

The Newsletter of the Brain Injury Alliance of Oregon

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New Hope for Children Who Nearly Drown

Though the brain damage can be severe, a recent study shows that areas involved in language, emotion and memory are evidently spared

Conrad was 17 months old when Dave, his grandfather, was babysitting him at their home in Temple, Texas. The two had been playing in the pool and went inside for a break. Dave set to unloading dishes in the dishwasher, unaware that Conrad had snuck back outside.

As he finished the dishes, Dave looked out the window and noticed something odd. There was what looked like a floating bundle of clothes in the swimming pool. It was his grandson.

Fortunately, Conrad responded to cardiopulmonary resuscitation (CPR), but it's unclear how long his lungs-and his brain-went without oxygen.

Drowning is the second most common cause of accidental death in children to age four. As in Conrad's case, CPR is fortunately very successful, with 66 percent of nearly drowned children surviving. But even when resuscitated, the seconds and minutes that the brain is deprived of oxygen come at a great cost. This type of damage is known as anoxic brain injury.

Anoxic brain injury is a clinical term that indicates damage to the brain that occurs due to lack of oxygen. There is a spectrum of injury ranging from complete recovery to minor to widespread brain mental illness (dual diagnosis) damage. Within this spectrum lies what is known as the disorders of consciousness, with the extent of damage being proportional to the loss of consciousness.

> In the case of nearly drowned children, the injury is frequently thought to be widespread. Nearly drowned children are labeled "minimally conscious" or even in a "persistent vegetative state" (with no consciousness) and the prevailing medical prognosis is grim: treatment and recovery is difficult if not impossible.

Conrad was left with profound brain damage. He remained comatose, unresponsive for weeks. Following his emergence from the coma, parents



and doctors struggled to understand what part-if any-of Conrad's brain function remained.

Liz Tullis, Conrad's mother, explained to UT Health San Antonio, "When Conrad survived his accident, I was not given much hope or guidance; in fact I was encouraged to institutionalize Conrad. Other families were encouraged to withdraw care."

One complication was that it was difficult to tease out what normal. "adult" brain functions had been lost because of the injury and which simply hadn't "grown out" yet-recall that Conrad was less than two years old when his accident happened. Even before the accident we wouldn't have expected him to hopscotch or spell.

Conrad's doctors felt his brain was severely damaged and that, if he improved at all, he might only be able to take food by mouth or do simple movements like roll over or hold his head up. Whether Conrad would be able to think and reason wasn't on the table.

That Conrad's ability to think was uncertain reflects a clinical malaise surrounding the detection and prediction of internal mental states. It also reflects a very specific clinical limitation: the clinical interview requires movement.

Whether listening to your heart beat (contracting, relaxing, contracting, relaxing), observing you breathe in and out, tracking the way your eyes focus, and perhaps most importantly, evaluating your mental and (Near Drowning Continued on page 7)

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Coaches are responsible for protecting young players with head injuries

BY DAVID KRACKE (Guest opinion from the Oregonian 8/30/17)

It's the time of year when kids across the state lace up their cleats and head out to play their favorite sports. Whether it's the football gridiron, the soccer pitch or the lacrosse field, players gear up for the fall season with high hopes. Practices take on an added sense of seriousness for high school athletes preparing for the march to state tournaments.

Coaches do what they can to make sure players are ready both physically and mentally for that long journey. Any coach worth his or her salt will readily admit that while the drive to win is important, the most important aspect of their job is to ensure their players' safety. And one of the most serious safety concerns is the risk of concussion and second impact syndrome.

Oregonians were the first in the nation to recognize the risk of concussions to young athletes with the passage of Max's Law, the landmark 2009 legislation that mandates specific protocols for all high school athletes who are suspected of having sustained a concussion while on the field. We followed Max's Law with Jenna's Law, which extended those same concussion protocols to all young athletes throughout the state regardless of league affiliation.

As a result of those laws, all coaches must understand their legal obligations in the event that a player sustains a blow to the head or body and then experiences symptoms or displays signs consistent with a concussion. If that happens, a coach has no wiggle room under either of the two laws. The coach must remove the player from the game or practice and cannot allow that player to return to play that day. The coach must only allow the player to return to play after the youth receives medical clearance from a qualified medical provider.

The consequences of allowing youth to play before they've recovered from a concussion are potentially devastating, including the risk of permanent neuro-cognitive deficits. No game is worth that risk and both Max's and Jenna's laws exist to ensure this standard is applied to all young athletes in Oregon.

Annual concussion training is required of all coaches, and a coach's failure to comply with that legal requirement can have devastating effects for the player, the coach and the league.

The risk of concussions is real in any youth sport and coaches are tasked with knowing the risks and following the laws designed to protect our young athletes. So, as much as it's time for athletes to suit up and play, it's also time for coaches to read up so they will know what they must do when one of their players exhibits the signs or symptoms of a concussion.

After all, it's the law. And more important, it's for our kids' cognitive health.

Summer Sudoku

The object is to insert the numbers in the boxes to satisfy only one condition: each row, column and 3×3 box must contain the digits 1 through 9 exactly once. (Answer on page 23)

5		3	9	7				8
	7	9				1	6	
				2	6			7
4		5	2				3	
	9			5			7	
	1				3	4		6
9			6	4				
	5	4				3	2	
1				3	9	6		4

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page 3

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The Lawyer's Desk: A Look at TBI Legal

Representation .

By David Kracke, Attorney at Law Nichols & Associates, Portland, Oregon

Lawyers tend to act in either a "reactionary" or a "preventative" manner depending on the circumstances of any given situation. When I represent a client who has suffered a traumatic brain injury (tbi) as a result of someone else's negligence I am acting from a reactionary standpoint: I am trying to obtain compensation for the tbi survivor as a result of something that has already happened. In other words, I am reacting to something that has already occurred.

When I work on public policy issues to ensure the passage of laws that will help prevent a brain injury from happening in the first place, such as we did with Max's Law and Jenna's Law, I am acting from a preventative stance: I am trying to prevent the threat of a traumatic brain injury, thereby reducing the incidence of traumatic brain injuries.

Both situations are extremely important. When a person needs my help to pursue legal remedies against a negligent actor, it is all hands on deck: What are the economic and non-economic damages suffered by the tbi survivor? What are the issues related to proving those damages as well as proving liability for the damages? What are the future medical needs of the survivor? What has the survivor lost as a result of the injuries? These questions are as big as they get in the life of a personal injury lawyer, and it is my job to zealously represent the tbi survivor.

When I act from a prevention standpoint my job is less obvious. I have to ask myself "What isn't there? What aren't we doing that we should be doing to prevent the occurrence of traumatic brain injuries?" It reminds me of the best lesson I ever learned about analyzing contracts: My most important job isn't analyzing what's in the contract; my most important job is figuring out what isn't in the contract.

Such is the case with the establishment of public policy: The most important question isn't "What are we, as a society, doing to prevent brain injuries?" The most important question is "What are we, as a society, **not** doing to prevent brain injuries?

In many respects this policy question, (What are we not doing?) is the same question that inventors ask when they initiate the process of creating a new invention. What do we, as a society, not have that would benefit us all?

Recently, the spheres of invention and tbi prevention have overlapped in a promising way. A Seattle company called VICIS has developed football helmet technology that shows tremendous promise in reducing the incidence of concussions among football players. It is important to note that the technology is still in its early stages of development, but all signs so far point to this being a breakthrough concussion (tbi) reducing technology in a place where it is sorely needed: on the football field.

VICIS has developed a helmet that compresses upon impact much like an automobile's "crumple zones", but in a way that allows the helmet to be compressed over and over again without compromising its concussion reducing effect. VICIS is quick to point out that more testing is needed before it can definitively state that it is a "better" helmet, but, from what I can tell, it is a huge step in the right direction.

If the technology withstands the incredible scrutiny that it is, and will be, undergoing, it could be, no pun intended, a game changer. Right now

football is in a difficult position. Youth player enrollment is down and parents are rightfully asking themselves if they want their children to play the game with its known concussion risks. If VICIS can reduce that concussion risk parents could be persuaded to allow their kids to play.

In the past thirty years, we have made so many things so much safer. Airbags have greatly reduced serious auto collision injuries. Mandatory helmet laws have significantly reduced the incidence of tbi among motorcycle and bike riders. Laws such as Max's Law and Jenna's Law have required concussion education to a point where concussions are much better understood and much more properly addressed than



they were a mere ten years ago.

If VICIS can reduce concussion threats among our youth, collegiate and professional football players, the game will be much better off than it is now. Football is desperately looking for a solution to the health problems caused by the multiple concussive and sub-concussive hits endured by its athletes, and occasionally a great invention can influence the policy decisions as much as any law. Here's to hoping VICIS will be part of a lasting solution to a public health issue that has defied easy answers.

David Kracke is an attorney with the law firm of Nichols & Associates in Portland. Nichols & Associates has been representing brain injured individuals for over twenty two years. Mr. Kracke is available for consultation at (503) 224-3018.

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(Near Drowning Continued from page 1)

emotional state based on the words you speak, the clinician's skill rests on some form of movement. Subtract movement and the clinician can gather no data.

But what if a patient can't move? Or at least move in a meaningful way? Does lack of movement necessarily imply lack of thought? (Non moveo ergo non cogito ergo non sum?)

With time, Conrad regained a limited ability to move—not coordinated, purposeful movements like hopscotch, but rather the ability to wiggle and squirm. He couldn't speak. To all outward clinical evaluations, he had reached his "optimum treatment potential."

When their insurance would no longer cover Conrad's physical therapy and treatments, the Tullis family could fortunately self-pay and persist with the hope that their baby would continue to improve.

Liz had a sense that Conrad was "in there" and wanted to sort out whether there was evidence for that. She approached Dr. Peter Fox, a neurologist and neuroscientist at the UT Health San Antonio's Research Imaging Institute, to see if there was something he could do to help Conrad, perhaps some avantgarde brain-computer interface that could improve his state.

Dr. Fox said he could offer no treatment, but with the help of modern brain imaging methods, he could see what brain systems Conrad had intact. He offered to design a study of nearly-drowned children with anoxic brain injury. With the help of his then-graduate student, Dr. Janessa Manning, a pediatric neuroscientist currently at the N.I.H.'s Perinatology Research Branch, they began to peer inside Conrad's brain and inside the brains of 9 other children with near-fatal drowning. They chose to use resting-state functional Magnetic Resonance Imaging (resting-state fMRI).

Resting-state fMRI was an ideal method to study these children's brain function because it is task-free, meaning that each child only had to remain still in the MRI scanner. The method captures the brain's intrinsic activity in the absence of a specific task. Resting-state fMRI has shown that brain networks that subserve motor and even cognitive functions like language, memory and emotion are continuously and dynamically active in the resting brain. The results of their study, published July 31, 2017 in the journal Human Brain Mapping, suggest there is great hope for children with anoxic brain injury. The pattern of brain damage wasn't as widespread as previously thought and indicates much higher levels of brain function.

