

SURFER'S BRAIN INJURY & CONCUSSION GUIDE



**Strength In Pain
Foundation**

Symptoms of Concussion Include:

Headache: can be acute or persistent

Whole body: blackout, fatigue, or poor balance

Cognitive: amnesia, disorientation, or mental confusion

Sleep: sleep disturbances or sleepiness

Gastrointestinal: nausea or vomiting

Also common: irritability, mild depression, ringing in the ears, or sensitivity to light

Post Concussion Syndrome

What is post-concussion syndrome?

Post-concussion syndrome (PCS), or post-concussive syndrome, refers to the lingering symptoms following a concussion or a mild traumatic brain injury (TBI).

This condition is typically diagnosed when a person who has recently experienced a head injury continues to feel certain symptoms following a concussion. These include:

- headache
- dizziness
- vertigo
- fatigue
- memory problems
- trouble concentrating
- sleeping problems
- insomnia
- restlessness
- irritability
- apathy
- depression
- anxiety
- personality changes
- sensitivity to noise and light

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CONCUSSIONS AND SURFING

Concussions can happen anywhere at anytime. They are quite common in surfing. Traditional concussions usually happen from a blow to the head. Examples of this in surfing would be a surfboard hitting someone on the head, a collision with another surfer, hitting your head in the bottom of the ocean, or getting hit hard by a large wave on the head.

Contrary to popular belief, getting violently shaken by white water while duck diving or after a wipeout can cause a concussion or “sub-concussion”.

If you got “cleaned up” by a big set while paddling out, and got violently thrashed around in white water, to the point where you were light headed or seeing stars, you have most likely experienced a sub-concussion.

Repetitive sub-concussions can lead to Post Concussion Syndrome and even CTE (Chronic traumatic encephalopathy) which has been made famous by NFL Football players repetitive head injuries.

Although repetitive sub-concussions can be unavoidable in surfing, there are proactive things surfers can do to counteract long term brain injury. For example, if a surfer knows they are going to surf in waves that are larger and more powerful than usual, perhaps on a surf trip, or during a big swell, they can do a session of hyperbaric oxygen therapy (HBOT) before and after the swell or trip. Cutting out caffeine and alcohol, and eating as healthy as possible before, during, and a while after a big swell can really help your body keep inflammation levels low.

CONCUSSIONS AND SURFING

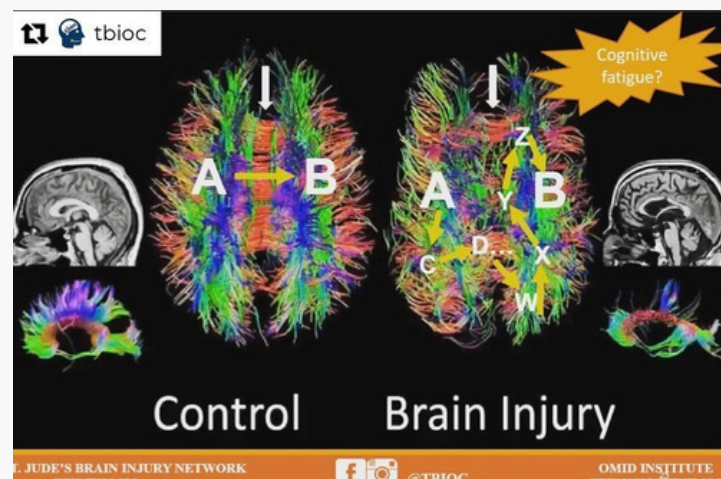
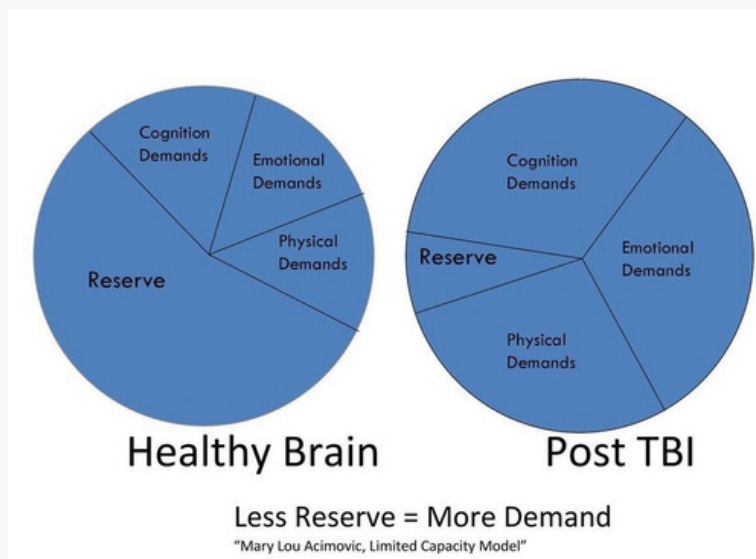
If you have suffered a blow to the head while surfing a great protocol to follow is:

1. Go seek medical attention to make sure you do not have internal bleeding in your brain.
2. HBOT! Do a treatment of Hyperbaric Oxygen Therapy as soon as possible!
3. Take brain healthy supplements such as Omega 3 Fish Oil and others.
4. Hydrate
5. Rest
6. If you are experiencing symptoms limit use of cell phones and limit screen time. Rest. And regulate your sleeping time.
7. No drugs or alcohol/caffeine
8. Do not surf for as long as symptoms are limiting your everyday life!! There will be another swell!
9. If symptoms persist contact a provider that specifically treats brain injury. If you need help finding one contact Strength in Pain Foundation.

The images below show examples of what people with more permanent long term brain injury symptoms deal with.

