

N euroConnect

Relationships Post ABI
How to work together to overcome
common challenges

+

Domestic Violence & ABI
Ending the Cycle

+

*Has your Loved One been
Hospitalized?*
Where to Start when your Loved
One has been Injured

Relationship Issue

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Relationship Barriers Post ABI

Relationships are an important part of being human. We are social creatures and that doesn't stop when someone has a brain injury.

Getting back into dating and relationships post injury should be fun and meaningful. But in order to maximize success, one must consider new challenges and how to overcome them. Becoming involved in successful dating and relationships requires one to think honestly and realistically about several things:

- Are you committed to focusing on your recovery? How will this change in a relationship?
 - Are you aware of what you have to offer and what your limitations in a relationship may be?
 - Do you want a serious relationship or just to go on some casual dates?
 - How much time do you have to spend with a partner? How much time should you expect to receive from them?
 - What role do you expect them to play? What do you expect them to bring to the table and is it realistic?
 - What behavioural and other changes do you have that you think may affect your relationship?
 - Are your answers different than they would have been prior to your injury? How?
- Working with people who have sustained a brain injury and are now in relationships, it is easy to see how certain behaviours related to brain injury may affect a relationship. If your partner knows about your injury and how it may relate to your behaviour, he/she may be more sympathetic and compassionate. Together you could use your knowledge to help overcome certain barriers to an easier relationship.

We've put together four common symptoms of brain injury to discuss how they may affect a relationship and how couples can work through them, assuming that the ABI has been disclosed.

Inflexible Thinking

Rigidity and inflexibility are often associated with damage to the frontal lobes (the most common site of injury in TBI). Cognitive flexibility enables someone to change from task to task and topic to topic in a conversation. Emotional flexibility allows one to experience a full range of emotion, express them, and carry on.

So how may this affect a relationship? Someone with a brain injury may find it difficult changing from one task to another which couples and people dating often do quickly (when on a date, for example). Explaining the inflexible thinking symptoms of brain injury will enable your partner to understand and help you transition.

Counsellor Kimberly Cohen suggests five steps to helping yourself think more flexibly:

1. Question- ask yourself if you are thinking flexibly or inflexibly. She says that thinking flexibly doesn't always mean giving in, but looking at things from a different perspective.
2. Recognize-see where you are being inflexible and ask yourself how you can think more flexibly. Good things can come from seeing things from other perspectives.
3. Clarity- when stuck in your inflexibility, your emotions may be clouding your thinking. According to Cohen, when feelings take over, it is hard to see clearly which leads to reacting and/or overreacting rather than seeing the situation clearly and responding to it.
4. Listen- take deep breath, remain calm, and listen. When you listen, says Cohen, you are

opening to other views, ideas, ways, methods, behaviours, and allowing yourself to learn from the experience.

Perseveration

Characterized by continuation of the same behaviour, thought, words, or emotions after the reason for the behaviour, thought, words, or emotions has passed or is appropriate, perseveration is a common symptom of brain injury. Potentially an obvious difficulty in a relationship where one partner has difficulty moving on from an argument or any occurrence during the day, perseveration can cause further disruption. Examples of perseveration in a relationship may include someone being unable to move on from being angry about a disagreement or being unable to stop talking about their ex that they ran into that morning. Of course this can be rather frustrating for the partner who is wondering why their loved one is talking constantly about their previous love interest when they are supposed to be “over” them. Letting your partner know that this is a symptom of brain injury may dramatically increase understanding and decrease tension around this issue.

Partners wishing to help minimize perseverative behaviours may employ methods of redirection where they can help transition away from the perseveration. Redirection can include changing the subject or activity. Limit setting may also prove useful where the partner can say “You can do that one more time but then I would really like you to stop” or “if you need to continue that, I think it would be best if we take a time out for an hour”.

In situations where perseveration is persistent, SSRI’s like Paxil, Prozac, and Zoloft may be necessary.

Personality and Mood Changes

Personality changes and moodiness are very common post brain injury and often TBI survivors will say that they died in their car accident and injury



and now they seem more self-absorbed, angry, and uninterested in anything.

Sometimes after an injury, a person may lack appropriate emotional responses (laughing, smiling, crying, etc) which can be confusing to a partner in a relationship. Again, understanding of these issues and their relation to the brain injury are essential to a healthy relationship and the partner should try not to take this personally. One thing that a partner can do is encourage the person to recognize proper emotional responses to situations as you go through them together.

In some cases of brain injury, a person may become emotionally volatile and have intense mood swings or extreme reactions to everyday situations. A partner must realize that the behaviour is unintentional and the person has lost control (to a degree) over emotional responses. Partners can help by remaining calm and not increasing stress by being critical. It may also be useful to help the person recognize when their responses are under control and reinforce that behaviour by pointing it out.

Aggressive behaviours are also common post brain injury and though you can work through this with your partner, there is never any excuse or a good enough reason to accept abuse. Obviously one needs to avoid relationships where a partner is aggressive physically. Assuming that the situation does not present a physical threat, there are certain approaches to soothing aggressive behaviour:

- Validate the emotion by letting the person know that their feelings are legitimate
- Negotiate instead of challenging or confronting the person
- Remain calm
- Suggest your partner use an outlet for aggression or techniques as set out by therapist (punching bag, walk, whatever works for this individual)
- Ask the person if there is anything you can do to help them feel better

- Leave the situation if it becomes dangerous

A self centered attitude post brain injury is also a very common occurrence. The injured person may lack empathy and find it difficult to see things through the eyes of others. Of course being thoughtful and empathetic is important in a relationship and this could be an area of strain. In order to help your partner, help them recognize their thoughtlessness and re-learn awareness of other people's feelings through supportive conversation.