In ten out of ten of the children studied, damage was most severe in important motor networks deep inside the brain. This explained the absence of purposeful movement in children like Conrad.

Also in all ten of the children, brain networks involved in language, emotion, and memory were seemingly preserved. This means that those children were awake and alert even though their absence of coordinated movement labeled them "minimally conscious." Liz was right, Conrad was "in there."

Dr. Mariam Ishaque, an MD-PhD student (and neurosurgery applicant) who spearheaded the project, was surprised how well Liz's clinical impression was borne out by the imaging data. She recalled to me that "one child couldn't talk, or control his movements. But he made eye contact with us. I could tell that he was annoyed that we were keeping him awake [they scanned the children at night]. You could tell he knew what was going on. It was striking."

It appeared that near-fatal drowning causes an anoxic brain injury that is more akin to focal

stroke than to widespread brain damage. These children had a clinical condition more akin to lockedin syndrome (where some patients have enough consciousness to write a book!) than a persistent vegetative state, where the brain function is flatlined.

"This is a new syndrome," Dr. Fox remarked to me. "It's not taught in medical school...and this study presents a new level of sophistication for functional MRI. We have developed a method of using restingstate fMRI to diagnose individual patients. We hope that these results will help bring resting-state fMRI and per-patient analyses into the clinical arena."

What this exciting study promises isn't a new treatment, but a way to direct these children to different therapies. Soon after a near drowning, this study suggests that children could benefit from neuroprotective agents or even similar therapies that stroke victims receive. In addition, it suggests that in some cases, parents and doctors are justified in continuing support.

Nearly drowned children like Conrad could very well be "fully-conscious," able to think and reason, able to understand social situations and humor and Dr. Seuss.

As Dr. Manning explained to me, "If these children are in fact locked-in, then they are part of a much larger population who share similar types of brain damage, like children with cerebral palsy. This presents opportunities for clinicians and educators to develop methods to intellectually challenge these children who are very much conscious, just in a different way."

Source: https://blogs.scientificamerican.com/observations/new-hope-for-children-who-nearly-drown/?

utm_source=feedburner&utm_medium=feed&utm_campaign=Feed% 3A-all-blogs%2Ffeed%28Blog%3A-Scientific American-BlogsPosts% 29 By Daniel Barron on August 7 2017



New Finding: Different Types of Exercise Affect Different Parts of Your Brain

Pumping iron to sculpt your biceps. Yoga poses to stretch and relax. Running to whittle your waistline and get fit fast. There are loads of reasons why it's smart to exercise, and most of us are familiar with the menu of options and how each can shape and benefit your body. But we are discovering that there are numerous ways in which exercise makes you smart too. Many of its effects have been going unnoticed, but if you were to peer inside the heads of people who like to keep active, you'd see that different exercises strengthen, sculpt and shape the brain in myriad ways.

That the brains of exercisers look different to those of their more sedentary counterparts is, in itself, not new. We have been hearing for years that exercise is medicine for the mind, especially aerobic exercise. Physical fitness has been shown to help with the cognitive decline associated with dementia, Parkinson's disease and depression, and we know this is at least in part because getting your blood pumping brings more oxygen, growth factors, hormones and nutrients to your brain, leading it — like your muscles, lungs and heart — to grow stronger and more efficient.

But a new chapter is beginning in our understanding of the influence of physical exercise on cognition. Researchers are starting to find more specific effects related to different kinds of exercise.

Specifically, high-intensity intervals, aerobic exercise, weight training, yoga and sports drills are affect different areas of the brain.

They are looking beyond the standard recommendation of 30 minutes of moderate, aerobic exercise a day, for the sake of your brain. Are there benefits to going slower or faster? To lifting weights, or performing sun salutations? Whether you want a boost in focus for an exam, find it hard to relax or are keen to quit smoking, there's a prescription for you.

"Lifting weights helps improve complex thoughts, problem-solving and multitasking"

The first clue that exercise affects the brain came from rodent studies 15 years ago, which showed that allowing mice access to a running wheel led to a boost in neuron formation in their hippocampi, areas of the brain essential for memory. That's (Brain Workout Continued on page 9)

The ultimate brain workout

Different physical exercises can bring specific mental gains, from improving memory to dealing with cravings or reducing stress



(Brain Workout *Continued from page 8*) because exercise causes hippocampal neurons to pump out a protein called brain-derived neurotrophic factor (BDNF), which promotes the growth of new neurons. The mice showed improvements in memory that allowed them to navigate mazes better.

The findings were soon translated to humans. Older adults who did aerobic exercise three times a week for a year also grew larger hippocampi and performed better in memory tests. Those with the highest levels of BDNF in their blood had the biggest increases in this brain region.

The idea that exercise helps to improve memory has been especially welcome given that the search for effective treatments for cognitive decline has been slow in progress. And it now seems that aerobic exercise such as running and cycling may help stave off Alzheimer's disease and other forms of dementia.

As the evidence for aerobic exercise accumulated, Teresa Liu-Ambrose at the University of British Columbia in Vancouver, Canada, began to wonder about other types of exercise. She has been looking for ways to halt dementia in people with mild cognitive impairment (MCI), a population of adults known to be at increased risk of developing dementia, and was especially interested in strength training, which has in recent years been added to US and UK government recommendations for physical activity.

To test the idea, Liu-Ambrose compared the effects of aerobic exercise and strength training in 86 women with MCI. She measured their impact on two abilities known to decline as the condition progresses: memory and executive function — which encompasses complex thought processes, including reasoning, planning, problem-solving and multitasking.

Twice a week for an hour, one group lifted weights, while the other went for brisk walks quick enough that talking required effort. A control group just stretched for an hour instead. After six months of this, both walking and lifting weights had a positive effect on spatial memory — the ability to remember one's surroundings and sense of place.

On top of that, each exercise had unique benefits. The group that lifted weights saw significant improvements to executive function. They also performed better in tests of associative memory, which is used for things like linking someone's name to their face. The aerobic-exercise group saw improvements to verbal memory — the ability to remember that word you had on the tip of your tongue. Simply stretching had no effect on either memory or executive function.

If aerobic exercise and strength training have distinct benefits, is combining them the way to go? To address this, Willem Bossers of the University of Groningen in the Netherlands split 109 people with dementia into three groups. One group walked briskly four times a week for 30 minutes; a combination group walked twice a week and strengthtrained twice a week for 30 minutes each; and a control group did no exercise. After nine weeks, Bossers put the participants through a battery of executivefunction tests that measured problem-solving,

measured problem-solving, inhibition and processing speed. He found that the combination group showed more improvement in executive function than the aerobic-only or control groups. "It seems that, for older adults, walking only is not enough. They need to do some strength training," he says.

Immediate Attention Boost

And these benefits extend to healthy adults too. In a year-long trial of healthy older women, Liu-Ambrose found that lifting weights, even just once a week, resulted in significant improvements in tests of executive function. Balancing and toning exercises, on the other hand, did not.

The combination of lifting weights and aerobic exercise might be particularly powerful because strength training triggers the release of a molecule called insulin-like growth factor-1 (IGF-1), a growth hormone produced in the liver that is known to affect communication between brain cells, and to promote the growth of new neurons and blood vessels. On the other hand, aerobic exercise mainly boosts BDNF, says Liu-Ambrose. In addition, Bossers says strength training also decreases levels of homocysteine, an inflammatory molecule that is increased in the brains of older adults with dementia. By combining aerobic exercise with strength training, you're getting a more potent neurobiological cocktail. "You're attacking the system in two ways," he says.

The studies so far haven't addressed how long the effects last, but preliminary findings suggest adults will have to keep exercising to maintain the benefits.

Another approach is to start young, with findings that different types of exercise affect a child's mental capacity in a number of ways. For example, if you want kids to focus for an hour on a math test, say — the best bet is to let them have a quick run around first. That's according to studies that show a simple 20-minute walk has immediate effects on children's attention, executive function and achievement in mathematics and reading tests. Letting kids sprint or skip about has the same effect. A brisk walk can also help children with attention-deficit



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hyperactivity disorder to focus, although again it's not yet clear how long the effects last.

These findings should be used to make decisions about the daily school routine, says Charles Hillman at the University of Illinois at Urbana-Champaign, who carried out some of the research. He agrees with current recommendations that children get at least an hour of exercise daily, but notes that it might be best spread over the course of the day. Because purely aerobic exercise keeps kids focused in the near term, giving them breaks to walk or move around every 2 hours might be the best way to promote learning.

In contrast, exercise that is highly structured and focused on specific skills, such as for a sport or to improve coordination, hampers attention. A bunch of drills and rules may be too taxing for children right before a test or a situation that requires sustained focus.

Instead, these kinds of specific exercises seem to build up attention span gradually over the longterm. In research yet to be published, Maria Chiara Gallotta at the University of Rome in Italy found that twice-weekly sessions of coordinative exercises, such as basketball, volleyball or gymnastics practice, over the course of five months helped children do better on tests that required concentration and ignoring distractions.

The cerebellum — the finely wrinkled structure at the base of the brain — has been long known to be involved in coordinating movement, but is now recognized as having a role in attention as well. Practicing complicated movements activates the cerebellum and, by working together with the frontal lobe, might improve attention in the process.

Making sure children are physically fit can have lasting cognitive benefits too, says Hillman. He has shown that children who are fit have larger hippocampi and basal ganglia, and that they perform better in attention tests. The basal ganglia are a group of structures important for movement and goal-directed behavior — turning thoughts into actions. They interact with the prefrontal cortex to influence attention, inhibition (Brain Workout *Continued from page 9*) and executive control, helping people to switch between two tasks, such as going from sorting cards by color to sorting cards by suit.

Hillman focuses on children aged 8 to 11 because areas like the hippocampi and basal ganglia are still maturing, so intervening at a young age can make a big difference. And even small gains in fitness lead to measurable changes in the brain. In some of his studies, Hillman has put kids on yearlong after-school fitness programs. Many are overweight, and while they don't lose much weight, their brains do change. They're going from being unfit to slightly less unfit, says Hillman. "But we're still finding benefits to brain function and cognition."

Adults too can reap brain gains from sporty challenges, says Claudia Voelcker-Rehage at Chemnitz University of Technology in Germany. Her research on older adults showed an increase in basal ganglia volume following coordination exercises that included balancing, synchronizing arm and leg movements, and manipulating props like ropes and balls, but not from aerobic exercise.

Voelcker-Rehage found that these types of exercise improved visual-spatial processing, required for mentally approximating distances — for instance, being able to assess whether you have time to cross the street before an oncoming car reaches you — more than aerobic exercise.

Another explanation comes from recent research by Tracy and Ross Alloway, both at the University of North Florida in Jacksonville. They found that just a couple of hours of activity of the type we often enjoy during childhood, such as climbing trees, crawling along a beam, or running barefoot, had a dramatic effect on working memory.

