



Early Concussion Education

Concussion Education ***Table of Contents***

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1. Mild Traumatic Brain Injury and Recovery

1a. Guiding Principles for Recovery

What is a concussion? A concussion is a mild injury to the brain caused by a trauma [blow or jolt] to the head that may result in physical, cognitive and emotional symptoms.

Common concussion symptoms and problems

Thinking	Physical	Emotional
Difficulty thinking clearly	Headache	Irritable
Feeling slowed down	Nausea or vomiting (early on)	Sad, depressed, tearful
Difficulty concentrating	Fuzzy or blurred vision	More emotional
Difficulty remembering new information	Dizziness or light headedness	Anxious
Trouble expressing thoughts and finding the right words	Sensitivity to noise or light	
	Poor balance	
	Clumsiness	
	Changes in sleep pattern	
	Feeling tired, having no energy	

The rate of recovery from a concussion varies but most symptoms resolve within 3-6 months. Recovery may be slower for people who have had previous concussions or for those experiencing pain, depression or anxiety. We have learned that people rehabilitate faster when they apply these guiding principles during their recovery.

First Principle: Stay in Good Health

1. Rest

- Be in a quiet place
- Reduce distractions and avoid noisy, busy, over stimulating places
- Take it easy
- Limit your physical activities [household chores, exercise]
- Limit your mental activities [reading, watching television, playing video game]

2. Make sure you sleep well at night; you will likely need more sleep than usual to feel rested
 - Tiredness can result in an increase of your symptoms and cause problems with your mood and your thinking

3. Apply relaxation techniques
 - Stress will cause and/or increase symptoms
 - Stress management is key to recovery
 - Take time for yourself
 - Listen to quiet music or meditation CD
 - Have a warm bath
 - Read something light and amusing; keep a journal
 - Try calm breathing or mindfulness meditation
 - Gentle yin or restorative yoga can be helpful but avoid all inversions

4. Maintain good nutrition
 - Eat 3 healthy meals/day; do not skip breakfast
 - Avoid limit caffeine, sugar, salt and junk foods
 - Drink at least 8 glasses of water every day

5. Do not drink alcohol or use non prescription medications for 3-6 months or if you are still experiencing symptoms
 - You need to avoid toxins while your brain is healing
 - Alcohol and drugs are depressants/mood altering substances

- Alcohol and drugs can impair balance and judgment that could put you at risk of another injury
 - Alcohol and drugs can interfere with natural recovery
6. Spend your energy carefully
- Prioritize. Decide what is most important to you
 - Plan ahead (see planning/organization). Gather needed items before you start. Spread harder tasks over the week. Do harder activities when you are most rested
 - Pace yourself; work for short periods; balance activity with rest; allow more time to complete tasks
7. Avoid sustained use on your computer, and limit the time spent watching television or movies
- Bright screens and monitors can increase symptoms
 - Your brain needs to rest while you are recovering
 - Take micro brain breaks before you feel fatigued
8. Do not put yourself at risk for another concussion; avoid climbing ladders, riding a bicycle, playing contact or recreational sports where there is a risk of you getting hit on the head, until your recovery is complete.
- Take special care for 3-6 months following a concussion not to have another one
 - A second concussion while recovering from the first one can be more dangerous and will be more complicated; recovery will take longer
9. Practice prevention
- Once you have fully recovered and are participating in your usual activities, it will continue to be important to reduce the likelihood of having another concussion

- ❑ Always wear the correct helmet to reduce the risk and severity of head injury in sports, such as biking, skating, horseback riding, skiing, snowboarding, skateboarding and in-line-skating.
- ❑ When participating in sports use a certified helmet and wear it as recommended by the manufacturer
- ❑ Use appropriate safety procedures and equipment when working from heights or around dangerous machinery