Difficulty with Problem Solving

Many people who have suffered a brain injury will also have long term difficulties with problem solving which can have an effect on many areas of life including relationships and work. Someone having difficulty in this area could benefit from using the following 5-Step Process to effective problem solving. Both partners in a relationship could encourage the other to use this process but remember to keep it positive and supportive instead of treating the person in a derogatory way.

1. Define the Issue
 - a. Is it important?
 - b. Should action be taken?
2. Gather Facts
 - a. Understand the issue
3. Think about Solutions
 - a. Consider different options
 - b. Think about pros and cons for each option and write them down
4. Choose the best Solution
5. Explain the reason for the decision to the parties involved

Communication is a fundamental of good relationships and, assuming you are in a healthy and understanding relationship, educating your partner about your brain injury can help ensure your relationship continues to get stronger.



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Domestic Violence & ABI: Breaking the Cycle



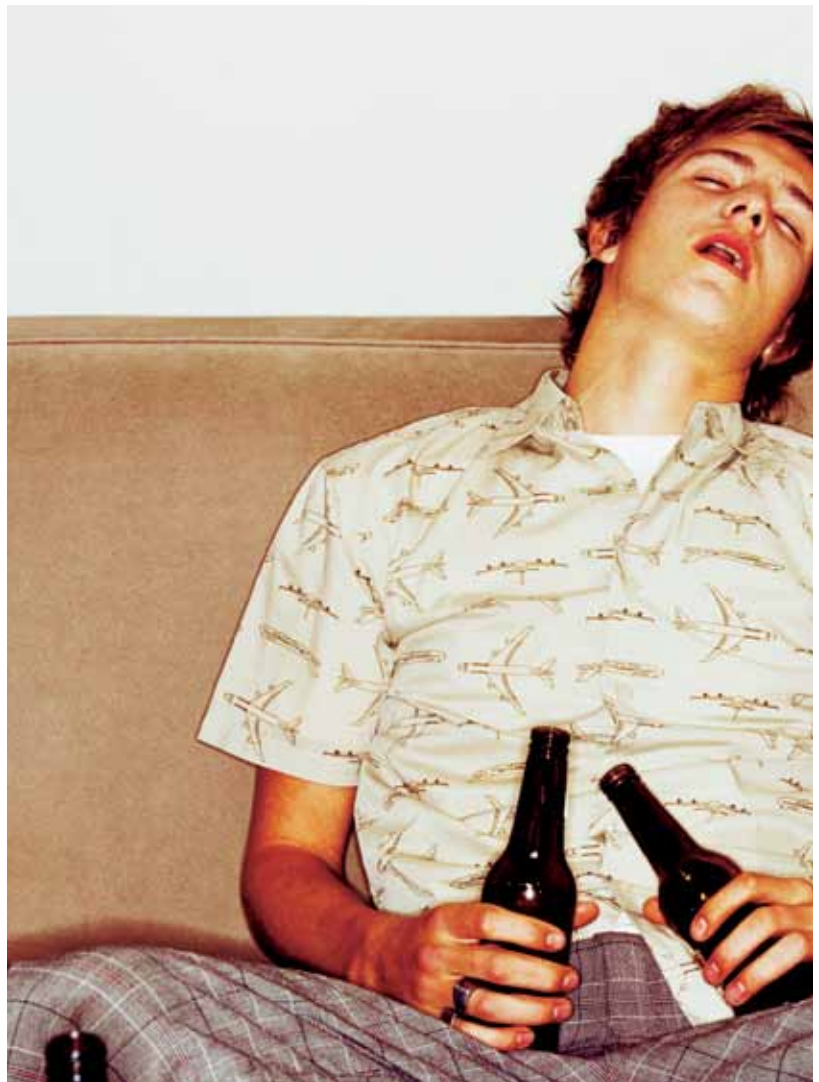
.....
• **K**aren's husband had never been violent in their relationship. He never hit her once. Not until she confronted the band member about his drug and alcohol abuse. This resulted in a fight where Karen's husband brutally beat and strangled her. Her struggle with an undiagnosed brain injury began here.

Domestic violence is a common cause of brain injury in women as the head and face are common targets of assaults. There are three types of brain injury caused by external physical force. Penetrating injuries include those where a foreign object pierces the skull, such as with a bullet, knife, or blunt object. Closed head injuries occur when force does not fracture the skull or from severe shaking. Strangulation cuts off oxygen from the brain, also resulting in a brain injury.

Brain injury resulting from domestic violence can cause an array of impairments ranging from mild to severe including cognitive difficulties (decreased ability to focus, concentrate, problem solve, and communicate); executive function impairments (seeing consequences, decision making, initiative, motivation, disinhibition, impulsiveness); changes in behaviour, personality, and temperament (moodiness, emotional liability, etc); and physical effects (vision, coordination, seizures).

Unfortunately as someone receives more and more brain injuries due to domestic violence, it becomes increasingly difficult for that person to leave the relationship and get help due to the above difficulties. According to the New York State Office for the Prevention of Domestic Violence, brain injury can make it more difficult for a victim to:

- Make and remember safety plans
 - Go to school
 - Keep a job, increasing financial dependence on abuser
 - Retain custody of children
 - Adapt to living in shelters
 - Assess danger and defend oneself against assaults
 - Leave partner and live independently
 - Assess services
- Continued...



Injured?