This is the ability to hold on to information and manipulate it in our minds at the same time. "It prioritizes and processes information, allowing us to ignore what is irrelevant and work with what is important," says Tracy Alloway. "Working memory influences nearly everything that you do, from the classroom to the boardroom."

So what is it about climbing trees or beam balancing that is so beneficial? The researchers only found positive results when the activities were a combination of two things. They needed to challenge the sense of proprioception — the position and orientation of the body — and also needed at least one other element, such as navigation, calculation or locomotion. Basically, the advantages came from exercises in which we need to balance and think at the same time.

The more we learn about the effects of exercise on the brain, the more different types of benefits are emerging, extending beyond cognition to changes in behavior.

One of the most popular fitness trends of the last few years is high-intensity interval training, which involves quick spurts of all-out exercise. Its sheer toughness is claimed to provide the same benefits as longer efforts in a fraction of the time.

These workouts might have an extra advantage: short bursts of activity can help curb cravings. And although the tougher the better, they don't necessarily have to be gut-bustingly hard.

To test the effects of intensity training on appetites, Kym Guelfi at the University of Western Australia in Perth invited overweight men to come into the lab on four separate occasions. On three of the visits, they spent 30 minutes on an exercise bike, but at different intensities — a moderate, continuous pace; alternating between intervals of high-intensity cycling for 1 minute followed by 4 minutes of moderate cycling; or alternating between very high intensity, 15-second sprints followed by one really easy minute. The fourth visit consisted of resting for the full 30 minutes.

After the most intense intervals, the men ate less of the provided, post-workout porridge and less

food overall for the next day and a half compared with days they cycled moderately or simply rested.

One explanation could be that the exercise reduced levels of the "hunger hormone", ghrelin. This is responsible for telling the part of the brain that controls eating — the hypothalamus — when the stomach is empty. When full, ghrelin production shuts off and hunger wanes. Following the most intense intervals of exercise, ghrelin levels were lowest.

What is clear is that these effects can endure well into old age, and it's never too late to start. The hippocampus shrinks as we get older, leading to the typical struggles with memory. But aerobic exercise not only prevents this loss — it reverses it, slowing the effects of getting older. Voelcker-Rehage has found that the brain requires less energy to complete certain tasks after exercise. "We would say that points to the fact that the brain is more efficient," she says. "It works more like a young brain."

And in a study looking at yogis that had been practicing for many years, Sara Lazar at Massachusetts General Hospital found that some brain regions were remarkably well preserved compared with those of healthy controls that were matched for age, gender, education and race. "The 50-year-old's brain looked like a 25-yearold's," notes Lazar.

If you're still unsure which type of exercise to pick, there's some overlap between the different exercises and benefits, so Liu-Ambrose's suggestion is simple: "If you're not active, do something that you enjoy." The best exercise is the kind that you'll actually do.

Source: http://consciouslifenews.com/new-finding -different-types-exercise-affect-different-partsbrain/11121031/



Through a partnership with VDAC (Vehicle Donations to Any Charity), The Brain Injury Alliance of Oregon, BIAOR, is now a part of a vehicle donation system. BIAOR can accept vehicles from anywhere in the country. VDAC will handle the towing, issue a charitable receipt to you, auction the vehicle, handle the transfer of title, etc. Donations can be accepted online, or call 1-866-332-1778. The online web site is http://www.v-dac.com/org/?id=930900797

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Eye Movements May Be Key In Detecting Brain Injury, Concussion

Dr. Uzma Samadani was a speaker at a Minnesota Brain Injury Alliance conference for professionals and I was mesmerized by what she had to share regarding eye-tracking and the correlation to brain injury. I couldn't soak up enough of what she had to share that day, so I was ecstatic to have the opportunity to interview her for an article, and you might say I was even a little star-struck.

You see — my eye-tracking was my biggest complaint that no one bothered to acknowledge.

Immediately after my fall that resulted in my traumatic brain injury (TBI), I knew my eyes weren't quite right. In the beginning I wasn't even able to read the words on my computer screen, like when I was trying to find the local ER. Time passed, and *I kept telling every doctor I saw that something wasn't quite right with my eyes.*

Eventually I was sent to a neuro ophthalmologist who did extensive testing, only to tell me that my eyes were "fine." I continued struggling with my vision and went to my eye doctor, who has known me for over 10 years. She tried everything to help me and concluded that I was seeing double, and my left eye was trying extra hard to keep me from seeing double, therefore causing strain on my eye.

It was the best answer I had been given thus far — yet I still didn't feel it was good enough.

I was convinced my eyes were causing my dizziness and balance issues, and everyone blew me off by saying it was just positional vertigo. When I would go to sleep at night, I could feel my eyes start to move around on their own. However, I was dismissed over and over again, indicating that I was imagining it, and I was suffering from positional vertigo.

This is NOT what was affecting me!

At the two-and-a-half-year mark Dr. Jeremy Schmoe, from Minnesota Functional Neurology DC in Minneapolis, reached out to me after reading one of my HuffPost blogs. He told me he was confident he would be able to help me with my dizziness and balance issues.

I was skeptical at first because everyone else blew me off — and had never really listened to me.

I figured what did I have to lose, so I went in for a consultation. Dr. Schmoe spent TWO HOURS with me performing all sorts of tests. One of the very first tests he did was to run a red and white striped pattern past me, telling me to focus on only the white squares. The second he moved it, I had a dizzy spell and had to look away.

His response? "It's your eyes — they're not moving together properly."

I wanted to cry, but this time it was happy tears instead of frustrated tears. FINALLY! Someone seemed to understand that my eyes indeed were causing me problems.

Dr. Schmoe explained, "You can sometimes evaluate eye movements, and the eye muscle and vision can look fine, but when the brain has to deal with a complex sensory environment, and the mechanisms to

compensate have been injured, this can be a terrifying situation. In your case, there was involvement of all three systems (cervical, visual, and vestibular) which lead to sensory confusion or mismatch in the brain, causing horrific symptoms and changes in your autonomic system and emotionality."

Now talking to Dr. Samadani, she considers it complete serendipity that she began the study of eye tracking. She had finished her residency and was conducting clinical trials for brain injury when a colleague suggested using eye-tracking as an outcome measure.

They began working on their technology, now known as EyeBOX[™], in the summer of 2011 and applied for their first patent in 2012, which was issued in spring 2017. The study of elevated intracranial pressure (ICP) and reversible eye-tracking began in 2014 and was funded by a NASA affiliate organization interested in helping astronauts achieve prolonged space travel. Astronauts develop visual and cognitive problems while in space deployment — which mimics elevated intracranial pressure on earth — and they wanted to find a way to detect this.

Dr. Samadani explained that a concussion can disrupt eye movements in at least two ways: through elevating intracranial pressure, and by physiological disruption of neurologic pathways — not bad enough that pressure goes up, but it causes irritation.

In the study, a patient watches a music video on a computer screen that contains a square moving around the screen. As a patient

(Eye Movements Continued on page 12)





follows the square, the device measures eye coordination. The device is attached to the computer so that a patient doesn't have to wear it on his or her head.

When Dr. Samadani's team developed their device, they wanted to make sure that a patient who wasn't able to follow instructions would still be capable of using it. "Essentially we are testing brain stem function, which is done involuntarily - meaning you don't have to think about it." stated Samadani.

Historically, measuring the nerves that move the eye has been done by having a patient look in a direction (up, down, left, right), but that assumes a certain amount of function.

Eventually Dr. Samadani discovered that the equipment could ultimately detect differences in the left and right eye movements. The test does not need a baseline since 98.78% of people's eyes move together.

The recent study looking at elevated ICP included 23 patients who required intracranial

including bleeding in the brain, while others were being monitored for pressure due to tumor or stroke. The study showed that nerve function in the brain decreased when pressure was elevated, and returned to normal when it came back down. The effect of elevated ICP on nerve function was detectable within minutes of ICP elevation.

Reviews by optometrists have shown that as many as 90% of people who seek attention for their concussion/brain injury have eye-tracking problems.

Dr. Samadani's team hopes that this device will help patents receive the proper care right away. "We want someone who has suffered a traumatic brain injury to be diagnosed as quickly as possible so that they can be treated appropriately," said Dr. Samadani.

She concluded by saying, "The majority of people who hit their heads don't have a brain injury; however, we want to help identify those who need treatment."

Dr. Uzma Samadani founded Oculogica in 2013, and her laboratory has developed the Neurosurgery at the University of Minnesota. Neurological Surgeons Executive Committee for Trauma and Critical Care and is Scientific Program Chair of the AANS/CNS National Neurotrauma Society Joint Satellite Meeting.

Amy Zellmer is an award-winning author, speaker, and advocate of traumatic brain injury (TBI). She is a frequent contributor to the Huffington Post, and has created a private Facebook group for survivors and also produces a podcast series. She sits on the Brain Injury Advisory Council (BIAC) through the Brain Injury Association of America's and is involved with the Minnesota Brain Injury Alliance. She travels the country with her Yorkie. Pixxie. to help raise awareness about this silent and invisible injury that affects over 2.5 million Americans each year.

Source: http://www.huffingtonpost.com/entry/ eye-movements-may-be-key-in-detectingbrain-

injury_us_5981e529e4b02be325be026c

What NOT to say to someone with a brain injury

1. "I know what you mean...I've got a terrible memory too!"

Sure, we all forget things, but an injury to the brain can stop memories being stored and/or retrieved. Being forgetful and having memory problems as a result of brain injury are worlds apart!

2. "But you don't *look* disabled..."

The cognitive, emotional and behavioural effects of brain injury can still be present long after any physical injuries have healed. Sadly, too many people judge disability purely on what they can see.

3. "Move on and stop dwelling on what happened."

One to avoid at all costs! The effects of a brain injury can last a lifetime and a person can't simply decide to 'get better' and move on.

4. "You should be back to normal by now."

Where to start with this one! No two brain injuries are alike, and no two journeys to recovery should ever be compared. And what's normal, anyway?

5. "You're tired? At your age?!"

Fatigue is a very real and debilitating effect of a brain injury. Tasks that most of us take for granted can require much more effort after brain injury. Getting told you're lazy must be infuriating!

6. "It's all in your mind!"

Brain injury isn't something that can be controlled by simple conscious thought, so there's little more frustrating for a person with a brain injury than being told to 'snap out of it'!

7. "Chin up – there's always someone worse off."

When trying to adapt to an entirely new life after brain injury, it doesn't always help to know that others may be dealing with worse – as defined by someone who doesn't understand what you're going through.

8. "Are you sure you should be doing that?"

An essential part of the rehabilitation process is relearning lost skills by pushing yourself to do challenging tasks. Although often said by people wanting to help, having your ability judged by someone else can be extremely frustrating.

"I know someone who had a brain injury and they're fine now."

