

Concussion Management

Before we start: your primary care practitioner (either your family doctor or nurse practitioner) should always be involved in your concussion care.

If you haven't made an appointment with your primary care practitioner yet, do so today.

Our Current Understanding of Concussion

Our understanding of concussions has come a long way. It wasn't too long ago we thought people needed to stay in a dark room and be woken up every hour or so until their symptoms disappeared. Thankfully, those days are in the past.

We now know concussions are a form of mild traumatic brain injury caused by a direct blow to the head or indirect blow to neck or body, meaning you can sustain a concussion without hitting your head. These forces cause a whole cascade of events including blood flow changes and inflammation.

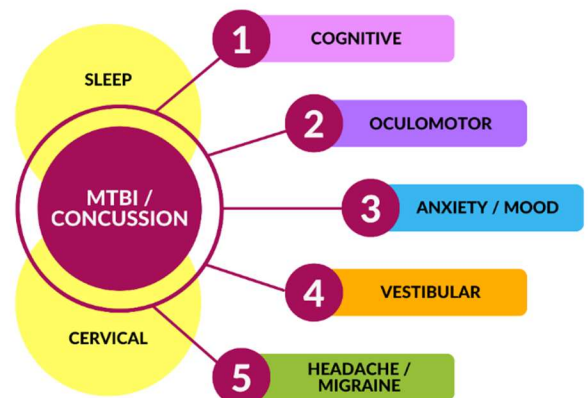
Signs and symptoms of a concussion typically present themselves within a day or two but they can take up to a week to make their presence known.

As of right now, we don't have any tests or scans that can confirm a concussion. Diagnosis of a concussion relies on the symptom profile as well as the results of certain tests, such as balance and cognitive tests.

Concussion Subtypes

We now understand concussion to have different subtypes, with each subtype having a different profile. It's possible to have more than one subtype involved in a concussion but one is typically the dominant subtype. These subtypes are:

1. Cognitive – difficulty with memory, concentration, attention and spatial orientation
2. Oculomotor – vision and eye movements
3. Anxiety / mood
4. Vestibular – dizziness, imbalance and vertigo
5. Headache / migraine



The subtype of your concussion will dictate the treatment approach. Those with the vestibular subtype will require much more intensive physiotherapy in the form of vestibular rehabilitation whereas the person with the cognitive subtype will require rehabilitation with an occupational therapist, neuropsychologist or clinical counsellor specializing in brain injury and concussions.

The five subtypes are all influenced by two modifiers: sleep and cervical/neck dysfunction. If sleep is impaired, symptoms of concussion will be magnified. The same goes for a neck injury: if the neck is a problem, concussion symptoms will be elevated. Both sleep and cervical dysfunction needs to be prioritized to help manage concussion.

Common Signs & Symptoms

There are a wide variety of signs and symptoms of a concussion. Some of the most common ones include:

- Headache
- Nausea
- Blurred vision
- Balance problems
- Dizziness
- Sensitivity to light or noise
- Tinging in the ears
- Frustration
- Anger
- Feeling down or depressed
- Anxious
- Sleeping more than usual
- Difficulty falling asleep
- Tearful
- Feeling "slowed down"
- Difficulty concentrating
- Feeling dazed
- Memory problems
- Difficulty multitasking
- "Not my self"
- Feeling foggy

If any of the Red Flags are present, seek medical attention immediately.



Timeline of Recovery

Concussions typically heal within 2 weeks for adults and 4 weeks for kids. Here's how you can help maximize your recovery:

First 24-48 Hours:

- Relax with relative physical and cognitive rest. This means no work or school during this time. Light (*and I do mean light*) exercise is welcome as long as you aren't increasing your symptoms.
- If light and sound is an issue, resting in a quiet, dark room is fine in this period of time.
- Avoid screen-time entirely. This includes scrolling on your phone.
- Sleep as much as you want. You do not need to be woken up periodically and you are welcome to nap the day away.
- You may get bored. Here are some ideas that help you heal while keeping you (*somewhat*) entertained:
 - **Listen to an audiobook, podcast or some music.** If you're new to the world of podcasts, we can help you find something up your alley.
 - **Practice some meditation.** Try an app, like Calm or Headspace, to help get you in the groove.
 - **Do something with your hands.** Try colouring, knitting, woodworking or crafts.
 - **Get your body moving in a gentle and relaxing way.** Some great options include walking (especially in nature - brains love trees!), yoga or Tai Chi

From Day 3 Through The Next Few Weeks:

- Gradually increase your cognitive and physical activity. Symptoms need to be managed during this period but it's very important to start moving your body and exposing your brain to stimulation.
- If light and sound has been an issue, it's important to start exposing yourself to both. While you are still allowed to take breaks in a dark room, you need to spend most of your time in lit and non-silent spaces. This may be in the shade in your back yard, in the living room with the kids playing downstairs or walking your dog through the forest.



- Return to a normal sleep schedule. This means the same bed time, the same wake time and no napping.
- Limit screen time to 1-2 hours per day in maximum 30 minute blocks.