- Disability Insurance Claims
- Brain or Spinal Injury
- Serious Injuries
- Car Accidents

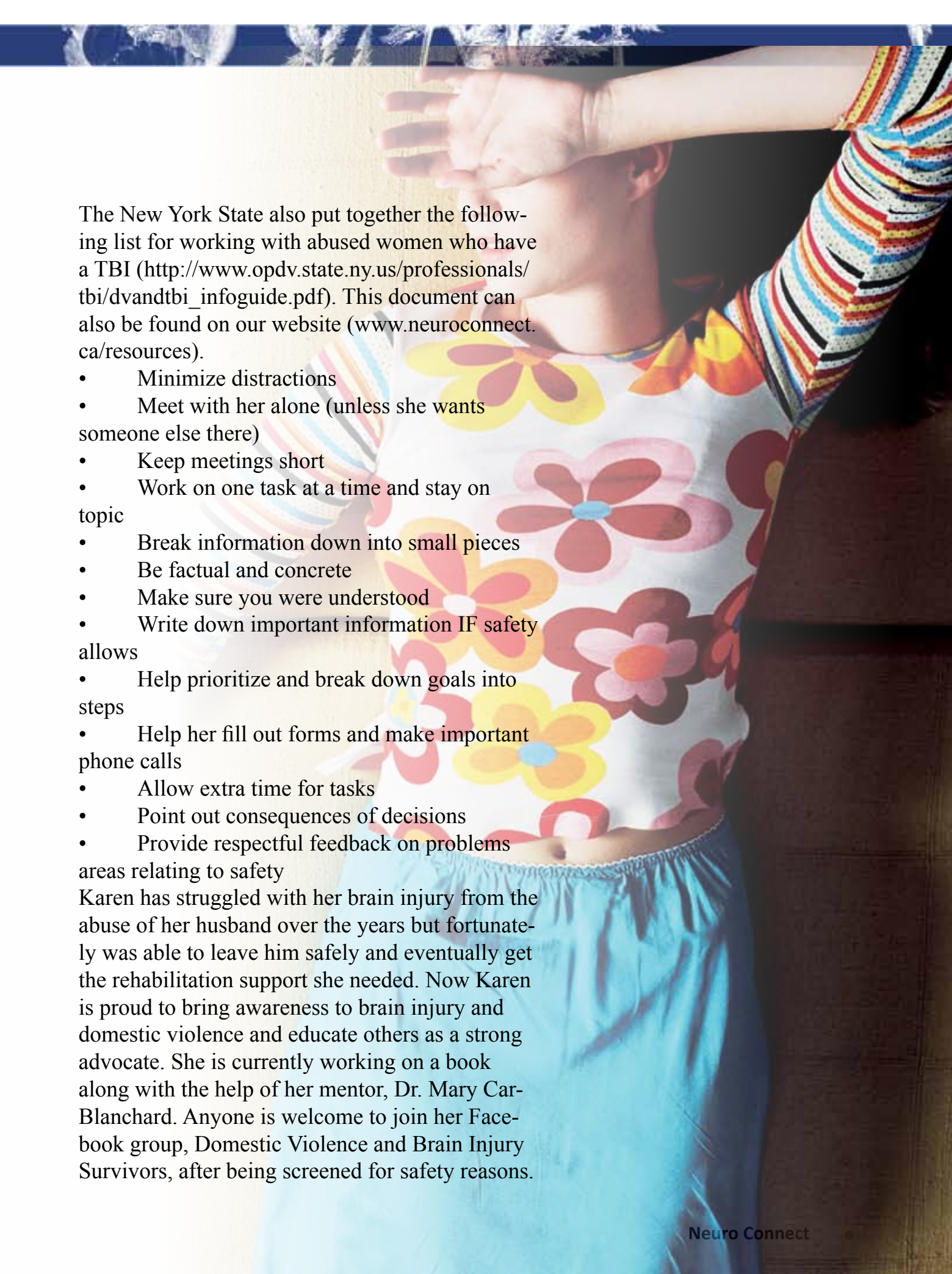


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The New York State also put together the following list for working with abused women who have a TBI (http://www.opdv.state.ny.us/professionals/tbi/dvandtbi_infoguide.pdf). This document can also be found on our website (www.neuroconnect.ca/resources).

- Minimize distractions
- Meet with her alone (unless she wants someone else there)
- Keep meetings short
- Work on one task at a time and stay on topic
- Break information down into small pieces
- Be factual and concrete
- Make sure you were understood
- Write down important information IF safety allows
- Help prioritize and break down goals into steps
- Help her fill out forms and make important phone calls
- Allow extra time for tasks
- Point out consequences of decisions
- Provide respectful feedback on problems areas relating to safety

Karen has struggled with her brain injury from the abuse of her husband over the years but fortunately was able to leave him safely and eventually get the rehabilitation support she needed. Now Karen is proud to bring awareness to brain injury and domestic violence and educate others as a strong advocate. She is currently working on a book along with the help of her mentor, Dr. Mary Car-Blanchard. Anyone is welcome to join her Facebook group, Domestic Violence and Brain Injury Survivors, after being screened for safety reasons.

Running After the Truth

Geills Meredith

The problem's not that the truth is harsh but that the liberation from ignorance is as painful as being born. Run after truth until you're breathless. Accept the pain involved in re-creating yourself afresh. -Naguib Mahfouz, 'Palace of Desire'

• • • • •
• **O**ur memories tell the story of our life. We connect to them with our senses and emotions as well as our intellect. We get our bearings from our memories: they give us useful information in order to learn, avoid repeating mistakes, set goals, understand who we are.

If I have no memories, how can I imagine my future? Who can tell my story? And what happens to my story if there is no first-person accounting of it?

“This is starting to scare me—you used to have the best memory of anyone I know.” I shared my daughter’s frustration and fear. Before my accident I kept everything in my head. There was never any need for lists and I reliably recalled whatever piece of information I needed, regardless of how tired, stressed or busy I was. Afterward, my life was governed by endless lists, lists to organize all the lists, and frequently ridiculous conversations:

“Where’s the, um ... thingy?”

“What thingy?”

“You know, the thingy that you use to wrap the other thing when you want to do some ... um ... thing.”

At times it was that bad. I can joke now, but when it was my all-day-every-day I was undone by it.

As adaptogenic herbs worked their slow yet steady chemistry-magic on my brain, as my immediate recall of words, of events just passed, increased, I looked forward to being able to retrieve memories of the years directly following my accident. Ultimately, I could not. With a few exceptions, the past eight years of my life are blank. Big empty time-spaces in my head. When I had my accident, my granddaughter was just beginning elementary school. She is about to finish her first year of high school and I have almost no memories of her growing up—despite having spent every other Sunday with her the entire time. The depth of this loss just breaks me down.

