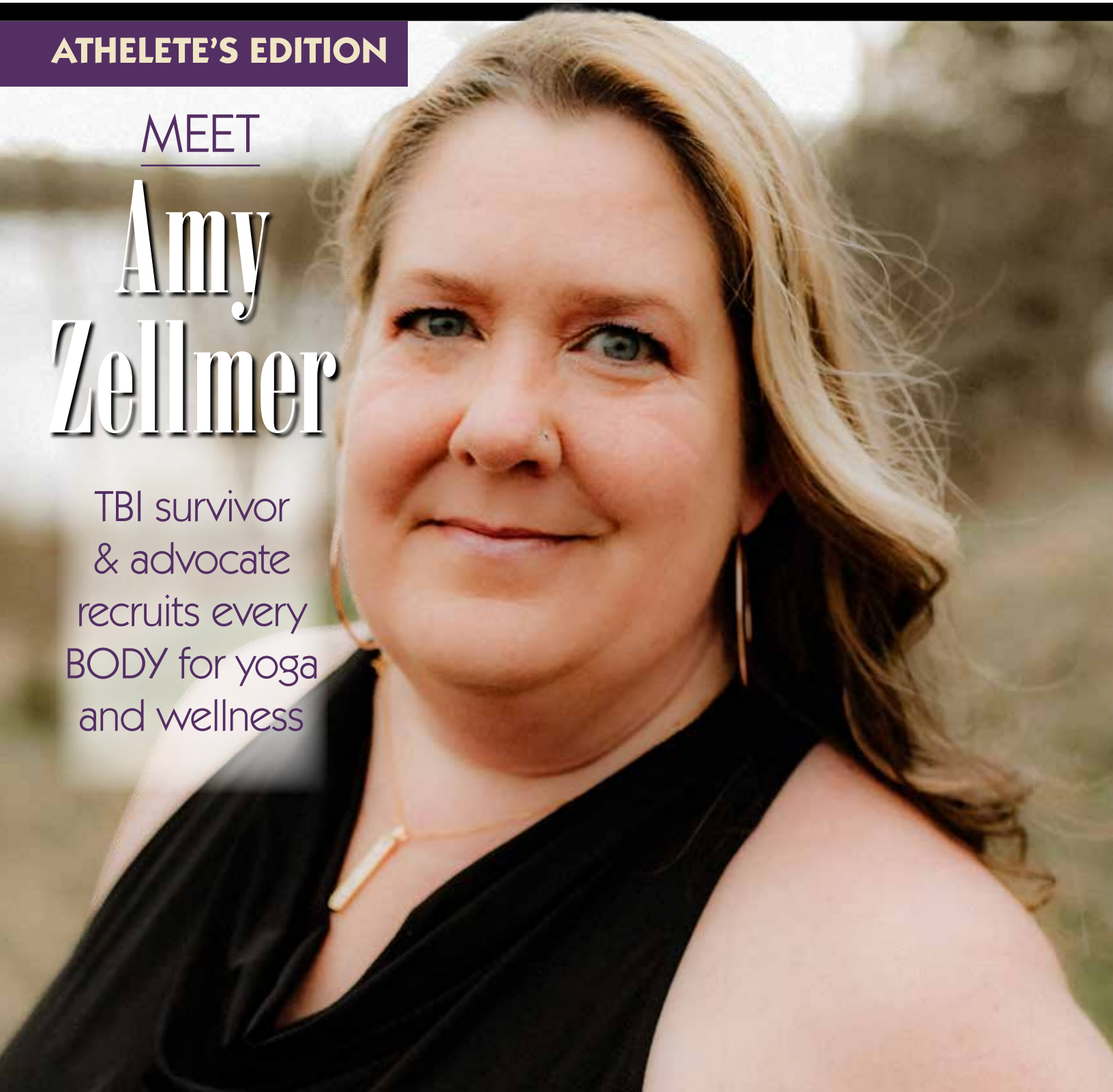


ATHELETE'S EDITION

MEET

Amy
Zellmer

TBI survivor
& advocate
recruits every
BODY for yoga
and wellness





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**Brain Injury
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ARIZONA

ON the HORIZON

Dear reader

Hello, and thanks for checking out volume 6, issue 2 of *The Noggin*. We think you're in for a *sporting* good time! Which, considering the last year-plus of pandemic-induced stress we've been through, is well-deserved. As the world around us re-opens, we're hearing phrases our survivors of brain injuries know all too well—a "return to normal," or "a new normal."

But much like nothing's "normal" about post-injury life, there's also nothing "normal" about what we've experienced due to COVID-19. It's been an ordeal, and we've earned our scars. What we can hopefully do is continue to move forward and do our best to rebuild as we go. Being kind to each other as we all heal will be essential.

For this issue, we wanted to focus on something that unites and excites us—sports and athletics. We're hoping to hit a home run with stories about striking a (yoga) pose, duathlon training, and exploring disability-friendly, adaptable options for fandom and physical fitness in The Grand Canyon State. There's also an in-depth look at Arizona's concussion protocols to prepare for students' return to school sports.

Still hungry for more? The Cerebral Chef has you covered with healthy stadium snack swaps. If you enjoy the thrill of the hunt, there are also some sports-related "Easter eggs" hidden throughout the issue, so keep a sharp eye out!

I'd be remiss if I didn't extend a huge thank you to *The Noggin* Committee. All the members produce amazing content and keep me on the ball. I can't express enough how much I appreciate their hard work. And for putting up with me. Now for the moment you've all been waiting for... *Q: How do soccer players cool down? A: They sit next to their biggest fans!* A good belly laugh is in fact my favorite form of exercise.



Cheers,

Brittany Sweeney-Lawson

Brittany Sweeney-Lawson | *The Noggin* Editor

SPORTS FACT: Olympic champions last received solid gold medals in 1912. Gold medal winners today receive medals that are 93 percent silver and six percent copper, with just six grams of gold.

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BIAAZ Profiles of Interest

Shining the spotlight on those raising their voice, lending a hand, and making a difference in the brain injury community

PERSON OF INTEREST Amy Zellmer

YOU CAN CALL HER Author, keynote speaker, podcast host, yoga enthusiast, and brain injury survivor

TYPE OF BRAIN INJURY Traumatic Brain Injury (TBI)



BRAIN INJURY BACKSTORY

In February of 2014, I was walking down my apartment building's driveway, which had a steep incline to it. It was very cold out that morning, and I was carrying my Yorkie in my arm. I stepped on a patch of black ice and my feet completely went out from underneath me. I instinctively held on to my dog and fell backward, landing full force on the back of my skull.

IN THE AFTERMATH

The first two-and-a-half years were really, really hard. Doctors had no idea what to do with me, other than say "give it more time." I had short-term memory problems, cognitive processing problems, headaches, dizziness, balance, and a slew of other issues that weren't getting better over time.

Many of my friends drifted away and would say things like "it's been 6 months, I don't understand why you're still complaining about it," or "it's not like you have cancer or something," or "you just need to try harder."

At the time of my accident, I had been a full-time photographer for 20 years, and I suddenly no longer remembered how to change my camera settings. Working more than one hour a day was extremely difficult. I would forget appointments or write them down on the wrong day and time. It felt very surreal that this was me, as I had always been a driven, independent business owner my entire life and now suddenly I couldn't keep anything straight.

In the fall of 2016, I was fortunate to find a functional neurologist, but at the same time, it was frustrating that I hadn't heard of them sooner in my recovery. He was able to help me improve all of my symptoms over about a 10-month period. Then over the next two or three years, I saw even more improvement by continuing to do my exercises at home.

STILL WORTH A THOUSAND WORDS

Photography is still one of my favorite loves, even if I no longer do it professionally (I retired from it a few years after my injury). I also love road-tripping

and seeing all the beauty of this country... and taking photos of it. ;)

ANYTHING BUT “MILD”

I want to iterate that a concussion, aka “mild” brain injury, IS a brain injury. Concussions are so often downplayed and mismanaged. If people are directed to the proper resources sooner, they will recover sooner. It’s truly frustrating that mainstream medical providers don’t understand enough about brain injury and where to refer us to. That’s why I am so passionate about what I do, in an effort to get those resources out there!