No two brain injuries are the same! While it can be a motivation to hear of other people making good progress, it certainly isn't helpful to be judged for not recovering as quickly as them.

10. "But you were able to do that yesterday..."

People who say this don't realise the fluctuating nature of a brain injury, which is often down to fatigue. In some cases it can be because they did a task yesterday that they can't do it today.





Brain Injury Awareness & Schools

A brain injury is often called the invisible disability and this is particularly the case in the education system.

Children with brain injuries often have complex and pervading difficulties for many years, regardless of whether the cause was a brain tumor, traumatic brain injury (TBI), near drowning, meningitis or encephalitis.

The difficulty recognizing problems associated with brain injuries is that they are not always visible. Symptoms such as moodiness, forgetfulness, lethargy, aggression and inappropriate behavior can easily be dismissed as a sign of puberty or poor attitude, rather than a sign that the brain has been injured.

The task of diagnosis is made more difficult when we consider that students with a brain injury may not attribute their difficulties to the injury. The complications and difficulties that arise are varied and may range from hidden cognitive disabilities, such as short-term memory loss, loss of planning and organizational skills, through to physical disabilities such as fatigue, paralysis, hearing and sight loss. When did the injury happen? Years before?

Brain injury overlooked in schools

There are three main reasons that children with a traumatic brain injury or other brain disorder are being overlooked in the school systems. Most educational systems do not have:

- A specific assessment category for children with a brain injury
- Interdisciplinary integrating policies
- Professional expertise in brain injury in school support system.

Policy makers in government expect models of support suitable for other people with a disability to be suitable for students with a brain injury but their support needs are usually very different to other disabilities. This is not the case. Brain Injury is different than developmental disabilities or mental illness.

The majority of State education systems have no specific category for brain injury although they do for other types of disabilities such as intellectual disabilities, autism and visual impairments. Children with a brain injury may either fail to be classified as needing support at all, or they may fall across a number of criteria but only have low needs on each criterion.

Oregon has the TBI Team. They will come to your school and do assessments of the child and with the help of professionals, create a learning plan for each child. But the school and parents need to know that help is out there and that the TBI Teams will come to help.

Extrapolating from Center for Disease Control data, about 13,000 children 0-14 sustain a brain injury each year but only 271 are

identified in the school system.

It is unlikely that many of these children will come to the attention of the services of the education system, certainly not without a proactive approach including education and awareness training of teaching staff.

Many young people who have not been linked with school-based support services have reported that:

- Their teachers have not understood them or their needs
- They have experienced bullying and discrimination
- Their resulting distress has been so great that they have wanted to leave school.

It would appear that those responsible for the education of our children and their parents are yet to be educated on the needs of this very special group. Contact the Oregon TBI Team if you think your student or child has a brain injury. The Oregon TBI Team is a multidisciplinary group of educators and school professionals trained in pediatric brain injury. The Team provides in-service training to support schools, educators and families of Individuals (ages 0-21) with TBI. For evidence based information and resources for supporting Individuals with TBI, visit: www.tbied.org

For more information about Oregon's TBI www.cbirt.org/oregon-tbi-team/ Melissa McCart 541-346-0597 tbiteam@wou.edu or mccart@uoregon.edu



The Brain Injury Alliance of Oregon can deliver a range of trainings for your organization. These include:

- CBIS Training (Certified Brain Injury Specialist)-International Certification
- What Medical Professionals Should Know About Brain Injuries— But Most Don't
- Challenging Behaviors
- TBI & PTSD in the Returning Military
- · Vocational Rehabilitation-working with clients
- · Methamphetamine and Brain Injury
- ADA Awareness—Cross Disability Training
- · Judicial and Police: Working with People with Brain Injury
- Traumatic Brain Injury: A Guide for Educators
- Native People and Brain Injury

- Brain Injury 101
- What the Family Needs to Know After a Brain Injury
- Anger Management and TBI
- Aging and TBI
- How Brain Injury Affects Families
- Brain Injury for Medical and Legal Professionals-
- What you need to know
- Caregiver Training
- Domestic Violence and TBI
- Dealing with Behavioral Issues
- Returning to Work After Brain Injury And more!

For more information contact Sherry Stock, Executive Director, Brain Injury Alliance of Oregon at sherry@biaoregon.org 800-544-5243

Mental health: brain injury & mental illness (dual diagnosis)

Some people may find themselves coping not only with the effects of a brain injury, but also a mental illness.

Mental illness can cause additional stress for the person and their family after a brain injury. Common forms of mental illness include depression, anxiety, and obsessive or compulsive behavior. A brain injury can be caused by a brain tumor, Alzheimer's disease, traumatic brain injury, meningitis, encephalitis or epilepsy.

It can be very difficult obtaining support as services are normally provided specifically for brain injury, or mental illness - not both.

Living with a brain injury and a mental illness lead to a very poor quality of life, particularly as there is often also a dependence on alcohol or other drugs and contact with the criminal justice system. Life is often a matter of simply surviving each day with minimal to no support.

What does dual diagnosis mean?

'Dual diagnosis' is used when someone is affected by two different conditions at one time. It can also be called co-morbidity, coexisting disorders or dual-disability. The terms used may depend on the country and professional background of a person, For example, a psychiatrist or health professional may commonly use the terms co-morbidity or dual-diagnosis, whereas someone from disability organization may use the term 'dual disability.'

To be diagnosed as a disorder, the condition needs to be of such severity that it interferes with a person's cognitive, emotional or social abilities. Some of the most common mental health disorders are:

- clinical depression
- schizophrenia
- bipolar disorder
- anxiety disorder
- Personality disorder
- social anxiety disorder
- substance abuse disorder

The link between mental illness & brain injury

A mental illness may have been present prior to brain injury. A brain injury is also known risk factor for developing a mental illness.1 One report indicates 42% of people as having a dual diagnosis.2 Issues following a brain injury that may lead to a mental illness include grief and loss, adjustment to disability, pre-injury personality traits and strengths, coping skills and level of social support.3

It can also occur in the other direction. People with a mental health disorder are at an increased risk of brain injury when changes in cognitive abilities include reaction time, alertness and increased risk of self-harm.

Dual diagnosis issues

The effects of brain injury and mental illness can look very similar, so misdiagnosis is possible if there are no clear medical records.4

Problems associated with a person's ABI can be heightened by the presence of a mental illness. A mental illness in itself can affect skills in memory, attention and planning.

The brain injury itself can cause symptoms similar to syndromes such as psychosis and dementia, which can increase chance of misdiagnosis or missed diagnosis.

A mental illness can affect the rehabilitation process due to low motivation and creating unhelpful coping mechanisms and a negative mind set.

A mental health disorder can increase risks associated with a brain injury, including social isolation, family breakdown, unemployment, aggression and risk of exploitation.4

Treatment & support

Dual-diagnosis situations require additional support and a holistic approach, which may include medication, psychological therapy, and programs focusing on social skills/living skills re-training.

The first step is to get an appropriate assessment by a qualified specialist, such as a neuropsychologist or psychiatrist. There should be a care plan upon discharge outlining supports and services in the community to prevent relapse. Case management should be provided to coordinate any mental health and brain injury services.

It is not uncommon for people with a dual diagnosis to access support - mental health services will say they need a brain injury service, but the brain injury services say they should go to a mental health service. You may like to seek the support of an advocate to resolve this lack of support for dual diagnosis situations.

How can family help?

Signs that a mental illness may be developing following brain injury, include;

- A gradual decline in ability to perform everyday tasks
- Decline in ability to cope with every day stressors
- Increased behavioral issues e.g. anger, frustration, agitation
- Exaggeration of the effects of the acquired brain injury.

Seek advice from an appropriate professional or service for a suspected mental illness. Read about mental illness and brain disorders such as traumatic brain injury. Contact your local Brain Injury Association for more information and local supports.

Steps needed to plug gaps in service provision

At the policy level, no government agency takes responsibility for this group of people. This plays out at the service level where people with a dual diagnosis are bounced back and forth between the disability, health and homelessness sectors. The following recommendation would go a long way to plugging the gaps in service provision:

- Dual diagnosis recognized by governments at the policy level
- Psychiatric and disability groups in partnership with a focus on the client
- Training on dual diagnosis is required within mental health services.
- Neuropsychiatric services within mental health services
- Crisis teams experienced in dual diagnosis
- Screening for brain injury within the criminal justice system
- A 24 hour dual diagnosis crisis team is needed.

References

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Van Reekum, R., Bolago, I., Finlayson, M. A. J. (1996). Psychiatric disorders after traumatic brain

SPORTS



Two UF neuroscientists, Russell M. Bauer, Professor, Clinical & Health Psychology and Neurology, University of Florida and Michael S. Jaffee, Vice chair, Department of Neurology, University of Florida, explain that while a recent study showing 110 of 111 brains of deceased NFL players had a serious brain disease, there's a lot we still need to know about concussions.

For many, American football is a beautiful game that is simple to enjoy but complex to master. Choreographed with a mixture of artistry and brutality, it features the occasional "big hit" or bone-jarring tackle, forcing a fumble and turning the tide of the game.

But with this part of football comes justified concern about the long-term health effects of engaging in this type of activity over time, concerns that abound in practically every highimpact contact sport. It is possible that effects of continued involvement may accumulate quietly in the background until they show themselves, later in life.

A recent study appeared to give a "big hit" to the game of football itself, with findings that nearly all the brains of 111 deceased NFL players studied showed signs of chronic traumatic encephalopathy, or CTE.

At the University of Florida, our interdisciplinary team has studied brain injuries in athletes, military veterans and civilians for many years. Regarding sports concussion, there are many gaps in our knowledge and many associated issues to consider as we develop ways to keep our athletes, both young and old, safe.

The concussion 'explosion'

Concussions result from mechanical impact to the brain that produces transient changes in awareness or consciousness and a range of other symptoms. A 2016 study reported that between 1.1 million and 1.9 million concussions occur each year in children.

Concussions and CTE: more complicated than even the experts know

Although diagnosed concussions have been the primary focus, they are not the only, or maybe even the main, problem. There is also rising concern about subconcussive impacts, repetitive blows that may not be severe enough to cause clinical symptoms. There may be hundreds of subconcussive impacts per player, per year.

In response to widespread concern, organized sports organizations from Pop Warner to the NCAA to professional levels have developed and implemented concussion management protocols to help in the identification and management of concussions.

Yet the massive attention given to concussion management and prevention has produced a level of public pseudo-awareness about CTE that currently outstrips what is scientifically known about the disorder.

Missing links and gaps in knowledge

Several scientific studies have linked repetitive brain trauma to CTE.

CTE is a "tauopathy" in which the normally occurring protein tau becomes misfolded and accumulates at the depths of the folds (sulci) of the brain, in regions that may also be susceptible to mechanical forces during head impacts. The abnormal accumulation of the tau protein gives rise to a cascade of brain pathology that leads to cognitive impairment, neuropsychiatric problems (depression, anxiety, aggression, reduced impulse control), functional decline and, eventually, death.