I have lost Christmases, birthday celebrations and family visits entirely. How can this be? I know I was there—I have pictures. Yet I look at those pictures with no first-person recollection. I have no first-hand connection to them, cannot conjure up the experience with my senses. I was there, yet not. And while I remember the broad strokes of some, the outlines of their occurrence, the details that would anchor me to them are nonexistent.

It’s like sleeping: I know I was asleep because I remember waking up. But there is no conscious engagement with the passage of that sleep time, no conscious awareness in the moment. Perhaps. I haven’t formed memories because I had not fully processed what I experienced while it was occur

ring. My ability to remember things, to remember the details, seems to be attached to how much stress I was under, how much was going on around me, how much my brain had to process.

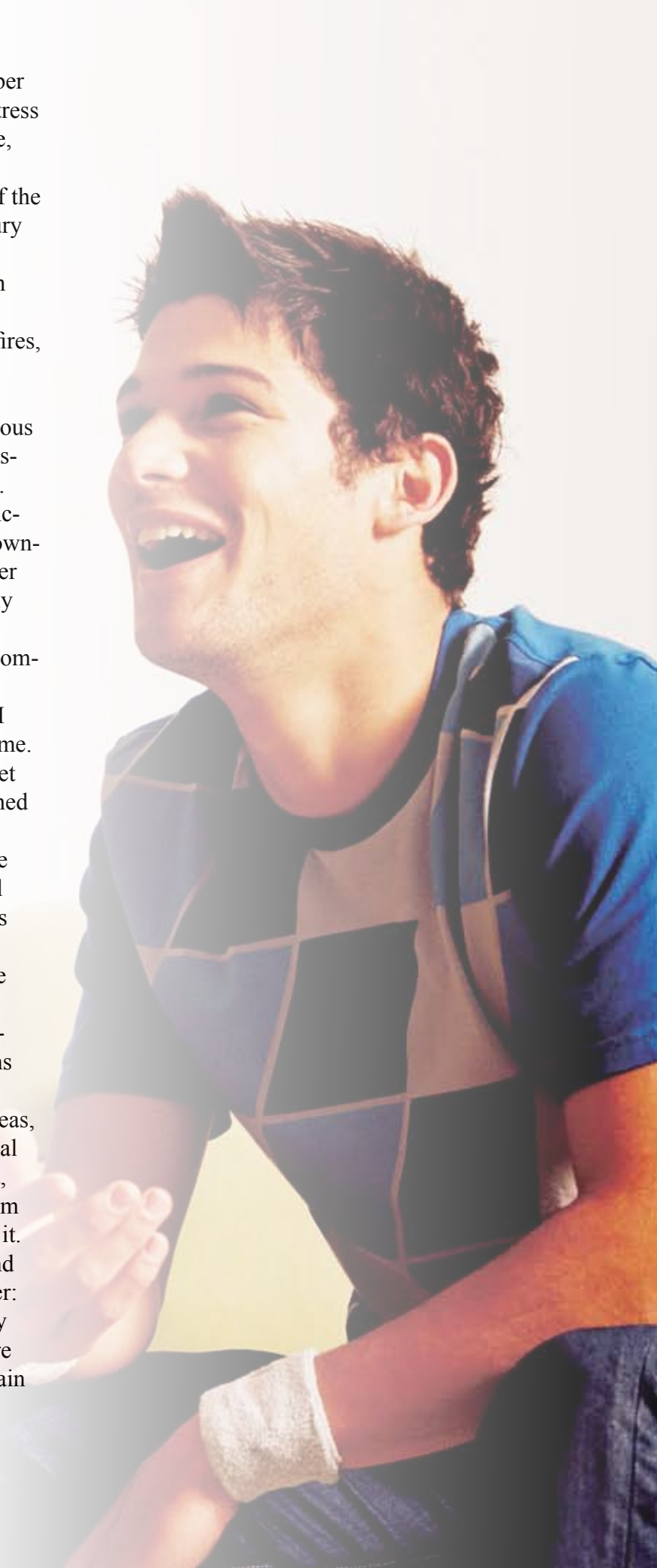
Understanding why this occurred became one of the most important aspects of figuring out what injury had done to my brain. In time I learned that the brain has systems, mechanisms, for laying down memories. If there is interference, if what is required to complete the information process misfires, then no memory will be made.

My Super Big Science

During the years following my brain injury, serious memory issues, perpetual exhaustion and increasingly poor physical health had incapacitated me. Not only was I not moving toward a state of functioning acceptable to me, my health was on a downward slide. It was one thing after another—never in my life had I been so chronically sick. Simply unbearable headaches were increasing and my digestive system malfunctioned—making it uncomfortable, even painful, to process food.

I stopped eating sugar for about a year because I felt awful, sluggish and tired whenever I had some. Helpful, but not enough. I tried a gluten-free diet for another year, thinking food allergies had joined the growing list of other allergic reactions I was inexplicably developing. This took care of more symptoms, but still not enough. As my physical health deteriorated and my cognitive capabilities stalled, I urgently needed to find answers—and threw myself doggedly into researching possible causes.

Throughout my research, regardless of the questions I asked, the way I framed them, adaptations and changes I made to the way I understood the material, I ended up at the same places, same ideas, same connections: cortisol, hippocampus, adrenal glands, Alzheimer's, PTSD, brain injury/trauma, chronic stress. It was like a cryptic message from The Beyond, and I had no idea how to decipher it. So I researched each word, idea, individually and made note of where they connected to each other: what was repeated, what overlapped, where they intersected. In the end it seemed to me that there are more commonalities between the various brain traumas than there are differences.



