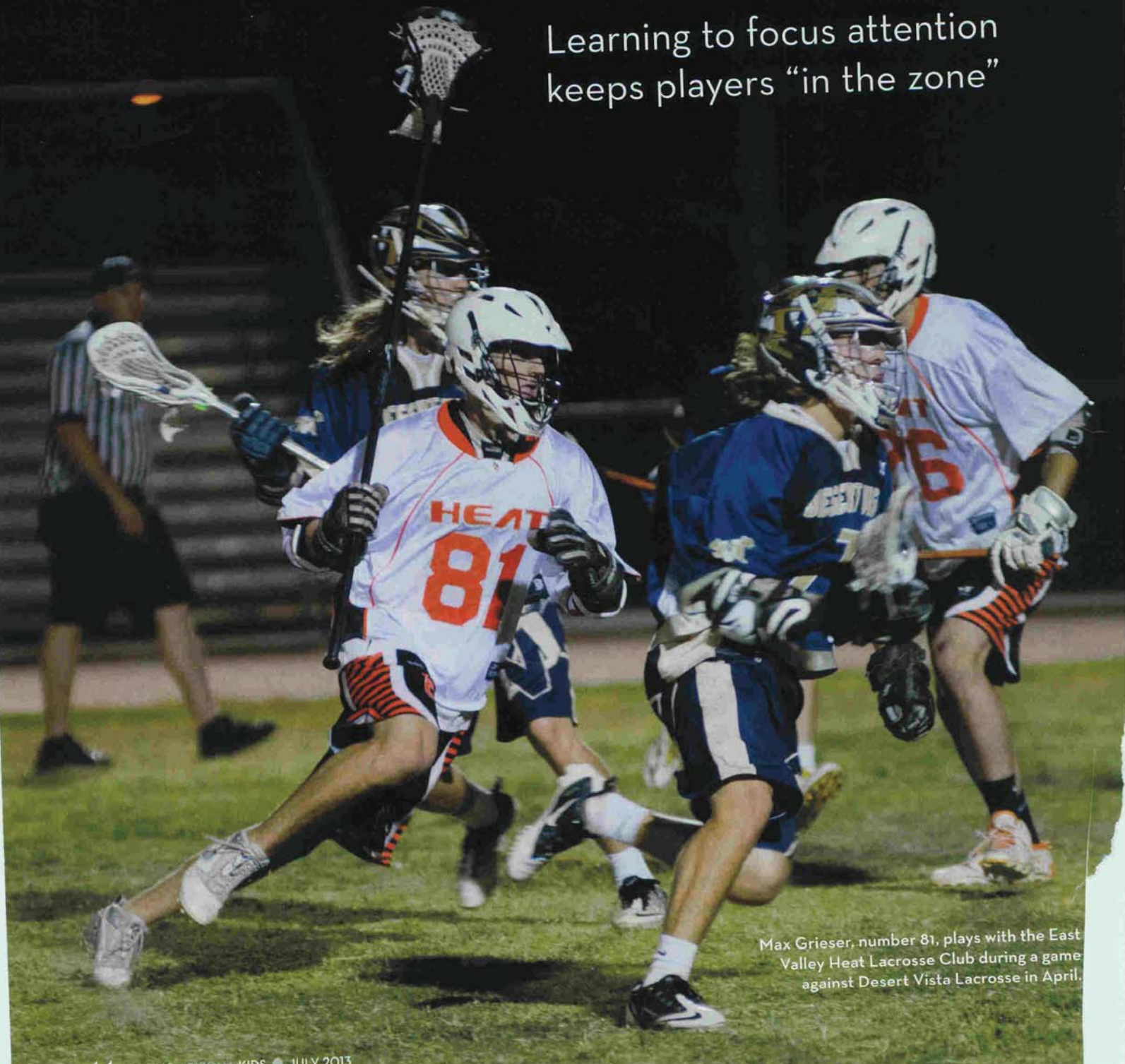


# BRAIN TRAINING

## for athletes

Story and photos by Daniel Friedman

Learning to focus attention keeps players “in the zone”



Max Grieser, number 81, plays with the East Valley Heat Lacrosse Club during a game against Desert Vista Lacrosse in April.

**A YEAR AND A HALF AGO,** 17-year-old

Max Grieser of Mesa suffered a concussion while playing lacrosse. It was his third.

