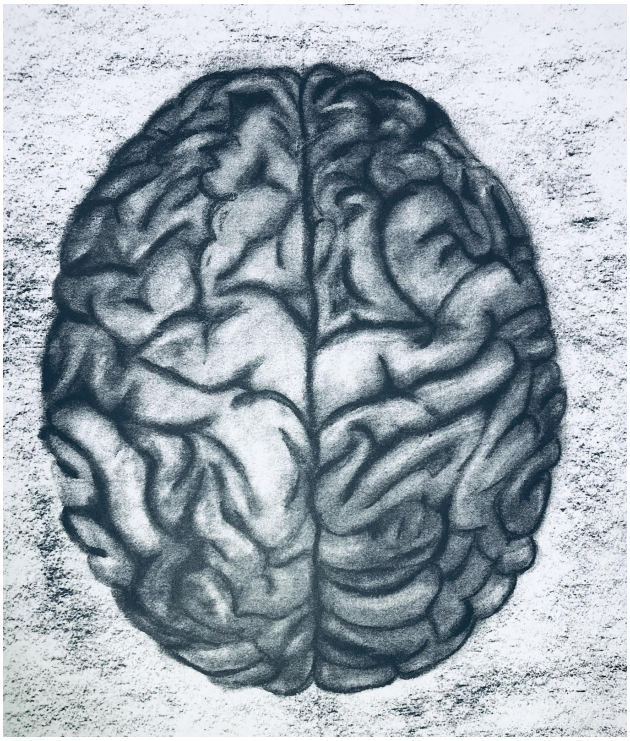
Brain Injury Recovery Guide



Healing Strategies after Brain Injury

Mary Pavlantos PT, DPT, CBIS

Certified Brain Injury Specialist & Vestibular Physical Therapist

Purpose of this Book:

The purpose of this book is to be a simple & interactive guide that is easy to read for those suffering from a brain injury & for their family members.

I compiled the most useful information I have come to encounter over the past 15 years as a physical therapist working with brain injuries and having a father who suffered a brain injury from a car accident.

I hope this book gives you the answers to the "Invisible Injury" that we never had.

Topics of this Book

Education on Brain Injury & Symptoms

- Head trauma can occur from a strike to the head or whiplash injury
- Brain injury can occur from a stroke, brain tumor, MS or other injury to the brain tissue
- Loss of consciousness is not necessary to get PCS
- PCS = Mild Traumatic Brain Injury
- Most concussions heal in 10 days
- Damage to the brain may be due to a neurochemical change and often does NOT show up on an MRI
- Avoid getting another concussion if the first has not healed
- Brain injuries are like snowflakes, each one is unique!
- The brain DOES heal!

