

Taking Steps to Boost Brain Health

Toeing the line between science and art, a distinguished dance artist, scholar and educator believes that movement beats back dementia and unlocks 'creative aging.'



PHOTOS BY NORA WESSON

Unraveling the connections between movement, brain health and mood is an increasingly fertile field for neuroscientists these days. They have nothing on Gene Kelly, who 70 years ago seemed to sense the link instinctively. With an unopened umbrella in hand in a downpour, he strolls along a city

BY ROBERT GOLDBLUM

sidewalk, the lighter-than-air tap steps lifting his spirits (falling in love helps too): “Let the stormy clouds chase/ Everyone from the place/ Come on with the rain/ I’ve a smile on my face ... I’m dancin’ and singin’ in the rain.”

The ability of dance to not only lift a person’s mood but improve brain function and stave off dementia lies at the heart of Magda Kaczmarek’s work. A Queens-based, Polish-born dance artist who is a fellow at the Global Brain Health Institute, a collaboration between the University of California San Francisco and Trinity College Dublin, she has carved out a career at the border of creative movement and brain health for more than 20 years.

“We spend so much money on medications to try to find cures and therapies for various forms of dementia. But physical activity is one of the few things that we actually know you can do to affect the trajectory of how our brain

health ends up,” Kaczmarek tells L’Chaim. She adds that while the science of connecting the dots between movement and brain health is still evolving, “the first thing that we know is that exercise, movement, aerobic engagement — things that get our heart rate going — do wonders for our brain. There’s a really strong connection between our heart and our brain.” The increase in blood flow from movement is crucial, she says. “That blood is food for our brain. So, when we engage in something that lifts our heart rate, we actually increase angiogenesis in our brain, we have more blood vessels in our brain.”

Kaczmarek points to a 2017 German study of 52 healthy adults ages 63-80 led by Dr. Kathrin Rehfeld that goes a step farther, suggesting that dance, rather than other types of movement, holds a special magic when it comes to brain health. The participants in the study, published in the journal *Frontiers in Human Neuroscience*, were split into two groups: one that did 90 minutes of repetitive strength-endurance training a week for 18 months; and the other, which took a 90-minute dance lesson, with alternating routines from jazz to Latin to square dance, each week for 18 months.

“It was the same amount of aerobic exertion,” Kaczmarek says,

“but what the researchers noticed was that the people who danced actually had more volume of a key brain molecule [BDNF, brain-derived neurotrophic factor],” which is released during exercise. “It’s a complicated cascade [in the brain], but basically it ends up resulting in more neuronal growth.” That growth, according to the researchers, occurs in the part of the brain that controls memory and learning, the hippocampus, which is the region where age-related changes in the brain take place.

It’s the complexity and challenging nature of choreography, Kaczmarek says, that leads to brain stimulation. “Dancing, and especially dancing with other people, is a powerful type of enrichment for our brains and it stimulates neuroplasticity — the idea that our brains aren’t static. This happens through aerobic activity, and by adding novelty, adding something new, a kind of positive stress. That’s powerful.” She adds that these benefits can also be derived from what she called “seated dance.” Her own program, *Stories in the Moment*, adds the element of storytelling to the mix of movement and dance, all in the service of creating a sense of community.

Kaczmarek’s own path to dance began with Polish folk dance. A painfully shy child, she says, “When I discovered dance, I

Continued on following page

Please note:
We understand that these exercises may not be suitable for everyone.

turned into a completely different person. ... I had discovered my language." Formal ballet study followed, along with jazz and modern dance, and by the time she was in college at the University of Arizona majoring in biochemistry and molecular biophysics, she was beginning to investigate the intersection of movement and brain health. A catalyst was her participation in an innovative program — Dancing for Parkinson's Disease — run

by the acclaimed Brooklyn-based Mark Morris Dance Company.

It's all comes together in Kaczmarska's exploration of what she calls "creative aging," a toeing of the line between science and art, and a way to bring seniors together in community. "It's the understanding that the golden years of life are a time of richer experience and celebration, rather than a restriction or retreat. ... And yet if you think about music and movement, [they] are some of the most inherent parts of how we find community and how we find our language, our own

identity — whether it is part of our culture that we grew up with or whether it's one that we cultivate and create together."

Kaczmarska says that a "big part" of the work she does for those living with the challenges of aging is "cultivating spaces for us to use dance, to recognize that over a lifetime, we accumulate a library of choreography and that we can tap into that movement and share it with one another." ▮

Robert Goldblum is the former managing editor of the New York Jewish Week.

GRAB A CHAIR

Three seated 'dances' to stretch your limits.

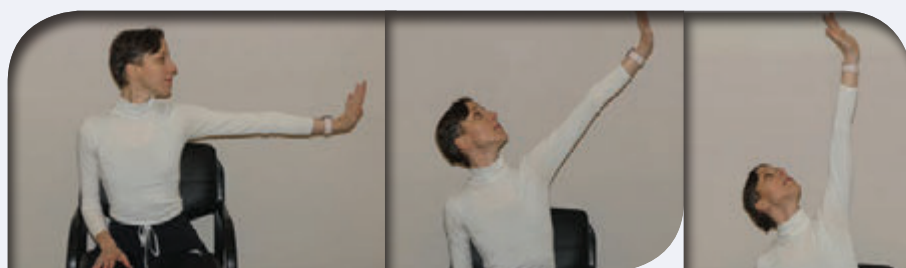
Low-impact exercises done in a chair can get the arms and legs moving and blood flowing. Studies show that seated dancing or chair yoga can improve upper-arm strength and flexibility, leg muscle endurance and balance, as well as brain health. Below, dance artist Magda Kaczmarska recommends three seated dance movements that can be done at home. (She picks particular songs, but others can work too.)

Please be sure to consult your doctor before doing these exercises.

▮ Dance 1: Sunrise

(Suggested song: Stevie Wonder's "You are the Sunshine of My Life.")

- Begin by turning your head side to side. Now look up to where your ceiling meets your wall and down to look at your lap.
- Repeat adding your arms. As you look to the side, stretch out your fingers to reach for the wall. Repeat this on the other side.
- Now continue pushing your fingers into the air around you



on either side — like rays of sunshine — pushing to the side and above you and back down.

- Now make this movement smooth. Trace a sun around you with your fingers — from the side reaching up and back down.
- Now reach one arm out to the side — like you are offering someone a hand and reach up and over your body in a rainbow shape — moving into a side stretch. Breathe here and open. Repeat other side.
- Gently roll your shoulders — one at a time, then both.

▮ Dance 2: I Got Rhythm

(Suggested song: The Crystals, "Da Doo Ron Ron")

- Sitting down, start with snapping your fingers 8x; then clapping your hands 8x, then stomping your feet 8x, then shaking your hands 8x in time with the music.
- Now try the same pattern 4x. Alternate between repeating this pattern 8x or 4x. Add an ad-

ditional challenge by repeating the pattern 2x.

▮ Dance 3: Partner Up

(With a friend in person or on Zoom. Can be done seated or standing.)

- Find a piece of music you both enjoy.
- Find a movement that you like. Maybe it's alternating stretching up to the sky with your arms; or a vigorous punch forward to the beat of the music; or a march in place; or a sway side to side.
- Invite your partner to follow along with you.
- Then have your partner pick a signature move for you to follow. ▮