10. See your Family Physician

- ❑ Your Family Physician will need to monitor your symptoms and recovery
- ❑ Plan and prepare for appointments; write down questions; bring appropriate information with you
- ❑ Talk to your doctor about how to manage your headaches, insomnia/disrupted sleep, dizziness, low mood or anxiety
- ❑ Your GP can recommend appropriate resources to assist in your recovery
- ❑ If you had soft tissue injuries [whiplash] or dizziness/vertigo talk to your doctor about if/when you should be treated by a massage therapist, physiotherapist or vestibular therapist
- ❑ Only take medicine prescribed by the doctor
- ❑ For athletes: Stop pain medication before progressing through return to play protocol.
- ❑ No GP? Phone Calgary Health Link 403-943-LINK (5465)

Second Principle: Respect Your Symptoms

1. Resume activities gradually

- Although the presence of symptoms does not preclude you from participating in activities, it is very important that you pace yourself and gradually return to your usual routines
- Pace yourself and rest between activities
- Simplify the activities you do
- Allow yourself more time to complete tasks
- Do one thing at a time
- Work in a quiet distraction free place
- Build in rest periods or brain breaks throughout the day
- Start building a structured daily routine based on getting up at/close to your usual time.
- Develop and use a written schedule of daily-weekly activities to include shopping, meal preparation, exercise, rest, cognitive demands and leisure

2. Your symptoms are your guide for recovery

- If your symptoms increase it is a signal that you have pushed too hard and need to reduce the physical or cognitive effort
- Overexertion and fatigue may slow down recovery
- Psychological factors such as stress or anxiety or low mood can also increase symptoms [headaches, dizziness, fatigue]

Third Principle: Manage Your Expectations

- Remember that your recovery will take time
- You may have set backs
- Everyone has different recovery timelines
- Listen to your symptoms
- If you over-do it and your symptoms worsen, reduce your activity and gradually increase later
- You may require more rest than you are accustomed to
- You may need to take time off of school or work and return to regular activities in a graduated basis
- It's useful to explain to friends, family and co-workers why you need more rest
- Ask for help

Fourth Principle: Maintain Connections

- Although it is important to get more rest and be realistic about your recovery, do not withdraw from all of your previous activities.
- Isolation can contribute to de-conditioning, depression and fear of reinitiating activities and connections.
- It is okay to participate in some cognitive, physical and social activities but with reduced effort.

Fifth Principle: Stay the Course

- You cannot go back in time to change the fact that you have had a concussion
- Your symptoms will improve and you will get better
- It is normal for people to have ups and downs in their recovery. Use the principles learned in this booklet to help you work through those setbacks.
- Don't get discouraged
- Recovery from concussion is all about learning to:
 - manage your symptoms;
 - reduce and manage stress; and
 - gradually return to activities

Sixth Principle: Be an Active Problem Solver

Recovery from concussion is all about learning to:

- manage your symptoms;
- reduce and manage stress; and
- gradually return to activities

You will need to figure out what is helpful and what isn't working

Strategy #1

Be patient and have realistic expectations of yourself

Strategy #2

Slow down and give yourself extra time to complete tasks

- Avoid deadlines
- Work on one task at a time
- Pace yourself and rest between activities
- Take micro brain breaks

Strategy #3

Simplify and Organize

- Avoid clutter
- Plan your day
- Do the hardest tasks when you have the most energy

Strategy #4

Repetition, structure and consistency work!

- Write things down; check things off when complete
- Use lists for shopping
- Keep your keys and cell phone and wallet in the same place

Strategy #5

Avoid sustained use of your computer, and limit the time spent watching television or movies

- Bright screens and monitors can increase symptoms
- Your brain needs to rest while you are recovering
- Take micro brain breaks before you feel fatigued

Strategy #6

Consider your symptoms as friends; if your symptoms increase, try to figure out what is the cause and then find a solution.

- Did you do too many things without taking a break?
- Do you need to continue with the task but pull back on the duration of the activity or reduce the intensity of your effort or pace yourself?
- Were you involved in a particularly stressful event?
- Did you have a bad sleep?
- Were you shopping in a busy, noisy grocery store?
- Did you have an argument with your friend?