My Brain Injury Occurred: _____

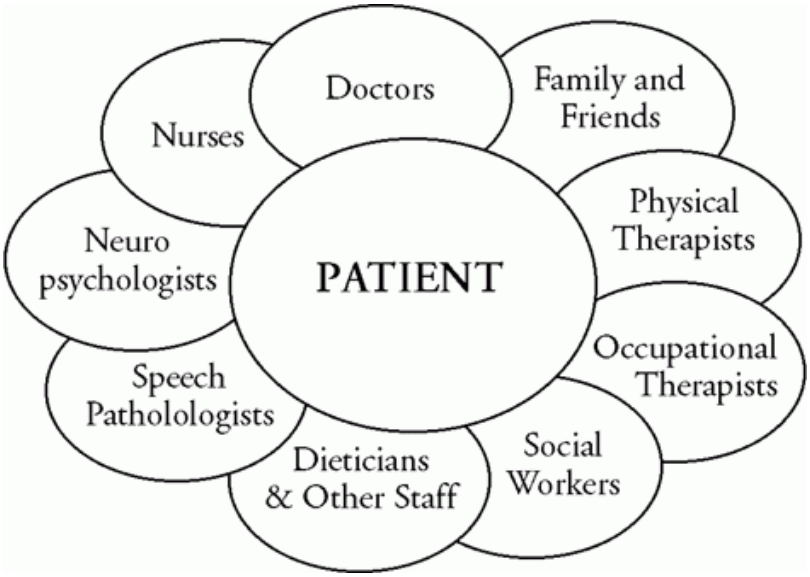
Symptoms

Put a Check in the Boxes next to the symptoms you are experiencing*

- ❑ **Serious Head Trauma**
  - ❑ Neurological changes (weakness in arms or legs), vomiting, seizure activity, loss of conscious, unequal pupil size, confused or slurred speech, or memory/cognitive changes.
- ❑ **Vestibular or Visual Dysfunction** (90% of PCS)
  - ❑ Dizziness & Balance changes
  - ❑ Blurry or Double vision, difficulty reading, tracking objects
- ❑ **Headaches** - Eyes, head, throbbing, neck tension
- ❑ **Increased Fatigue levels**
- ❑ **Light/Sound Sensitivity**
- ❑ **Thinking & Remembering**
  - ❑ Unclear thinking, slowed processing, difficulty concentrating, memory loss, decreased organizational skills, mental fatigue
  - ❑ Difficulty with work or school activities
- ❑ **Emotional**
  - ❑ Irritability, sadness, more emotional, nervous or anxious
- ❑ **Sleep**
  - ❑ Sleeping more than usual, loss of sleep, trouble falling asleep
- ❑ **Hormonal changes** - weight changes, changes in menstrual cycle

It Takes a Team to Heal a Brain!

Who's on your team? Please fill out



Team Healers

- **Doctors/Neurologist: _____**
- **Physical Therapist/Vestibular Specialist: _____**
- **Occupational Therapist: _____**
- **Speech/Cognitive Therapist: _____**
- **Chiropractor:_____**
- **Massage Therapist: _____**
- **Mental Health therapist:_____**
- **Neuropsychologist:_____**
- **Vision Doctor: _____**
- **Athletic Trainer: _____**

Support Team:

- **Family & Friends who can help**

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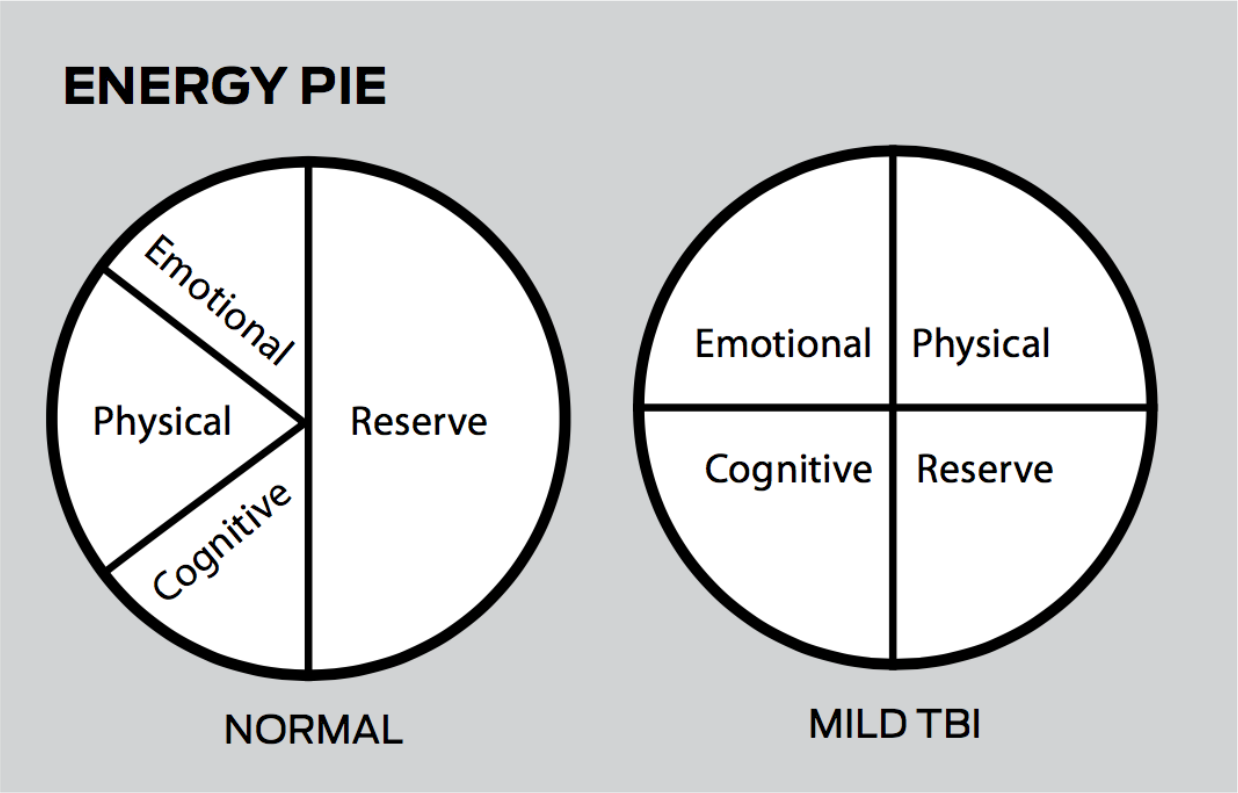
The Brain Battery

Emotional, Physical & Cognitive deficits will drain your energy battery, so make sure you recharge with rest!

