

PART ONE OF A

HEALTHURDLES

CONTINUING SERIES

# Striking Back

AFTER SURVIVING A LIFE-CHANGING STROKE AT THE AGE OF 38, A LOCAL EDUCATOR LEARNS WHAT SHE'S MADE OF

By Kristen De Deyn Kirk

## The sound of an ambulance

causes most people to straighten up and turn their heads, but Allison Zmuda's children react differently. They flinch.

The siren takes them back to March 27, 2010, the day their then-38-year-old mother collapsed at a Virginia Beach soccer field.

"I was cheering for my daughter, Zoe, like a good mom," remembers Zmuda. "I had just given her a hug for scoring a goal."

Her husband, Tom, and her 9-year-old son, Cuda, were at the YMCA working out. Around 9:30 a.m., a little after half time, Zmuda wanted to get out of her chair. She tried to stand but couldn't. Her right foot was asleep.



"I kept shaking it, thinking 'seriously?!'" she says. How could it be asleep when she hadn't been sitting for long?

Despite the lack of feeling, Zmuda willed herself to stand—and instantly fell to the ground. Parents swarmed her, and a former nurse shouted for someone to call 9-1-1. Another person found Zmuda's phone and called Tom.

"All he heard was, 'She's hurt. Get here as fast as you can,'" Zmuda says. As the soccer coach distracted Zoe (now 6), the paramedics arrived. They asked Zmuda the date, and she replied, "Ma...ma...ma..."

"I remember thinking to myself, 'that was weird!'" Zmuda says. "I started to realize what was going on. They were trying to as-  
bertain if I had a stroke and what side of my brain it was on. My right side was paralyzed, and the right side of my face was falling. They needed to determine if my language or cognition was affected."



## SLOW SPEECH, QUICK THINKING

Zmuda recounts the details of her stroke on an unseasonably warm and sunny day this winter. She walks into a Virginia Beach Starbucks swinging her arms and smiling wide. Her dark, curly hair worn loose, a black and white polka dot dress and a dusty rose purse further reveal confidence and ease. But sharing the details of that shocking March day isn't pain-free.

When a listener chokes up hearing about the collapse and the resulting ambulance ride to Sentara Virginia Beach General Hospital, Zmuda nods in agreement.

"I'm glad I have my sunglasses on," she says.

Zmuda is an educator, a one-time social studies teacher who now travels the country consulting at schools looking to improve their performance. She's written six books on the topic and has been a speaker at national educator conferences. Communicating is a money-making must for her and something she always did succinctly and engagingly.

When she speaks nowadays, her intelligence becomes obvious. Most people would have said "The paramedics were trying to figure out if I had a stroke," but she says "ascertain." Her occasional struggles with communicating aren't as obvious, but they do occur. During her conversation at Starbucks, she pauses for a few seconds after flawlessly talking at length. When a question stumps her, she sits back in her chair, and her smile disappears.

Not having all of the answers, or not being able to share them as quickly as before, isn't something Zmuda has accepted. Nothing stops her from making her point—not even on the day of her stroke.

When Zmuda arrived at Virginia Beach General, she received tissue plasminogen activator, commonly known as tPA. The drug can dissolve blood clots, one of which had traveled to the left side of Zmuda's brain. Ideally, the drug is given within three hours of a stroke, and thanks to her friends' immedi-

ate response on the soccer field and the paramedics' and hospital staff's quick work, Zmuda received it within a half hour.

Dr. John Agola, an interventional neuroradiologist who has worked for Sentara since 1994, categorized Zmuda's clot as "substantial," noting that it was considered large on a small-medium-large scale. In such cases, he believes tPA works about 50 percent of the time. Unfortunately, it wasn't effective for Zmuda.

"I was taken by ambulance to Norfolk General to meet with Dr. Agola. He told my husband and me about my options," says Zmuda. "We could either try another round of tPA or have surgery."

"My husband said, 'I don't know,'" says Zmuda. "But I clearly communicated what I wanted."

How did she do so, when she couldn't speak?

Zmuda laughs.