He remembers feeling “fuzzy” and forgetful. He experienced headaches and struggled with emotional control. His grade point average sank to 2.3. And he was slow to react on the lacrosse field, which was a big deal because he hopes to play the sport in college.

Eleven-year-old hockey goalie Ben Schouten, 11, of Scottsdale, was feeling sluggish on the ice and not very agile. His mother, Jennifer, says he spent a lot of time watching the clock and looking into the stands.

Both athletes turned to neurofeedback, or “brain training,” to improve their performance. Over time, the sessions have helped them stay more focused and alert.

**DIFFERENT KINDS** of brain waves are associated with levels of attention, focus and arousal. A quantitative electroencephalogram (QEEG) measures brainwaves, creating a “map” of brain activity.

Using that map as a guide, trained professionals create exercises that can help clients gain better awareness of, and control over, attention lapses. Eventually the cause-and-effect response becomes quicker and, in daily life, more automatic.

At SIRRI Developmental and Sensory

Max Grieser during a neurofeedback session at SIRRI. The movie will only play when he maintains focus.

Inset: The readout from electrodes on Max Grieser's head.

Learning Center. Thomas, physical therapist Dan Williams, PT, CSCS, BCIA-EEG, attaches electrodes to Max Grieser's head. The electrodes are connected wirelessly to a computer.

Then Max starts watching a movie. If his brain activity indicates he is not paying attention, the movie stops.

When I was there, observing and taking pictures, those distractions occasionally caused the movie to pause. But after 50 sessions, Max is adept at keeping the movie playing.

“I just try to relax and let my brain do what it's going to do,” he says. “Some days it's rough, some days it's not.”

Since he started twice-weekly neurofeedback sessions in November, Max's

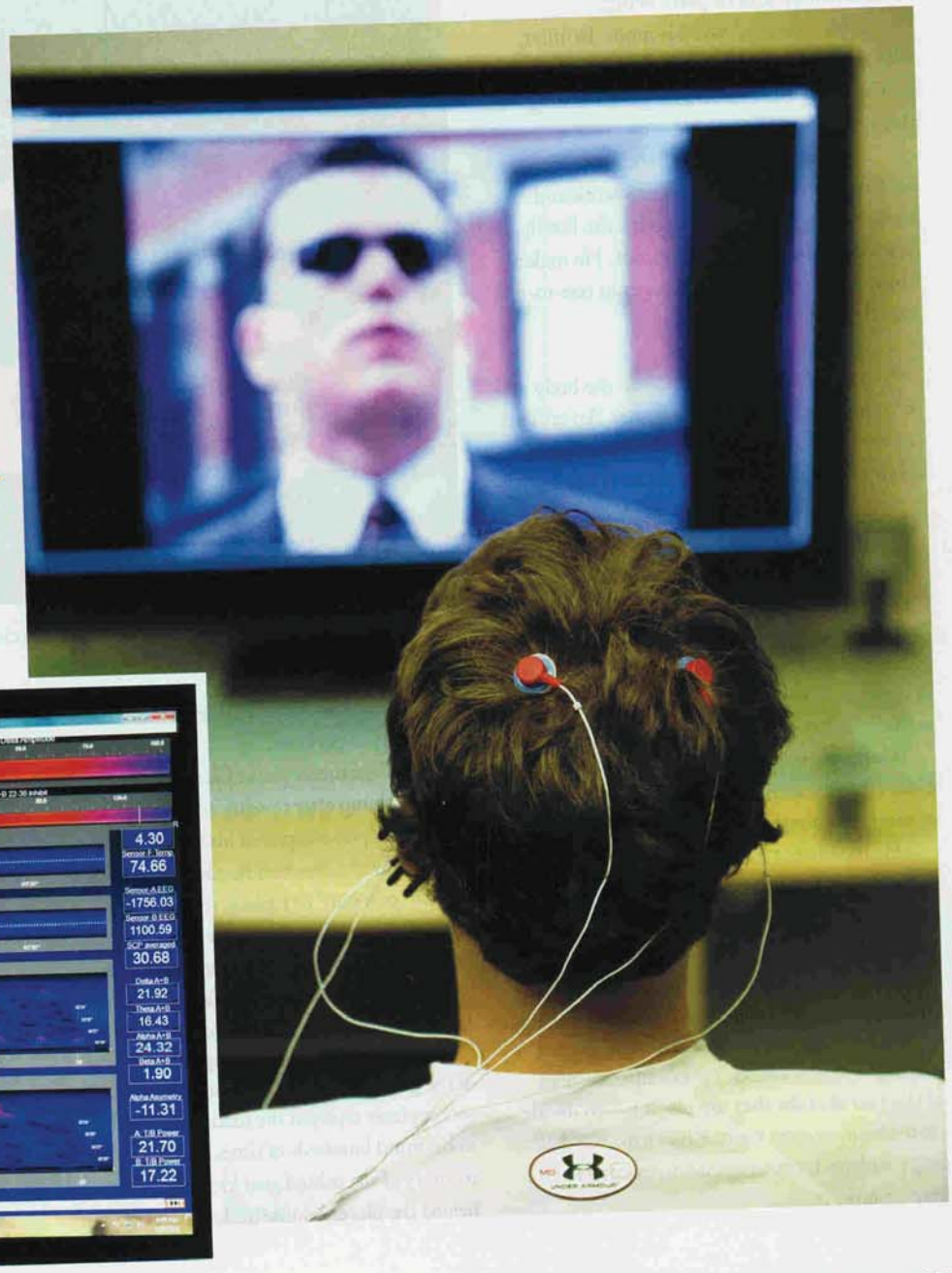
ability to focus and concentrate has improved, as has his lacrosse game. He is currently playing for the Force Lacrosse Club.