Difficulty in one area will directly affect the other areas!



Source: Denton

Strategies for recharging the Brain Battery:

- Take frequent rest breaks through the day; 5-10 min/hour
- Take an early afternoon nap for severe fatigue
- 8-10 Hours of Sleep at night
- Not too much sleep! Studies show quicker return to recovery if normal life functions are integrated into the day

Sleep Hygiene Strategies

- Routine, routine, routine with some willingness to be flexible
- Low stimulation - No phone, TV or computers within 2 hours of bed
- Stop eating 3 hours before bed
- No exercise, caffeine or stimulants within 3 hours of bed
- Bed is only for sleeping (move work, etc to another room)
- Avoid alcohol 4-6 hours before bed
- Room should be dark and cool at 68º F
- Get outside during the day!
- Pillow should allow for neutral neck position
- No snooze button
- Weighted blanket - deep pressure input will calm the body
    - Mosaic Blanket online is good
- No distractions with sleeping - turn cell phone to airplane mode

SLEEP NOTES: (Develop a routine, rest times, & a bedtime)

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Relaxation Strategies

- Consistent bedtimes routine
- Calm Application on phone - Start 7 Days of Calm today!
- Deep breathing - In Nose and Out Mouth for 10 cycles

Progressive Muscle Relaxation:

- Lay on your back in bed
- Legs relaxed and palms facing up towards the ceiling
- Squeeze and relax all the muscles in your body, emphasize the feeling of relaxation after contraction. Hold for 2 seconds
- Start with Toes > Ankles > Knee muscles > Glutes
- Move up to Hands > Shoulders > Neck & Facial Muscles
- Breathe 8-10 mindful breaths feeling the relaxation within your body

Sleep Aides

- Essential Oils: applied topically or in diffuser
    - Lavender, jasmine or night time blends
- Heat
    - Around Neck or in areas of pain
- Gentle Eye pressure with hands
    - Lavender eye pillow (amazon)
    - 2 washcloths on eyelids
- Meditation & mindfulness
    - Practice calming your thoughts
    - Thinking of a relaxing happy place
- For severe sleep difficulties consult your doctor for medication or supplement options such as Melatonin

Anxiety, Stress, & Anger Management

Stress Relief

- Parasympathetic Activation - (rest & digest) nervous system
  - ***Practice taking 4 mindful breaths every hour or use the breathing stickers as cues***
  - Decreased heart rate, cortisol levels and constant calming the body
- Calm or Mindspace Application on your phone

Anxiety Management

- Breathing & Meditation/mindfulness
- Therapeutic walking to promote oxygen to the brain
- Positive Self Talk - be KIND to your brain!
- Facial tapping - repeat positive things thile gently tapping different locations on the face “Everything is going to be ok”

Anger Management

- Identify Stress stimulators
- Walk away to diffuse situation
- Deep breathing
- Stop what you are doing and return later

Journaling: Write down things that are causing you anger, anxiety, or stress. Often times getting your thoughts out onto paper will help!

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Managing Symptoms of a Brain Injury

Headaches

- Limit screen time, Rest eyes every 10 minutes with pressure
- Rest at first sign of fatigue when over stimulated
- Cold eye pack on eyes
- Gentle temporal or suboccipital (back of neck) rubbing
- Deep Breathing
- Medications - ask supervising doctor
- Avoid over the counter medications so you do not get rebound headaches

Dizziness & Balance changes

- Consult with vestibular physical therapist
- Caused from medications, vertigo in inner ear, brain changes, neck tension, inner ear trauma, cardiac changes
- Balance is highly retrainable
    - Severe balance changes may require an assistive device
- Find focal points, stop and sit or lean against wall
- Riding in a car - focus on the dash or cover eyes
- Nausea - Mints, ginger, deep breathing

Light & Sound Sensitivity

- Dim cell phone and computer/Anti-Blue Ray application
- Limit speed of scrolling
- Sunglasses and hats in grocery stores
- Rest eyes every for 2-3 minutes after every 20 minutes
- Ear plugs (TRU brand is great) for restaurants, church, etc.
- Ask friends/family members to talk to you one person at a time

Managing Symptoms of a Brain Injury

Tinnitus (Ringing in the ears)

- Tinnitus Relief application
- Listen for 15 min to a sound that your brain likes
- Take deep breaths
- Improvement should be seen in 1-2 weeks

Memory Loss & Cognitive Changes

- Consult with speech or occupational therapist
- Memory repairs with repetition

- Strategies
  - Write things down
  - Use phone or calendar to keep track of appointments
  - Use Sticky notes (sparingly), Color coordinate by topic
  - White board in one place for important reminders
  - Basket or place for all important belongings
    - Keys, wallet, phone, etc
  - Make a schedule to organize your day and rest breaks
  - Notebook

