

THE BRAIN HEALTH MAGAZINE

The Resiliency of the
HUMAN BRAIN
and **BODY**

**RANDY
ELSTON**
*Overcomes
Three TBIs*

THE **RESILIENCE** ISSUE

Is Resiliency
PERSONAL
or **BRAIN
CHEMISTRY?**

Living Your Best Life After Brain Injury | Spring 2023

SPRING 2023
VOLUME 5 | ISSUE 1

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The Brain Health Magazine® (ISSN 2688-6057) is a bi-monthly publication with 6 issues each year. To order a subscription, visit www.thebrainhealthmagazine.com. For address changes or advertising information, please email: hello@thebrainhealthmagazine.com.

2000 Forest Street | Hastings, MN 55033 | www.thebrainhealthmagazine.com

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FROM THE EDITOR

With the Winter issue comes a little bit of anxiety for me. My injury happened in February of 2014 when I slipped on a patch of black ice. Because I was carrying my five-pound Yorkie at the time, and was on a steep incline, I landed full-force on the back of my head. Nine years later, I still get anxious when there is snow and ice in the forecast (and can we all just agree that this winter in particular has been full of icy conditions).

My PTS (post traumatic stress) has gotten better over the years, but I still have a hard time dealing with ice. It triggers something inside me and I do my very best to avoid going outside, but alas, I have to get to work or Tuesdays at the Capitol, so I have no choice.

Fortunately there is this neat invention called Yak Trax (they also go by various other names). These slip over the bottoms of your boots and have little cleats to prevent you from falling on ice. They work great and every single Minnesotan should have a pair (or two). While they give me a lot of peace of mind, I still have that anxious feeling creep in when it's time to go outside.

I want to take a moment to assure you that it's completely OK to have big feelings around the season of your injury. Your injury was incredibly traumatic, both physically and mentally. It's important to take the time to

allow yourself to acknowledge these feelings, but it is also equally important to seek help if these emotions start to get in the way of your everyday life.

This issue is all about resilience. How does that differ from recovery? Recovery has an expectation that you will get back to 100% the way you were before your injury. Brain injury is a lot different from a physical injury, such as a broken leg. The path to recovery isn't linear, and can take years.

Resilience, on the other hand, is our ability to react to stress and difficulties. We can 100% completely control our resiliency, in fact, it's up to US. Nobody else can do it for us. Sure, they can help us along the way, give us tips and tricks, and be our cheerleader. But WE have to be willing to put in the work and make it happen. There's a lot to be said for a positive mindset and resiliency.

I hope that the stories you read in this issue will help give you inspiration and guidance on your journey. 🌱

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This Is What It REALLY TAKES



BY DR. MICHAEL HENNES, DC, DACNB

GRIT. When you first hear this word it probably conjures images of a worn, weathered, maybe even cynical individual who always gets the job done. Their personality might not be unicorns and rainbows but when the job needs doing, that's who you call. That may be Hollywood's version of grit, but that's not its true form.

"When we are no longer able to change a situation, we are challenged to change ourselves." — Viktor Frankl

Grit is the perseverance for a long-term goal, no matter what or who stands in your way. Merriam-Webster Dictionary actually defines it as "firmness of mind or spirit: unyielding courage in the face of hardship or danger."

This community exemplifies the notion of grit. For the last 11 years, I worked with people who sustained brain injuries, and the concepts of "quit," "settle," "good enough," and "this is how it is" are never entertained. I am consistently humbled by the sheer force of will the people I work with exert on a daily basis. This doesn't imply they suffer daily, but rather they choose to strive for better even though they have already overcome so much.

My relationship with patients begins at different stages of recovery. Sometimes we meet early. Other

times we meet after a decade or more. The injury, the recovery, the situations, the support ... it varies from story to story, person to person. But the vigor by which these individuals pursue their best selves never changes. I've experienced people telling me their doctors said they would never walk, they would never work, and they should file for disability and live their lives as best they can, only to entirely ignore that advice and prove everyone except themselves wrong.

The human body and brain are amazing things, capable of healing beyond our wildest imagination. What is equally amazing is our mind's ability to influence our healing. In order to keep our minds in the right orientation we need to develop grit, this mental toughness or firmness of mind. How then do we cultivate this mental toughness?

"We need to actively seek out opportunities for growth, change, and forward-thinking."

First, never shy away from change — the only constant thing in life. When we face a problem, we can either initiate the changes needed to solve the problem or be swept up in the changes that happen. One way or another, change will come so we can either be in control or at the mercy of our surroundings. We need to actively seek out opportunities for growth, change, and forward-thinking. This will absolutely be uncomfortable, but being uncomfortable will force us to be creative in finding new ways to grow.

"We all have something we aren't good at. Instead, focus on improving the lacking skills."

Next, the past is gone and there is nothing we can do to change it. Don't dwell on what happened; rather, focus on what you want. Don't focus on your weaknesses. We all have something we aren't good at. Instead, focus on improving the lacking skills. What does this mean? If you're bad at sleeping, don't ruminate on how tired you are and all the things that keep you from getting restful sleep. Focus instead on building the perfect environment for sleep. Put timers on your electronics. Develop a pre-bed routine. Create and adhere to a sleep schedule. You'll need these new skills to succeed. Whatever you give your attention to will grow. We can grow our skills or grow our insecurities.

"It's important to look at what positive changes we've made and the results we've gotten so we can gain momentum. By gaining momentum we become better at what we're doing."

The next piece is looking at your results. We need to focus on our immediate successes while never expecting immediate results. It's important to look at what positive changes we've made and the results we've gotten so we can gain momentum. By gaining momentum we become better at what we're doing. As we get better at what we're doing, we'll see exponential growth as our skills improve. This is exciting because we become more confident, we gain more energy, and we develop confidence in our abilities again. There will always be setbacks, but by looking at how far we've come we can develop the stamina to overcome the bad days.

"Your health is your own. [...] but thanks to your relentless perseverance and your grit, you'll continue to improve."

Finally — and most importantly — you must NEVER compare yourself to others. I was told once that comparison is the thief of joy. In today's social age it can be very hard to keep from comparing ourselves to others. Amplified by biased information and algorithms, we see what people want us to see. Often we only see the successes rather than the work that went into the success. Your health is your own. The thing helping your neighbor may not work for you — but thanks to your relentless perseverance and your grit, you'll continue to improve. Because that's who you are. 🧡

Michael Hennes, DC, DACNB is a chiropractic functional neurologist at Northwestern HealthSciences University's Sweere Clinic. He specializes in concussions, brain injuries, dizziness/vertigo, post-auto whiplash, stroke, neck/face pain, visuo-vestibular dysfunction, headaches, migraines, and sports performance.



OCULOMOTOR MOVEMENTS

as the Foundation of Visually Processing Our World



"Vision plays a dominant role in motor development and the motivation to move."

– Linda Gerra, American Occupational Therapy Association Annual Conference 2016



**BY KARA CHRISTY,
MS, OTRL, CBIS**

Eighty percent of all learning occurs visually. Visual dysfunction occurs in 50-70% of all acquired brain injuries, making learning new strategies and re-learning skills challenging if not addressed. Our visual system is a hierarchy, with oculomotor control – or eye movement abilities – paired with appropriate acuity forming the foundational base of that hierarchy. This includes visual pursuits, visual saccades, scanning, and vergences. To visually attend to and process the world around us, this foundation must be strong, accurate, and efficient. When impacted, our ability to attend, process, recall, move through, and make decisions about our visual surroundings becomes challenging.