A VIEW FROM THE OTHER SIDE

I definitely have more patience and more self-compassion. Until you’re in the position of not being able to do many of the things you used to take for granted, it’s really hard to understand. We often look fine and can walk and talk, so it’s very hard for outsiders to truly understand what we are going through.

HEALING FROM THE INSIDE-OUT

I started yoga in college and was instantly hooked. Yoga isn’t just a form of exercise; it’s a way of life and a way of thinking about yourself and the world. It has

an incredible effect on our central nervous system and can help keep us in a state of ‘rest and relax’ vs. the ‘fight or flight’ that many of us are stuck in after brain injury.

In the beginning of my recovery, I could barely do five simple poses, but I stuck with them and did them every single day. I eventually noticed my balance and dizziness were getting better, and that I was getting stronger in my poses. I slowly added back in anything that required a side or forward bend. I fell over a lot, but I pushed myself because I knew I needed to get back what I had lost.

EVERY BODY FOR YOGA

There are a lot of misconceptions out there about yoga and that you have to be thin and bendy in order to do it. This is not at all true. Any BODY can do yoga, especially with an accessible yoga trained teacher (like myself). You can do an entire practice seated in a chair and get the same amazing benefits as the person standing on their mat.

A WARRIOR FINDS HER PLACE

I applied to be a part of the Yoga Warrior Competition earlier in the year, and with over 2,500 com-

continued next page





petitors, I am happy with how far I made it in the competition. 3rd place is a great place. I have also recently been asked to be an ambassador for *Yoga + Life Magazine* and couldn't be more thrilled to help promote their brand, while they help me promote accessible yoga as a whole. So watch for upcoming articles and videos from me on their website!

MEETING THE BRAIN INJURY ALLIANCE

Shortly after I wrote my first book, I was approached by Ronda Alcorn, one of the founders of the brain injury social group We're MOVING Forward. She asked if I would be interested in coming to Arizona to speak to her group. When I immediately said YES, she also connected me to the Brain Injury Alliance of Arizona and other local support groups that I spoke to while I was in town. It's been an incredible relationship and I love collaborating with the Brain Injury Alliance.

PASSION PROJECTS

I started *The Brain Health Magazine* in 2019 as a

resource for living your best life after brain injury. It's important to me to get quality information out to survivors and their families so that they can make informed decisions about their recovery options. You can get a free digital subscription, or for \$25/year you can get a print subscription mailed to you. <https://thebrainhealthmagazine.com/subscribe>

Additionally, I have a podcast series, Faces of TBI. You can listen on your favorite podcast streaming app or at www.facesoftbi.com

The weekly accessible yoga classes I teach are \$10/month. www.patreon.com/amyzellmer



SPORTS FACT: The longest Major League Baseball game was between the Chicago White Sox and Milwaukee Brewers and went 25 innings (8 hours and 6 minutes).



KEEPING YOUR BODY AND MIND ACTIVE AT HOME

Staying active is a great way to improve physical and mental health



CHECK WITH YOUR DOCTOR — Consult with your medical provider prior to starting any exercise regimen. Once obtaining approval from your medical provider, you are ready to begin.



HYDRATION — Hydrating before, during, and after any physical activity is key. Always have water available while performing any activity.

Do you know a good indicator of hydration? The color of your pee can clue you in. Clear to light yellow = good hydration while a darker color may indicate more water is needed.



TAI CHI — Is a form of meditation that involves slow movements and rhythmic breathing. Tai Chi is known to improve balance, flexibility, and strength. Research has demonstrated that Tai Chi is helpful for improving cognitive function and improving balance.

Where to begin? Tai Chi classes can be found in many community centers or even on the internet.



YOGA — Is a series of movements, meditation, and breathing exercises that can increase your strength, flexibility, mobility, balance, and improve mental well-being. Research has shown that Yoga can also help reduce stress, anxiety, depression, and even post-traumatic stress disorder (PTSD).

Did you know there are many types of Yoga? Vinyasa, Bikram, and Hatha are a few examples.



WATER AEROBICS — Are cardio exercises that are conducted in a shallow pool. Exercises may include bicep curls, leg lifts, and kick-board moves, amongst others.

Water aerobics is also known to provide resistance to strengthen muscles, which can increase balance and stability and improve overall heart health.



STRENGTH TRAINING — Is the act of challenging your muscles by pushing or pulling against resistance. You can generate resistance using your own body weight, lifting weights, or resistance bands.

Strength training has been shown to have multiple benefits, including strengthening your muscles, stimulating bone growth, improving balance and posture, and reducing stress.

Graphics and content by Ayda Menjugas-MacDuff

ACCESS TO SPORTING EVENTS IS RAMPING UP



Sports are back this summer in a big way. For some, it means staying active and outdoors as long as the sun will allow. For others, it's all about cheering on their favorite teams (and heckling the others). After more than a year of being cooped up indoors during the pandemic, it seems like everyone is ready to get out and moving again.

And unless you're one of the players, you can't beat the great American pastime of hanging out at the ballpark.

For many people with disabilities, though, this isn't as simple as packing up the car and heading down to the stadium. Fortunately, professional sports organizations are stepping up their game to ensure the best possible experience.

At the home of our very own MLB team, the Arizona Diamondbacks, there have been many encouraging accommodations added. Besides designated disability parking spaces in the Chase Field and

Jefferson Street garages, accessible seating has been integrated on every level throughout the stadium.

There's also a wide ramp located near Gate J that services the main, diamond, and upper levels. Guest relations will even provide free wheelchair escorts throughout the park. If you use a wheelchair, walker, or scooter, they'll also safely store your equipment during the game.

If you're concerned about experiencing a health-related incident in the middle of an inning, the D-backs have your back, with not one but two First Aid centers with on-site medical staff.

Finally, service dogs and service dogs-in-training are welcome, although they must be harnessed or leashed and remain under your control. Depending on the dog's size, you may need to buy tickets in the wheelchair-accessible section, so you have room for the seventh-inning stretch.

The Cardinals' State Farm Stadium also offers ADA Computer Assisted Real-Time Translation, aka CART service, from parking lots to the closest entrance. Open captioning is available via smartphones. Need sign language interpreters? Not a problem, as long as you contact Guest Services at least two weeks in advance.

If you get a kick out of professional soccer, you're in luck. The Phoenix Rising's new stadium in Wild Horse Pass is ADA-compliant. What's more, the Ability360 power soccer team has partnered with the Rising and is now known as the Ability360 Phoenix Rising Power Soccer Program.

Enjoying a game is fun, but maybe getting out into nature is more your speed. Fortunately, the city of Phoenix has numerous wheelchair-accessible trails for you to experience the great outdoors. Locations include Papago Park, North Mountain Park, Rio Salado Habitat Restoration Area, and the Sonoran Preserve. You can find a complete list on the City of Phoenix's website page, "Wheelchair Accessible Trails," with details about the difficulty, distance, and

continued next page

TOP 10 ARIZONA WHEELCHAIR ACCESSIBLE TRAILS

Great wheelchair-accessible trails can be found throughout Arizona. According to AllTrails, the top 10 are:

1. Horseshoe Bend Trail
(Glen Canyon National Recreation Area)
2. Grand Canyon Rim: Mules to Mather Point
(Grand Canyon National Park)
3. White Tank Waterfall Trail
(White Tank Mountain Regional Park)
4. Grand Canyon Rim trail
(Grand Canyon National Park)
5. Shoshone Point Trail
(Grand Canyon National Park)
6. Water Ranch Trail
(Gilbert Riparian Preserve)
7. Double Butte Loop Trail
(Papago Park)
8. Oak Creek Trail
(Coconino National Forest)
9. Veteran's Oasis Park Loop
(Veteran's Oasis Park)
10. Desert Botanical Garden Loop
(Desert Botanical Garden)

Photo: Kartchner Caverns





Photo: Horseshoe Bend

accessibility of each trail.