A year ago March, an aggressive approach with herbal supplements, consistent mindfulness meditation and a stark change in diet began what seemed like miraculous work to take me out from under the shadow over my well-being. For the first time since my accident I felt my mental and physical health significantly improve.

I have spent nearly a year-and-a-half in a perpetual state of experimentation and discovery. Thinking I was medically alone, pushing ahead with the help of my daughter, I searched for the science to explain, prove, the truth in what was restoring competence to my brain and health to my body.

The mind may be limitless and unfathomable, but the brain is a closed system, with a finite number of working parts that have been mapped. We know a lot about the brain.

Absolutely every organ and function of the body engages the brain in some way. It's a complex relay system reliant upon electrical impulses that send signals throughout the body. What that says to me is that if a person has a brain problem, then that person has a whole body problem.

This is where conventional 'Western' medicine failed me. It's not that we don't know enough about either the brain or the body—it's that we don't connect them. Problems are dealt with in a



At first I was shocked to think that I might sort out my brain problems myself. Then, alright, I admit, I became self-congratulatory and elated: "Oooh, look at meeee! I can do sciencey things! Am I not clever?" As I dug deeper, learned more, I was able to start asking different kinds of questions, to connect new concepts and information and discovered there are other people riding this wave.

Emerging from all of the information I gathered was a huge idea: I think we've got it wrong about brain injury's long-term. I think this needs redefining. It is through a new understanding of what brain injury is and isn't, what it does, that genuine recovery might become a possibility.

compartmentalized, disconnected way, as if they existed in a vacuum. And yet, the brain and body are working parts of one fully integrated, synchronized, interactive system—attempting always to communicate harmoniously; to elegantly, efficiently, dance us through life.

This connectedness is particularly evident after brain trauma. In their paper 'Traumatic brain injury: a disease process, not an event' B.E. Masel and D.S. DeWitt (Department of Neurology, U. Texas Medical Branch) state:

"Traumatic brain injury (TBI) is seen by the insurance industry and many health care providers as

an ‘event.’ Once treated and provided with a brief period of rehabilitation, the perception exists that patients with a TBI require little further treatment and face no lasting effects on the central nervous system or other organ systems. In fact, TBI is a chronic disease process ... the beginning of an ongoing, perhaps lifelong process, that impacts multiple organ systems and may be disease causative and accelerative.” (1)

The Brain Injury Network carries the point further by advocating that this chronic disease process after brain trauma be acknowledged as distinct and legitimate—referring to it as ‘Post TBI Syndrome’. (2)

From that perspective, brain trauma sets in motion a series of biological stressors and malfunctions—like a line of unbalanced dominoes, each one hitting the next and tipping, knocking, it over. As brain-body balance (homeostasis) declines, disease sets in, further contributing to overall poor health and standing in the way of recovery. As with Alzheimer’s or Parkinson’s diseases, neurodegeneration can ultimately occur. (3) There is a theory that, because of this, brain injury survivors are more susceptible to Alzheimer’s and Parkinson’s. The possible connection of brain injury to neurodegeneration and/or dementia scares the heck out of me. Am I not dealing with enough already? Please don’t tell me that after years of struggling to keep my brain functioning I may lose my mind too! Fear of this threw me fast and furious into (what was for me) the often incomprehensible world of neuroanatomy, neurobiology and endocrinology. Starting simply by Googling my symptoms, then by adapting and modifying the questions I asked as I understood more, I have travelled a startling path to where I am now: with a whole life back, with a future, with hope restored.

In the end, all the seemingly disparate threads of information came together only when I suspended disbelief about ‘natural options’; looked critically yet openly at information I had mostly been encouraged to dismiss. My current brain-body health and well-being are due to the use of herbs and food (nutrients), exercise, and by adjusting my focus (mindfulness meditation). Every time I refine my search I find more that supports non-conventional

treatment of post-brain trauma symptoms. I have come to profoundly believe in the value of adaptogenic herbs such as Ashwagandha, Rhodiola, Holy Basil (Tulsi).

By investigating the chemistry of herbs, scientists around the world are starting to provide measurable proofs that confirm what Ayurvedic, Chinese and many non-conventional health practitioners have anecdotally and observationally known for years. At Toyama Medical and Pharmaceutical University in Japan, scientists have tested Ashwagandha’s properties:

“Withanolide-A is therefore an important candidate for the therapeutic treatment of neurodegenerative diseases, as it is able to reconstruct neuronal networks.’ Thus, the active components of ashwagandha may actually be able to reverse damage caused [by] (sic) beta-amyloid and regenerate vital neural connections.” (4)

‘Able to reconstruct neuronal networks’...? Are you kidding me? ‘Reverse damage caused by beta-amyloid’...? Wow. Beta-amyloid is a marker for Alzheimer’s. Why have we been so slow to incorporate information from other countries and medical traditions into what we already know and practice?

As I started to actually understand some of the science behind adaptogens, behind my health problems, I wondered if the brain has a universally applied emergency response, despite the cause of trauma.

Dr. Robert M. Sapolsky confirmed that there is a standard neuroendocrine stress response. (5) Dr. Sapolsky is an award-winning neurobiologist and neuroendocrinologist currently working at Stanford



University in several departments: Neurology and Neurological Sciences, Neurosurgery and Biological Sciences. He has focused his research on stress and neuron degeneration and techniques to strengthen neurons against glucocorticoids' debilitating effects.

Dr. Sapolsky's material was so far beyond my experience and intellectual capability at the time that I had to read it, listen to him, in ten-minute increments. Start. Listen. Stop. Re-read. Re-wind. Pause. Oh, wow, time for tea...

Nonetheless, I slogged away and with him as my guide, came to understand the why and how of the symptoms I had learned to attribute solely to brain injury. In order to explain how I did this it's necessary to walk through some Big Science. For those who, like me, aren't really interested in or used to such things, I apologize right now.