"Here I am telling you I can't talk *and* that I clearly communicated," she says. "I nodded 'yes,' pointed at Dr. Agola (who was recommending the surgery) and tried to say, 'I want ...' but could only get out 'I... I... I...'"

## NEW TREATMENTS, NEW CHALLENGES

Dr. Agola doesn't use the word "surgery" when talking about treating Zmuda. Instead, he explains that he and Dr. Karah Lanier used a "procedure," a word that certainly sounds more benign. Known, as "clot retrieval" in layman's terms, it involves two instruments—a merci retrieval device to physically move the clot out of the artery and a penumbra

suction thrombectomy catheter to vacuum out the clot.

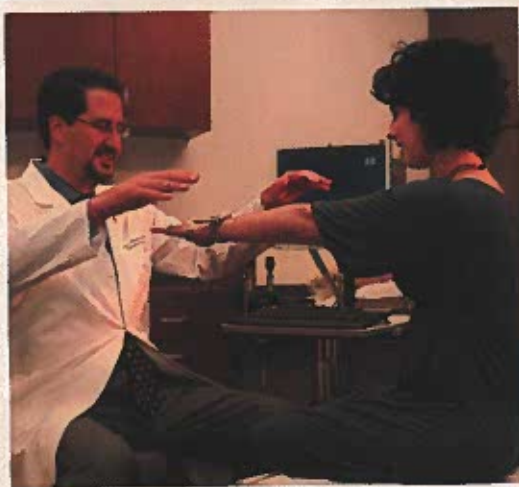
Dr. Agola says that the instruments are often used side by side. He estimates he's performed the procedure 100 times in the last four years. Under the best circumstances, doctors can complete the clot retrieval with one attempt in about an hour and a half. On average, though, it takes three to five tries. With Zmuda, five attempts and six hours were necessary.

She woke up that evening around 9:30, groggy and able to say four words: *Yes, no, I and please.*

Physically, she felt OK. Within a day, she got out of bed and walked. She was grateful but not happy. She thought to herself that she'd rather be in a wheelchair—and able to speak.

Zmuda's mobility was a concern to speech therapist Paul

Post stroke, Allison regularly undergoes testing that checks her motor skills, speech, hearing and cognitive thinking.





Fisher. When she stood up and walked over to him during their first meeting at the hospital, his heart sank. He knew she wouldn't be allowed to stay as a patient for long.

"He told me I was in danger," says Zmuda. "Most insurance companies prioritize physical therapy, then occupational therapy and then speech. He knew they were likely to take away (recovery) services if I could walk."

And he was right. When Zmuda was released, her insurance allowed for five outpatient speech therapy sessions, saying she was functional enough, although she couldn't speak in simple sentences.

When Zmuda met with the second speech therapist, she shared her plan. She had a consulting job at a Philadelphia school on May 17 and 18, and she would be there as scheduled.

"I don't think you can work again in the near future," responded the therapist.

Zmuda's husband jumped in to help, cancelling all of her consulting work and starting his own job hunt to take pressure off his wife. The kind gesture made her upset.

"I thought once he was back to work, it would be the sign of my defeat," says Zmuda.

She told him "May 17 and 18" repeatedly and sent a basic email to the Philadelphia school principal.

"I wrote something like, 'OK to work May 17 and 18,'" says Zmuda. "I needed to get out there. I had to have something to work for. I was on the verge of losing myself."

While appreciative of her second speech therapist's efforts, Zmuda knew that Fisher better shared her determination. She asked if they could continue working together. "I wanted to hire him," Zmuda says.

Instead, he worked for free.

Twice a week, for three hours at a time, Fisher met with Zmuda. He diagnosed her with "moderate expressive aphasia," which means a language disorder following a stroke. She had progressed to naming objects but couldn't elaborate.

"She told me that her goal was to be 'brilliant,'" says Fisher. "That amazed me. She was



Allison spends time with husband Tom, daughter Zoe and son Cuda at their Virginia Beach home. She says it is important to believe and continues to work on her recovery.



nowhere near it."