WHAT ARE OCULOMOTOR SKILLS AND WHY ARE THEY IMPORTANT?

- 1. VISUAL SCANNING:** Coordinating eye movement in an organized fashion (efficient search pattern) while actively searching the environment for information.
 - **Functional use:** Looking for items in a grocery store, scanning for hazards at a 4-way stop while driving, searching for a favorite toy on a shelf, locating an entry in a checkbook register.
- 2. VISUAL SACCADDES:** Eye saccades are quick, simultaneous movements of both eyes in the same direction, usually toward a target.

- **Functional use:** Reading, moving your eyes to different faces in a crowd, comparing two products at a grocery store, following notes on sheet music.

3. VISUAL PURSUIT: Following a moving target with the eyes.

- **Functional use:** Watching a ball during a sports game, tracking traffic while merging onto the freeway, watching a child run at the playground.

4. CONVERGENCE: The simultaneous inward movement of both eyes toward each other, usually in an effort to maintain single vision with both eyes when viewing an object up close.

- **Functional use:** Reading, medication management, threading a needle, using a phone or tablet, completing a puzzle or game.

5. DIVERGENCE: The synchronized outward movement of both eyes away from each other, usually in an effort to maintain single binocular vision when viewing an object far away.

- **Functional use:** Driving, watching an event from a stadium or auditorium, hiking, playing on a playground.

6. VERGENCE FACILITY: The ability to alternate ocular posture between convergence (near) and divergence (far) while maintaining single binocular vision.

- **Functional use:** Looking between a car dashboard and the road environment, reading a grocery list and scanning a grocery aisle, taking notes from a screen or board in a classroom.

7. VISUAL SPATIAL DEFICITS:

- **Focal Vision:** Aiming your eye directly at an object causes focalization by the brain through the macula. This is the “what” we look at.
- **Ambient Vision:** Lets you know where you are in space and provides general information used for balance, movement, coordination, and posture. This is the “where” we are looking.
- **Post Trauma Vision Syndrome:** A disruption of the visual process. This disruption affects the neurological system innervating the extraocular muscles that control eye movements, as well as the system regulating focus. This often causes high anxiety with the perception of stationary objects moving or tilting. Common characteristics with this include convergence insufficiency and oculomotor dysfunction.

- **Visual Midline Shift Syndrome:** The ambient visual process changes its orientation and concept of the bodily midline; our perception of being centered is off.

- **Functional use:** Participating in sports, walking in a straight line (functional mobility), driving a vehicle, navigating curbs, grocery shopping.

COMMON SYMPTOMS

Deficits with oculomotor control commonly follow an acquired brain injury. Knowing what symptoms to monitor is key to finding help. If an individual experiences persistent symptoms from the list below, seek an evaluation with the appropriate healthcare provider.

- Dry, itchy eyes
- Redness, watery eyes
- Dizziness
- Headache
- Double vision
- Blurred Vision
- Light sensitivity
- Decreased balance
- Decreased depth-perception
- Difficulty reading
- Difficulty with tracking
- Anxiety with complex environments

WHO CAN HELP?

1. **NEUROVISUAL / BEHAVIORAL OPTOMETRISTS (NVO):** a health care provider specializing in vision therapy and prism lenses, an expanded area of optometry. They may help improve the flow and processing between the eyes and the brain. NVOs follow a holistic and functional approach to vision care looking at behaviors and abilities, and relating them to visual skills. NVOs view vision as a learned sense that may be improved and/or enhanced. This type of optometrist examines the visual system beyond the health of the eye itself. Evaluations are extended

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to include tests beyond acuity, depth perception, and visual fields. An NVO will determine how the eyes work together, focus together on a single object, process information, and move. To locate a provider, visit www.COVD.org

2. OCCUPATIONAL AND PHYSICAL THERAPISTS:

It is within the scope of OTs and PTs to address oculomotor movement dysfunctions post acquired brain injury. Neuro specialized therapists can address foundational skills through remediation following training, as well as create a plan of care to work toward bigger functional goals impacted by oculomotor dysfunction. Collaboration with an NVO is key to monitor progress of the foundational deficits, as well as prescribe and adjust prism lenses when applicable.

3. CLIENT/CAREGIVER: Prior to an appointment with a NVO, OT, and/or PT, things can be done to help set the client and their environment up for success.

- **Limit screen time:** *Extended time on phone, tablet, and computer screens can increase symptoms. When work or school requires the use of a screen, build in regular breaks to allow for visual rest. (Note: Rest breaks are not scrolling through a phone)*
- **Follow the 20/20/20 rule:** *Every 20 minute, look 20 feet away, for approximately 20 seconds to allow for visual rest*
- **Use a blue light filter on phones, tablets, or computers**
- **Wear blue light filtered glasses when on a screen**
- **Dim lights in the environment**

- **Print materials needed off from a screen when possible**
- **Listen to audio versions of books/textbooks**
- **Increase text/font size whenever possible**
- **When possible, avoid visually busy environments**
- **Take rest breaks. Rest breaks can be short and should have little to no visual input**
- **Advocate:**
 - To see appropriate health care providers
 - For reasonable accommodations at work/school
 - For necessary breaks in your day

FUNCTIONAL GAINS

With resources in place, appropriate providers, and hard work, these foundational oculomotor deficits can get better through remediation-based therapy. Always set goals on function — how these deficits impact a person on a daily basis — and always work toward that goal! With the help of a therapist, keep goals SMART- Specific, Measurable, Attainable, Relevant, and Timely. Remediation based therapy can be a long process, however there is hope for improvement and progress. 🧡

Kara Christy, MS, OTRL, CBIS, is an Occupational Therapist at Origami Rehabilitation. Origami is a 501(c)(3) nonprofit organization providing comprehensive rehabilitation for children, adolescents, and adults with neurological, developmental, mental health, and orthopedic conditions through their residential and outpatient programs. Learn more about Origami at OrigamiRehab.org or by calling 517-336-6060.

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The Quality of RESILIENCE

BY SHAUNA HAHN



Sometime in 2019, in the weekly “Healing and Recovery” therapy group I lead, we discussed the topic of the quality of “resilience.” When it came time for a patient to contribute, he said, “I don’t want to be resilient. I get tired of being resilient all the f*cking time.” And I heard him. We all heard him. Life can be so tough, just at baseline.

We live hard modern lives: traffic, fluorescent lights, 9-5’s, bureaucracy, appointments, tough finances, you name it. When we live hard lives and then something bad happens, like an injury to our brains, we now have an altered world view, sensory limitations, physical limitations, cognitive limitations, and the same difficult modern life! No wonder folks get tired of being resilient! I understand completely.

“[H]appy people are not people who just don’t experience misfortune, difficulty, or shortcomings. They are folks who develop more values and character strength to help them manage life’s problems.”

So one might ask, what are the benefits of resilience? Many different researchers (like Martin Seligman, in the field of “positive psychology”) demonstrated that happy people are not people who just don’t experience misfortune, difficulty, or shortcomings. They are folks who develop more values and character strength to help them manage

life’s problems. I am going to help describe one such model I share in my practice utilizing such an approach; a model called “Healing Power” developed by my mentor, Dr. Phil Shapiro.