The Hippocampus

Brain injury damages the hippocampus. (6)

Well, alrighty, but what is the hippocampus, exactly?

The hippocampus is small, seahorse-shaped, and located in the limbic system of the brain. "Deep inside each hemisphere of our brain is a structure that controls our emotions and memory. The hippocampus is part of this structure. It is our memory indexer. You might think of the hippocampus as the document manager of your mind. It maintains your brain's filing system, filing away your important memories and retrieving them when called on to do so. It is also your brain's navigation system, helping you find your way around. And it's your brain's learning center." (7)

As Dr. Sapolsky puts it, the hippocampus is "ground zero" for memory and learning. It is critical for declarative memory—what we can call up intentionally, consciously. (8) The hippocampus is also intrinsically involved in anxiety and depression. Not in a good way. Chronic anxiety and depression can be an indication of neuron death in the hippocampus.

Always busy, the hippocampus is like an information transfer hub, receiving and sending signals continuously throughout the brain and body. It is a gateway for information transfer to the neocortex, directly affecting executive function. (9)

So what happens to the hippocampus to cause neuron death, anxiety, depression, memory loss, learning difficulties and potential disengagement from executive function?

Glucocorticoids

Glucocorticoids are a type of steroid hormones produced in the adrenal glands, used in the metabolism of glucose as well as in the immune system to keep inflammation down. Cortisol is our most important glucocorticoid.

Without cortisol we would never wake up. It's our jump-start hormone. Without cortisol we would die. It's our energy booster. High levels of cortisol are released during stress.

It works like this: you experience stress or trauma, the brain understands it as danger and throws you into 'fight or flight'. Immediately a string of events occurs within the brain and body to ensure you will survive.

First there is the mobilization of energy—all available energy is routed to appropriate systems to get you through what is happening. Your heart-rate, blood pressure and breathing increase. Within seconds there is a neuroendocrine cascade along the hypothalamic-pituitary-adrenal axis (HPA).

The HPA axis is our adrenal highway—a complex relay-feedback system from the adrenal glands to the brain. Hormones, such as cortisol, are secreted from the adrenals (located at the top of the kidneys) then travel along the spine via nerve endings up to the hypothalamus and ultimately along more nerve endings into the hippocampus.

This will control your reaction to stress and regulate numerous body functions including digestion, immune functions, sexuality/reproduction, emotions, energy (expenditure and storage). In the short term, senses and cognition are sharpened so the brain is more alert, the mind sharp. In an emergency you need your wits about you.

As the heart and brain work more acutely, split-second decisions are made about all other bodily functions. The brain is deciding what will be necessary in order to survive the stress/trauma. Anything unnecessary will be put on hold or shut down. In effect, the brain thinks: "Don't worry about the long term projects until you know there's a long term." (10)

It's a brilliant little system, a wonderful and necessary adaptive stress response, that takes us from being Clark Kent to Superman. And it's meant to be an emergency service only. This is in-and-out as fast as you can stuff. It was never intended to be used chronically or normatively. In the short term, glucocorticoids helpfully make their way to their highest receptors located in the hippocampus, in order to enhance its function and ensure our survival. Released unrestrained over the long term they kill neurons.

Hormones aren't the only means to keep the brain up and running. Also important is glutamate—an amino acid and excitatory neurotransmitter located in the hippocampus. According to Dr. Sapolsky: “That’s how you pull off learning and memory—you need a super-excitatory neurotransmitter.” (11)

Trauma derails orderly glutamate dispersion. (12)

In proper amounts, both glucocorticoids and glutamate are necessary and beneficial to the brain. Too much wreaks havoc and ultimately can literally excite neurons to death. This is how it happens: head trauma triggers a glucocorticoid stress response, which then triggers glutamate over-release. Together these cause every single step in the neuroendocrine pathway to stumble in some way. Malfunctioning over time ultimately leads to neuronal death and hippocampal atrophy/shrinkage (the final outcome of this is brain degeneration).

All of this activity causes a massive energy crisis in the brain as hormones, neurotransmitters, neurons and all their support mechanisms scramble to keep information systems up and running. It is a damaging cycle of over-excitement and over-activity that becomes toxic and, finally, exhausts. I ended up with a double-whammy energy crisis: too much in the brain, too little in the body.

Can this killer cycle be arrested, restoring balanced energy to brain cells in the hippocampus?

There are energy-producing ways to slow down or stop the damaging effects of glucocorticoids and glutamate run amok: pharmacological, surgical and the one that appealed to me, supplemental. Dr. Sapolsky tells us that ketones and mannose will provide the type of energy needed to neutralize the over-release problem while halting escalating damage. We can save neurons! Sometimes there is a benefit to not knowing what you’re doing because you also don’t know what you can’t do. It was through researching ketones and mannose (new words to me) that I rediscovered amino acids. Amino acids are the building blocks of life. (13) This is where I had my Eureka moment.

Amino acids, ketones and mannose led me to the same destination: diet. Ketones are available in coconut oil and meat, amino acids in protein and mannose is present in green beans, tomatoes, cranberries and blueberries. I found out that mannose may not be as effective as the other two when consumed through diet, however. Since I needed help fast, I decided to concentrate on ketones and amino acids.

A vegetarian for most of my adult life, post-brain injury exhaustion had made me reliant on foods that were quickly prepared and easily consumed: carbohydrate-heavy commercial pasta and breads and highly processed fake meats. As it turns out, the farther away from its original state a food is, the worse it is for my brain.

Since ketones will readily replace glucose in the hippocampus, halting the damaging flooding of sugar in the wounded brain, I made the difficult decision to eat meat once again and significantly reduce my carb intake. No more donuts for me. I haven’t cut out carbs altogether—that would simply create a whole new set of dietary problems. What’s gone are the ‘empty’ carbs, replaced entirely by high-fibre whole grains (such as quinoa), eaten sparingly and with protein.