As you look for ways to keep cool, there's the pools at the Ability360 Aquatic Center, with transition and lift equipment. Or you can take a dip at El Prado Pool on 19th Place, which has an ADA chair lift and stairs. Additional adaptive recreation programs are also offered by the cities of Casa Grande, Gilbert, Glendale, Mesa, Peoria, Phoenix, Scottsdale, Surprise, Tempe, and Yuma.

For those who like fast and fun times on the water, you can find AZ Adaptive Watersports out at the Bartlett Marina. This non-profit offers a wide-range of activities, including kayaking, waterskiing, wakeboarding and surfing, tubing, and fishing. Their main goal is to make sure everyone has an enjoyable and safe time on the water, so everything from the parking lot to the boat is accessible.

Daring Adventures has an entire roster of recreation programs for athletic enthusiasts with or without disabilities. This non-profit organization uses specialized adaptive equipment and has trained staff to teach the fundamentals of all outdoor activities.

In case you're wondering, Phoenix doesn't have a monopoly on accessible adventures: In Tucson, you can visit Reid Park Zoo, the Botanical Gardens, Arizona Sonoran Desert Museum, or the Pima Air & Space Museum. If parks are more your thing, head over to the Edith Ball Adaptive Recreation Center, with its zero-depth entry, warm water indoor and shaded outdoor pools.

Outside of Tucson, you can beat the heat with a one-hour drive up Mt. Lemmon. Or head over to Kartchner Caverns, which is especially cool, as their trail system is one of the only caverns designed specifically for people with limited mobility.

With so many inclusive ways to watch and participate in sports or recreational activities, you're bound to have a great time. It's a win-win.



SPORTS FACT: Greenland has never been able to have an official soccer team because they cannot grow grass to create fields.

We're getting back to normal. Whatever that is.

For survivors of brain injury, there's no such thing as normal, even without a worldwide virus. That's where we come in. Our goal is to help survivors and their families thrive on their road to recovery and self-rediscovery through our free resources, education, and programs. We've even expanded our peer support capabilities.

And now that pandemic hibernation is ending, we're no longer Zoom-bound. You can find us out and about at:

Community events

Hospitals

Military bases

College campuses

Our office is still at Ability 360... but now in Suite 106.

If you or someone you know needs help, contact us at 800-500-9165 or info@biaaz.org to get more info or set up an in-person appointment.



**Brain Injury
Alliance**

ARIZONA

Making the invisible, visible since 1983

CONCUSSION FACT SHEET FOR SCHOOL PROFESSIONALS



WHAT IS A CONCUSSION?

A concussion is a type of brain injury that changes the way the brain normally works. A concussion is caused by a bump, blow, or jolt to the head. Concussions can also occur from a fall or blow to the body that causes the head and brain to move rapidly back and forth. Even what seems to be a mild bump to the head can be serious.

Children and adolescents are among those at greatest risk for concussion. The potential for a concussion is greatest during activities where collisions can occur, such as during physical education (PE) class, playground time, or school-based sports activities. However, concussions can happen any time a student's head comes into contact with a hard object, such as a floor, desk, or another student's head or body. Proper recognition and response to concussion can prevent further injury and help with recovery.

Children and teens with a concussion should **NEVER** return to sports or recreation activities on the same day the injury occurred. They should delay returning to their activities until a health care professional experienced in evaluating for concussion says they are symptom-free and it's OK to return to play. This means, until permitted, not returning to:

- Physical Education (PE) class,
- Sports practices or games, and
- Physical activity at recess.

THE FACTS

1. All concussions are serious.
2. Most concussions occur without loss of consciousness.
3. Recognition and proper response to concussions when they first occur can help prevent further injury or even death.

HOW CAN I RECOGNIZE A CONCUSSION?

Teachers and school counselors may be the first to notice changes in their students. The signs and symptoms can take time to appear and can become evident during concentration and learning activities in the classroom.

Send a student to the school nurse, or another health professional, if you notice or suspect that a student has:

1. Any kind of forceful blow to the head or to the body that results in rapid movement of the head,
- AND**
2. Any change in the student's behavior, thinking, or physical functioning. (See the signs and symptoms of concussion.



“WHEN IN DOUBT, SIT THEM OUT!”

WHAT ARE THE SIGNS AND SYMPTOMS OF A CONCUSSION?

The signs and symptoms of concussion can show up right after an injury or may not appear or be noticed until hours or days after the injury. Be alert for any of the following signs or symptoms. Also, watch for changes in how the student is acting or feeling, if symptoms are getting worse, or if the student just “doesn’t feel right.”

SYMPTOMS REPORTED BY STUDENT:

EMOTIONAL:

- Irritable
- Sad
- More emotional than usual
- Nervous

THINKING/REMEMBERING:

- Difficulty thinking clearly
- Difficulty concentrating or remembering
- Feeling more slowed down
- Feeling sluggish, hazy, foggy, or groggy

SLEEP*:

- Drowsy
- Sleeps less than usual
- Sleeps more than usual
- Has trouble falling asleep

*Only ask about sleep symptoms if the injury occurred on a prior day

PHYSICAL:

- Headache or “pressure” in head
- Nausea or vomiting
- Balance problems or dizziness
- Fatigue or feeling tired
- Blurry or double vision
- Sensitivity to light or noise
- Numbness or tingling
- Does not “feel right”

SIGNS OBSERVED BY SCHOOL STAFF:

- Appears dazed or stunned
- Is confused about events
- Answers questions slowly
- Repeats questions
- Can’t recall events prior to the hit, bump or fall
- Can’t recall events after the hit, bump or fall
- Loses consciousness (even briefly)
- Shows behavior or personality changes
- Forgets class schedule or assignments

DANGER SIGNS

Be alert for symptoms that worsen over time. A student should be seen in an emergency department right away if s/he has:

- One pupil (the black part in the middle of the eye) larger than the other
- Drowsiness or cannot be awakened
- A headache that gets worse and does not go away
- Weakness, numbness, or decreased coordination
- Repeated vomiting or nausea
- Slurred speech
- Convulsions or seizures
- Difficulty recognizing people or places
- Increasing confusion, restlessness, or agitation
- Unusual behavior
- Loss of consciousness (even a brief loss of consciousness should be taken seriously)



JOIN THE CONVERSATION AT  www.facebook.com/CDCHeadsUp

TO LEARN MORE GO TO >> [WWW.CDC.GOV/CONCUSSION](https://www.cdc.gov/concussion)

WHAT DO I NEED TO KNOW ABOUT MY STUDENTS RETURNING TO SCHOOL AFTER A CONCUSSION?

Supporting a student recovering from a concussion requires a collaborative approach among school professionals, health care providers, and parents, as s/he may need accommodations during recovery. If symptoms persist, a 504 meeting may be called. Section 504 Plans are implemented when students have a disability (temporary or permanent) that affects their performance in any manner. Services and accommodations for students may include speech-language therapy, environmental adaptations, curriculum modifications, and behavioral strategies.

Students may need to limit activities while they are recovering from a concussion. Exercising or activities that involve a lot of concentration, such as studying, working on the computer, or playing video games, may cause concussion symptoms (such as headache or tiredness) to reappear or get worse.

Check out CDC's Heads Up to Schools Facts Sheet on "Returning Students to School After a Concussion Fact Sheet". For more information: www.CDC.GOV/Concussion



WHAT TO LOOK FOR AFTER A CONCUSSION:

Students who return to school after a concussion may need to:

- Take rest breaks as needed,
- Spend fewer hours at school,
- Be given more time to take tests or complete assignments,
- Receive help with schoolwork, and/or
- Reduce time spent on the computer, reading, or writing

When students return to school after a concussion, school professionals should watch for:

- Increased problems paying attention or concentrating
- Increased problems remembering or learning new information
- Longer time needed to complete tasks or assignments
- Difficulty organizing tasks
- Inappropriate or impulsive behavior during class
- Greater irritability
- Less able to cope with stress or is more emotional

It is normal for students to feel frustrated, sad, and even angry because they cannot return to recreation or sports right away, or cannot keep up with schoolwork. A student may also feel isolated from peers and social networks. Talk with the student about these issues and offer support and encouragement. As the student's symptoms decrease, the extra help or support can be removed gradually.