Healing Power offers much in the way of resilience development. It tells us any painful problem can be reduced through the combination of a spiritual quality or value and the application of that value through spiritual methods. For spiritual qualities or values, think: love, compassion, forgiveness, intuition, empathy, creativity, beauty, wisdom, acceptance, etc —there are one million and eight gorgeous qualities. Spiritual methods to apply the value include affirmations, yoga, reading spiritual or self-help literature, deep breathing, meditation, mindfulness, etc.

Healing Power does not deceive us into believing every problem can be practically solved. For example, just because we want our brains to be spontaneously healed, our brains may not immediately reach that point. But, the framework does let us know that despite what life throws our way, we have everything within us to solve our own problems and promote our own healing. Innately wise and knowledgeable, we grow in all spiritual qualities, resilient every time we apply ourselves to our highest virtues. 🧡

Shauna Hahn specializes in the treatment of post-brain injury psychiatric disorders and often lectures on this topic. Shauna is excited to bring her expertise to TMS at her beautiful destination clinic, Framework Functional Psychiatry and TMS, in Lake Oswego, Oregon.
www.frameworktms.com

Resilience After a Brain Injury



**BY DR. SHANE STEADMAN,
DC, DACNB, DCBCN, CNS**

Recovery after a brain injury can be a long journey. Working hard and hoping to get back to baseline often can be frustrating, and for some, unattainable. With the many doctor visits, exercises, rehab appointments, medications, and supplements, goals can become lost. However, amid recovering from a brain injury, one needs to consider resilience, the ability to recover from difficulties. Bouncing back or having resiliency from a brain injury can be extremely difficult.

There are many ways to look at resiliency or ways to make oneself more resistant to stressors. Most individuals with brain injuries find their threshold to do simple tasks very low. This includes reading, engaging with others, cleaning the house, or driving. Others find they cannot be around chemicals or even eat certain foods. Being resilient can look different for many with different approaches. Let's discuss a few examples and their approaches.

"Important for recovery, slowly increasing activities over time aids brain function and builds more endurance for brain activities such as rehab."

Many find exercise a difficult activity. People will even avoid engaging in any type of exercise due to their injury. With this scenario, starting any type of exercise is very important — even if the exercise starts slow for five minutes, using low resistance exercise bands or doing isometrics or simple stretches. The goal for increasing resiliency is to start low and build up over time. Being able to build up endurance, strength, and stamina over time allows for resiliency of activities of daily living. This might allow someone to engage more with friends and family. Important for recovery, slowly increasing activities over time aids brain function and builds more endurance for brain activities such as rehab.

Immune resilience improves resiliency to one's environment and can be as simple as replacing toxic chemicals in the home with more natural safe products.


Replacing products such as detergents, deodorant, soap, toothpaste, and cleaning supplies can be an easy step toward reducing agents causing inflammation in the body. When a person constantly needs to deal with toxins, mold, allergens, and chemicals, it creates consistent immune activation causing global inflammation.

"Resiliency can begin slowly with evaluating one's environment and identifying what can be changed. In addition to one's environment, making healthy food choices can be a challenging area, but a necessary adaptation."

Recovering from a brain injury grows more difficult when the body, more importantly the brain, deals with external stressors resulting in inflammation. Inflammation in the body can lead to inflammation in the brain. Resiliency can begin slowly with evaluating one's environment and identifying what can be changed. In addition to one's environment, making healthy food choices can be a challenging area, but a necessary adaptation. Consuming neurotoxic or allergenic products creates immune reactions making us less resilient with time.

Psychological resilience is probably the most difficult for people to overcome. A traumatic brain injury impacts so many facets of our lives. It is very hard to understand what others go through daily. With an invisible brain injury, it is tough to see the emotional and psychological impact on mental health. Many experts and research articles discuss the importance of a positive attitude and the role it plays on physical and mental health. The chemical changes in the body are well researched with how negative and positive emotions play a role.

"Many experts and research articles discuss the importance of a positive attitude and the role it plays on physical and mental health. The chemical changes in the body are well researched with how negative and positive emotions play a role."




It makes sense that this might be the most difficult area to improve, but when it comes to becoming more resilient, it could be the most important. Like exercise, a person can start with working on small moments throughout the day or week. For others, working with a professional counselor might be the best option to make these small changes. Building resilience in this scenario means being able to handle the daily stress of life as well as life's challenges.

"Some days will be easier than others, but when someone is able to do a little more, then they become more resilient. It can be a tough journey but doing a little over time can have a big impact."

Finally, there are two ways to look at resiliency. The first is to become proactive and make the changes needed to keep the body strong both physically and mentally. Such changes include exercising, self-care, removing toxins, and eating healthy. With the major goal of being proactive,

a person can bounce back from major events such as an injury or infection by adopting these practices.

The second way to look at resiliency is how well a person comes back from an injury, stressful event, or infection. Recovery looks different for each person. When a person goes through the recovery process, areas of their daily life can be improved. Some situations we cannot control, but some areas of life we can, such as allergens, toxins, and our thoughts. Starting with the little things and increasing them over time builds resiliency. Some days will be easier than others, but when someone is able to do a little more, then they become more resilient. It can be a tough journey but doing a little over time can have a big impact. 

Dr. Shane Steadman, DC, DACNB, DCBCN, CNS, *is the owner and clinic director of Integrated Brain Centers. To learn more about how they can help with concussions, stroke, and TBIs, please visit www.integratedbraincenters.com. For a free consultation, please call 303-781-5617.*





ARIZONA MAN OVERCOMES THREE TRAUMATIC BRAIN INJURIES

and Gives Back By Building Adaptive Recreation and Socialization Program for Survivors

BY ED ROTH



Randy Elston is finally living his best life, which may be an odd thing to say about a Marine Corps veteran with three traumatic brain injuries (TBIs). Recently named as the Brain Injury Alliance of Arizona's new Adaptive Recreation & Activities Coordinator, Randy's tours of duty in Iraq left him with a unique understanding about the difficulties of recovering from brain injury. He sustained his TBIs as a direct result of three improvised explosive device detonations within his one deployment.

The Northwest Indiana native enlisted at the age of 18 and served eight years on active duty in his infantry unit of Light Armored Reconnaissance. In 2005, his unit engaged in ongoing battles. On one mission to intercept insurgents fleeing a city by cutting off the highway system, his vehicle hit a pressure-plate IED. Randy recalls the immediate aftermath. "My ears were ringing, and I had a metallic taste in my mouth."

Within a few hours and virtually no time to recover, his team was called upon to provide security and recovery operations for another vehicle and crew that hit an IED. On the way over, and with Randy still reeling from the first blast, their maintenance vehicle hit another explosive. "I was standing in the back, fully exposed."

This injury was more significant. "I broke my back and was knocked out for a period. While I was semi-conscious, I heard people talking but couldn't quite make out what they were saying due to the ringing in my ears. I was very confused and didn't realize that my back was broken or that I had a TBI. We just went ahead and completed the mission."

By the time he returned to a more secure location, he had been awake for around 36 hours and experienced two TBIs. His Commanding Officer ordered him to get some rest.

"Randy's tours of duty in Iraq left him with a unique understanding about the difficulties of recovering from brain injury. He sustained his TBIs as a direct result of three improvised explosive device detonations within his one deployment."

Several months later, and less than two weeks from his scheduled leaving of Iraq, he was hit a third time while on a vehicle patrol. As they approached an overpass, he noticed an IED at the guard rail. Just as he tried to shout a warning, the roadside bomb exploded, giving Randy his third TBI in as many months.