Fisher worked with Zmuda on writing and speaking, along with some reading. He let her know that she had to get used to giving herself more time. Before her stroke, in the spur of a moment, she could come up with examples from literature or film or other areas of life to illustrate a point. Now she would have to plan. It also helped to have an extra pair of eyes. Whereas Zmuda could once shoot out emails in seconds, after her stroke she would need someone to proof-read them, because she wasn't seeing her errors.

Zmuda fell into what she describes as a "funk" during her recovery.

"I was embarrassed and humiliated by my lack of abilities," she says.

Fisher saw her face days with all kinds of mistakes.

"You have to know that progress is not always linear," he notes. "You have days without any progress."

Standard advice for stroke patients facing frustration is to use support systems—and Zmuda had ones in all sizes.

"My husband would prompt me to name things and describe them," she says. "My son would point out that I kept saying, 'that's ridiculous,' in response to everything. My children had a better vocabulary than me."

It's also important to believe, says Fisher. Too many times stroke victims hear that they'll get most of their skills back in the first year and then progress will wane. In other words: Whatever skills are regained in the first year will be the only

skills regained. Or, unlike Zmuda, they'll accept only a minimal number of therapy sessions.

"Patients will settle," says Fisher. "You have to say 'I want to do that.'"

Zmuda set goals time and time again and accomplished them, including making her scheduled May 17 and 18 meetings in Philadelphia and writing her sixth book, *Breaking Free From Myths About Teaching and Learning: Innovation as an Engine For Student Success*, on time in December 2010.

"If she had gone with the insurance-recommended therapy of five hours," Fisher continues, "we both have no doubt she'd be a different person."



## LOOKING FOR ANSWERS

Zmuda doesn't fit the typical stroke victim profile. She always ate well and exercised, and she didn't smoke or have high blood pressure, high cholesterol or diabetes.

Why exactly she had a stroke at age 38 could remain a mystery, but she has pieced together information about possible causes:

- Estrogen might have a link to strokes, and she's taken birth control with estrogen.
- She has a genetic predisposition to blood clotting.
- She also has a hole in her heart.

The predisposition to clotting and the hole in her heart, known as patent foramen ovale (PFO), were discovered after her stroke. Time and research could provide Zmuda with the answers—and solution—she wants. Her neurologist, Dr. Richard Zweifler, is working with Dr. Deepak Talreja, a Virginia Beach cardiologist, on a nationwide study exploring stroke prevention and PFO. Zmuda joined the study, knowing she'd be randomly selected for one of two treatments.

Given her desire to fix things and fix them fast, she was disappointed to learn that she was placed with the patients who would continue with a standard treatment of taking Plavix, a drug designed to prevent blood clots.

"I wanted to be part of the other group, where the patients have the hole in their heart closed," she says.

The thought of one day getting the hole closed, if it proves to be an effective stroke preventer, keeps her spirits up. She says she's been promised the first spot in line by Dr. Zweifler.

The neurologist explains that a possible link between PFO and strokes is based on three theories:

1. A blood clot starts in a vein in the leg. It travels to the heart and goes through the hole in the heart and onto the brain.
2. The clot can go into or near the heart and block the flow of blood.
3. A person with PFO has an increased chance of having an abnormal heart rhythm known

Stroke affects about 600,000 Americans a year, and surprisingly, about one-third of all strokes occur in women younger than 65. It is the third leading cause of death in Virginia. The disease touches four out of five American families and kills twice as many women as breast cancer.

When an artery that supplies the brain with oxygen-rich blood becomes blocked or ruptures, a stroke occurs. This kills brain cells in the immediate area. That's why learning the symptoms and seeking immediate care at the nearest emergency room is crucial. Now, during May's National Stroke Awareness Month, is the perfect time to learn more.

## TWO TYPES OF STROKE

### ISCHEMIC STROKE

The most common type of stroke—accounting for 80 to 85 percent of all strokes—is caused by a clot or other blockage within an artery leading to the brain.