2. Symptom Management

2a. Sleep Hygiene

Sleep is a natural stage of rest that affects our daily function as well as our physical and mental well-being. Following a concussion it is very important that you get a good restorative sleep every night to help your recovery. Lack of sleep and fatigue can increase all of your symptoms and slow down your progress.

Sleep hygiene refers to the practices, habits and environmental factors that influence sleep. Here are some suggestions to help you get a good night's sleep:

- Set up a routine time to go to bed and to get up each morning-and stick to it even on weekends! Consistency is very important in developing a good sleep-wake cycle. Most importantly always get up at the same time in the morning.
- Engage in calming activities 30 minutes before going to bed
 - Avoid stimulating movies, books or exercise during this time;
 - Some people find a warm bath an hour or so before bed to be relaxing
 - Avoid eating a heavy meal immediately prior to bed. If you are hungry you might want to eat a light snack. Some people find drinking warm milk to be helpful.
 - Lie down when feeling sleepy
- Regular daily exercise can improve restful sleep. This includes stretching and aerobic exercise. Complete any exercise at least three hours before going to sleep.
- Avoid alcohol and limit caffeine intake from any source (e.g. coffee, tea, cola, chocolate) in the afternoon and evening.
- Extra sleep may be necessary in the days immediately following an injury. However avoid napping during the day if possible. If a nap is necessary, try to limit it to less than twenty minutes. It is better to have a nap earlier in the day (before noon) rather than later in the day.
- Use your bed only for sleep and intimacy. It is not a place to watch TV, read or work on your laptop.
- If you are unable to sleep for 20-30 minutes after retiring, get up and engage in a calm activity such as reading a relaxing book or listening to quiet music. Return to bed once you start to feel sleepy. Repeat this cycle until you fall asleep. Avoid lying awake in bed for long periods of time. You want to teach your body and mind that bed is a place to sleep with the goal of eliciting sleep as an automatic response when you retire for the night.

2b. Strategies for Stress Management

What is Stress?

Stress can be defined as the condition or feeling you experience when you perceive that the internal or external demands exceed your personal and social resources. Stress is a normal response and is commonly experienced following a change in health status, including concussion.

The following table lists some of the common warning signs and symptoms of stress. Many of these symptoms are the same ones you may be experiencing as the result of your concussion.

Signs and Symptoms of Stress

Cognitive Symptoms

- Memory problems
- Inability to concentrate
- Poor judgment
- Seeing only the negative
- Anxious or racing thoughts
- Constant worrying

Emotional Symptoms

- Moodiness
- Irritability or short temper
- Agitation, inability to relax
- Feeling overwhelmed
- Sense of loneliness and isolation
- Depression or general unhappiness

Physical Symptoms

- Fatigue
- Aches and pains [e.g. headaches]
- Diarrhea or constipation
- Nausea, dizziness
- Chest pain, rapid heartbeat
- Loss of sex drive
- Frequent colds

Behavioral Symptoms

- Eating more or less
- Sleeping too much or too little
- Isolating yourself from others
- Procrastinating or neglecting responsibilities
- Using alcohol, cigarettes, or drugs to relax
- Nervous habits [e.g. nail biting, pacing]

What is Stress Management?

Stress management refers to the practices, habits and environmental factors that can influence stress. Following a concussion it is very important that you use healthy ways of dealing with stress in order to promote a good recovery. Psychological factors including stress and anxiety can increase all of your concussion symptoms and slow down your progress.

Here are some suggestions to help you manage stress in an effective manner. Commit to trying these strategies for at least 4 weeks before deciding whether or not they work

Stress management strategy #1: Stay healthy

You can increase your resistance to stress by strengthening your physical health.