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"Randy eventually received a medical discharge from the Marines, but that brought on a spate of mixed emotions. 'I was an up-and-coming 25-year-old Sergeant with a bright future. I didn't know what to do with the rest of my life.'"

By now, the effects of these brain injuries accumulated, which both his Commanding Officer and First Sergeant noticed. "They observed things that I myself wasn't seeing, I knew I was having memory and mobility issues, like smashing into doorways while trying to walk through them."

At Medical, brain scans indicated he needed treatment, so Randy was admitted to Scripps Memorial Hospital in Encinitas (California). "At first, I was the only military personnel there. But after 6 months, there were people of all ages and backgrounds, including more individuals who had seen combat."

Randy eventually received a medical discharge from the Marines, but that brought on a spate of mixed emotions. "I was an up-and-coming 25-year-old Sergeant with a bright future. I didn't know what to do with the rest of my life."

"I volunteered with veteran groups and my church, as well as began to work at a non-profit organization, Arizona Coalition for Military Families. My focus was Risk Reduction for those veterans at risk of suicide."

Trying to find "the new me," he enrolled in various colleges to learn new processes. Even though he worked with disability services, his classes were increasingly challenging due to his cognitive and memory issues. He went on to

complete his core classes through community college and proudly earned a scholarship to Embry-Riddle Aeronautical University in Prescott, AZ.

His ability to adapt led him to expanded horizons. "I volunteered with veteran groups and my church, as well as began to work at a non-profit organization, Arizona Coalition for Military Families. My focus was Risk Reduction for those veterans at risk of suicide."

Now he is taking his career to the next level as the Brain Injury Alliance of Arizona's Adaptive Recreation &



Activities Coordinator. In his new role, Randy will also be calling upon his experiences as a client and peer support. “I’m here to help organize some of the Alliance’s signature events, like the Rays of Hope conference for survivors and caregivers, the Run, Walk, & Roll for Brain Health, and Camp Brain, a camp for adult survivors of all types of brain injury.

“I also want to establish more consistent activities on a weekly or bi-weekly basis. Being involved is enjoyable and therapeutic,” says Randy. “Self-care is important to the healing process. So whether it’s a hike or an art class, you need to be present in the moment in order to de-stress. That’s how you develop coping skills, and how you heal.”

“Self-care is important to the healing process. So whether it’s a hike or an art class, you need to be present in the moment in order to de-stress. That’s how you develop coping skills, and how you heal.”

Luke Fadell, US Veteran and Director of Veteran Services for the Brain Injury Alliance, welcomes Randy’s arrival. “When we met, he showed an enthusiasm to help others that is extremely contagious. With his unique background, he understands what our clients are going through, as well as providing insights into recovery. His upbeat approach is a perfect fit for reaching those trying to reimagine their own lives.”

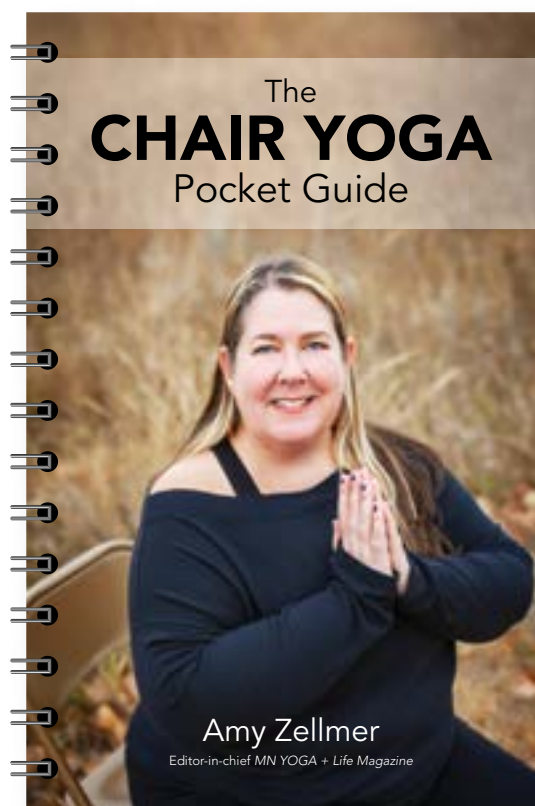
The latter point drives the avid outdoorsman and father of two daughters. “This is a great opportunity to help others and myself. I struggled with identifying my own self, and now want others in a similar position to realize your brain injury doesn’t define you.

“When surrounded by the right team, you can accomplish so many things; when you don’t just survive, you succeed. If you can imagine it, you can attain it.” 🧡

Ed Roth is a Scottsdale based media consultant, branding expert, and writer.

The CHAIR YOGA

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A CAREGIVER'S WISH for 2023



BY ANNE ADKINSON

As a member of the Brain Injury Alliance Veterans Services team, I advocate on the front lines for Arizona's military caregivers, connecting them with the resources, education, and support they need to make family life run a bit smoother. It's been an honor to help those whose selfless acts of love and caring improve our veterans' lives. The need for investment in community resources and family caregivers cannot be understated.

I have personal experience with the challenges and joys of family caregiving as well. My husband Dave sustained a brain injury in 2003 while deployed in Iraq.

The last few years have been especially challenging, but with the new year now upon us, I feel there are many reasons to look forward to a great 2023. When I think about my family's journey over the last twenty years and the military families I worked with, I have some clear things on my wish list for next year.

In fact, my New Year's wish is for medical providers everywhere to understand the power of teaming with family caregivers to provide the best possible healthcare outcomes for survivors of brain injury.

"My [...] wish is for medical providers everywhere to understand the power of teaming with family caregivers to provide the best possible healthcare outcomes for survivors of brain injury."

I was reminded of this wish when my husband came down with a serious case of COVID. Because of his underlying medical conditions, we immediately visited an urgent care center to get him Paxlovid, the antiviral

medication designed to lower at-risk patients' odds of hospitalization. Since Dave looks "just fine" but lives with the cognitive challenges of a brain injury, I, as his caregiver, am responsible for facilitating the process for all involved in healthcare appointments.

"Since Dave looks 'just fine' but lives with the cognitive challenges of a brain injury, I, as his caregiver, am responsible for facilitating the process for all involved in healthcare appointments."

At the urgent care center, we were told to wait in the crowded waiting room for 30 minutes. However, because of his brain injury, Dave often gets overwhelmed in rooms like this and proceeded to wait in the car just outside the front door. This common adaptation for survivors can ensure a necessary medical appointment gets off to a strong start.

The medical tech eventually called him two hours later, and I informed them he would be right there. Dave exited the car and entered the facility within 30 seconds of his name being called, but the medical tech slammed the door in my face, proclaiming it unacceptable for Dave to not be in the waiting room. A few tense moments passed, and the tech finally relented.

"Without my help he becomes overwhelmed and falls back with the answer of, 'I'm fine,' leaving his medical concerns unaddressed as the medical staff shuffle off to the next patient."

During the intake interview, the tech's aggravation continued whenever I helped Dave answer questions. As his caregiver, it's my responsibility to ensure medical providers receive accurate information since his brain injury often prevents him from formulating words and accessing memory. Without my help he becomes overwhelmed and falls back with the answer of, "I'm fine," leaving his medical concerns unaddressed as the medical staff shuffle off to the next patient. This creates a real barrier to services for those with a brain injury and leaves many secondary medical conditions unaddressed.