JOIN THE CONVERSATION  www.facebook.com/CDCHeadsUp

TO LEARN MORE GO TO >> WWW.CDC.GOV/CONCUSSION

CONCUSSION SIGNS

All concussions are serious!

A concussion is caused by a **bump, blow, or jolt** to the head that shakes the brain inside the skull.

Know Your Concussion ABCs

A	Assess the situation		B	Be alert for signs and symptoms		C	Contact a health care professional
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- Concussions can happen even if you don't lose consciousness.
- What may seem like a mild bump to the head can be serious.
- **Sit out the game!** It's better to miss one game than one season if you've experienced impact to your head.





A CLOSER LOOK Concussion Protocols & Programs



This past year, school and youth sports have looked drastically different than in the past. With pandemic protocols, we've seen athletes playing in face masks in empty stadiums, with parents supporting from afar via TV or radio. This means coaches and athletic trainers have been the watchful eyes over these athletes, as the rough-and-tumble world of sports inevitably involves injuries. The good news is most coaches and athletic trainers receive certification in first aid and CPR to deal with medical emergencies. Also promising is how education for sports-related "invisible injuries" such as concussions is on the upswing.

Since 2003, the CDC's HEADS UP program has worked specifically to enact policies which help prevent, identify, and provide specific steps in the event of concussion during youth sports. This national program has been adopted at the state and local level in many places as a good criterion for addressing student athletes and head injuries. All their materials are available for public use and distribution free of charge.

Additionally, the Arizona Department of Education works with the Arizona Interscholastic Association (AIA) to promote the safety of student athletes in our public schools. Almost 275 Arizona high schools play competitive sports through the AIA. The AIA is instrumental in providing professional development opportunities for athletic administrators and athletic directors to ensure they are up-to-date in their training and using best practices.

A benefit for a school competing in the AIA's system is that they are covered by Catastrophic/HeadStrong Concussion Insurance as part of their membership. This helps those who do experience a head injury get proper medical attention without the cost being passed on to the athletes' families or guardians.

Through their **AZ365 education program**, the AIA also provides courses for athletes themselves. One course covers opioid education and the risk of prescription misuse among high school athletes who have been injured. The other is the Brainbook, a 30-minute training developed with Barrow Neuro-

logical Institute. Article 14.14 of the AIA Bylaws states: "All student athletes shall complete the Brainbook online concussion education course prior to participation in practice or competition." This means all student athletes at AIA schools are receiving specialized training about concussion.

The Brainbook is accessed as a video, styled like a sportscaster program. Students get to create a

player profile that will personalize the experience throughout the course (gender, grade level, sport played) and there is a competition feel with quizzing sessions that could either land you on the "benchwarmer" path to review or celebrates your successes. The program integrates interviews with student athletes, professional athletes, and doctors, and there's a message board of prepared comments and questions throughout.



With so many agencies and organizations addressing the issue of K-12 sports concussions, you might be curious to see how these systems work in practice. As a contributing author, I was able to video conference with two representatives of the Tucson Unified School District (TUSD) about their safety protocols. Bart Peterson, MAA, AT, and Becky Fajardo, MS, AT, have each been with the TUSD for 20 years. Peterson works with Palo Verde High Magnet school and Fajardo with Sahuaro High School, but both serve as a sort of final say within the district due to their advanced credentialing.

While the CDC's HEADS UP program launched in 2003, the Arizona legislature didn't pass a man-

date regarding concussion training until 2011 as an amendment to AZ Senate Bill 1521. TUSD didn't have to panic because they had begun addressing the seriousness of concussion years earlier. Back in 2007, Fajardo and fellow coaches shared similar experiences of seeing serious athlete injuries and feeling they weren't addressing it as well as they should.

According to Fajardo, "With the help of local doctor, Mo Mortazavi (MD with concussion clinic SPARCC), and the school nurse staff, we laid out a draft of district-wide protocols back in 2009." This protocol called for an education component wherein administrators, counselors, and faculty learned about the symptoms of concussion as well as the

continued next page

SPORTS FACT: Believed to have originated in France in the 12th century, the tennis ball was hit with the palm of the hand and was named "jeu de paume", or game of the palm.

“Return-to-Learn” and “Return-to-Play” plans.

“It was important to get the buy-in from the whole staff because this problem is not isolated to just our athletes,” asserted Fajardo. “Students could suffer a concussion from a car accident or non-school activities.” Even other extracurricular activities like theatre and robotics clubs put students in situations where they may hit their heads.

One element that garnered campus-wide concussion protocol support is that “Return-to-Learn” was prioritized over the “Return-to-Play” plan. Peterson noted that having a re-entry plan for post-concussion classroom learning based on their ongoing symptoms is what “drove home the point that concussions interrupt learning processes.” Teachers understood their job is impeded if they aren’t working with injured students through their recovery period.

As the ones who often serve as coordinators and communicators for students with medical needs, school nurses were also called upon for their expertise, such as helping craft 504 Plans. They also help ensure needed accommodations (temporary, long-term, or permanent) are being followed on

behalf of the student to ensure educational equity.

The other aspect the TUSD had considered was education and training for parents and guardians. Their programs involve family members in the process of monitoring and observing students at home after a concussion-causing incident. It also stresses their important role of seeking medical attention for their child when warranted.

Thanks to these protocols and the support of administrators in the TUSD, any head coach, paid coach, as well as all volunteers, have CPR training, and all coaches take the National Federation of State High School Associations Concussion course.

Peterson explained times have changed since he first began in school athletics back in Wyoming in 1990. “It used to be ‘you’re OK, it’s just a ding!’... or that concussions could be treated uniformly.” He makes sure his athletes understand there is risk present when ignoring a “small ding” because one can become many, which can lead to chronic, lifelong symptoms if left untreated. He speaks from years of experience, which happen to coincide with research done by the CDC: “Athletes who have ever had a



BARROW CONCUSSION NETWORK

Arizona is also home to the Barrow Concussion Network, which assists athletes in their recovery. Going beyond their Brainbook program, the Barrow Concussion Network at St. Joseph’s Hospital coordinates with the AIA, the Brain Injury Alliance of Arizona, A.T. Still University, and Arizona State University to address concussion in student athletes. This Network operates across the state to share medical, educational, and athletic expertise with each other to further research and improve education programs. Through this program, all high school-level athletes have access to computerized concussion baseline testing.

concussion have a higher chance of getting another concussion. A repeat concussion can lead to more severe symptoms and longer recovery.”

One part of the district’s training that has been especially impactful is having former players come to speak to current student athletes about the realities and the effects of concussion. For instance, one athlete reported they couldn’t attend prom because the flashing lights provoked their post-injury vision sensitivity. Another told of the battle to stay focused in class. This peer-to-peer education also helps speak to the importance of not hiding an injury, as some players may try to do so as not to miss out on training or play time. Hearing the real-world consequences hopefully helps student athletes accept the responsibility of self-reporting or calling out teammates who try to “play hurt.”

Both Peterson and Fajardo credit their district administrators and board members for their outstanding support that made it possible to put the protocols in place and keep their student athletes safe years before the Arizona Department of Education was mandating it.

SPORTS FACT: At its birth, badminton was played with balls of wool and called ball badminton, which allowed for players to play even in windy and wet conditions.

As life starts to resume in the aftermath of the pandemic, we can anticipate the return of our favorite pastimes. Roaring crowds will invigorate teams playing against deep-seated rivals. College scouts will get to watch players in person once again. Teammates will bond and create life-long friendships. Sporting events are part of the American identity and are not going anywhere anytime soon. As demonstrated by the Tucson Unified School District, it is possible and imperative to prioritize student safety, learning, and athletics. By providing the necessary education and best practice tools to coaches, trainers, parents, and students, everyone can join forces to become an unbeatable team.

continued next page

ImPACT

Immediate Post-Concussion Assessment and Cognitive Testing

“ImPACT is an objective tool to support trained healthcare providers in making sound return-to-activity decisions following concussions. It’s a computerized test that measures memory and attention span, as well as visual and verbal problem solving. ImPACT has two primary uses: before the onset of an activity, a baseline test is conducted to measure the athlete’s performance baseline. In the event of an injury, a post-injury test is administered and compared to the baseline and/or normative data scores.”

