce or lessen the effects of sensory sensitivity that can help support active recovery and help to better manage these common symptoms if they last longer. Tips to manage sensory sensitivity after mTBI or concussion include:

- Gradually increase time spent in environments that cause symptoms instead of avoiding situations altogether. For example, it may be easier at first to make shorter trips to the store during non-busy times rather than going to a supermarket or shopping mall on a weekend.
- Perform important tasks that require more focus, like studying or paying bills, in a quiet environment with fewer distractions.
- Take “brain breaks” by adding scheduled rest breaks into routines and activities.
- With exercise, symptoms should not increase by more than a little bit and should not last long afterwards. Start with low impact exercises, like walking or a stationary bike, then progress exercise routines as they feel better and are cleared by their medical providers. Your doctor and physical therapist can advise you on what exercises are safe and appropriate.
- Avoid wearing hats, sunglasses, and ear protection unless they are really needed. It is okay to wear sunglasses or a hat when outdoors in the sun but avoid using them indoors. Using ear protection (like ear plugs) is ok when in louder places or around loud machinery (like mowing the lawn or using a leaf blower) but avoid using them in other situations. It is better to use pacing and symptom management strategies instead.
- Relaxation tools, like breathing techniques or using calming smells and tastes can also help to manage sensitivity symptoms.
- You can learn about additional tools to support active recovery after mTBI in the **Active Recovery** handout found here: <https://www.myshepherdconnection.org/mild-tbi-concussion/mind-and-body>

Talk to your healthcare provider if sensory sensitivity symptoms are not improving or lasting longer than expected. There are specialists who can teach you specific tools to help manage sensory sensitivity symptoms and support active recovery after mTBI or concussion.