- Brain Applications - use sparingly & not to replace therapy
  - Brain Headquarters
  - Luminosity
  - Time to Focus - Number sequencing application

Brain Foods

- Food to Avoid
    - Caffeine (in large amounts), sugar, alcohol, processed carbs, & trans fats
- Good Brain foods/Anti-Inflammatory foods
    - Fruits, vegetables, Fish, Walnuts & Cashew nuts
    - Water! Half body weight in ounces
    - Eat frequently every 2-3 hours to keep metabolism up
- Brain Supplements
    - Fish Oil - 3000 mg/daily. Wild Caught
    - Curcumin - natural anti-inflammatory
    - Magnesium - for headaches/anxiety
    - COQ10 - improve brain health
    - Riboflavin (B6) - Cellular energy
    - CBD Oil

(Ask your doctor about these supplements and dosages)

Exercise and Brain Healing

- Promotes oxygen to the brain
- Move pain free with activities
- Improve neurological and hormonal response
- Therapeutic walking within pain free tolerance
- Neuroplasticity and brain body connection
- Yoga - great for mind body connection

Concussion Submaximal Threshold

- Avoid exercise if you get an increase in headache/dizziness
- Too much blood flow to the brain
- Take your heart rate when you headache starts
- Exercise at 70-80% of that threshold
- Example: Headache at 100 beats per minute, only exercise at 70-80 beats per minute. This is the sub-maximal threshold

How Family Members Can Be Supportive

- A Brain Injury is “An Invisible Injury”
- Reinforce use of cognitive strategies
- This injury requires a support system to help with recovery
- Realize this is an invisible injury and how it is affecting your loved one
- Take some chores, workload, or other duties off their platter to help them focus on rehabilitation and get needed rest/naps.
- Run errands as needed (grocery stores and busy environments can be over stimulating)
- Schedule extra family events keeping in mind smaller and quiet is better during the initial stages of rehabilitation.
- Massage or light touch to help calm the nervous system
- Be Kind, patient and caring!

General Tips from TBI Survivors

- Aim for completion of ***1 task or errand per day*** *(*outside of therapy/treatment). This means doing something like laundry, vacuuming, a trip to the store (for 5 items or less), etc. It will be a while before you can start aiming for 2 tasks or errands per day.
- ***Plan one or two social activities per week*** - and keep them simple. This could be a phone call to a friend, or inviting someone to come over for coffee. These will be easier than going out to meet someone.
- ***Rest.*** Schedule one or two rest breaks per day. Actually schedule them, and do it. Even if you can't sleep. Just laying down with your eyes closed for 30 minutes to an hour can help.
- **Exercise.** Once you have been cleared by your doctors (usually somewhere after 8 weeks) plan for at least 30 minutes of exercise. Riding a bike (stationary at first), walking, running, swimming, yoga, etc.
- Fill the rest of your days with things like meditation, coloring (yes seriously, get a coloring book!), reading (if you can) or listening to audiobooks, writing in a journal, sitting outside, or taking a hot bath.
  ~ Kristin G.
- "When the garage door is shutting, go take a nap!"
- Don't let depression overcome you, do things you enjoy doing!
  ~ Tony P. (My Dad)

Resources

- **Brain Injury Alliance of Colorado - biacolorado.org**
  - Patient education & provide help with short term disability
  - Resource Directory on Website
- **Colorado Brain Injury Program**
  - TBIcolorado.org
- **TBIto100.co**
  - A Brain Injury survivor blog
- **Love your Brain**
  - Patient resources, TBI yoga, group gatherings
- **Brainline.org**

Articles/Books

- The Mild Traumatic Brain Injury Workbook (Amazon)
- Overcoming Mild TBI & Post Concussion Symptoms

About the Author:
Mary Pavlantos PT, DPT, CBIS

I was born and raised in Albuquerque, NM in a mountain town where I grew up playing sports including basketball and running track. I moved away to attend Whittier College in California where I played basketball and graduated with a Bachelor of Kinesiology & Leisure Science. In 2009, I received my Doctor of Physical Therapy degree from Thomas Jefferson University in Philadelphia, PA.

I have been very passionate about helping individuals with brain injuries, and other neurologic conditions, strive toward achieving functional goals and improve quality of life as a physical therapist. My father was in a tragic rollover car accident when I was in high school and suffered a TBI. It wasn't until several years later, after the loss of our family business and home, that we began to understand how his head injury had affected his memory, personality, and quality of life. After going through these struggles, I made it a personal mission to help people who have sustained a brain injury identify it early on, learn how to manage symptoms, and heal the brain quicker with vestibular physical therapy.