These measures help ensure our young athletes can participate in sports safely. It also means their chances of a full recovery are so much better than the old-fashioned “shake it off and get back in there” approach to injuries. For many students, the camaraderie and purpose they find in the extracurricular activities on school campuses are big motivators for doing well in classes and keeping on top of their attendance, which is why it is important we give them a safe environment to grow and have those experiences.

Even with the extra education given to those overseeing our young athletes, injuries come with the territory. The following are guidelines offered by the CDC for students to return to learn and return to play after a concussion.

RETURN to LEARN

1 TOTAL REST

No mental exertion (computer, testing, video games, or homework); no driving; staying at home

2 LIGHT MENTAL ACTIVITY

Up to 30 minutes of mental exertion, still at home, no driving

Progress to next level when 30 minutes occur without symptoms worsening / flaring

3A PART-TIME SCHOOL

Maximum accommodations: shortened day, built-in breaks, quiet place, no significant classroom or testing, extra time, extra help, modified assignments

Progress to next level when 30-40 minutes of mental exertion occurs without symptoms worsening / flaring

3B PART-TIME SCHOOL

Up to 30 minutes mental exertion, still at home, no driving

Progress to next level when 60 minutes of mental exertion occurs without symptoms worsening / flaring

4A FULL-TIME SCHOOL

Up to 30 minutes mental exertion, still at home, no driving

Progress to next level when able to handle all class periods in succession without symptoms worsening / flaring AND medical clearance for full return to academics

4B FULL-TIME SCHOOL

Full academics without accommodations

SPORTS FACT: The first women's lacrosse match was held in 1890 in Scotland.

RETURN to PLAY

BASELINE: Back to School 1st

Student follows a customized return-to-learn plan and resumes regular school activities without symptoms from the injury surfacing

1 LIGHT AEROBIC ACTIVITY

5-10 minutes of walking or exercise bike to increase the heart rate (no weightlifting)

2 MODERATE ACTIVITY

Continue activities to increase heart rate: jogging, brief running, modified weightlifting (i.e., less time/ reps or less weight than normal routine)

3 HEAVY, NON-CONTACT ACTIVITY

Add on higher intensity activity such as sprinting, high resistance stationary bike, regular weightlifting, non-contact sport-specific drills

4 PRACTICES AND FULL CONTACT

In controlled practice, athlete may return to practice and full contact

5 COMPETITION

Athlete may return to competition

HOW TO BE A SAFE BIKER

- Always wear a helmet, **fitted correctly!**

Use the 2-V-1 rule with your fingers!



2 fingers
distance from
helmet to brow



V-shaped
straps around
both ears

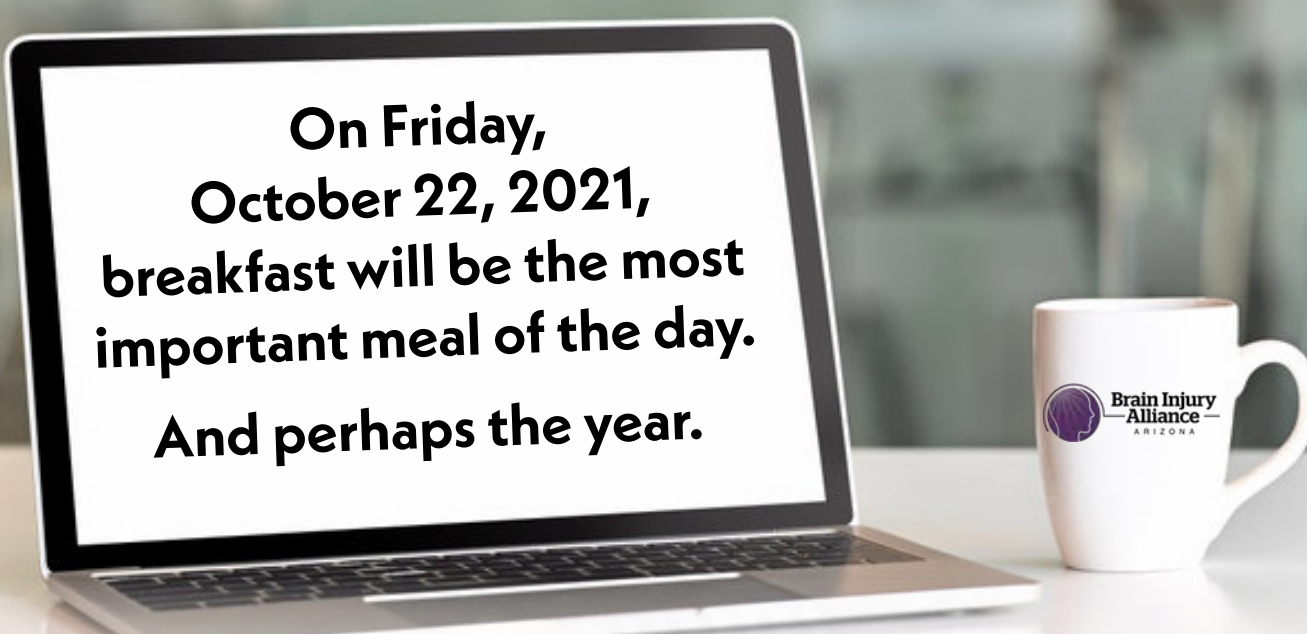


1 finger
between chin
and strap

- Use **hand signals** for turns.
- Wear **bright colors**.
- **Concentrate** on riding.
- **Obey traffic signals**.
- **Look both ways** before crossing.



Brain Injury
Alliance
ARIZONA



**On Friday,
October 22, 2021,
breakfast will be the most
important meal of the day.
And perhaps the year.**

**That morning, from 7:30am – 9:30am (Arizona time),
the Brain Injury Alliance of Arizona's Advisory Council is partnering with
leaders throughout the state to present the 2021 Arizona's Brain Health CEO/
Leadership Breakfast for community CEO's, leaders, and neuro professionals.**

**This Zoom event is a celebration of individuals and organizations that form
centers of excellence for research and treatment of brain injuries in the state.**

**By raising awareness and advocacy from community leaders, we continue to
impact the lives of survivors of brain injury, their families, and caregivers.**

SPONSORSHIP & TICKETS ARE NOW AVAILABLE

biaaz.org/2021-ceo-bkfst-sponsor

For more information, contact info@biaaz.org or call 888-500-9165.



The Cerebral Chef



Serving Up Food for Thought

Steve Norton, co-facilitator of The Brain Injury Alliance's Brain Cave Men's Discussion Group, was diagnosed with Type II Diabetes in 2006. While working as a private chef for a family in northern California in 2012, he experienced a hemorrhagic stroke, which caused paralysis on the left side of his body. Even though he had spent years ensuring those he cooked for ate healthy meals made with fresh ingredients, his own eating habits were poor due to long work hours and a busy schedule. The stroke proved to be the wake-up call Steve needed to take charge of his health and what he put into his body. He now uses food as medicine and believes people can heal their bodies from the inside-out. His *Noggin* column, *The Cerebral Chef*, offers recipes, ideas, and tips for incorporating and enjoying delicious brain-boosting foods.



HEALTHIER FOOD CHOICES AT THE STADIUM

Some foods are synonymous with sports, like hot dogs, burgers, peanuts, popcorn, and nachos. Game day foods play an important role in the overall spectator experience. It can be difficult to make healthy choices when you are faced with delicious-looking temptations offered at a variety of food booths. Fortunately, many stadiums are offering healthier options these days now more than ever.

If you just can't watch the game without enjoying a traditional hot dog, choose a regular-sized one over a foot-long. A regular hot dog on a bun with just mustard has about 290 calories. If you add two tablespoons each of ketchup, relish, and sauerkraut, it increases to about 370 calories, so choose your toppings wisely and opt for chopped veggies, like onions, if available.