- **Exercise regularly.** Physical activity plays a key role in reducing and preventing the effects of stress. Make time for some light aerobic activity, such as walking, treadmill, stationary bike; gradually increase [first frequency, then duration and lastly intensity] as your symptoms allow. Nothing beats exercise for releasing pent-up stress and tension.
- **Eat a healthy diet.** Well-nourished bodies are better prepared to cope with stress, so be mindful of what you eat. Start your day right with breakfast, and keep your energy up and your mind clear with balanced, nutritious meals throughout the day.
- **Reduce caffeine and sugar.** The temporary "highs" caffeine and sugar provide often end with a crash in mood and energy. By reducing the amount of coffee, soft drinks, chocolate, and sugar snacks in your diet, you'll feel more relaxed and you'll sleep better.
- **Avoid alcohol, cigarettes, and drugs.** Self-medicating with alcohol or drugs may provide an easy escape from stress, but these substances are both toxins and depressants. Don't avoid or mask the issue at hand; deal with problems head on and with a clear mind.
- **Get enough sleep.** Adequate sleep fuels your mind, as well as your body. Feeling tired will increase your stress and may cause you to think irrationally.

Stress management strategy #2: Relax

You can reduce stress in your life by nurturing yourself. If you regularly make time for fun and relaxation, you'll be in a better place to handle life's stressors when they inevitably come.

Healthy ways to relax and recharge

- Go for a walk.
- Spend time in nature.
- Call a good friend.
- Sweat out tension with a good workout.
- Write in your journal.
- Take a long bath
- Savor a cup of tea.
- Play with a pet.
- Work in your garden.
- Get a massage.
- Curl up with a good book.
- Listen to music.
- Watch a comedy.

Don't get so caught up in the hustle and bustle of life that you forget to take care of your own needs. Nurturing yourself is a necessity, not a luxury.

- **Set aside relaxation time.** Include rest and relaxation in your daily schedule. Don't allow other obligations to encroach. This is your time to take a break from all responsibilities and recharge your batteries.
- **Connect with others.** Spend time with positive people who enhance your life. A strong support system will buffer you from the negative effects of stress.
- **Do something you enjoy every day.** Make time for leisure activities that bring you joy, whether it be stargazing, playing the piano, or working on your bike.
- **Keep your sense of humor.** This includes the ability to laugh at yourself. The act of laughing helps your body fight stress in a number of ways.
- **Learn to relax.** Learn strategies for relaxation and mindfulness through gentle yoga and or a breath meditation that will help improve coping skills. Regularly practicing these techniques will build your physical and emotional resilience and boost your overall feelings of well-being.

Stress management strategy #3: Avoid unnecessary stress

Not all stress can be avoided, and it's not healthy to avoid a situation that needs to be addressed. You may be surprised, however, by the number of stressors in your life that you can eliminate.

- **Establish your priorities**— Analyze your schedule, responsibilities, and daily tasks. Decide where you want to spend your time and energy. If you've got too much on your plate, distinguish between the "shoulds" and the "musts." If possible ask for help or delegate some responsibilities. Drop tasks that aren't truly necessary to the bottom of the list or eliminate them entirely.
- **Learn how to say "no"** – Know your physical and mental limits and be firm. Overexertion and fatigue may slow down your recovery from concussion. Do not

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overextend yourself. Once you have established your priorities and stamina it is easier to say no.

- **Avoid people who stress you out** – If someone consistently causes stress in your life and you can't turn the relationship around, limit the amount of time you spend with that person or end the relationship entirely.
- **Take control of your environment** – If the evening news makes you anxious, turn the TV off. If traffic's got you tense, take a longer but less-traveled route. If going to the grocery store is an unpleasant chore, choose a quiet time and a small marketplace or do your grocery shopping online.

Stress management strategy #4: Change the situation

If you can't avoid a stressful situation, try to alter it. Figure out what you can do to change things so the problem doesn't present itself in the future. Often, this involves changing the way you communicate and operate in your daily life.