“I'm a lot faster and clearer and know what I'm doing,” he says. “I can hear people better.” His grade point average was edging up to 3.0 during a recent quarter.

His mother, Judy, reports that Max's behavior at home is better, he's easier to reason with, more pleasant to be around, more aware of others and is less self-absorbed.

All of this is without medication.

**IN LATE MARCH,** Ben Schouten started neurofeedback sessions with psychologist Sanford Silverman, PhD, at Zone Athletic Performance in Scottsdale.



Like Williams, Silverman starts by “mapping” Ben’s brain to determine which parts are most active or inactive.

His therapeutic approach includes a specially designed Xbox controller with a microchip that receives signals from a wireless unit attached by electrodes to Ben’s head. When the signals indicate attention and focus, the game plays. Otherwise the game stops.

Ben is adept at playing the game and appears undistracted by my visit.

More importantly, he’s noticed a difference in his daily life.

When he’s on the ice, he says, “I feel like nothing else is going on in my mind.” He pays more attention and he plays better.

“It was instant,” says his mom, Jennifer, who decided to restrict Ben’s regular use of Xbox and other electronic games during therapy.

“It was a game changer,” she says. “Ben became more focused with homework and hockey. He’s more engaging with the family, he’s more talkative and humorous. He makes funny jokes. He actually engages in one-to-one conversation.”