Throughout Recovery:

- Three supplements have been shown in the literature to help with brain health: riboflavin, magnesium and CoQ10. Speak to your primary care practitioner or pharmacist about whether or not these supplements are appropriate for you as well as the appropriate dosage.
- Proper nutrition and hydration are crucial for brain health and recovery. For questions about your nutrition, you can speak to a nutritionist by dialing 811.
- There is strong evidence in the research that social relationships and joy need to be a daily part of your life. See your friends! Laugh! Get lost in the moment! It can be very difficult to do this when you are dealing with symptoms of a concussion but the more you can do this, the better.
- If headaches are a problem, speak to your primary care practitioner about different options for medication. It is also wise to take a headache journal to see if you can figure out triggers or patterns to your headaches.
- Get outside every day.

Symptom Management

After a concussion, your brain's resources are more limited. Activities that were once simple often become exhausting and overwhelming. Managing this process is incredibly important for a successful rehabilitation.

It is important to avoid the “crash and burn” – pushing too hard to the point your symptoms overtake you and you need hours or days to recover. Instead, your daily goal should be to keep the majority of your activity within your comfort zone and to play on the edges, just a bit. In this way, you will expand your safe zone so that you are gradually able to do more activities with less symptom aggravation.



A good way to think about this is with a bubble diagram. Before the concussion, you were able to do a big bubble's worth of activity of no problem. After the concussion, your comfort zone shrunk. The "Therapeutic Zone" is where you need to work when doing your exercises, playing along the edges to gradually expand your bubble.

Physical Exercise

We used to recommend that people rest after a concussion, until their symptoms completely subsided. We now know that activity is an important part of concussion rehabilitation, and gradual entry back into an active lifestyle is critical. Exercise has been shown to have an incredible range of effects on the human body including improved oxygen delivery to the brain.

You should start exercising daily within a few days of your concussion. Here's how to do so safely:

- Before exercising, take note of your symptom level out of 10.
- During and after exercise, it is normal and safe for your symptoms to be slightly exacerbated. We want to keep those symptoms within 1-2 points of your baseline.
- Once you have finished exercising, your symptoms should return to their pre-exercise level within one hour.

If you find that your symptoms went higher or lasted longer than they should have, that's ok! Use this as a guide for next time and try your best to stay within this range.

Some ideas for exercise include:

- Walking or light jogging
- Cycling, either on a stationary bike or outside
- Stair climbing (i.e. Fred Gingell Park in Tsawwassen)
- Aquacise, swimming or water walking
- Light weight & body weight circuit the gym (i.e. squats, bicep curls, step ups, etc)



Sleep Hygiene

Sleep is one of the most underrated aspects of rehabilitation from any injury. Without sleep, it is nearly impossible to recover. Here are some ways to prioritize sleep and make sure you are getting enough:

- **Keep a regular sleep schedule.** It is vital to healthy sleep hygiene that you prioritize getting to bed at roughly the same time every night and waking up at roughly the same time. Your brain thrives on routine and getting into these circadian rhythms help your brain heal. Aim for 7-9 hours of scheduled sleep every night, preferably more than less.
- **Expose yourself to natural light during the day.** This helps your brain set those circadian rhythms and regulates the melatonin (the sleep hormone) circulating in your brain.
- **Promote a sleep friendly environment.** Keep your room dark when you are sleeping, using blackout curtains if necessary. Block ambient noise by either using a sound machine, fan or ear plugs. Keep your room cool but comfortable.
- **Make a bedtime routine.** With babies and kids, we usually have a bedtime routine to help them get ready for sleep. Why not do the same for us? Get in some kind of bedtime habit – a shower, a book, meditation, etc. Do what works for you.
- **No naps.** Napping disrupts these rhythms you are working so hard to build. Instead, take a brain break during the day – do some yoga, meditation or listen to a podcast.
- **Avoid alcohol, caffeine, nicotine, heavy meals and lots of liquids in the evenings.** Aim for none of these things in the last 4-6 hours of your day.
- **Avoid exercise before bed.** If you can, get your exercise in the morning – it will help wake you up and keep you going through the day.
- **Avoid screen time in the two hours before bed.** When you look at bright lights, your melatonin levels decrease and your brain wakes up more. If you need to look at screens, add the night filter to your phone – it helps decrease the blue light and reduces the effect on your circadian rhythms.
- **Use your bedroom for sleep and sex – that's it.** Don't turn your bedroom into your gym, your office space, your afternoon lounging area. You want your brain to associate your bed with those two things; everything else is a distraction and will hinder your sleep.



- **Can't sleep? Get up.** We all have those nights where we just can't sleep. When that happens, give yourself 15-20 minutes to try and get to sleep. If that fails, get out of bed and go into another room. Read a book, do some meditation, have a light snack. When you are sleepy again, go back into your bed and try again. Do not turn on the TV or try to use that time to get some work done – keep those hours you have reserved for sleep as quiet, non-stimulating time.