- **Express your feelings instead of bottling them up.** If something or someone is bothering you, communicate your concerns in an open and respectful way. If you don't voice your feelings, resentment will build and the situation will likely remain the same.
- **Be willing to compromise.** When you ask someone to change their behavior, be willing to do the same. If you are willing to bend at least a little, you'll have a good chance of finding a happy middle ground.
- **Be assertive.** Don't take a backseat in your own life. Deal with problems head on, doing your best to anticipate and prevent them. If you've got an exam to study for and your chatty roommate just got home, say up front that you only have five minutes to talk.
- **Manage your time.** Poor time management can cause a lot of stress. Plan ahead and make sure you don't overextend yourself. Keep track of your daily and weekly responsibilities by making 'to do' lists, scheduling appointments and tasks into a calendar, day timer or personal assistive device.
- **Get organized.** Reduce clutter and develop a system for storing items and information
- **Re-think your workload.** When stress gets too much consider reducing your obligations and responsibilities, such as social activities, household duties, volunteering, work or school,

Stress management strategy #5: Realistic thinking

If you can't change the stressor, change yourself. You can adapt to stressful situations and regain your sense of control by changing your own expectations of yourself.

- ❑ **Reframe problems.** Try to view stressful situations from a more positive perspective. Rather than fuming about a traffic jam, look at it as an opportunity to pause and regroup, listen to your favorite radio station, or enjoy some alone time.
- ❑ **Look at the big picture.** Take perspective of the stressful situation. Ask yourself how important it will be in the long run. Will it matter in a month? A year? Is it really worth getting upset over? If the answer is no, focus your time and energy elsewhere.
- ❑ **Adjust your standards.** Recognize your limits and adjust your expectations while you are recovering. Perfectionism is a major source of avoidable stress. Stop setting yourself up for failure by demanding perfection. Set realistic and reasonable standards for yourself and others, and learn to be okay with "good enough"
- ❑ **Focus on the positive.** When stress is getting you down, take a moment to reflect on all the things you appreciate in your life, including your own positive qualities and gifts. This simple strategy can help you keep things in perspective.
- ❑ **Become aware of your own negative thoughts and fears.** How you think can have a profound effect on your emotional and physical well-being. Each time you think a negative thought about yourself, your body reacts as if it were in the throes of a tension-filled situation. If you see good things about yourself, you are more likely to feel good; the reverse is also true.
- ❑ **Eliminate words such as "always," "never," "should," and "must".** These are telltale marks of self-defeating thoughts. Shift to more realistic and supportive ways of thinking and accept the things you cannot change i.e. "It is what it is."

Who can help?

If you are interested in learning relaxation techniques you can start by reading a book or buying a beginners CD on meditation or yoga practices. If you are interested in more then you can take a gentle yin or restorative yoga class. While recovering from concussion you should avoid inversions.

2c. Energy Conservation

Following a concussion many people find that they have less energy than before. Everyday situations that require physical, cognitive and/or emotional stamina may be exhausting. Energy conservation is about being smart with your energy resources.

If you think about your energy resources as being similar to money in a bank account then you will understand 'energy conservation' is similar to being on a budget. You manage your energy by making deposits and withdrawals based on your requirements. If you empty your energy bank account by noon then you will not have enough to do all that you need to do in a day. Here are some suggestions to help you balance your energy budget:

1. Save your energy

- Make a list of what you need
- Gather the items you need before you start
- Use good lighting and appropriate workspace
- Limit distractions and avoid clutter.
- Sit to work
- Push rather than lift things. Use a wheeled cart or dolly to carry things

2. Restore your energy

- Try to include activities in your day that bring you pleasure and add to your energy bank
- For example set aside time to read an interesting book, talk with an upbeat friend or family member on the phone, listen to music and find a way to be playful or laugh

3. Use your energy wisely

- Plan
 - Take time each evening to review the day and plan out the next day
 - List activities and tasks that need to be done. Remember to include rest breaks.
 - Take time each week to plan out the next week
 - Spread heavier tasks out over the week. Do harder tasks when you are most rested
- Pace
 - Give yourself plenty of time to do each task
 - Balance activities with rest breaks. Rest before you are tired
 - Break up a large task by doing a little each day.

2d. Post-traumatic Headaches

Post-traumatic headache is one of the most common symptoms (not a diagnosis) following a concussion or mild traumatic brain injury. Post-concussion headaches will gradually improve and typically resolve. While you are recovering it is important to do whatever you can to prevent & manage your pain as well as improve your well-being.