When you find yourself craving a juicy burger,

choose a four-ounce turkey burger with only 147 calories over a 490 calorie six-ounce burger (calorie content before any toppings). You can top with your favorite veggies, such as lettuce, tomatoes, onion, and avocado for added nutrition. Omit cheese, as it adds more calories and sodium. Pass on deep-fried chicken tenders and grab a grilled chicken sandwich instead. A six-ounce grilled chicken sandwich has only 280 calories, is low in fat and calories and high in protein, whereas six-ounces of chicken tenders are 446 calories (not including dipping sauce). Just go easy on heavy calorie toppings like mayo and load up your sandwich with veggies.

If popcorn or peanuts are your snack of choice, stick to a small order of popcorn and do not add any butter or salt. It is already popped in butter and usually well-salted. Peanuts are a great snack option

Chicken Nachos

Prep: 15 minutes | Cook: 10 minutes | Total: 25 minutes | Servings: 6

1 Tbsp. olive oil
1 lb. ground chicken
1 packet taco seasoning
3 Tbsp. water
6 servings of tortilla chips of choice
1 large red pepper, diced
½ medium red onion, diced
1-15 oz. can black or pinto beans, drained and rinsed
½ cup sweet corn
½ cup Mexican shredded cheese (or more to taste)
Optional Toppings: Greek yogurt, lime juice, fresh cilantro, sliced avocado

INSTRUCTIONS

First prepare the ground chicken by heating one tablespoon of olive oil over medium/high heat in a large skillet. Add the ground chicken and sauté until fully cooked, then add taco seasoning and water. Let simmer for five minutes. While the ground chicken is simmering, preheat oven to 400-degrees Fahrenheit and line a baking sheet with foil. Add half of the chips to the baking sheet and sprinkle with 1/2 of the remaining ingredients, including the cooked ground chicken. Then, add one more layer of chips and one more layer of all other ingredients. Place baking sheet in the oven for 10 minutes or until cheese fully melts. Then, broil for 1-2 minutes. Serve immediately with your favorite toppings such as Greek yogurt, lime juice, fresh cilantro, and sliced avocado.



as they are full of protein and heart-healthy fats. Just don't eat the entire bag by yourself.

If you happen to be at the stadium during the hot summer months, you might find yourself longing for a cold treat. Look around for frozen yogurt before heading to the ice cream stand. Frozen yogurt is lower in fat and calories and contains healthy probiotics.

To add a little indulgence to your yogurt, sprinkle on some fresh fruit or granola.

Another favorite game day snack is nachos, normally loaded with gooey cheese. The next time you're watching your favorite sport on the big screen at home, make this healthier version to share with your family and friends.



Home is where the ♥ is.



At Chekela Turner's Place, we strive to help people with traumatic brain injuries feel like themselves again.

For more than 20 years, we have provided 24/7 care in a nurturing environment. Residents receive daily living skills, medication administration, meal preparation, and accompaniment to doctors' appointments.

At both of our Valley locations, we also promote physical movement and organize weekly outings to ease reintegration into the community.

**Helping people with TBI feel better isn't just our mission,
it's our calling.**

For more information, or to arrange an interview or inspection, please call 602-785-0230 or email us at tbihome@chekeleturnersplace.com



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www.chekeleturnersplace.com



How Cardiovascular Exercise Has Prepared Me for a Duathlon

BY CONNOR LAPLANT

The power of cardiovascular training is an important aspect of our overall health. Activities such as walking frequently can improve endurance and stamina. This can carry over into other demands we have throughout our daily lives.

For me, being physically active was part of who I was prior to my brain injury. I played numerous sports and was always moving in one way or another. Post-TBI, most of the sports I once played were no longer an option. They have been deemed too dangerous for me now.

During my physical rehabilitation, I found the desire to learn how to run again. It was a struggle at first, but this accomplishment benefited my health and continuous rehabilitation efforts in more ways than one. Not only did my stamina for running longer distances improve, but my mental clarity and focus were also enhanced. Over the years, this improvement of my physical stamina has also played a significant role in my academic performance. Despite school being a challenge following my injury,

my ability to focus on the task at hand improved tenfold thanks to exercise. This alone made all the difference.

I credit running for at least a portion of the academic success I've had thus far. Therefore, I cannot recommend cardiovascular exercise and training enough for others who are going through the recovery process after brain injury.

I rode bicycles before my accident but never intentionally as a form of physical exercise. I considered biking to be a leisure activity that I often took for granted. Post-TBI, I eventually worked my way up to running in several 5Ks. This led me to thinking about finding additional forms of aerobic exercise. I soon found myself thinking about riding a bike again, not sure if it would even be possible.

In the spring of 2014, I decided I wanted to train for a duathlon, which is a multi-sport event, similar to a triathlon but without the swimming portion. I

continued next page

don't consider myself to be a great swimmer and felt I needed to focus on one new sport at a time!

Depending on the type of duathlon, (sprint, standard, middle, and long distances), the race starts and ends with running, with a biking portion in between. In preparation for the race that I signed up for and participated in on August 9th, 2014 in Rochester, New York, my primary focus was to make sure I could safely ride a bike for an extended period of time and finish the race without any issues.

I trained frequently with my dad throughout the months prior to the race. We focused on improving our endurance for riding longer distances and worked to make sure we still had the energy to run several miles after getting off the bike. Having a partner to train with, was a critical component in reaching this goal. The presence of someone else training alongside me helped motivate me to do my best and kept me accountable for showing up physically and mentally every day. This is the first benefit I noticed in relationship to training for a duathlon.

Because this was a multi-sport event, I needed to put in twice the work to make sure I would be successful. Having a training buddy made a huge difference in my attitude and how I went about training for this event. As helpful as it was to have a training partner, I must stress that I could not rely solely on someone else for the drive that was necessary to reach my goal of competing in a duathlon.

Another benefit that came from setting and

working toward this goal was an improvement in my nutritional habits. It can be overlooked but it is just as important to provide our bodies with proper nutrition as it is to consistently train. I found that keeping my focus on the desired end result made it surprisingly easy to eat a clean diet. These benefits are rooted in one key word—motivation. It's motivation that gets us all started on something; it's that initial flame that we have all felt at one point or another, where we paint a picture of something we desire in our minds.

However, motivation is often finite. There needs to be something more to propel us further. This is especially true when it comes to something aspired to, like training for a duathlon. It is determination that keeps the momentum required to sustain that initial motivational spark. This is where mindset plays its greatest role in helping us accomplish something.

Following a life event as serious as a brain injury can make staying motivated and determined very challenging. The last couple of years have been some of the most grueling I have ever experienced. I have been undergoing some health setbacks that have made it difficult to see the light at the end of this dark tunnel at times. However, remembering what setting goals has done for me in the past has helped me remember I must focus my energy on what it is I can do as opposed to dwelling over what I am incapable of changing.

The duathlon has helped me with this considerably. As David A. Grant, also a brain injury survivor, states, "My sporadic lack of impulse control means

Remembering what setting goals has done for me in the past has helped me remember I must focus my energy on what it is I can do as opposed to dwelling over what I am incapable of changing.

SPORTS FACT: Swimming for fitness can burn up to 40% more calories per hour than aerobic activities like cycling, and 30% more per hour than running because of all the muscle groups and organs that are used simultaneously.

that I occasionally fight with my weight, the call of sweets more powerful than my ability to refrain. My daily cycling helps keep my weight in check. I feel more mentally sharp after I ride." ("Cycling to Recovery After Brain Injury" Brainline.org)

It is important to understand that I couldn't just hop on a bike and start riding. I had to determine which modifications would be necessary. For me, adaptations for my particular needs made all the difference in the world. First, my right foot has trouble staying on the pedal under its own power. I was able to have a custom platform made that keeps my foot from sliding too far forward or side to side. It is open in the back so that I can easily get off the bike safely, even if I need to in a hurry. I also had the gear shifters moved to the left handlebar. This was critical since the most my right hand can do is hang on. With these alterations I had made, the duathlon

became a much more realistic goal.