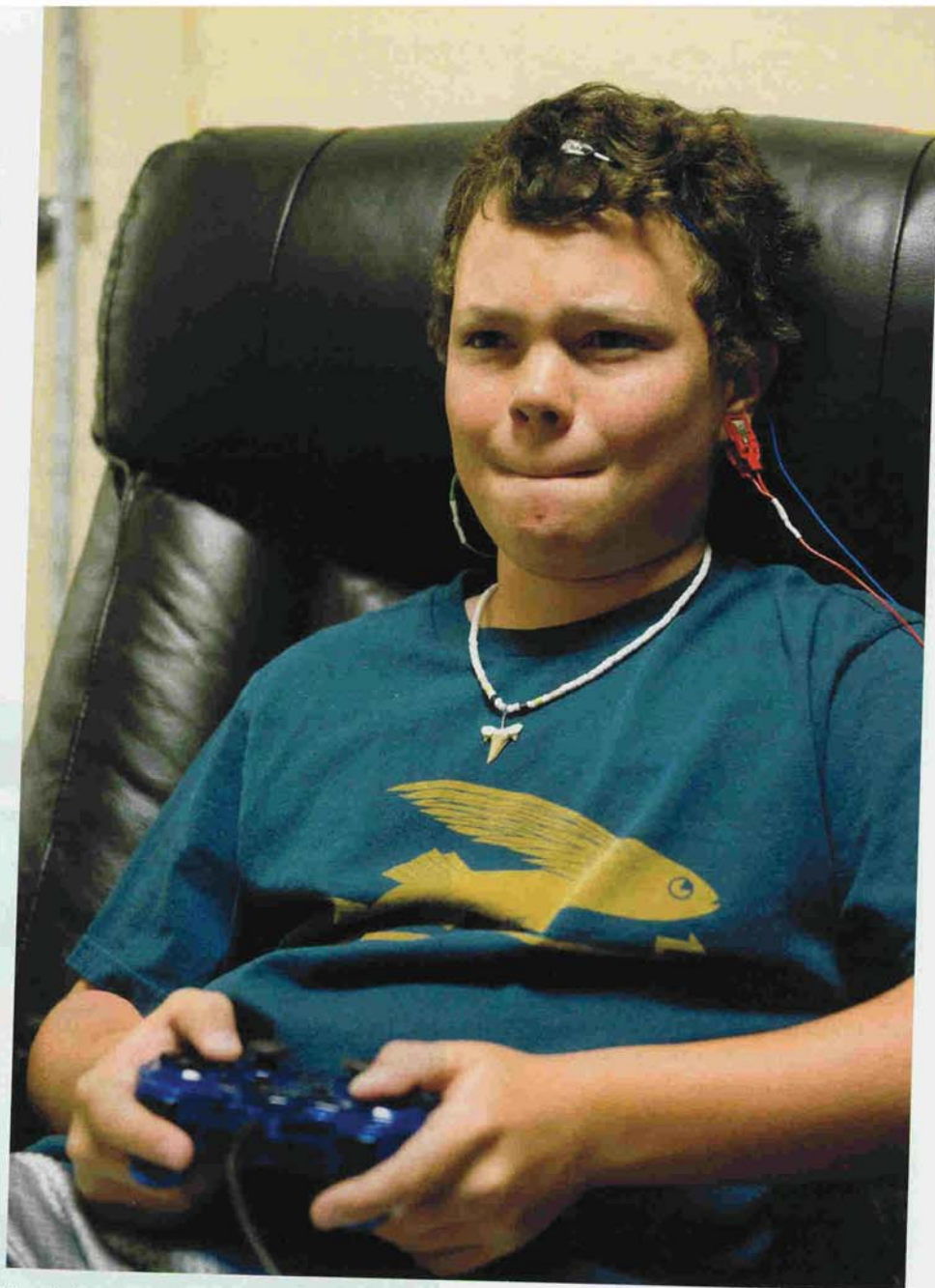
**UNDER IDEAL CONDITIONS**, the body and the mind work seamlessly together. An athlete “in the zone” executes moves without thinking about it much. Any distraction or second-guessing will impair performance.

When the brain thinks too much there can be “paralysis by over-analysis,” says Glendale sports psychologist John Gassaway, PsyD. The goal is “automaticity:” the ability to shoot a jump shot, pitch a baseball or do a back layout in gymnastics as one operation rather than having to think of each distinct step of the process.

Gassaway works with middle school and older athletes, using visualization and “memory editing” to enhance performance.

He has clients play a fast-paced card game called Speed to make them aware of times when their attention is divided. During the game, Gassaway purposely tries to distract them. He changes the rules. He has them announce out loud which card they are playing.

Then he has them say a card they are not playing—jack of hearts, for example, instead of the two of clubs they are playing—to divide their attention even more. Over time the drill helps athletes learn to ignore distractions and stay on task.



Ben Schouten concentrates on playing a specially modified Xbox controller at Zone Athletic Performance.

Gassaway also helps athletes visualize how they want to perform.

A college soccer player Gassaway worked with was in a slump after missing an easy goal kick. The soccer player replayed his memory of the error so many times that he couldn’t get past it.

To “edit out,” or replace, the memory of the error, Gassaway had the player visualize the game in minute detail. What was the weather like? What was happening on the field? How should he have kicked the ball to score the goal?

The exercise included imagining the end of the game and the celebration afterward. The soccer player replayed the successful visualization in his mind hundreds of times to replace the memory of the missed goal kick. This technique helped the player resume his high level of play.

If performance slumps aren’t caused by injury, coaching changes or other external factors, Gassaway can work with athletes to rekindle confidence and motivation, he says.

Sometimes, however, he finds an athlete who just doesn’t want to compete anymore. In that case, he has to work with the parents to help them understand that years of practice and competition are not enough to sustain a child’s interest in a sport.

Athletes need to be self-motivated, Gassaway says. They shouldn’t be playing to please their parents or coaches.

*Daniel Friedman is a staff writer and photographer. Find more of his brain-training coverage each Wednesday in July at raisingarizonakids.com.*