Researchers are trying to find the best helmet to prevent concussions, just as doctors are studying the best way to treat them.

The study published July 25 that showed CTE in 110 of 111 deceased, former NFL players reflected a startling 99 percent prevalence rate.

The results were reported by news outlets across the world, leading many people to think that CTE is an all but inevitable outcome of playing football or other sports.

But is it? And most importantly for parents, coaches and fans, what is the actual risk to my kids, my players and my team?

The answers to these questions are not yet

known, though the risk to the individual player is very likely to be considerably less than would be suggested by available research findings.

Two important facts should be considered.

First, studies of CTE have all been conducted on small samples of brains delivered to CTE research centers by families of former players who have had concern about post-retirement cognitive, psychiatric or behavioral problems and symptoms.

The likelihood of finding brain pathology in these brains of symptomatic players is high, but these results cannot be generalized to all former football players, many of whom are living healthy lives in retirement.

Second, no study has evaluated even a single living player to determine whether he or she exhibits the cognitive, psychiatric or behavioral signs of CTE and then followed that person to autopsy to verify that CTE-associated pathology actually exists in their brains.

So, we do not know the actual prevalence of CTE in the general population of players, though it is assuredly much lower than those quoted by studies of symptomatic players.

Why do some get CTE and others do not?

We also don't know much about who develops CTE and who doesn't. There are over 10,000 living NFL retirees, yet the entire science of CTE is based on samples of less than a few hundred former NFL players and a handful of athletes from other sports. This means that some of those exposed to the risk of repetitive head impacts develop CTE, but most do not.

There are several factors that may contribute to the development of brain dysfunction and disease, including:

- medical or genetic risk factors
- medical and psychiatric problems such as depression, anxiety, sleep disorders and abuse of prescription medications or other drugs and substances
- reduced educational attainment or literacy, or socioeconomic deprivation

In addition, some athletes have poor adjustments to retirement, leading to psycho-

social and psychiatric maladjustment, marital or financial difficulties, substance abuse and other behavioral problems.

Repetitive head impacts may heighten risk of CTE, but other factors are undoubtedly involved in determining whether risk becomes reality. Reducing risk of CTE will involve targeting and treating these other factors as well.

over another. We do know, however, that appropriate fitting of helmets and protective gear is necessary to get the full protective benefit.

Some measures to reduce possible exposure and risk have been implemented. The Dartmouth University football program has significantly reduced contact practices for its football

team. Other Ivy League



What parents, coaches and athletes need to know

We need to take seriously the possible health consequences of prolonged exposure to repetitive head impacts and concussions.

That said, parental decisions to remove children from contact sports should be weighed against the many proven positive aspects of participation in team sports. Decisions should not be based on inflated risk assessment. Several studies have shown that recreational or scholastic athletic participation in youth conveys no significant added risk to brain health later in life.

Still, the developing brain may be more susceptible to injury and may take longer to recover. Knowledge of the individual player and his or her response to injury should guide parents, coaches and athletes in decisionmaking. Some youth are more injury-prone than others, and some have other conditions (e.g., ADHD, learning disability) that may affect how they react to head impact. When all factors are considered, the strongest predictor of recovery is the severity of initial symptoms.

All states now have legislation requiring public schools to have a concussion program in place. Parents should ask their school or athletic organization what their policies are regarding concussion management.

While helmet manufacturers are developing helmets that might provide greater protection, there is not enough evidence to recommend one teams and organizations have followed suit. The NCAA has recently recommended the elimination of two-a-day practices and restricted the number of contact practices allowed in football.

Physicians and athletic trainers at the University of Florida are using data from helmet sensors originally designed to help detect concussions to inform coaching staff on which specific practice drills and pad

configurations may incur higher risk so that such drills can be adjusted.

Ongoing research for this important issue is focused on developing techniques for accurate



diagnosis while an individual is alive and understanding the exact pathophysiology that might inform future disease-modifying treatment, in addition to our current treatments aimed at reduction of symptoms.

For those athletes who choose to continue the sports they love, we hope for continued innovations and policies that make their participation as safe as possible.

Source: http://news.ufl.edu/articles/2017/08/ concussions-and-cte-more-complicated-than-even-the -experts-know.php

BRAIN INJURY FACTS

Brain damage is an injury that causes the destruction or deterioration of brain cells.

In the U.S., every year, about 2.6 million people have some type of brain injury -whether as a result of trauma, stroke, tumor, or other illnesses, according to the Brain Injury Association of America. About 52,000 die as a result of traumatic brain injury, and more than 5 million Americans who've suffered traumatic brain injury require help in performing daily activities.

Some of the main difficulties that can affect people after Brain Injury

All Brain Injuries are different and people may be affected to a varying degree by any number of these problems depending on the severity of their injury and the area of the brain which is affected. We have grouped the main effects of Brain Injury into three areas:

- Physical affecting how the body works
- Cognitive affecting how the person thinks, learns and remembers
- Emotional and behavioral affecting how the person feels and acts

Physical Effects

Fatigue

Excessive tiredness is common to all severities of Brain Injury, including mild injuries. Tasks that we take for granted, such as getting dressed or walking around can require much more effort after Brain Injury. It is important to allow for rest periods at regular intervals during the day, and not to feel that everything has to be done at once.

Mobility

Movement can become very slow and balance can be affected. Indeed, having a Brain Injury can sometimes feel like 'living life in the slow lane'. Some people may need a wheelchair or other mobility aids, because their poor balance and coordination means they cannot walk without support. The fact that they use a wheelchair does not necessarily mean that the person cannot stand or walk for short distances.

Sensory impairment

Sensation of touch on the skin may be reduced, lost or exaggerated. It may also be difficult for the person to know where their limbs are positioned without looking at them. Eyesight may be affected and this may not be correctable with glasses. Odd postures or walking patterns may also be explained by sensory impairments. Taste or sense of smell may be impaired or lost, either in the short or long term.

Difficulties with speech

Slow, indistinct or rapid speech is common after a Brain Injury. It may be hard to understand the person's speech at first, but the listener may learn to 'tune in'. Some people may repeat what they have said many times over: this is known as perseveration. Some people may lose the ability to speak altogether. Remember, their inability to express themselves does not mean that they have lost their intelligence.

Epilepsy

Brain injury can make a person prone to epileptic seizures or 'fits'. Many people who have had a seizure after a Brain Injury are given a drug for a number of years to reduce the chance of it recurring. The drug may have an overall 'dampening' effect on the person's level of arousal, and therefore on the performance of everyday tasks. Remember the added effect that this could have if the person already has excessive fatigue. It is important to remember that a person who suffers from seizures may not be allowed to drive and should contact the relevant authorities for advice.

Spasticity

Limbs may be stiff or weak, and the range of movement limited. Often one side of the body is affected more than the other, depending on the area of brain that is damaged. This is known as hemiplegia. Spasticity may cause pain or discomfort. If this occurs it is advisable to seek help from a GP, who may be able to (Difficulties Continued on page 19)







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Phone: 503-581-0393 Fax: 503-581-4320 *(Difficulties Continued from page 18)* prescribe drugs to reduce muscle spasms. Weakness or paralysis often affects one side of the body more than the other. This could mean that help is needed during personal care and when getting dressed or undressed. Muscle weakness may affect continence, and continence aids may be needed.

Ataxia

This is irregular, uncontrolled movement or tremor affecting the co-ordination of movements. The person's hands may be shaky or clumsy, and handwriting may be difficult or impossible.

Hormonal imbalances

Brain injury may cause damage to the hypothalamus and/or pituitary gland, which are small structures at the base of the brain responsible for regulating the body's hormones. Damage to these areas can lead to insufficient or increased release of one or more hormones, which causes disruption of the body's ability to maintain a stable internal environment (homeostasis). If damage to the pituitary gland leads to a reduction in hormone production the resulting condition is known as hypopituitarism. Another hormonal condition which can be caused by Brain Injury is neurogenic diabetes insipidus, which is usually a shortterm problem in the acute stage after injury but can occasionally persist in the long-term.

Cognitive Effects Memory

Problems with memory, particularly shortterm memory, are common after Brain Injury. Some people may be unable to remember faces or names, or what they have read or what has been said to them. New learning may be affected, whilst previously learned skills may still be intact.

Motivation

Reduced initiation and problems with motivation. Problems with getting started on tasks are common, and can often be mistaken for laziness. These problems may also be a symptom of depression.

Reduced concentration span

This is very common and can also impact on memory problems. Completing tasks can be a problem and the task may be abandoned before reaching the end. The person may initially appear eager to start a task, but then lose interest very quickly.

Slower information processing

People can take longer to think things through or work out what has been said to them. 'Information overload' can be quickly reached, and can cause frustration and anger.

Reduced problem-solving ability

It may be difficult for the person to work out what



While women have smaller brains than men, women use their brains more efficiently than men.

to do if they encounter an unexpected problem.

Repetition or 'perseveration'

The person may be unable to move on to another topic in the same conversation, and they may return to the same topic over and over again. They may also repeat the same action, appearing unable to break the cycle.

Reasoning, judgement & insight

Impaired reasoning may affect a person's ability to think logically, to understand rules, or follow discussions. The person may easily become argumentative due to lack of understanding. Impaired judgement can cause difficulties in accurately perceiving and interpreting one's own and other people's behavior and feelings. Putting oneself 'in someone else's shoes' can be almost impossible. Lack of insight means the person may have an unrealistic view of themselves and others, and may not appreciate that they have certain problems. This may lead to unattainable goals being set, which then leads to failure and frustration.

Language loss (aphasia)

This may be 'receptive' (difficulty making sense of what is said or read) or 'expressive' (difficulty finding the right words to say or write), or both. This can be very frustrating for the person and for others, and patience is needed on both sides. Remember - just because a person cannot express themselves, does not mean they do not need or want to be heard.

Impaired visual-perceptual skills

The person may have difficulty making sense out of ordinary pictures and shapes, finding the way around a building, or drawing or constructing objects. These problems can be particularly frustrating for a person who is quite competent in their language and social skills. Occasionally, people may fail to respond to stimuli coming from one side of their visual field, or may ignore a particular side of their body, for example when shaving or dressing. This condition is known as visual neglect.

Emotional & Behavioral Effects Loss of confidence

This is very common after Brain Injury and a person can need a lot of encouragement and reassurance.

Mood swings or 'emotional lability'

The person may have a tendency to laugh or cry very easily, and to move from one emotional state to another quite suddenly. Depression and sense of loss are common. Depression may be caused by injury to the areas of the brain that control emotion, but can also be associated with the person gaining an insight into the other effects of their injury. After Brain Injury, many things that are precious to the individual may be lost forever and there may be much sadness, anger, guilt and confusion, surrounding this.