I explained to the tech I was there to make everyone's job easier — from the receptionist to the doctor. I know Dave's medical history, medication, diagnoses, and current symptoms, and can communicate these precisely to all involved. Without my assistance, progress is hampered for my husband as well as the medical staff.

"It's time for medical providers to be more culturally competent with veteran culture, the way a brain injury can hamper communication of vital medical information, and the crucial role of the family caregiver."

Compounding the situation, this facility — contracted with the Veterans Administration (VA) — should have been able to treat Dave with a greater understanding of brain injury challenges. As we look toward 2023, it has been 20 years since Dave and many fellow Marines sustained a service-connected brain injury. It's time for medical providers to be more culturally competent with veteran culture, the way a brain injury can hamper communication of vital medical information, and the crucial role of the family caregiver.

To all the caregivers out there, 2023 will be our year. Make sure you reach out to your state's Brain Injury Alliance or Association if you care for someone with an acquired brain injury such as stroke, tumor, aneurysm, TBI, concussion, Long-COVID, PTSD, or other brain health concerns.

"Let's work together for healthier and happier outcomes for members of the brain injury community — survivors and family caregivers alike!"



I would urge professionals to recognize brain injuries as complex and worthy of time spent on continuing education. Know that including the caregiver leads to better health outcomes for the veteran, while also making providers' jobs much easier. You can connect with The Campaign for Inclusive Care by the Elizabeth Dole Foundation for short training modules teaching how to identify a patient's caregiver and include them on the care team. Professionals can also earn two hours of Continuing Education Units (CEUs).

Psych Armor is another great resource, with short 15-minute modules designed for medical providers to better understand military culture, veterans, and the role

of caregivers. CEU credits are available for Healthcare and Human Resource professionals.

Let's work together for healthier and happier outcomes for members of the brain injury community — survivors and family caregivers alike! 🧡

Anne Adkinson is the military family caregiver advocate for the Brain Injury Alliance of Arizona. You can reach out at 888-500-9165 or info@biaaz.org.

REFLECTING

at the Eight-Year Mark



CAREGIVER CORNER



BY IAN HEBEISEN

As of October, my family officially passed the eight-year anniversary of the car accident causing my mom's traumatic brain injury. That's eight years of doctor's appointments, chiropractic care, restless nights, back exercises, visual therapies, and legal battles. It's been eight years of trial and error, bouncing from treatment to treatment, trying to gain an inch of healing and sometimes losing a foot of progress. It's been a challenging journey that we continue to traverse.

A week or two ago, Mom needed some assistance with a few chores around the house. As I helped her clean a few dishes, she admitted that she found this year particularly difficult. "This time, I'm having trouble staying positive or seeing the bright side," Mom confessed. "Can you think of any good that's come out of my accident?"

It took a bit of reflection, but I actually could think of a handful of positive changes. One of the first things that

came to mind was how our family united to help Mom. We adapted the structure we knew for ages to accommodate Mom's new needs. Whether she needed a ride to an appointment, or required an extra set of hands to fold the laundry, or wanted someone to provide an arm to lean on while out on walks, my dad and my brothers all stepped up to these requests. If we could grant Mom a little bit of ease in her life, we happily provided.

I also noticed positive shifts in Mom's demeanor, despite all the hardships she faced. First and foremost, her tenacity increased tenfold. She's been dealing with nerve damage and pain for eight years, and she continues pushing forward. With every new treatment, she pushes her boundaries a little further, holding onto hope all the while.

"[Mom's] tenacity increased tenfold. She's been dealing with nerve damage and pain for eight years, and she continues pushing forward. With every new treatment, she pushes her boundaries a little further, holding onto hope all the while."


Mom's faith grew stronger after the accident. In fact, I attribute it in part to her increase in tenacity. Her church proved a valuable resource for her. She often talks with the pastors and turns to them for advice and positive words when times grow especially difficult. Mom and her prayer group often pray for healing, and since she has improved since the initial incident, I'd say it's helped.

"We become what we believe, so believing in any positive changes we can might benefit Mom, her recovery, and our family. Maintaining positivity certainly proves a challenge on its own, and we face it every day, but it's a necessary one for asserting a quality of life."

Another interesting change for the better? Mom grew more aware of her limits and now knows when to throw in the towel. While this certainly leads to some frustrating moments, I believe this honesty about her limitations overall improves her quality of life. By paying attention to her body and how she's feeling, Mom can avoid potentially exhausting herself and setting back her progress.

Don't get me wrong, I'm not trying to glamorize Mom's TBI in any way. What happened to her drastically impacted our lives, hers most of all, and I would love nothing more than to have prevented the accident from ever happening in the first place. She lives with pain from damaged nerves every day, and if we could reverse it entirely, we would in a heartbeat.

But dwelling on how much changed for the worse would keep us in a trap of despair. We become what we believe, so believing in any positive changes we can might benefit Mom, her recovery, and our family. Maintaining positivity certainly proves a challenge on its own, and we face it every day, but it's a necessary one for asserting a quality of life.

For any caregivers reading this, try and record any positive event you might come across when helping someone with a TBI. Kind words and reflection will provide a much-needed morale boost. Even if they're few and far between, try and focus on the glimpses of good, for your sake and the sake of your loved one. 

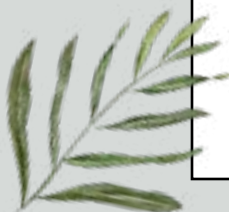
Ian Hebeisen is a writer based in the Twin Cities. Graduating in 2020 with a degree in Literature with a Writing Emphasis, Ian spends his time writing for *The Brain Health Magazine* and *JUVEN Press*. He also writes comics, zines, short stories, and poetry. He lives with his partner and two cats, and enjoys playing board games and reading.

WORD SEARCH RESILIENCE

"You never know how strong you are, until being strong is your only choice." Words by the late, great Bob Marley underscore the drive to give everything you have and then some. Inspiration is found in the most spectacular places. Reflect on where you find yours while searching for these words related to resilience.

COURAGE **HELIX**
POWER **FLEXIBLE**
LOTUS **STRENGTH**
GRIT **PERSIST**
WILLOW

R	N	G	Y	S	T	R	E	N	G	T	H
W	R	Q	C	D	I	E	S	X	O	L	E
I	B	F	L	E	X	I	B	L	E	P	L
L	C	V	M	Y	W	R	D	P	H	K	I
L	G	C	O	U	R	A	G	E	S	W	X
O	E	U	P	J	M	U	E	R	G	K	L
W	T	F	T	U	Z	S	C	S	I	G	T
T	P	O	W	E	R	V	B	I	K	R	E
A	L	Q	I	J	N	E	W	S	R	I	V
E	I	O	R	L	G	R	D	T	P	T	C
L	O	T	U	S	Y	D	F	H	G	J	P





The Resiliency of the **Human Brain & Body**



BY JAMES HEUER, PA

As a personal injury attorney for over 45 years, I have witnessed many of my clients successfully recover from a Traumatic Brain Injury (TBI). Whether the TBI occurs from a car crash, a slip and fall, or blow to the head, the resiliency of the human body and brain is incredible.

According to the CDC, the majority of TBIs that occur annually are considered “mild” TBIs, also referred to as a concussion. Bouncing back after a TBI can be referred to as returning to baseline (pre-injury). In the initial phase of recovery, I encourage my clients to have confidence, accept new limitations, adapt active coping skills, and most importantly, maintain a positive outlook.