Meat, the Idea, the Kind-of-a-Plan

Since I am no scientist, no medical professional, I needed to come up with a kind of ‘kitchen table’ plan for my post-brain injury health care. It needed to be reasonably easy to prepare and follow, affordable and consistently deliver the results I expected. I wanted food and exercise to address my neurological problems.

My idea was simple: if I could find a way to simultaneously reduce the cortisol cascade that was stupefying or killing my brain cells (hippocampal neurons), neutralize the destructive effects of glucocorticoids and support and strengthen my brain cells, I could (theoretically) eradicate the cognitive problems that had trapped me in a web of chronic brain breakdown.

My plan is a work in progress, evolving slowly, still changing and morphing as I discover information new to me. This is the gist of it: to aggressively attack the over-release of glucocorticoids and glutamate in as many different ways as possible via adaptogens that will normalize cortisol and repair damage, L-Theanine to regulate my brain waves, vitamin C to support my adrenal glands, other supplements to decrease brain and body inflammation, low carbohydrate intake to curb glucose in my brain, high quality meat to supply ketones as a beneficial energy source (no medicated, factory farm meat; no nitrites), exercise to increase oxygen in my brain and aid in the formation of new neurons, and mindfulness meditation to practice mental discipline, focus my thoughts, adjust my behaviours. It’s working.

I have learned that through a process called neurogen

esis, hippocampal stem cells create new neurons that can migrate to other parts of the brain. I have no idea how many of my neurons gave up the ghost during the eight years they were being bombarded by cortisol and glutamate, but perhaps now that that has stopped, my brain can use its energy to rebuild.

Eight years ago I couldn't tie my shoelaces, count to ten without confused faltering, remember my children's names (without mixing them up with the dogs'), walk a block from my house without getting lost.

Four years ago I still couldn't calculate numbers, stay awake for the whole day, remember without referring to detailed lists, or pro-actively manage my anxiety and anger.

Two years ago, having plateaued in an awful place of disorientation, brain fog, I also became physically ill. My anxiety constant, I was perpetually in a state of 'fight or flight', hyper-vigilance, on high alert. Merely navigating these symptoms was my ongoing normal.

Now I have almost none of the problems brain injury created in me—the debilitating symptoms that hijacked my life have substantially decreased or disappeared altogether. I have once again taken over managing the household finances. I can access information at will—spontaneously stopping in at the grocery store without a list recently I managed to remember what we needed. And, happily, I still remember last Christmas.

This is not me doing the best I can under very difficult circumstances, as was the case previously. This is me feeling well and whole again. This is a completely different trajectory, a path both familiar and yet new. This is my brain making connections, firing correctly—consistently and reliably doing what my mind directs it to do. Me functioning in a surprisingly close pre-brain injury way cognitively, but with an understanding deeper than I had ever imagined.

Gone are the disabling exhaustion, brain fog, intellectual 'running to catch up', disorientation, inability to access information, numeracy problems, brain suddenly crashing, insomnia, runaway/escalating anxiety and anger. Headaches are infrequent and shorter in duration. What remains is some difficulty with organizing,

vulnerability to stress, more emotional reactivity than I'd like, slower information processing and some residual verbal communication problems. What it comes down to is a matter of degree and I can tolerate so much more before I tire than I could even six months ago.

I have no idea how long I will need to take supplements, whether or not damage has actually been halted or is being reversed. Will I hit another plateau? Will I slide backwards neurologically? Time will be the teacher here. With time it will become evident whether or not diet and adaptogens have repaired my broken brain—or if I will be dependent upon my current regimen for the rest of my life.

My journey to good brain-body health seems to have been more complete and effective than others I know who are using similar plans. I have no idea why or what the mitigating factors are—which is why I believe that conventional and naturopathic doctors need to fully collaborate, both bringing their best medical knowledge to solving the problems created by all brain trauma. It seems to me that it is through an integrative approach, with the survivor as a significant partner, that each individual has the best chance for genuine recovery.

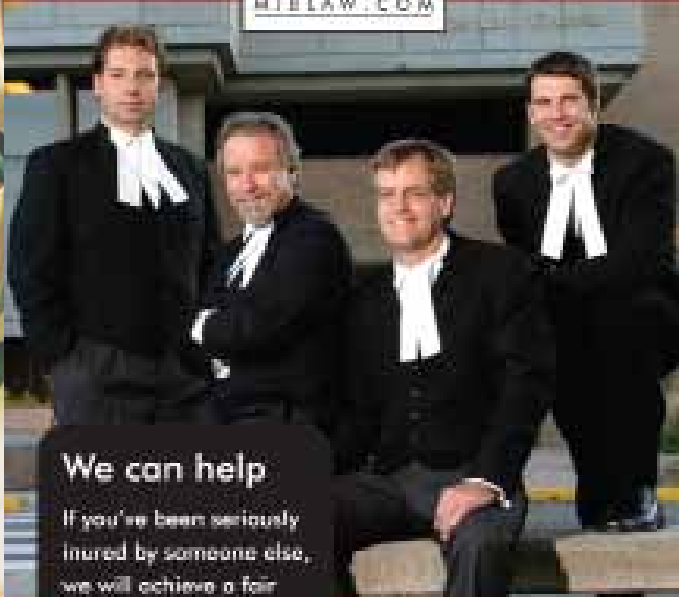
Despite all the research I have done, there is so much more (than I have covered here) involved in brain injury and its aftermath. I intend to follow this path as far as I can go along it, hopefully finding permanent means to end the disabling legacy of brain trauma. In the meantime, what I'm doing now feels like such a good start.

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Continued...



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MY SUPPLEMENTS SUPERSTARS

Some of these have special rules for consumption, for stopping once started, may interfere with pharmaceuticals you might be taking. Unless you are trained in natural supplements it's really important to talk to an appropriately trained professional before you try them. I take quite low dosages, as follows:

L-Theanine: (300mg/day) Helps to regulate brain waves, providing mental calmness and clarity. It doesn't need to be taken as a supplement, but can be drunk as a tea. L-Theanine is found in high amounts in 'Matcha' green tea.