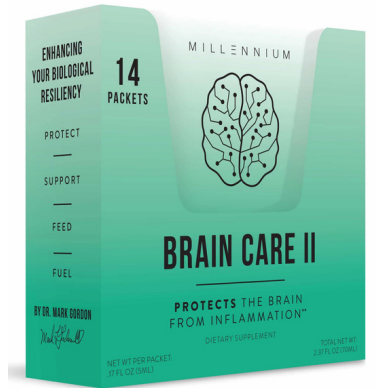
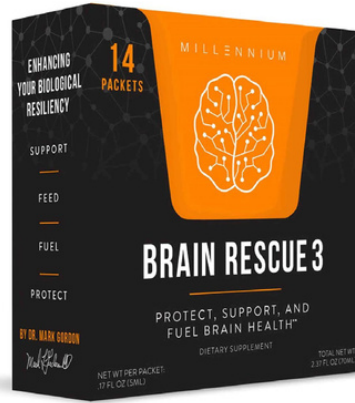
Image 1 shows the amount of energy a damaged brain uses and the lack of “reserves” it has compares to a healthy brain.

Image 2 shows how difficult it is for a damaged brain to connect thoughts together.



Supplements for Neuroinflammation

Regardless of the actual cause of trauma - physical - emotional - chemical - the ultimate production of inflammatory chemicals (Cytokines, Chemokines) by neurons and glia cells in the brain, is the final common pathway. The longer these chemical are produced and in contact with your neurons, the greater is the destruction of cells and signaling pathways that allow us to function. What develops are changes in our psychological, physical, and physiological well-being. Reverse the inflammation and we change the outcome.



The production of brain hormones (Neurosteroids) as well as all chemical of the brain are based upon a healthy environment promoting their production. When there is inflammation it is like trying to grow a tree in a cesspool, it ain't gonna happen. This is a Non-Neuro-Permissive Environment. Supplements for Neuroinflammation focus on reducing inflammation in order to re-establishing a Neuro-Permissive Environment so that your brain can heal.

Breathwork & Meditation



In discussions (and studies) about how Breathwork such as the Wim Hof Method benefit the neuro-typical person, there's a lot of emphasis on the benefits of creating blood cells that deliver more oxygen to the brain, and how Breathwork delivers oxygenated blood supply to the deeper parts of the brain. The effects on the autonomic nervous system are also documented.

Meditation is also a powerful tool that can help mitigate the stress response and even create beneficial neuroplasticity. Attention and emotional self-regulation can be common symptoms following a TBI, which can be improved through this process of mental training.

Treatments For Brain Injury / Concussion



HYPERBARIC OXYGEN THERAPY

Many studies show the effectiveness of HBOT in improving brain function and quality of life in mild traumatic brain injury (mTBI) patients suffering chronic neurocognitive impairments. The common conclusion is that HBOT can induce neuroplasticity, leading to repair of chronically impaired brain functions and improved quality of life in mTBI patients with prolonged post-concussion syndrome (PCS) at late chronic stage. Studies also reveal that HBOT can reduce cognitive impairment related to memory performance and connectivity using functional MRI.



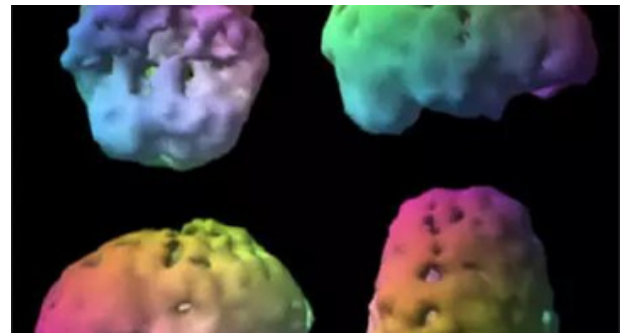
NEUROFEEDBACK THERAPY

Neurofeedback for brain injury
Neurofeedback, also called EEG biofeedback or neurotherapy, is a research proven way to improve your brain function through intensive brain training exercises. Although the technology is quite sophisticated, the process is simple, painless, and non-invasive. It is just learning. You learn to alter your brain activity the same way you learn every other skill – through feedback and practice. What is new in neurofeedback is that you are guided by a form of feedback that was previously not available to you – instantaneous information about changes in your brain's electrical activity. Every half second, your brain activity is compared to your targets for change. You get a signal and "reward" when you meet the goal. No signal or reward when you do not.



TRANSCRANIAL MAGNETIC STIMULATION

Transcranial Magnetic Stimulation (TMS) is used primarily for the aberrant mood swings experienced by TBI patients including depression, anxiety, etc. There is also evidence that TMS is beneficial for pain experienced by TBI patients. TMS is non-invasive, does not involve insertion of intravenous lines or surgery and does not require any anesthesia or sedation. A small electromagnetic coil, controlled by a computer program, is used to deliver short, powerful bursts of magnetic energy focused precisely on the left side of the brain's frontal cortex.



SPECT IMAGING

Brain SPECT (single photon emission computed tomography) is a state-of-the-art brain mapping tool that can give psychiatrists more information to help their patients more effectively. SPECT is a nuclear medicine study that is proven to reliably evaluate blood flow and activity in the brain. SPECT allows physicians to look deep inside the brain to observe three things: (1) Areas of the brain that work well, (2) Areas of the brain that work too hard, and (3) Areas of the brain that do not work hard enough.

BRAIN INJURY PROVIDERS IN SOUTHERN CALIFORNIA

Dr. Mark L Gordon M.D.
tbihelpnow.org
mellenniumhealthstore.com

Bloch Wellness
Blochwellness.com
6324 E Pacific Coast Hwy, Ste C, Long Beach, CA 90803

Amen Clinics
Amenclinics.com
3150 Bristol St., Suite 400
Costa Mesa, CA 92626

St Jude Brain Injury Network
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