Here are some basic suggestions to help you prevent and/or reduce post-concussion headaches:

- Post-concussion headaches can be triggered by physical or cognitive exertion. It is important to gradually return to previous activities. Start rebuilding your stamina by increasing first the frequency, then the duration and lastly the intensity of any activity. If your headaches increase following exertion it is a sign you are doing too much and need to back off. Refer to the handout on Energy Conservation for some ideas on 'budgeting' your energy.
- Eat healthy foods and do not skip meals—especially breakfast. Being hungry can trigger a headache.
- Foods and beverages affect your brain chemistry and can change the size of your blood vessels. There are certain foods and beverages that can trigger headaches in some people. It is recommended not to drink alcohol following a brain injury for a number of reasons, including the prevention of headaches. Reduce your caffeine intake.
- Drink lots of water to stay hydrated. What is a sign of mild dehydration? You guessed right if you said headache. Drink 8 eight ounce glasses of water a day.
- Get a good sleep. It is very important to get a good restorative sleep at night in order to prevent headaches from developing. Try to get at least 6-8 hours per night and stick to the same sleeping schedule. Refer to Sleep Hygiene section for strategies on managing your sleep.
- If you develop a headache it may be helpful to lie down or sleep. Try to lie down early before the headache gets bad. When you lie down, find a dark and quiet place.
- While sleeping it is important to support your neck and position your arms to reduce the muscle tension that may contribute to pain or headaches. Talk to your Physiotherapist about the best sleeping position for you.

- ❑ If you have a whiplash injury it can contribute to your headaches. It may be helpful to see a Massage Therapist, a Physiotherapist or an Acupuncturist for management of your whiplash injury.
- ❑ Remember to stretch your neck and upper body, especially if you work at a desk, in front of a computer or behind the wheel. This can be effective in preventing the onset of tension headaches. Keep proper posture as well.
- ❑ Get a healthy amount of exercise. Exercise keeps the body and mind healthy in many ways, including the release of endorphins, natural painkillers.
- ❑ Swimming or water based activities can be beneficial. A warm water pool may prevent some headaches. Swimming is also helpful if you have back pain.
- ❑ When you have a headache that starts at your neck or the back of your head, applying a hot pack or having a shower can help reduce muscular tension.
- ❑ Sometimes people who go from a dark building out into the bright sunlight have instant headaches. If this is true for you then wear dark, wraparound sunglasses.
- ❑ If watching a television or computer screen causes a headache then limit your exposure and/or take frequent breaks away from the screen.
- ❑ If you find that noise triggers a headache for you then turn down the volume, go to a quiet place or wear earplugs.
- ❑ Stop smoking. Smoking affects your blood and blood vessels and can be a factor in the onset of headaches.
- ❑ Explore and practice relaxation strategies. There are a number of relaxation methods including meditation, biofeedback, deep breathing, gentle yoga, progressive muscle relaxation, guided or mental imagery.
- ❑ Learn healthy ways to manage stress and distress. Take a look at implementing some basic stress management strategies such as exercising; establishing priorities; having realistic expectations of yourself; simplifying your life. Consider seeing a professional (Psychologist, Counselor) who can help you acquire and apply effective strategies, such as cognitive behaviour therapy, to manage stress.
- ❑ It may be helpful to keep a headache journal. Use a monthly calendar to document your daily activities and rate your headaches on a 1 to 10 scale each day with "1" being no headache and "10" being the worst headache you've ever had. You may start to recognize a connection between fatigue or stress and your headaches.

2e. Tips for Managing Thinking Problems

Following a concussion you may notice difficulties with memory, concentration and attention. You may also find that it takes longer to collect your thoughts and express yourself. These are some of the common thinking problems following a concussion. Typically they improve with time but that does not make them any less annoying while you have them.