Anxiety & frustration

(Difficulties Continued on page 20)

(Difficulties Continued from page 19) Anxiety can be another consequence of Brain Injury. Life has been changed forever in a matter of seconds, and the future can look frightening. Anxiety can guickly lead to frustration and anger and needs to be identified and alleviated as early as possible. Frustration can build up quickly, especially when things that were once so easy are now difficult or impossible. The resulting anger may be very difficult for the person to control. Abusive or obscene language may be used. This may be spontaneous and uncontrollable, and may be an outlet for the person's anger and frustration. This behavior can obviously be embarrassing and upsetting for those nearby.

Disinhibition

There may be a loss of control over social behavior, so that the person may behave in an over-familiar manner or may make sexual advances with the wrong people at the wrong time. They may also be unable to inhibit what they are thinking and may make inappropriate and offensive outbursts.

Impulsivity

A person with a Brain Injury may tend to speak or act without thinking things through properly first. Obsessive behavior can occur. For example, a person may be afraid that their possessions will be stolen, and may check their belongings repeatedly.



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Recovering from Mild Traumatic Brain Injury A handbook of hope for military and their families. Edited by Mary Ann Keatley, PhD and Laura L. Whittemore

This clear and concise handbook speaks to our Wounded Warriors and their families and helps them navigate through the unknown territory of this often misunderstood and unidentified injury. It provides an insightful guide to understanding the symptoms, treatment options and redefines "Recovery" as their new assignment. Most importantly, the intention of the authors is



to inspire hope that they will get better, they will learn to compensate and discover their own resiliency and resourcefulness. \$23.00



Ketchup on the Baseboard

Ketchup on the Baseboard tells the personal story of the authors' family's journey after her son, Tim, sustained a brain injury. Chronicling his progress over more than 20 years, she describes the many stages of his recovery along with the complex emotions and changing dynamics of her family and their expectations. More than a personal story, the book contains a collection of articles written by Carolyn Rocchio as a national columnist for newsletters and journals on brain injury. \$25

A Change of Mind

A Change of Mind by Janelle Breese Biagioni is a very personal view of marriage and parenting by a wife with two young children as she was thrust into the complex and confusing world of brain injury. Gerry Breese, a husband, father and constable in the Royal Canadian Mounted Police was injured in a motorcycle crash while on duty. Janelle traces the roller coaster of emotions, during her husband's hospital stay and return home. She takes you into their



home as they struggle to rebuild their relationship and life at home. \$20



Fighting for David

Leone Nunley was told by doctors that her son David was in a "persistent coma and vegetative state"--the same diagnosis faced by Terri Schiavo's family. Fighting for David is the story how Leone fought for David's life after a terrible motorcycle crash. This story shows how David overcame many of his disabilities with the help of his family. \$20

The Caregiver's Tale: The True Story Of A Woman, Her Husband Who Fell Off The Roof, And Traumatic Brain Injury

From the Spousal Caregiver's, Marie Therese Gass, point of view, this is the story of the first seven years after severe Traumatic Brain Injury, as well as essays concerning the problems of fixing things, or at least letting life operate more smoothly. Humor and pathos, love and frustration, rages and not knowing what to do--all these make up a complete story of Traumatic Brain Injury. \$20



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Summer 2017

Resources

Oregon Centers for Independent Living Contact List

									CIL	LOCATION	COUNTIES SERVED
Dregon Developmental Disabilities (DD) For individuals whose disability manifested before age 22 and resulted in ifelong conditions that affect a person's ability to live independently, this state agency arranges and coordinates services to eligible state residents								sulted in tly, this	ABILITREE IL Director: Greg Sublette	2680 NE Twin Knolls Dr Bend, OR 97702 1-541-388-8103	Crook, Deschutes, Jefferson
http://ww	ate agency arranges and coordinates services to eligible state residents. ttp://www.oregon.gov/DHS/dd/Pages/index.aspx (800)-282-8096 regon's Aged and Physically Disabled Medicaid Waiver helps elderly									322 SW 3 rd Suite 6 Pendleton, OR 97801 (541) 276-1037 1-877-711-1037	Gilliam,, Morrow, Umatilla, Union, Wheeler
of in a ni nome pla or-aged-	nd physically disabled Oregon residents to receive care at home instead f in a nursing home even though they are medically qualified for nursing ome placement. <u>https://www.payingforseniorcare.com/medicaid-waivers/</u> <u>or-aged-and-physically-disabled.html</u>							nursing -waivers/	EOCIL (Eastern Oregon Center for Independent Living) Director: Kirt Toombs	400 E Scenic Dr., Ste 2349 The Dalles, OR 97058 541-370-2810 1-855-516-6273	Columbia , Hood River, Sherman, Wasco
 Adult Adult reside Comm return 	Day Care Residenti nces nunity Tra ing to the	a - group ial Care - ansition S commur	such as Services	adult fo	ster ho sons le	urs omes or a aving nu	assisteo ursing h	d living omes and		1021 SW 5th Avenue Ontario, OR 97914 (541) 889-3119 or 1-866-248-8369	Baker, Grant, Harney, Malheur , Wallowa
 Enviro of par Home Hot or In Hor 	nmental ticipants Delivere prepared ne Care	Accessib d Meals d, nutritio Services	bility Ada busly bala - as nee	ptations anced ded	- to inc	crease th	ne indep	bendence	HASL (Independent Abilities Center) Director: Randy Samuelson	305 NE "E" St. Grants Pass, OR 97526 (541) 479-4275	Josephine, Jackson, Curry, Coos , Douglas
 Transcare a ADRC - A resour 	In Home Care Services - as needed Transportation Assistance - coordination of transportation for adult day care and medical appointments ADRC - Aging and Disability Resource Connection							dult day ers	LILA (Lane Independent Living Alliance) Director: Sheila Thomas	20 E 13th Ave Eugene, OR 97401 (541) 607-7020	Lane, Marion, Polk, Yamhill, Linn, Benton, Lincoln
eeking information about long-term supports and services. Here you will ind quick and easy access to resources in your community. If you cannot ind the information you are looking for or wish to talk to someone in person I-855-673-2372							es. Here ty. If you omeone	you will u cannot e in person	ILR (Independent Living Resources) Director: Barry Fox-Quamme	1839 NE Couch Street Portland, OR 97232 (503) 232-7411	Clackamas, Multnomah, Washington
	Summer Sudoku (Answer from page 2)								SPOKES UNLIMITED	1006 Main Street Klamath Falls, OR 97601 (541) 883-7547	Klamath
5 2	6 7	3 9	9 4	7 8	1 5	2 1	4 6	8 3	Director: Curtis Raines	SPOKES Lakeview Branch Office 100 North D St, Lakeview, OR 97630 541-947-2078 (voice)	Lake
8	4	1	3	2	6	5	9	7	UVDN (Umpqua Valley disAbilities	736 SE Jackson Street, Roseburg, OR 97470	Douglas
4	8	5	2	6	7	9	3	1	Network) Director:		
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The Headliner

Resources

For Parents, Individuals, Educators and Professionals

The Oregon TBI Team

The Oregon TBI Team is a multidisciplinary group of educators and school professionals trained in pediatric brain injury. The Team provides in-service training to support schools, educators and families of Individuals (ages 0-21) with TBI. For evidence based information and resources for supporting Individuals with TBI, visit: www.tbied.org For more information about Oregon's TBI www.cbirt.org/oregon-tbi-team/ Melissa McCart 541-346-0597 tbiteam@wou.edu or mccart@uoregon.edu

www.cbirt.org

LEARNet

Provides educators and families with invaluable information designed to improve the educational outcomes for Individuals with brain injury. www.projectlearnet.org/index.html

Parent Training and Information

A statewide parent training and information center serving parents of children with disabilities. 1-888-988-FACT

Email: info@factoregon.org http://factoregon.org/?page id=52

Websites

Mayo Clinic www.mayoclinic.com/health/traumatic -brain-injury/DS00552 BrainLine.org www.brainline.org/content/2010/06/

general-information-for-parents-educators-ontbi_pageall.html

FREE Brain Games to Sharpen Your Memory and Mind

www.realage.com/HealthyYOUCenter/Games/ intro.aspx?gamenum=82

http://brainist.com/ Home-Based Cognitive Stimulation Program http://main.uab.edu/tbi/show.asp? durki=49377&site=2988&return=9505 Sam's Brainy Adventure http://faculty.washington.edu/chudler/flash/ comic.html

Neurobic Exercise

www.neurobics.com/exercise.html Brain Training Games from the Brain Center of America

www.braincenteramerica.com/exercises am.php



Brain Injury — Alliance — Washington TBI Resource Center

Providing Information & Referrals to individuals with brain injury, their caregivers, and loved ones through the Resource Line. In-Person Resource Management is also available in a service area that provides coverage where more than 90% of TBI Incidence occurs (including counties in Southwest Washington).

> For more information or assistance call: 1-877-824-1766 9 am -5 pm www.BrainInjuryWA.org

Vancouver: Carla-Jo Whitson, MSW CBIS 360-991-4928 jarlaco@yahoo.com

Returning Veterans Project

Returning Veterans Project is a nonprofit organization comprised of politically unaffiliated and independent health care practitioners who offer free counseling and other health services to veterans of past and current Irag and Afghanistan campaigns and their families. Our volunteers include mental health professionals, acupuncturists and other allied health care providers. We believe it is our collective responsibility to offer education, support, and healing for the short and long-term repercussions of military combat on veterans and their families. For more information contact: Belle Bennett Landau, Executive Director, 503-933-4996 www.returningveterans.org

email: mail@returningveterans.org

Center for Polytrauma Care-Oregon VA

Providing rehabilitation and care coordination for combat-injured OIF/OEF veterans and active duty service members.

Contact: Ellen Kessi, LCSW , Polytrauma Case Manager Ellen.Kessi@va.gov 1-800-949-1004 x 34029 or 503-220-8262 x 34029

Addiction Inpatient help:

Hazelden Betty Ford Foundation, 1901 Esther St, Newberg, OR 97132 (503) 554-4300 www.hazeldenbettyford.org

Serenity Lane, 10920 SW Barbur Blvd Ste 201, Portland, OR 97219 (503) 244-4500 www.serenitylane.org

Legal Help

Disability Rights Oregon (DRO) promotes Opportunity, Access and Choice for individuals with disabilities. Assisting people with legal representation, advice and information designed to help solve problems directly related to their disabilities. Have you had an insurance claim for cognitive therapy denied? All services are confidential and free of charge. (503) 243-2081 www.disabilityrightsoregon.org/

Legal Aid Services of Oregon serves people with low-income and seniors. If you qualify for food stamps you may gualify for services. Areas covered are: consumer, education, family law, farmworkers, government benefits, housing, individual rights, Native American issues, protection from abuse, seniors, and tax issues for individuals. Multnomah County 1-888-610-8764 www.lawhelp.org

Oregon Law Center Legal provides free legal services to low income individuals, living in Oregon, who have a civil legal case and need legal help. Assistance is not for criminal matter or traffic tickets. http:// oregonlawhelp.org 503-295-2760

Oregon State Bar Lawyer Referral Services refers to a lawyer who may be able to assist. 503-684-3763 or 800-452-7636

The Oregon State Bar Military Assistance Panel program is designed to address legal concerns of Oregon service members and their families immediately before, after, and during deployment. The panel provides opportunities for Oregon attorneys to receive specialized training and offer pro bono services to service members deployed overseas. 800-452-8260

St. Andrews Legal Clinic is a community non-profit that provides legal services to low income families by providing legal advocacy for issues of adoption, child custody and support, protections orders, guardianship, parenting time, and spousal support. 503-557-9800

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Need Help with Health Care?