Mental resilience can improve with family and friends by your side. I advise seeking out a primary caregiver post TBI. A caregiver can be a friend, family member, or anyone close to you. A caregiver can help with journaling, encouraging rest, and exercising, among other things to ease your recovery. Your caregiver will be able to notice changes and/or improvement with any limitations you may suffer such as memory, learning, problem solving, and concentration.

Following a head injury, a caregiver will also be taking their loved one to many difficult appointments. Appointments may include, but not limited to, physical and mental examinations, physical and occupational therapy, and other prescribed treatments. These multitudes of appointments can be taxing and challenging, and the caregiver can serve as a helping hand of encouragement promoting resiliency.

The more you can accomplish on your own — such as remembering tasks and techniques — the more the resiliency of your brain strengthens. Our office assists

in recovery by providing our TBI clients journals and encouraging them to write down daily tasks and note what was difficult and perplexing. This combats discouragement if progress moves slower than desired. This technique also assists the brain's resiliency to recall the past and focus on future recovery.

"[Journaling ones daily tasks] combats discouragement if progress moves slower than desired. This technique also assists the brain's resiliency to recall the past and focus on future recovery."

In addition to journaling, cognitive rehabilitation can be extremely helpful during the road to regaining baseline status. Some simple activities to improve cognition may include crossword or jigsaw puzzles, card games, knitting, or even building a model. Although never linear, progress and improvement will always depend on the individual. Some struggle with anger and loss of their former self, which can hinder efforts to recover.


"Some simple activities to improve cognition may include crossword or jigsaw puzzles, card games, knitting, or even building a model. Although never linear, progress and improvement will always depend on the individual."

The human spirit is incredibly resilient, and a positive outlook is always encouraged by me and my team at Heuer Fischer to overcome falling into negative thinking. I like to think of it this way: coping with stress can strengthen a person suffering from a TBI immensely.

As per research and personal experience, I learned just from feeling more resilient, one can improve their communication and problem solving skills, as well as feel less stress. Changes in resilience equal changes in all positive outlooks of recovery such as goals, treatment, and mood. The willingness to focus on the positive to overcome a negative is important.

Dr. Burke from Emory Brain Health Center, a TBI survivor himself, shared a tip that resonated with assisting TBI clients. Dr. Burke shares that gratitude is a key component to resilience. As part of adopting a positive outlook, Dr. Burke carries around a small stone in his pocket and touches it to think and remind himself of something grateful. "It is critical that people stop looking in the rearview mirror, and instead look ahead," he suggests. "You can't move ahead if you're always looking at what was lost instead of what you can gain."

"Dr. Burke shares that gratitude is a key component to resilience. [...] 'It is critical that people stop looking in the rearview mirror, and instead look ahead,' he suggests. 'You can't move ahead if you're always looking at what was lost instead of what you can gain.'"

Resilient adaptive responses regain fundamental skills. Traits may be innate but skills develop and expand in a lifetime. The goal is to strengthen problem solving, emotional management, and communication. By doing so, this will improve emotional health and stress, thus improving overall health. 

James A. Heuer, PA is a personal injury attorney helping individuals with TBI after suffering one himself. He is located in Minneapolis, Minnesota.



**Want to learn more about Amy's journey?
Purchase her books on Amazon!**



"Amy is a prime example of how powerful and life-changing combining personal experience, passion, and advocacy can be."

— **Ben Utecht**, 2006 Super Bowl Champion and Author

RESILIENCY:

Is It Just Personal or Part of Brain Chemistry?

Scientists Say Patient's Response to Injury May Be Bit of Both

The term resiliency encompasses “the range of personal protective factors, environmental supports, and resources, as well as self-regulatory processes, engaged in response to adversity,” according to investigators writing about recovery from traumatic brain injury (TBI) for the publication *Disability and Rehabilitation*.

Indeed, author Mike Norton said it best when he wrote, “[As] human beings, [we] are limited only by what we allow ourselves to be limited by: our own minds. We are each the master of our own reality; when we become self-aware [of] this, absolutely anything in the world is possible.”

Norton is, at least in part, correct. Resiliency occurs at two levels – physical and mental. One level involves a person's drive and commitment to overcome physical disabilities and do whatever necessary to regain functions lost in an accident, sports activity, or medically related event, like a stroke. At a mental level, patients with a brain injury often get stuck in fight-or-flight mode. The fighters hold a greater capacity than “flighters” to go beyond their comfort level to address and resolve problems. Other patients either “freeze” – fail to accept their new situation – or “flop” – surrender to stressors and meekly submit to whatever happens.

The Mind-Eye Institute team found that patients with innate mental resilience seem to do better at re-building their brain functions after an injury. However, some scientists suggest resiliency following a TBI may be more than simply a matter of premorbid personality traits,

psychological characteristics, and mental toughness, such as strength of mind, coping skills, mindfulness (ability to live in and accept the present), enhanced psychosocial functioning, and even a background in advanced education. Resiliency could be linked physically to brain chemistry as well.

And if that is so, cannot the ability to accept and successfully respond to challenges of a TBI be restored through changes in brain function?

Quite possibly! In fact, some experts suggest neuromodulation – modifying brain chemistry and function – may be a treatment protocol for enhancing successful rehabilitation of TBI and other injured patients.

One important mechanism for neuromodulation is retinal stimulation. Following this logic, optometry tends to be an underused method of altering brain activity. Since brain tissue composes the retina, how the retina processes environmental signals – through both image-forming (eyesight) and non-image-forming (non-eyesight) pathways -- influences overall physical and mental health, including a patient's power of resiliency.

Retinal circuitry is composed of both image-forming cells – those allowing us to ‘see’ – and non-image-forming cells, which have nothing to do with eyesight but generate signals communicating with critical brain structures below the level of consciousness. These structures govern a person's basic physical, physiological, and psychological systems.

The Mind-Eye Institute uses therapeutic eyeglasses, filters, and other optometric interventions to stimulate retinal processing and influence brain pathways in patients



BY DEBORAH ZELINSKY, O.D.

who sustained a TBI, received a diagnosis with various neurological disorders, or experienced learning difficulties.

The right mix of prescriptive optometric appliances can influence and change the spatial and temporal distribution of light on the retina in ways that modify the dynamic relationship between the mind's visual inputs and the body's internal responses.

"Customized changes" to the brain often bring relief to patients experiencing headaches, brain fog, concentration and attention problems, sleep disorders, and even learning difficulties due to brain injury or neurological abnormalities and disease. And relief, of course, helps restore a patient's resiliency because it takes both the body's and the mind's hyper-focus off post-injury pain, symptoms, and the patient's internal sense of loss for what life used to be.

Researchers reported how imaging the brains of PTSD patients reveals structural and functional changes, including disruption of some main communication pathways among important regions of the brain. Authors of a University of Iowa Health Care study appearing in an October 2022 issue of the journal *Brain* contend that resilience against mood disorders like depression after a brain injury depends on which of two brain networks gets impacted in a TBI. One network associates with increased risk of developing depression, and the other with decreased risk and greater resilience.

Meanwhile, investigators writing in a 2022 issue of *Molecular Psychiatry*, contend a surge in stress hormones after a traumatic event can affect the brain in different ways in different people. Some people become more resilient

against post-traumatic stress disorder (PTSD), depression, and other mood and behavioral anomalies than others.