Sometimes, these strategies are not enough. If these strategies are not working for you, talk to your doctor about medications or supplements that may help you find the sleep you need.

9 Things NOT To Say To Someone With A Brain Injury

Brain injury is confusing to people who don't have one. It's natural to want to say something, to voice an opinion or offer advice, even when we don't understand. And when you care for a loved one with a brain injury, it's easy to get burnt out and say things out of frustration.

Here are a few things you might find yourself saying that are probably not helpful:

1. **You seem fine to me.** The invisible signs of a brain injury—memory and concentration problems, fatigue, insomnia, chronic pain, depression, or anxiety—these are sometimes more difficult to live with than visible disabilities. Research shows that having just a scar on the head can help a person with a brain injury feel validated and better understood. Your loved one may look normal, but shrugging off the invisible signs of brain injury is belittling. Consider this: a memory problem can be much more disabling than a limp.
2. **Maybe you're just not trying hard enough (you're lazy).** Lazy is not the same as apathy (lack of interest, motivation, or emotion). Apathy is a disorder and common after a brain injury. Apathy can often get in the way of rehabilitation and recovery, so it's important to recognize and treat it. Certain prescription drugs have been shown to reduce apathy. Setting very specific goals might also help. Do beware of problems that mimic apathy. Depression, fatigue, and chronic pain are common after a brain injury, and can look like (or be combined with) apathy. Side effects of some prescription drugs can also look like apathy. Try to discover the root of the problem, so that you can help advocate for proper treatment.



3. **You're such a grump!** Irritability is one of the most common signs of a brain injury. Irritability could be the direct result of the brain injury, or a side effect of depression, anxiety, chronic pain, sleep disorders, or fatigue. Think of it as a biological grumpiness— it's not as if your loved one can get some air and come back in a better mood. It can come and go without reason. It's hard to live with someone who is grumpy, moody, or angry all the time. Certain prescription drugs, supplements, changes in diet, or therapy that focuses on adjustment and coping skills can all help to reduce irritability.
4. **How many times do I have to tell you?** It's frustrating to repeat yourself over and over, but almost everyone who has a brain injury will experience some memory problems. Instead of pointing out a deficit, try finding a solution. Make the task easier. Create a routine. Install a memo board in the kitchen. Also, remember that language isn't always verbal. "I've already told you this" comes through loud and clear just by facial expression.
5. **Do you have any idea how much I do for you?** Your loved one probably knows how much you do, and feels incredibly guilty about it. It's also possible that your loved one has no clue, and may never understand. This can be due to problems with awareness, memory, or apathy—all of which can be a direct result of a brain injury. You do need to unload your burden on someone, just let that someone be a good friend or a counselor.
6. **Your problem is all the medications you take.** Prescription drugs can cause all kinds of side effects such as sluggishness, insomnia, memory problems, mania, sexual dysfunction, or weight gain—just to name a few. Someone with a brain injury is especially sensitive to these effects. But, if you blame everything on the effects of drugs, two things could happen. One, you might be encouraging your loved one to stop taking an important drug prematurely. Two, you might be overlooking a genuine sign of brain injury. It's a good idea to regularly review prescription drugs with a doctor. Don't be afraid to ask about alternatives that might reduce side effects. At some point in recovery, it might very well be the right time to taper off a drug. But, you won't know this without regular follow-up.
7. **Let me do that for you.** Independence and control are two of the most important things lost after a brain injury. Yes, it may be easier to do things for your loved one. Yes, it may be less frustrating. But, encouraging your loved one to do things on their own will help promote self-esteem, confidence, and quality of living. It can also help the brain recover faster. Do make sure that the task isn't one that might put your loved one at genuine risk—such as driving too soon or managing medication when there are significant memory problems.



8. **Try to think positively.** That's easier said than done for many people, and even harder for someone with a brain injury. Repetitive negative thinking is called rumination, and it can be common after a brain injury. Rumination is usually related to depression or anxiety, and so treating those problems may help break the negative thinking cycle. Furthermore, if you tell someone to stop thinking about a certain negative thought, that thought will just be pushed further towards the front of the mind (literally, to the prefrontal cortex). Instead, find a task that is especially enjoyable for your loved one. It will help to distract from negative thinking, and release chemicals that promote more positive thoughts.
9. **You're lucky to be alive.** This sounds like positive thinking, looking on the bright side of things. But be careful. A person with a brain injury is six times more likely to have suicidal thoughts than someone without a brain injury. Some may not feel very lucky to be alive. Instead of calling it "luck," talk about how strong, persistent, or heroic the person is for getting through their ordeal. Tell them that they're awesome.

Free Online Resources

MyGuide – created by GF Strong / VCH. These online guides allow you to pick and choose the information you need about your concussion and are updated regularly.

Adult - concussion.vch.ca

Teen – teenconcussion.vch.ca

Concussion Awareness Training Tool – for athletes, parents, teachers, support staff, medical professionals and anyone wanting to learn more about concussions.

Cattonline.com

F.Lux – a free download to change the colour of your screen

justgetflux.com