Affordable Naturopathic Clinic in Southeast Portland

Resources

An affordable, natural medicine clinic is held the second Saturday of each month. Dr. Cristina Cooke, a naturopathic physician, will offer a sliding-scale.

Naturopaths see people with a range of health concerns including allergies, diabetes, fatigue, high blood-pressure, and issues from past physical or emotional injuries.

Assistance

Financial, Housing, Food, Advocacy

TBI Long Term Care—Melissa Taber, Long Term Care TBI Coordinator, DHS, State of Oregon 503-947-5169 Long Term Care Ombudsman - Fred Steele, JD,

fred.steele@ltco.state.or.us, 1-800-522-2602 503-983-5985 Mult County: 503-318-2708

Oregon Public Guardian Ombudsman - Travis Wall, 503-378-6848 844-656-6774

Oregon Health Authority Ombudsman - Ellen Pinney Ellen.Pinney@state.or.us 503-947-2347 desk 503-884-2862 cell 877-642-0450 toll-free

The Low-Income Home Energy Assistance Program (LIHEAP) is a federally-funded program that helps lowincome households pay their home heating and cooling bills. It operates in every state and the District of Columbia, as well as on most tribal reservations and U.S. territories. The LIHEAP Clearinghouse is an information resource for state, tribal and local LIHEAP providers, and others interested in low-income energy issues. This site is a supplement to the LIHEAP-related information the LIHEAP Clearinghouse currently provides through its phone line 1-800-453-5511 www.ohcs.oregon.gov/OHCS/ SOS Low Income Energy Assistance Oregon.shtml

Food, Cash, Housing Help from Oregon Department of Human Services 503-945-5600

http://www.oregon.gov/DHS/assistance/index.shtml

Housina

Various rental housing assistance programs for low income households are administered by local community action agencies, known as CAAs. Subsidized housing, such as Section 8 rental housing, is applied for through local housing authorities. 503-986-2000 http://oregon.gov/ OHCS/CSS Low Income Rental Housing Assistance Programs.shtml

Oregon Food Pantries http://www.foodpantries.org/st/ oregon

Central City Concern, Portland 503 294-1681 Central City Concern meets its mission through innovative outcome based strategies which support personal and community transformation providing:

- Direct access to housing which supports lifestyle change.
- Integrated healthcare services that are highly effective in engaging people who are often alienated from mainstream systems.
- The development of peer relationships
- Attainment of income through employment or accessing benefits.

The clinic is located at:

The Southeast Community Church of the Nazarene 5535 SE Rhone, Portland.

For more information of to make an appointment, please call: Dr. Cooke, 503-984-5652

> Tammy Greenspan Head Injury Collection A terrific collection of books specific to brain injury. You can borrow these books through the interlibrary loan system. A reference librarian experienced in brain injury literature can help you find the book to meet your needs. 516-249-9090

Oregon Health Connect: 855-999-3210 Oregonhealthconnect.org Information about health care programs for people who need help.

Project Access Now 503-413-5746 Projectaccessnnow.org Connects low-income, uninsured people to care donated by providers in the metro area.

Health Advocacy Solutions - 888-755-5215 Hasolutions.org Researches treatment options, charity care and billing issues for a fee.

Coalition of Community Health Clinics 503-546-4991 Coalitionclinics.org Connects low-income patients with donated free pharmaceuticals.

Oregon Prescription Drug Program 800-913-4146 Oregon.gov/OHA/pharmacy/OPDP/Pages/index.aspx Helps the uninsured and underinsured obtain drug discounts.

Central City Concern, Old Town Clinic Portland 503 294-1681 Integrated healthcare services on a sliding scale.

Valuable Websites

www.iCaduceus.com: The Clinician's Alternative, web-based alternative medical resource.

www.idahotbi.org/: Idaho Traumatic Brain Injury Virtual Program Center-The program includes a telehealth component that trains providers on TBI issues through video-conferencing and an online virtual program center.

www.headiniury.com/ - information for brain injury survivors and family members

- http://activecoach.orcasinc.com Free concussion training for coaches ACTive: Athletic Concussion Training ™using Interactive Video Education
- www.oregonpva.org If you are a disabled veteran who needs help, peer mentors and resources are available
- www.oregon.gov/odva: Oregon Department of Veterans Affairs

http://fort-oregon.org/: information for current and former service members

http://oregonmilitarysupportnetwork.org - resource for current and former members of the uniformed military of the United States of America and their families.

http://apps.usa.gov/national-resource-directory/National Resource Directory The National Resource Directory is a mobile optimized website that connects wounded warriors, service members, veterans, and their families with support. It provides access to services and resources at the national, state and local levels to support recovery, rehabilitation and community reintegration. (mobile website)

http://apps.usa.gov/ptsd-coach/PTSD Coach is for veterans and military service members who have, or may have, post-traumatic stress disorder (PTSD). It provides information about PTSD and care, a self-assessment for PTSD, opportunities to find support, and tools-from relaxation skills and positive self-talk to anger management and other common self-help strategies-to help manage the stresses of daily life with PTSD. (iPhone)

www.BrainLine.org: a national multimedia project offering information and resources about preventing, treating, and living with TBI; includes a series of webcasts, an electronic newsletter, and an extensive outreach campaign in partnership with national organizations concerned about traumatic brain injury.

People Helping People (PHP) provides comprehensive wrap around services to adults with disabilities and senior citizens, including: the General Services Division provides navigation/ advocacy/case management services in the areas of social services and medical care systems; the DD Services Division provides specialized services to adults with developmental disabilities. including community inclusion activities, skills training, and specialized supports in the areas of behavior and social/sexual education and training; and the MEMS program provides short term and long term loans of needed medical equipment to those who are uninsured or under-insured. Medical supplies are provided at no cost. (availability depends on donations received). http:// www.phpnw.org Sharon Bareis, 503-875-6918

Survivor Support Line - CALL 855-473-3711

A survivor support line is now available to provide telephone support to those who suffer from all levels of brain impairment. 4peer11 is a survivor run, funded, operated and managed-emotional help line. We do not give medical advice, but we DO have two compassionate ears. We have survived some form of brain injury or a we are a survivor who is significant in the life of a survivor.

The number to call 855-473-3711 (855-4peer11). Live operators are available from 9am-9pm Pacific Standard Time. If a call comes when an operator is not free please leave a message. Messages are returned on a regular basis.

Astoria

Astoria Support Group on hiatus Kendra Ward 209-791-3092 pnwhigroup@gmail.com

Beaverton

Circle of Support Brain Injury Survivors, Stroke Victims and their Care Givers 4th Saturday 10:00 am - 11:30 pm Elsie Stuhr, Cedar Room 5550 SW Hall Beaverton, OR 97005

Bend

CENTRAL OREGON SUPPORT GROUP

2nd Saturday 10 am to 11:30 St. Charles Medical Center 2500 NE Neff Rd, Bend 97701 Call 541 382 9451 for Room location Joyce & Dave Accornero, 541 382 9451 Accornero@bendbroadband.com

Abilitree Thursday Support Group

Thursdays 10:30 am - 12:00 noon Brain Injury Survivor and Family Group & Survivor and Family/Caregiver Cross Disabilities Abilitree, 2680 NE Twin Knolls Dr., Bend OR 97701 Contact Francine Marsh 541-388-8103 x 205 francinem@abilitree.org

Abilitree Moving A Head Support Group

1st & 3rd Thursday 5:30-7:00 Brain Injury Survivor, Survivor and Family Abilitree, 2680 NE Twin Knolls Dr., Bend OR 97701 Contact Francine Marsh 541-388-8103 x 205 francinem@abilitree.org

Corvallis

STROKE SUPPORT GROUP

1st Tuesday 1:30 to 3:00 pm Church of the Good Samaritan Lng 333 NW 35th Street, Corvallis, OR 97330 Call for Specifics: Josh Funk 541-768-5157 jfunk@samhealth.org

Brain Injury Support Group

Currently with Stroke Support Group Church of the Good Samaritan Lng 333 NW 35th Street, Corvallis, OR 97330 Call for Specifics: Josh Funk 541-768-5157 jfunk@samhealth.org

Brain Injury Support Groups

Coos Bav (2)

Traumatic Brain Injury (TBI) Support Group 2nd Saturday 3:00pm - 5:00pm Kaffe 101, 171 South Broadway Coos Bay, OR 97420 tbicbsupport@gmail.com

Growing Through It- Healing Art Workshop Contact: Bittin Duggan, B.F.A., M.A., 541-217-4095 bittin@growingthroughit.org

Eugene (3)

Head Bangers

3rd Tuesday, Feb., Apr., June, July, Aug., Oct. Nov. 6:30 pm - 8:30 pm Potluck Social Monte Loma Mobile Home Rec Center 2150 Laura St;, Springfield, OR 97477 Susie Chavez, (541) 342-1980 admin@communityrehab.org

Community Rehabilitation Services of Oregon

3rd Tuesday, Jan., Mar., May, Sept. and Nov. 7:00 pm - 8:30 pm Support Group St. Thomas Episcopal Church 1465 Coburg Rd.; Eugene, OR 97401 Jan Johnson, (541) 342-1980 admin@communityrehab.org

BIG (BRAIN INJURY GROUP)

Tuesdays 11:00am-1pm Hilyard Community Center 2580 Hilyard Avenue, Eugene, OR. 97401 Curtis Brown, (541) 998-3951 BCCBrown@gmail.com

Hillsboro

Westside SUPPORT GROUP

3rd Monday 7-8 pm For brain injury survivors, their families, caregivers and professionals **Tuality Community Hospital** 335 South East 8th Street, Hillsboro, OR 97123 Carol Altman, (503) 640-0818

Klamath Falls SPOKES UNLIMITED BRAIN INJURY SUPPORT GROUP

2nd Tuesday 1:00pm to 2:30pm 1006 Main Street, Klamath Falls, OR 97601 Jackie Reed 541-883-7547 iackie.reed@spokesunlimited.org

Lake Oswego (2)

Family Caregiver Discussion Group 4th Wednesday, 7-8:30 PM (there will be no group in August) Parks & Recreational Center 1500 Greentree Drive, Lake Oswego, OR 97034 Ruth C. Cohen, MSW, LCSW, 503-701-2184 www.ruthcohenconsulting.com