While you are recovering here are some practical strategies that you can use to help:

- Reduce distractions in your environment when you are concentrating. For example, turn off the television when you are trying to read; ask the children not to interrupt while you are making dinner.
- Work on one task at a time. This helps to keep your focus and helps you from feeling overwhelmed.
- Give yourself more time than usual to complete tasks. Work for short periods and take breaks. This will help reduce the stress that can impact on your ability to concentrate
- When concentration is critical for a task, pick a time when your energy level is at its best.
- Avoid or limit your exposure to noisy, busy or overly stimulating places. It may be helpful to use earplugs when in a noisy environment or organize your workspace to minimize clutter and visual distractions. This will help you focus and it will reduce feelings of confusion.
- To stay focused during conversations, maintain good eye contact with the person. Also repeat back what was said or ask the person to repeat the information if you missed it.
- If reading is difficult, it can help to read aloud and read only for short manageable periods of time.
- If you are forgetful, record important information in a notebook, a calendar, an organizer or even a tape recorder and keep it with you to use throughout your day. Make this a habit.
- Keep items such as car keys, umbrella, calendar, message pad, cell phone or day timer in designated places.

- Use lists for shopping. Use sticky notes around the house, for example at the door to remind you to check the locks, the stove, the iron etc. before you leave.
- Use your answering machine or your computer e-mail to leave reminders for yourself.
- Use external cues or prompts to draw you back to a task. For example use an egg timer or the microwave timer when cooking or doing laundry.
- Some watches, cell phones and palm pilots have programmable timers to remind you things such as appointments, when to take medication, people to call etc.
- Use appliances that have automatic shut off, such as kettle or iron.
- Write out a list of what you need to do and plan a schedule for the day, week and month at home and at work. Review your list and schedule every morning and update it as necessary.
- To assist with organization, it can help to break the task down into manageable steps prior to starting the task.
- Pre-planning your activities is useful. It helps you to be prepared to handle daily situations. For example if you have a medical appointment, write down your list of concerns and questions so you do not forget what you need to know. If you are driving somewhere unfamiliar, plan ahead by having the address and a contact number with you and reviewing the directions before you leave.
- Do not make decisions in haste. Be sure to take the time to review all possible perspectives of a situation and discuss the situation with someone you trust before deciding, especially if it is a significant decision.
- Count to ten before you act on anything. Consider whether you are safe and whether you are using good judgment.
- Remember that your thinking ability is affected by other symptoms such as headaches, poor sleep, dizziness, fatigue, low mood and stress. It is critical that you get a good restorative sleep at night and pace all of your activities to allow for rest periods throughout your day. As these symptoms settle down you will find that your thinking problems also settle down.
- Be patient and have realistic expectations of yourself

It takes time and practice to use these techniques consistently but once you have formed the habit they will be very helpful in managing your thinking difficulties while you are recovering

3. Return to Activities

Return to Activities of Daily Living Following Concussion

Recommendation #1: Resume activities gradually

- Although the presence of symptoms does not preclude you from participating in activities, it is very important that you pace yourself and gradually return to your usual routines
- Pace yourself and rest between activities
- Simplify the activities you do
- Allow yourself more time to complete tasks
- Do one thing at a time
- Work in a quite distraction free place
- Build in rest periods or brain breaks throughout the day
- Write things down if you find it hard to remember, make lists and use a daily planner
- Start building a structured daily routine based on getting up at/close to your usual time.
- Develop and use a written schedule of daily-weekly activities to include shopping, meal preparation, exercise, rest, cognitive demands and leisure
- Keep stress low

Recommendation #2: Your symptoms are your guide for recovery

- If your symptoms increase it is a signal that you have either pushed too hard and need to reduce the physical or cognitive effort
- Overexertion and fatigue may slow down recovery
- Psychological factors such as stress or anxiety or low mood can also increase symptoms [headaches, dizziness, fatigue]

Participation in general exercise

Aerobic/cardio exercise is recommended after a concussion since there is evidence that this form of exercise when managed appropriately will reduce your symptoms and hasten recovery.