Rhodiola Rosea: (375mg/day) Adaptogen to help manage stress.

Ashwagandha (Withania somnifera): (250mg/day) The first time I took this adaptogen it upset my stomach. After six months of handling my stomach problems I was able to tolerate it with no problems.

Holy Basil (Ocimum Tenuiflorum): (250mg/day) Only take this adaptogen if you know for a fact that your cortisol is too high. If your cortisol is low it will make your symptoms worse. Also available as 'Tulsi' tea.

Siberian Ginseng: (150mg/day) I take this adaptogen in a mix with 75mg/day of Green Tea Extract.

WobenzymN: (6/day maintenance dosage) Suggested by a Naturopath immediately following the accident, I take this for inflammation.

Choline & Inositol: (500mg/day) I have stopped these now, but took them for about four years.

Magnesium Citrate: (150mg/day) I take this at night with Holy Basil—good sleep, no anxiety.

Vitamin C: (2000mg/day) I take this with Citrus Bioflavonoids 1300mg/day. Do not stop Vitamin C all at once—decrease in 500mg increments every 2-3 days.

Turmeric: (900mg/day)

Vitamin D3: (2,000 I.U./day)

It's important to understand that adaptogens work differently for everyone. While I believe L-Theanine, Rhodiola and Ashwagandha are all appropriate for stress and brain trauma, the others might be specific to my needs. Discussing your symptoms with a knowledgeable health care professional is the best way to ensure you are taking what you truly need.


FOOTNOTES:

1. Traumatic brain injury: a disease process, not an event. B.E. Masel, D.S. DeWitt, Dept. of Neurology, Transitional Learning Center at Galveston, The Moody Center for Traumatic Brain & Spinal Cord Injury Research/Mission Connect, The University of Texas Medical Branch, Galveston, Texas <http://www.ncbi.nlm.nih.gov/pubmed/20504161>
2. <http://www.medicalnewstoday.com/articles/226353.php> Brain Injury Network—'Post TBI Syndrome'
3. 'Are There Other Long term Problems Associated with a TBI?' National Institute of Neurological Disorders and Stroke http://www.ninds.nih.gov/disorders/tbi/detail_tbi.htm#170003218
4. Institute of Natural Medicine, Toyama Medical and Pharmaceutical University, Sugitani, Japan: 'Supports Normal Brain Function' <http://www.smart-publications.com/articles/print/clear-your-brain-of-the-toxic-gunk-that-causes-alzheimers-disease1>
5. 'Stress, Neurodegeneration and Individual Differences' lecture, Dr. Robert M. Sapolsky; 45:40 <http://www.youtube.com/watch?v=Ap61Q67wDVA&playnext=1&list=PL6FBF6E4574DA82E8>
6. Hippocampal head atrophy after traumatic brain injury. M. Ariza, et al, Dep't of Psychiatry and Clinical Psychobiology, U. Barcelona: <http://www.ncbi.nlm.nih.gov/pubmed/16352320>
7. <http://phyt-ality.com/?p=338>
8. 'Stress, Neurodegeneration and Individual Differences', Sapolsky lecture
9. "... the hippocampus is not the equivalent of the brain's hard drive but rather a gateway, 'a structure, through which all information must pass, before it can be memorized.'" Kempermann, G. 2002.
10. Sapolsky lecture—per footnote #5
11. Sapolsky lecture—per footnote #5
12. "It is known that following brain injury, glutamate is released from injured cells and extends brain damage by over exciting neurons in the neighborhood." http://www.nutrained.com/brain/neurotransmitters_aminoacids.htm
13. "Every cell in the body is comprised of proteins. Amino acids are the chemical substances that make up protein.": <http://www.glisonline.com/essential-amino-acids.html>

Part of the reason why we started NeuroConnect was to share our personal experiences in the area of brain injury with others. If you read George Armstrong's "Falling through the Cracks" in our last issue, you will know that a close family member of his suffered a brain injury, signed away their rights to support, and was left to navigate through life post injury on their own without even being aware of their injury. We've put together a few notes for readers with a family member in the hospital post injury now:

1. If your loved one has had a car accident or any other accident where the head suffered an injury, read up on brain injury now.
 - Did your loved one go unconscious, black out, have any type of amnesia, loss of motor control, difficulty speaking, etc? They could have a brain injury and learning about it now will help you make sure they get all of the help they will need in the future.
2. Never sign anything or let your loved one sign anything without a lawyer (especially brought in by the insurance company trying to "help you out")
 - If the insurance company brings you papers saying they will pay for your car, loss of income, etc., this may be an indicator that your loved one potentially has an injury serious enough for more compensation- which they will need later on.
 - Your loved one may need more medical or financial assistance in the future. Never agree to signing something without a qualified lawyer who specializes in personal injury.

Continued...



3. Research legal issues and find an appropriate personal injury lawyer to talk to. Lawyers should not charge for meeting up front and usually take their fee as a percentage at the end of a personal injury case settlement- there is no need to pay up front, so don't let that stop you from getting the help you need.

4. Take time for and care of yourself now!

- If your loved one has a serious injury you will be putting in a lot of time and effort when they return home- pamper yourself now and find a way to continue this as you won't be a help to your injured loved one if you don't take care of yourself.

- Don't feel guilty accepting help from others!

5. Mourn the loss of "the old (insert name here)".

- If your loved one sustained a head injury, they will likely have many changes to their personality. Mourn the loss of the person your loved one used to be and get ready to embrace the new. It may be a rocky road with many of and downs but there will be plenty to celebrate in the future!





You are not alone. We are here to help.



Because accidents happen, it's nice to know someone will be there for you. Just remember - you are not alone. Give us a call, we are here to help.

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