Functional Neurology Support Group 3rd Wednesday 7-8:30 pm Market of Choice, 5639 Hood St, West Linn

Lebanon **BRAIN INJURY SUPPORT GROUP OF LEBANON** on hiatus

Medford

Southern Oregon Brainstormers Support & Social Club 1st Tuesday 3:30 pm to 5:30 pm Lion's Sight & Hearing Center 228 N. Holly St (use rear entrance Lorita Cushman 541-621-9974 BIAOregon@AOL.COM

Oregon City

Brain Injury Support Group 3rd Friday 1-3 pm (Sept - May) - summer potlucks Pioneer Community Center - ask at the front desk for room 615 5th St. Oregon City 97045 Sonja Bolon, MA 503-816-1053 brain4you2@gmail.com>

Portland (20)

Brain Injury Help Center Without Walls "Living the Creative Life" Women's Coffee 1st and 3rd Fridays: 10:00 - 12:00 - currently full Family and Parent Coffee in café Wednesdays: 10:00-12:00 braininjuryhelporg@yahoo.com Call Pat Murray 503-752-6065

BIRRDsona

1st Saturday 9:30 - 11 1. Peer support group that is open to everyone, including family and the public 2. Family and Friends support group that is only for family and friends Legacy Good Samaritan Hospital, Wistar Morris Room. 1015 NW 22nd Portland, 97210 Joan Miller 503-969-1660 peersupportcoordinator@birrdsong.org

BRAINSTORMERS I

2nd Saturday 10:00 - 11:30am Women survivor's self-help group Wilcox Building Conference Room A 2211 NW Marshall St., Portland 97210 Next to Good Samaritan Hospital Lynne Chase MS CRC Lynne.Chase@gmail.com 503-206-2204

BRAINSTORMERS II

3rd Saturday 10:00am-12:00noon Survivor self-help group Emanuel Hospital Medical Office Building West Conf Rm 2801 N Gantenbein, Portland, 97227 Steve Wright stephenmwright@comcast.net 503-816-2510

CROSSROADS (Brain Injury Discussion Group)

2nd and 4th Friday, 1-3 pm Independent Living Resources 1839 NE Couch St. Portland, OR 97232 503-232-7411 Must Be Pre-Registered

Doors of Hope - Spanish Support Group

3rd Tuesday 5:30 -7:30pm Providence Hospital, 4805 NE Glisan St, Portland, Rm HCC 6 503--454--6619 grupodeapoyo@BIRRDsong.org Please Pre-Register

Support Groups provide face-to-face interaction among people whose lives have been affected by brain injury, including Peer Support and Peer Mentoring.

OHSU Sports Concussion Support Group

For Youth and Their Families who have been affected by a head injury 2nd Tuesday, 7:00-8:30 pm OHSU Center for Health and Healing 3303 SW Bond Ave, 3rd floor conference room Portland, OR 97239 For more information or to RSVP contact Jennifer Wilhelm (503) 494-3151 or email: wilhelmj@ohsu.edu Sponsored by OHSU Sports Medicine and Rehabilitation

PARENTS OF CHILDREN WITH BRAIN INJURY

Wednesdays: 10:00-12:00 Currently combined with THRIVE SUPPORT GROUP/ FAMILY SUPPORT GROUP Contact for further information braininjuryhelp@yahoo.com Pat Murray 503-752-6065 **MUST BE PRE-REGISTERED**

TBI Caregiver Support Meetings

4th Thursday 7-8:30 PM 8818 NE Everett St, Portland OR 97220 Call Karin Keita 503-208-1787 email: afripath@gmail.com **MUST BE PRE-REGISTERED**

THRIVE SUPPORT GROUP

Family and Parent Coffee in café Wednesdays: 10:00-12:00 Brain Injury Survivor support group ages 15-25 Currently combined with FAMILY SUPPORT GROUP/ PARENTS OF CHILDREN WITH BRAIN INJURY SUPPORT GROUP Contact for further information braininjuryhelp@yahoo.com Pat Murray 503-752-6065 **MUST BE PRE-REGISTERED**

TBI SOCIAL CLUB

2nd Tuesday 11:30 am - 3 pm Pietro's Pizza, 10300 SE Main St, Milwaukie OR 97222 Lunch meeting- Cost about \$6.50 Michael Flick, 503-775-1718 **MUST BE PRE-REGISTERED**

Redmond (1)

Stroke & TBI Support Group Coffee Social including free lunch 2nd & 4th Thursday 10:30-1 pm Lavender Thrift Store/Hope Center 724 SW 14th St, Redmond OR 97756 Call Darlene 541-390-1594

Roseburg

UMPQUA VALLEY DISABILITIES NETWORK on hiatus

736 SE Jackson St, Roseburg, OR 97470 (541) 672-6336 udvn@udvn.org Salem (3)

SALEM BRAIN INJURY SUPPORT GROUP 4th Thursday 4pm-6pm

Community Health Education Center (CHEC) 939 Oat St, Bldg D 1st floor, Salem OR 97301 Megan Snider (503) 561-1974 megan.snider@salemhealth.org

SALEM COFFEE & CONVERSATION

Fridays 11-12:30 pm Ike Box Café 299 Cottage St, Salem OR 97301 Megan Snider (503) 561-1974

SALEM STROKE SURVIVORS & CAREGIVERS SUPPORT GROUP

2nd Friday 1 pm - 3pm Community Health Education Center (CHEC) 939 Oat St, Bldg D 1st floor, Salem OR 97301 Bill Elliott 503-390-8196 welliott21xyz@mac.com

Tillamook (1)

Head Strong Support Group

2nd Tuesday, 6:30-8:30 p.m. Herald Center - 2701 1st St - Tillamook, OR 97141 For information: Beverly St John (503) 815-2403 or beverly.stjohn@ah.org

WASHINGTON TBI SUPPORT GROUPS Quad Cities TBI Support Group

Second Saturday of each month, 9 a.m. Tri State Memorial Hosp. 1221 Highland Ave, Clarkston, WA Deby Smith (509-758-9661; biagcedby@earthlink.net) Stevens County TBI Support Group 1st Tuesday of each Month 6-8 pm Mt Carmel Hospital, 982 E. Columbia, Colville, WA Craig Sicilia 509-218-7982; craig@tbiwa.org Danny Holmes (509-680-4634)

Moses Lake TBI Support Group

2nd Wednesday of each month, 7 p.m. Samaritan Hospital 801 E. Wheeler Rd # 404, Moses Lake, WA Jenny McCarthy (509-766-1907)

Pullman TBI Support Group

3rd Tuesday of each month, 7-9p.m. Pullman Regional Hospital, 835 SE Bishop Blvd, Conf Rm B, Pullman, WA Alice Brown (509-338-4507)

Pullman BI/Disability Advocacy Group

2nd Thursday of each month, 6:30-8:00p.m. Gladish Cultural Center, 115 NW State St., #213 Pullman, WA Donna Lowry (509-725-8123)

SPOKANE, WA

Spokane TBI Survivor Support Group 2nd Wednesday of each month 7 p.m. St.Luke's Rehab Institute 711 S. Cowley, #LL1, Craig Sicilia (509-218-7982; craig@tbiwa.org) Michelle White (509-534-9380; mwhite@mwhite.com)

Spokane Family & Care Giver BI Support Group

4th Wednesday of each month, 6 p.m. St. Luke's Rehab Institute 711 S. Cowley, #LL1, Spokane, WA Melissa Gray (melissagray.mhc@live.com) Craig Sicilia (509-218-7982; craig@tbiwa.org) Michelle White (509-534-9380; mmwhite@mwhite.com)

*TBI Self-Development Workshop

"reaching my own greatness" *For Veterans 2nd & 4th Tues. 11 am- 1 pm Spokane Downtown Library 900 W. Main Ave., Spokane, WA Craig Sicilia (509-218-7982; craig@tbiwa.org)

Spokane County BI Support Group

4th Wednesday 6:30 p.m.-8:30 p.m. 12004 E. Main, Spokane Valley WA Craig Sicilia (509-218-7982; craig@tbiwa.org) Toby Brown (509-868-5388) Spokane County Disability/BI Advocacy Group 511 N. Argonne, Spokane WA

Craig Sicilia (509-218-7982; craig@tbiwa.org)

VANCOUVER, WA

TBI Support Group

2nd and 4th Thursday 2pm to 3pm Legacy Salmon Creek Hospital, 2211 NE 139th Street conference room B 3rd floor Vancouver WA 98686 Carla-Jo Whitson, MSW, CBIS jarlaco@yahoo.com 360-991-4928

IDAHO TBI SUPPORT GROUPS

STARS/Treasure Valley BI Support Group

4th Thursday 7-9 pm Idaho Elks Rehab Hosp, Sawtooth Room (4th FI), Boise Kathy Smith (208-367-8962; kathsmit@sarmc.org) Greg Meyer (208-489-4963; gmeyer@elksrehab.org)

Southeastern Idaho TBI support group

2nd Wednesday 12:30 p.m. LIFE, Inc., 640 Pershing Ste. A, Pocatello, ID Tracy Martin (208-232-2747) Clay Pierce (208-904-1208 or 208-417-0287; clayjoannep@cableone.net)

Twin Falls TBI Support Group

3rd Tuesday 6:30-8 p.m. St. Lukes' Idaho Elks Rehab Hosp, Twin Falls, ID Keran Juker (keranj@mvrmc.org; 208-737-2126)

*Northern Idaho TBI Support Group

*For Veterans 3rd Sat. of each month 1-3 pm Kootenai Med. Center, 2003 Lincoln Way Rm KMC 3 Coeur d'Alene, ID Sherry Hendrickson (208-666-3903, shendrickson@kmc.org) Craig Sicilia (509-218-7982; craig@tbiwa.org) Ron Grigsby (208-659-5459)





The Brain Injury Alliance of Oregon (BIAOR) AKA the Brain Injury Association of Oregon PO Box 549, Molalla OR 97038 NON-PROFIT ORG U. S. Postage PAID PORTLAND, OR PERMIT NO. 3142



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How To Contact Us

Brain Injury Alliance of Oregon (BIAOR)

Sherry Stock, MS CBIST

Mailing Address: PO Box 549 Molalla, OR 97038 Toll free: 800-544-5243

Executive Director 800-544-5243 Resource Facilitator—Becki Sparre 503-961-5675

Fax: 503-961-8730 biaor@biaoregon.org www.biaoregon.org Rachel Moore, CBIS Eastern Oregon 541-429-2411

Meetings by Appointment only Call 800-544-5243 Thank you to all our contributors and advertisers.



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Nancy Irey Holmes, Psy.D, CBIS

Psychologist, Certified Brain Injury Specialist

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2775 SW 17th Pl Health Point Bldg, Suite 4 Redmond, OR 97756 541-330-4428 nancyholmespsyd.com

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