All of these reported brain-related anomalies may be reflected in the retina. In fact, an increasing amount of research demonstrates how retinal degeneration parallels brain degeneration. The retina is a "window to the brain." Viewing the retina as a map of the brain could help zero in on brain injury, thereby facilitating and individualizing rehabilitation. Studies show retinal changes mirror brain changes in patients with Alzheimer's disease, multiple sclerosis, schizophrenia, and Parkinson's. The retina tells us much about a person's overall health.

Those who suffer the trauma of a brain injury or neurological disorder may do well to consider American writer Joseph Campbell's description of resiliency. "We must be willing to let go of the life we planned so as to have the life that is waiting for us." Or, as Louise Mathewson so aptly said, "TBI should not be thought of as Traumatic Brain Injury; it should represent "Transformed By Injury." 🌿

Deborah Zelinsky, O.D., is a Chicago optometrist who founded the Mind-Eye Connection, now known as the Mind-Eye Institute. She is a clinician and brain researcher with a mission of building better brains by changing the concept of eye examinations into brain evaluations. For the past three decades, her research has been dedicated to interactions between the eyes and ears, bringing 21st-century research into optometry, thus bridging the gap between neuroscience and eye care.

MOONSTONE *for Resilience*



BY KRISTEN BROWN


HEALTHY LIVING

Work and life can be busy and stressful, pulling your focus from what matters to you most. The big and small changes that happen over a lifetime require a strong sense of self and a high level of resilience to navigate your path with positivity. You can use one powerful stone, moonstone, to amp up your resilience when the pressures of the world come your way. It's a soothing and healing crystal bringing a calming energy when you need it most.

Here are three ways to use Moonstone when you need strength and a boost in resilience:

- **Intention Setting:** *When you have a clear vision and intention for where you want to go, it can help you stay on track when you feel challenged or struggle with change. Keep Moonstone in your pocket or somewhere you see it regularly to remind you of your intention.*
- **Stress Relief:** *Moonstone can provide a very chill and calming energy when you feel agitated or overwhelmed. Simply hold it in your hand and take a few slow deep breaths. Imagine a white light beaming through the stone, flooding your body down to the cellular level to slow it and relax.*
- **Stretch Your Comfort Zone:** *One of the best ways to build resilience is to try new small things even when they seem scary or out of the norm. It helps your brain and body manage change in tiny ways so when big things come along you feel better prepared. Moonstone can help you feel brave and strong when you venture into new situations. Keep it with you or in your car or purse so it's nearby to fortify your energy.*

Moonstone is a great stone for soothing, healing, strength, and bravery ... all key elements of resilience. Bonus: it's also great for sleep, so keep it by your bed or under your pillow for some extra dreamy vibes too!

Want more info on crystals and energy healing? Connect with Kristen at: KristenBrownPresents.com 

Kristen Brown is a bestselling author, keynote speaker, and energy mastery expert who charges up her clients by syncing up their body/mind/spirit for work and life growth.

YOGA:

Seated Cobra Pose

BY AMY ZELLMER, EDITOR-IN-CHIEF

Yoga is a powerful tool for neuroplasticity. Contrary to some beliefs, everyone can do yoga — you don't need to be super flexible, be able to balance, or even be able to stand up. The beauty of yoga is every pose can be modified to accommodate anyone.

An important aspect of yoga is your breath. Connecting your breath to your body and getting oxygen flowing to your brain makes yoga powerful for brain health. Yoga also quiets the mind and lets anxiety and distracting thoughts drift away.

One wonderful pose, seated cobra pose, brings breath and movement to our upper body. Keeping your breath steady while inhaling and exhaling for a count of three or four helps push oxygen to our brain, building neuroplasticity.

Instructions:

1. Start seated in your chair with your hands over your heart center. Keep your spine tall without slouching.
 2. As you inhale, bring your hands and arms out to the side in “cactus arms,” pulling your shoulder blades closer together.
 3. As you exhale, bring your hands back to your heart center.
- Repeat 3-5 times.

Amy Zellmer is Editor-in-chief of The Brain Health Magazine and MN YOGA + Life Magazine. In addition to her 200RYT, she is certified in chair yoga, LoveYourBrain yoga, Yoga For All, and trauma-informed yoga. Join her for monthly yoga classes via zoom for only \$10 a month: www.patreon.com/amyzellmer 🌱



HEALTHY LIVING



STRESS AWAY

Essential Oil



BY AMY ZELLMER, EDITOR-IN-CHIEF

A complementary tool that can help you achieve a healthy lifestyle, essential oils are easy to use and smell great, with a variety of uses.

All oils are not created equal. I personally only trust the Young Living brand because I know they maintain complete control over their product from seed to seal. Oils sold at health food stores can be misleading. They are not regulated by the FDA, so you must look closely at the labels. The labels may say they are 100% therapeutic-grade oils when they are not. If the ingredients list anything other than the plants, or if the label has statements like “For external use only,” “For aromatic use only,” and/or “Dilute properly,” the oil inside that bottle may have been cut with other oils, synthetics, or chemicals.

Stress Away Essential Oil Blend

Stress Away™ essential oil blend features Copaiba, Lime, Cedarwood, Vanilla, Ocotea, and Lavender for an exotic aroma used for exactly what the name says and for achieving a happy and positive day. It’s this distinct mix of vanilla and lime that gives Stress Away its unique and exotic aroma. Stress Away also includes Copaiba, which has a history of beneficial properties in topical application when applied to tired muscles; Lavender, with its peaceful, and calming scent that comes from a few of Young Living’s farms located in Utah, Idaho, and France; and Cedarwood, known for its comforting, calming aroma.

FEATURES & BENEFITS

- *Has a soothing, exotic aroma*
- *Can be diffused or enjoyed aromatically to create a luxurious, spa-like ambience at home*
- *Makes a great addition to your favorite skin, hair, and body care products*
- *Has a well-rounded and relaxing aroma, making it great to use as a personal fragrance*

SUGGESTED USES

- *Apply it to your wrists while at work or school to enjoy this blend’s soothing, fresh scent.*
- *Apply Stress Away topically or diffuse it to enjoy a calming and peaceful aroma.*
- *Wear Stress Away as a personal fragrance.*
- *Diffuse Stress Away in your home after a long day for a fresh, soothing aroma that helps you find a moment of calm.*
- *Add a few drops to a cotton ball and place it in the vent of your car to create a calming environment during a long drive or rush-hour traffic.*

DIRECTIONS

- **Topical:** *Dilute 1 drop with 1 drop of V-6 Vegetable Oil Complex or olive oil and apply to desired area as needed.*
- **Aromatic:** *Diffuse up to 30 minutes 3 times daily.*

*These statements have not been evaluated by the Food and Drug Administration. Young Living products are not intended to diagnose, treat, cure, or prevent any disease. 🌿

PEANUT BUTTER PROTEIN FLUFF

HEALTHY LIVING

BY AMY ZELLMER, EDITOR-IN-CHIEF

WHAT YOU NEED:

- 1 cup (250g) full-fat Greek yogurt
- 2 tbsp. peanut butter or almond butter
- 2 tsp. stevia
- favourite garnish (banana, granola, blueberries)

DIRECTIONS:

1. Add the yogurt, nut butter and stevia into a small mixing bowl and whisk together using a hand mixer, until fluffy.
2. Transfer the mix into a bowl and top with your favorite toppings to serve. 🌿



Serves: 2 Prep: 5 mins Cook: 0 mins

Nutrition per serving: 224 kcal 209g Fats 9g Carbs 9g Protein

Available on your
favorite streaming platform



Faces of TBI
by Amy Zellmer

A podcast series by survivors for survivors.
Creating awareness for Traumatic Brain Injury (TBI).

www.facesoftbi.com

Sponsored by: www.IntegratedBrainCenters.com



Healing the Brain *with Hyperbaric Oxygen*



BY IAN HEBEISEN

As the son of a neurologist, Dr. Mohammed Elamir learned about the brain at a young age. One of his earliest memories involves a visit to his father's office. "My father actually had the privilege and opportunity to treat Muhammad Ali, the boxer," said Dr. Elamir. "I was five years old, and Muhammad Ali came to my dad's office... I remember meeting him and talking to my dad about what it was like treating him. As Dr. Elamir grew up, he interned at the office from middle school into college. Now, Dr. Elamir boasts over 10 years of experience in internal medicine.