Balance can oftentimes be a problem for brain injury survivors. This can cause a safety issue for riding a bike. However, there are different options if this is the case. Recumbent bicycles are a great alternative to a standard upright bike. They take away the balance aspect while still providing a great workout for the legs. Another substitute for a regular bicycle is a stationary bike, which allows the rider to achieve a great workout with many of the same benefits. In my case, rather than let my health issues deter me from keeping a healthy lifestyle, I purchased a stationary bike and have been riding it regularly.

This has helped me to continue getting the benefits for my cardiovascular system. I have been able to maintain my prior level of endurance despite the setbacks I've experienced due to my chronic illness. It is important to remember there is always more

than one way to attain a goal. I strongly believe that having a stationary bike has been a true lifesaver for me during the trying times brought on not only by my health condition, but also the pandemic we are all experiencing. I highly recommend this option for anyone, especially if riding a road bike isn't an option at this time.

Those of us with brain injuries may need to think outside the box every now and then for ways to keep a routine in an effort to stay mobile. I know from personal experience that it can feel daunting to keep a positive mindset. However, remember that no matter how small of steps you may take at first, beginning an exercise regimen is a great way to improve multiple areas of recovery and health following a brain injury.

The only question is, are you ready to get started?





Brain Injury
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Serve & Support

- ◆ *Preventing Injuries*
- ◆ *Inspiring Hope*
- ◆ *Promoting Understanding*

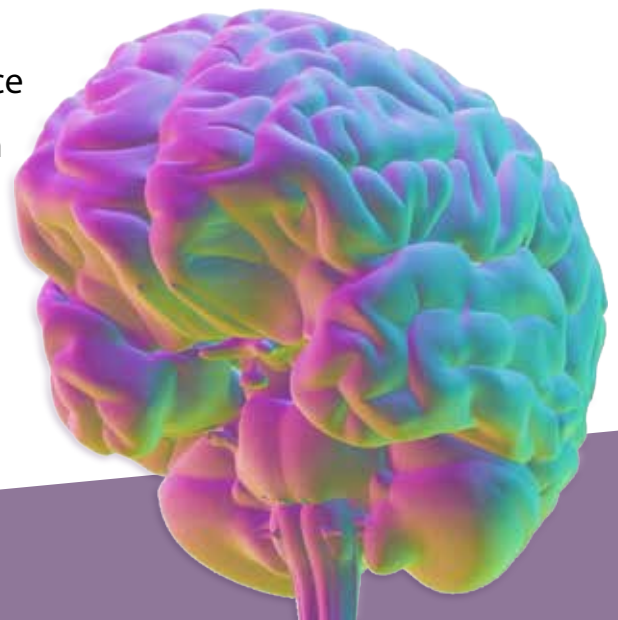
Every 23 seconds,

someone in the United States experiences a brain injury. Whether acquired through a medical incident or an accident, brain injuries often have a powerful and lasting impact on the lives of survivors as well as their families and friends.

The Brain Injury Alliance of Arizona is dedicated to improving the quality of life for individuals with brain injury and their families. We are the **ONLY** statewide organization that provides comprehensive services including education, information and referral, support, and advocacy for all types of brain injuries.

The Brain Injury Alliance supports children, adults, and families affected by any type of brain injury or insult to the brain:

- ◆ Aneurysm
- ◆ Anoxic and Hypoxic Injuries
- ◆ Brain Tumor
- ◆ Chemical Dependence
- ◆ Concussion
- ◆ Metabolic Disorders
- ◆ Stroke
- ◆ Traumatic Brain Injury



How does the Brain Injury Alliance serve and support Arizona families?

Connections *to Community Resources*

The Brain Injury Alliance Resource Facilitators provide individuals and families with information and make appropriate connections to community services and organizations. We serve both English- and Spanish- speaking families and professionals.

Our hospital referral program allows us to reach patients as they are discharged from acute care or rehabilitation facilities. We offer support and guidance to ensure a smooth transition home. Our extensive list of statewide resources can be accessed on our website, BIAAZ.org.

All staff members who work with clients are Certified Brain Injury or Peer Support Specialists, trained in trauma and suicide prevention.

Education *on Brain Injury*

Providing education on brain injury is an integral part of our mission. We offer educational sessions tailored to specific audiences. Survivors and family members participate in our annual Rays of Hope Conference, while professionals attend our yearly Brain Health Symposium.

In addition to ongoing presentations, we offer community “in-service” sessions and outreach events to raise awareness of the effects of brain injury.

We provide education to first responders on brain injury de-escalation techniques, as well as awareness outreach for teachers and community members. Our helmet dispersal program aims to avert recreational TBIs.

Empowerment *through Activities & Events*

We encourage friendships and strengthen independent-living skills through recreational empowerment activities that include Camp Can Do for adult survivors, virtual Survivor Sunday get-togethers, and statewide support groups, such as She Shed for women, Brain Cave for men, a stroke group for survivors and families, and more.

An Investment with a Powerful Return

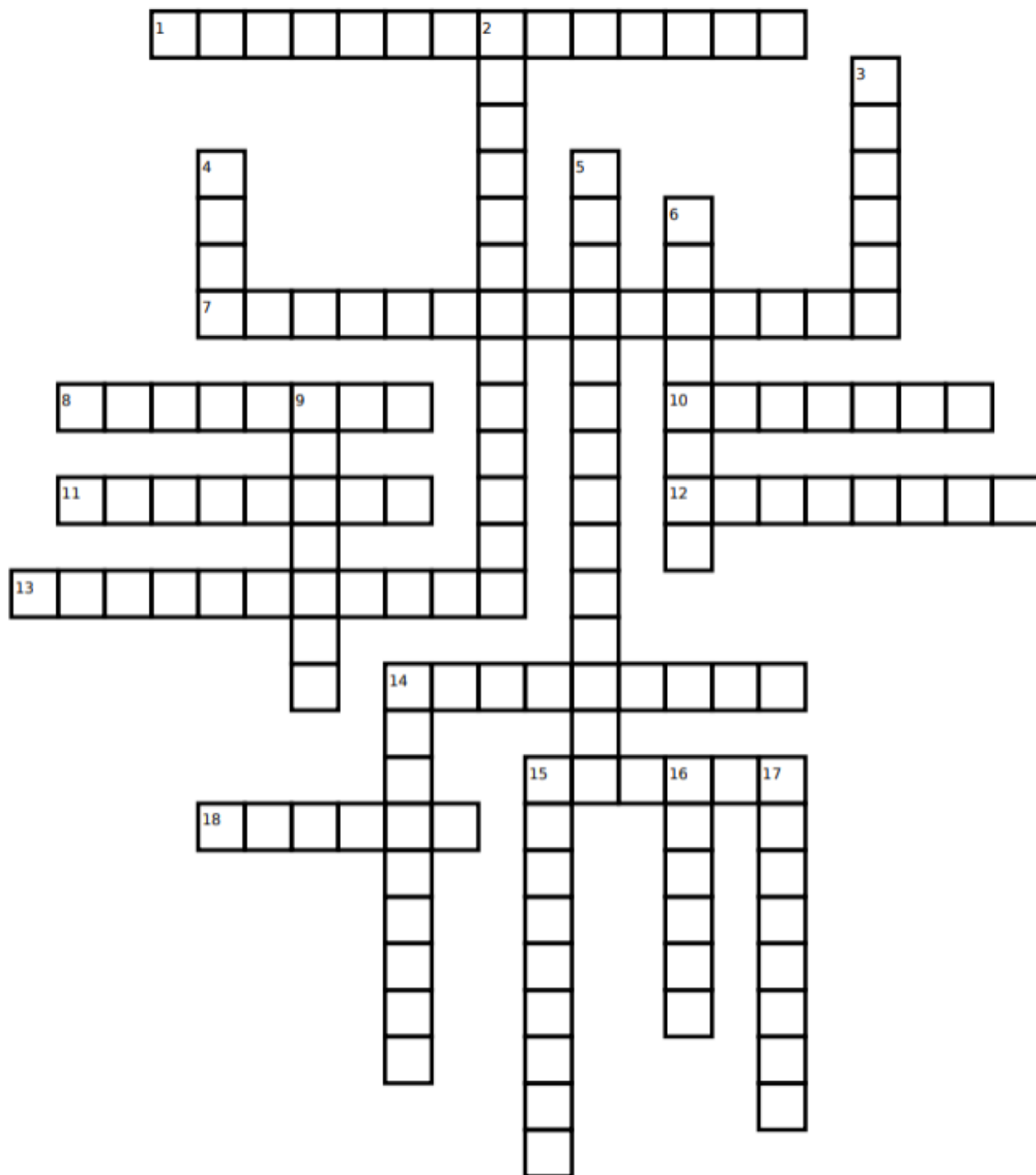
The Brain Injury Alliance of Arizona relies on the generosity of individuals, organizations, and businesses. Your investment helps prevent injuries, inspire hope, and promote understanding of brain injuries and their impact on individuals, families, and communities.