In the early days, rest is more important and we suggest only brief light activities such as short walks. Avoid contact sports, jarring activities or things requiring high level balance to avoid re-injuring yourself. Start at 10 to 15 minutes on alternate days and gradually increase frequency first and then duration. At this stage avoid increasing intensity.

It is advisable for you to incorporate regular cardio exercise into your recovery plan after 7-10 days. This will help improve your sleep, improve mood and headaches and prevent deconditioning. You do not have to be symptom-free before you start light activity, however if your symptoms increase during or immediately after exercise it is a signal that you've pushed too hard and need to reduce your effort next time. Train at sub-symptom threshold.

Start with twice a week increasing to five times per week as symptoms allow. Choose a non-jarring low impact cardio exercises such as walking, stationary cycling, elliptical or stairmaster machines, treadmill walking, swimming or water-based exercises. Start with 10 to 15 minutes and gradually increase as symptoms allow to half an hour with a five-minute warm-up and cool down. First increase frequency, then duration, and finally intensity.

If symptoms increase you have pushed too hard and need to reduce the effort. Work your way up by first increasing frequency, then duration, lastly intensity. Only return to jarring activities, such as running, if you're able to achieve non-jarring aerobic exercises without exacerbating symptoms.

Guidelines for returning to contact sports for athletes

Training for a gradual return to sport can begin when you as an athlete are off all medications and your symptoms can be self-managed. If symptoms escalate during or immediately after exercise at any stage reduce your effort [duration &/or intensity]. Train at sub-symptom threshold

Rehab Stage	Guidelines
Rest	Symptom limited physical and cognitive rest
Light aerobic activity	Start with low intensity aerobic activity [walking, stationary bike, elliptical] for 10-15 minutes but no resistance training.
High intensity aerobic and return to sports activities	Higher intensity aerobic exercise [running] as well as balance and agility drills. Heart rate 80% of maximum ~140-180 with 5 minute warm-up up to 25 minutes
Return to sports activities and resistance training	Easy sports specific activities; can start light resistance training
Non-contact training drills	Progression to more complex training drills
Full contact practice	After medical clearance can progress sport specific activity, participate in moderate resistance training and explosive movements.
Return to play	Okay when asymptomatic at rest and with exertion; with medical clearance
Return to full competition	After full competence and medical clearance

3c. Return to Work

A concussion is a mild traumatic brain injury that often results in poor sleep, headaches, fatigue and difficulties with attention, concentration, memory, thought processing and critical thinking. Fatigue impairs all other functions and its management is critical in returning to work. It is expected that you will have a good recovery from your concussion but while you are recovering you need to manage your symptoms and gradually return to your usual activities and routines, including work.

It is expected that you will continue to recover and having the appropriate accommodations, strategies and supports will be helpful in the process. You may want to discuss how to implement some of the following suggestions into your return to work plan with your employer/supervisor and review your return to work progress regularly with your Family Physician:

- Return to work only when the majority of symptoms have diminished and your physical and cognitive endurance can be maintained over the day
- If you don't feel your normal self and cannot concentrate you are unlikely to be much use at work, and it is better to take a few days off
- Plan a gradual return to work e.g. start with shorter days; work on alternate days
- Allow some time at the beginning of each workday to plan the tasks and expectations for the day without interruptions or other demands
- Start with familiar tasks or easy projects
- Modify or simplify the activities you do
- Allow yourself more time to complete tasks or projects
- Write things down if you find it hard to remember, make lists and use a daily planner
- Keep stress level low as stress may result in an increase of your symptoms

- It will be important to pace yourself throughout the day allowing for 'micro-breaks' before you feel fatigued; start with a 5-10 minute break every hour; it may take you more time to complete your work; it is also important that you take your regular breaks e.g. 15 minutes for coffee break, 30 minutes for lunch
- Do one thing at a time; deal with one person at a time;
- Avoid or limit being in noisy, busy, over stimulating areas; working in a quiet environment will help your concentration.
- If your symptoms increase this is a signal that you are doing too much and need to back off by reducing your effort
- Overexertion and fatigue can slow down the recovery process