After retiring, Dr. Elamir's father suffered from a stroke, affecting his speech. Dr. Elamir shifted the focus of his research towards finding ways to heal the brain. His research led him to a paper published out of Israel, where Dr. Shai Efrati utilized hyperbaric oxygen to heal the brain. "He used hyperbaric oxygen in a very specific protocol to change the physiology within the brain," said Dr. Elamir.

While looking for jobs, he kept his eye open for something similar to the process detailed in the research. With a bit of luck, Aviv Clinic in Central Florida reached out – a facility run by Dr. Shai Efrati using hyperbaric oxygen to treat patients suffering from brain injuries. "I said, 'great, I'm applying for the job'," said Dr. Elamir. "I just wanted to talk to him about the protocol and see if it could help my dad. But once I spoke with him, we talked for hours and he told me everything about the research."

"Once I saw the clinic and what was possible, it was easy enough to leave my practice and join the team," said Dr. Elamir. Now, working at Aviv Clinic, he helps patients

with all sorts of brain injuries, implementing hyperbaric oxygen when appropriate.

Originally used to help scuba divers with medical emergencies such as the "bends," hyperbaric oxygen involves breathing 100% oxygen in a pressurized environment. This increases oxygen concentration, getting it directly into deprived cells. Certain TBIs can destroy tiny blood vessels in the brain, which causes a decrease in oxygen delivery, resulting in slow cell death and impaired function.

In a low oxygen environment, the body produces a molecule promoting new cell and blood vessel growth. "We administer the protocol where you're breathing 100% oxygen in a pressurized environment for 20 minutes, then we take the mask off for five minutes," said Dr. Elamir. "That tricks the body, making it think it's in a low oxygen state every time you take the mask off, triggering that molecule to be released."

"Now, we can make new stem cells," said Dr. Elamir. "If we want to regenerate brain tissue or nerve cells, we can. We can grow new blood vessels. Not only can you heal the brain, you can prevent future decline because you're building resources with this protocol. And that's what we do here at the Aviv Clinics."

Hyperbaric oxygen will not be for everyone. "If you've had seizures or epilepsy, we need you to be six months free of seizures, and cleared by your neurologist," said Dr. Elamir. "If you're pregnant, you can't go in the chamber. If you've had collapsing of the lungs, being put in a high pressure chamber can collapse the lung again. And if you

have an active cancer, the last thing I want to do is grow new blood vessels into that active cancer.”

Since no two brains function the same way, every patient begins with a full assessment. From there, the treatment becomes straightforward – initiating protocol for several weeks with assessments throughout. Aviv Clinics often administers brain games on an electronic tablet during the procedure to further stimulate the mind and promote recovery.

“My favorite appointment is that final summary meeting,” said Dr. Elamir. “I review the scans, show the brain before and after... I often connect day-to-day things they’ve noticed with the parts of the objective testing.”

To learn more about Aviv Clinics or to schedule a consultation, visit www.aviv-clinics.com. To listen to the whole conversation, listen to the Faces of TBI podcast on Apple Podcasts or wherever you find your podcasts. 🌿



Ian Hebeisen is a writer based in the Twin Cities. Graduating in 2020 with a degree in Literature with a Writing Emphasis, Ian spends his time writing for *The Brain Health Magazine* and JUVEN Press. He also writes comics, zines, short stories, and poetry. He lives with his partner and two cats, and enjoys playing board games and reading.

You can listen to this episode of Faces of TBI on iTunes or wherever you listen to podcasts.



RESILIENCY *and* *the* COURTROOM



BY JEFF HELLER



Resiliency is one of the greatest attributes anyone can have. From an early age, parents teach their children, “if you get knocked down, you get back up.” Coaches teach their players, “when the going gets tough, the tough get going.” And one of the cornerstones of the underdog mentality is to “never give up, no matter the odds.”

“[After a TBI], the brain cannot compute the required deeper thought to even consider the concept [of resiliency]. Psychiatrists, occupational therapists, physical therapists, and nurses physically push, pull, and coordinate the body to be resilient, otherwise it would not occur at all.”

But what about within the context of surviving a traumatic brain injury? In many cases, the motivational thought process of resilience is not possible. The brain cannot compute the required deeper thought to even consider the concept. Psychiatrists, occupational therapists, physical

therapists, and nurses physically push, pull, and coordinate the body to be resilient, otherwise it would not occur at all.

“After suffering a TBI or mTBI because of someone else’s negligence, the courtroom provides the opportunity to show a jury what resiliency really means.”

In mild traumatic brain injury survival, resiliency can be akin to a drain. The heaviness of the inner battle by itself could drive the average person mad. But with no choice, the survivor must continue the battle regardless of whether victory is even in sight.

After suffering a TBI or mTBI because of someone else’s negligence, the courtroom provides the opportunity to show a jury what resiliency really means. Lawyers achieve this through witnesses: clinicians, family members, co-workers, and friends. These people can talk about the struggle and the fight they see every day with their own eyes. This offers the chance to explain to others — many who never experience brain injury on any level — what it is like to live, work, or care for a brain injury survivor. Often, these witnesses provide the most important and credible testimony in the entire case. Not only does it shed light on the real ramifications of the “at fault” party’s negligence,

but it shows the true David v. Goliath story. Only this time, David and Goliath (the TBI) are the same person.

Anyone who suffered a brain injury at the hands of someone else or a company should call a TBI lawyer. An experienced TBI lawyer can put together the evidence needed to show the resiliency of the survivor. All that work, day-in-day-out by the survivor, should be rewarded. At the end of the case, the jury will be asked to render a verdict, which includes monetary relief for the TBI survivor. Each day leading up to the verdict, as well as everything the future holds, is a part of that relief. Resiliency should always be rewarded!

Jeffrey M. Heller is a trial attorney with Nurenberg, Paris, Heller & McCarthy Co., L.P.A., in Cleveland, Ohio. Mr. Heller focuses his practice solely on personal injury and medical malpractice, specifically in the area of brain injury. He has also been selected to America's Top 100 Personal Injury Attorneys and the National Trial Lawyers Top 40 Under 40. He can be reached at 216.621.2300. 🌱



The image shows the cover of the book 'Concussion Discussions: A Functional Approach to Recovery After Brain Injury' by Dr. David Heller. The cover features a colorful brain illustration. To the right of the book are two award medals. The top one is a gold seal that says 'BOOK EXCELLENCE AWARDS FINALIST'. The bottom one is a silver seal that says 'MIDWEST BOOK AWARDS WINNER' and 'MIPA'.

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The Brain Injury Helpline
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