In fact, 87% of every dollar raised goes directly to support our programs.

For more information on how you can get involved, please reach out to us at (888) 500-9165 or info@biaaz.org.

Word Search

Instructions: Fill in the blank boxes with the correct word using the numbered clues below. Down words are spelled from top-to-bottom. Across words are spelled out left-to-right. Sometimes a box blank is shared between a Down and Across word, so the same letter appears for both words. If you aren't quite sure of the word, or if you want to double-check the spelling, each clue has the page number of where the information can be located.



The following clues come from the articles and Sports Facts “Easter eggs” found throughout this edition of *The Noggin*.

ACROSS

1 Connor LaPlant used this type of training which improved the capacity of his heart and lungs and helped him build up endurance after his injury.

See page 27

7 Many schools employ not just coaches but these certified health care professionals who practice in the field of sports medicine . (2 words) *page 16*

8 The first women’s match of this sport was held in 1890 Scotland. *See page 21*

10 This CDC program seeks to prevent, recognize, and respond to concussion or other serious brain injury in student athletes. (2 words) *page 16*

11 The Chicago White Sox and Milwaukee Brewers are both Major League teams of this sport. *See page 6*

12 This international competition is known for their gold-silver-bronze medals, even though a solid gold one has not been issued since 1912.

See page 3

13 The ability to bend without breaking, found in abundance in gymnasts and those who practice yoga or Tai Chi. *See page 7*

14 The ball for this sport was originally made of wool. *See page 19*

15 Our Cerebral Chef Steve Norton offers up a healthier version of this classic stadium food.

See page 25

18 The original French name of this sport was “jeu de paume,” which translates to “game of the palm. *See page 17*

DOWN

2 This concept ensures that products, devices, services, or environments are designed to be usable by those with disabilities, much like Amy Zellmer does with her yoga classes, and Arizona’s State Parks do for several of our regional hiking trails. *See pages 9-10*

3 Greenland has never had an official team in this sport due to their inability to grow grass. *See page 10*

4 This ancient practice can have an incredible effect on our central nervous system and help keep us in a state of ‘rest and relax’. *See page 5*

5 This body of water is where the non-profit AZ Adaptive Watersports holds its fishing, tubing, and boating events. *See page 10*

6 This three-part race starts and ends with a running event, with a biking portion in between. *See pages 27-28*

9 A sports arena with tiers of seats for spectators. *See page 8*

14 This program offered through Barrow Neurological Institute is required training for all student athletes at AIA schools. *See pages 16-17*

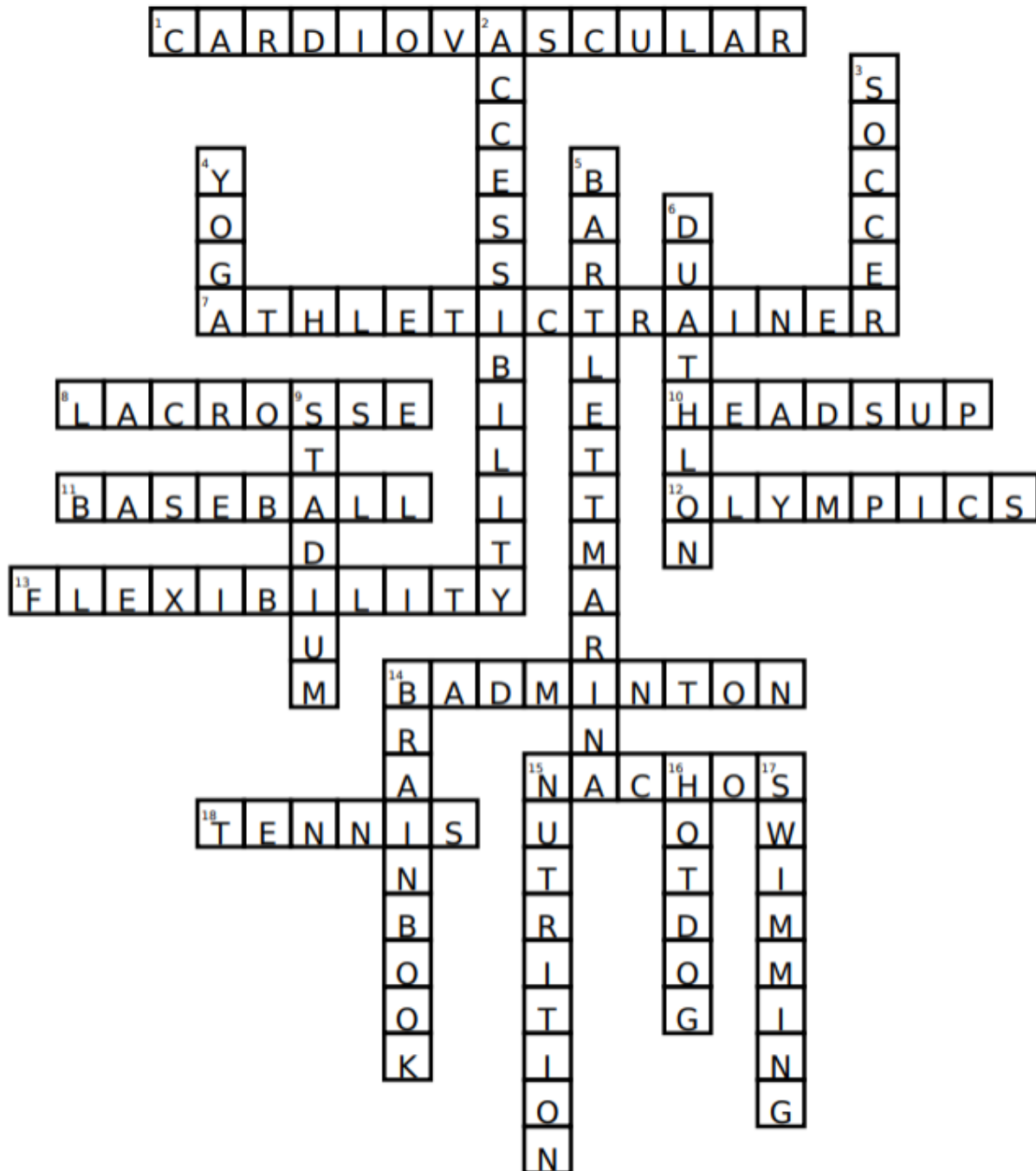
15 You can find the facts for these on the back or side of your favorite packaged foods. *See page 28*

16 This All-American food is often associated with the game of baseball. (2 words) *page 24*

17 This cardio activity burns up to 30% more calories than running because it engages so many muscles and organs at once. *See page 28*

answer key next page

ANSWER KEY



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presents

SALUTE OUR VETS



RUN FOR BRAIN HEALTH
10K & 5K RACE / 1-MILE FUN RUN

Sunday, October 10, 2021 • Rillito Regional Park in Tucson

Join the movement to help veterans get back on track!

With more than 500,000 veterans in Arizona, there is a growing need to help those in various stages of recovery from PTSD, brain injury, or trauma. Proceeds from this event allow us to continue offering free resources and programs for these heroes, their families, and caregivers.

Be part of this community by giving back to those who have given so much. Your participation will go a long way in helping fight this invisible disability.

The run begins at 8:00am; check-in starts at 7:00am, which includes a brunch for all participants.

REGISTRATION IS OPEN

SCAN QR CODE TO REGISTER



For more information,
email info@biaaz.org
or call 888-500-9165