### INTRACEREBRAL HEMORRHAGE

An intracerebral hemorrhage is a type of stroke caused by the sudden rupture of an artery within the brain. Blood is released into the brain, compressing brain structures. They account for about 15 to 20 percent of all strokes.

as atrial fibrillation. Blood doesn't circulate correctly within the heart, making it more prone to clotting.

About 25 percent of people have PFO, and most aren't aware of it.

Zmuda now knows so much about her body and health, and learning about it all has been discomfoting. For a long time, she could only say, "I had a blood clot."

"I couldn't fathom, 'I had a stroke,'" she shares.

But other times, her sense of humor about it all comes out. When she saw an X-ray of her brain after the stroke, she jumped up and pointed to part of it.

"Look, my brains are dead," she said.

It's that kind of spunk-despite-tragedy attitude that makes Zmuda an effective advocate for stroke survivors. She says she wants to bring hope to others and help them

## STROKE: THE FACTS YOU NEED TO KNOW

### KNOW AND LIMIT YOUR RISKS

High blood pressure, diabetes, high cholesterol, smoking, obesity, atrial fibrillation (a form of irregular heart beat), physical inactivity and family history can increase your risks of stroke.

Women also have additional risk factors, including pregnancy, using hormone replacement therapy to treat menopause, and having waist sizes larger than 35.2 inches and triglyceride or blood fat level higher than 128 milligrams per liter after menopause.

### SYMPTOMS OF STROKE INCLUDE:

- Sudden numbness or weakness of face, arm, or leg (especially on one side)
- Sudden confusion, trouble speaking or understanding
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness or loss of balance
- Sudden severe headache with no known cause
- Women are more likely than men to describe unique stroke symptoms, such as face and limb pain, hiccups, nausea, general weakness, chest pain, shortness of breath and heart palpitations.

### IF YOU THINK YOU OR SOMEONE ELSE IS HAVING A STROKE, REMEMBER TO CHECK "FAST":

#### F = Face:

Ask the person to smile. Does one side of the face droop?

#### A = Arm:

Ask the person to raise both arms. Does one arm drift downward?

#### S = Speech:

Ask the person to repeat a simple phrase. Does the speech sound slurred or strange?

#### T = Time:

If you observe any of these signs, it's time to call 9-1-1. Studies show stroke patients who arrive at the hospital by ambulance receive quicker treatment than those who arrive on their own.

### TREATMENT OF STROKE

Within the first hours after a clot-caused stroke, tPA, a clot-busting drug, can be given. This helps restore blood flow to the brain, limiting the damage to nearby brain cells. Once three hours have passed, doctors are limited in how to treat a stroke. However, advancements are being made with clot retrieval, and local research conducted by Sentara Healthcare may one day lead to new stroke treatment options.

get the care they need. She has spoken to neuropsychology residents and doctors at Sentara Norfolk General with Fisher, her speech therapist.

"She had a lot of insight about communicating with patients," Fisher says. He's a bit jealous that she outshined him, receiving the residents' best written feedback of the year.

He'd like to invite her to speak with speech therapy students at Old Dominion University, where he attended school, so that they can get a sense of what it's like to suffer a stroke.

Chances are high they will encounter many patients who have had a stroke, a leading cause of serious, long-term disability in the United States. That's especially true if they stay in Hampton Roads, a part of the "stroke belt," a region of 11 Southern states where the incidence of stroke-related deaths is above the national average.

Public speaking is also an

appropriate, ongoing therapy for Zmuda, one she continues to practice regularly. She returned to her full schedule of work last summer and had big plans for her one-year stroke anniversary on March 27. (She would present at the Association for Supervision and Curriculum Development conference in San Francisco.)

Later in the year, on Dec. 13, she'll celebrate her 40th birthday. While other women dread that decade, she welcomes it. Not that everything in her life is perfect—her writing is a bit sloppy, she says. She types a little slowly on her right side, too. And on a recent trip to a pharmacy, she fumbled over her words while picking up a prescription. But she shares these details matter-of-factly, as if they're temporary hurdles.

"I so appreciate those things that were once effortless," Zmuda says. "I never want to take any of it for granted." **HAM**

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