


Finding New Life through Movement

How a modern dance company helps Parkinson's
disease patients loosen tight joints and lift spirits

BY DAWN FALLIK



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INNOVATIVE THERAPIES

This is the third in a series of articles covering complementary or alternative therapies for neurology patients—therapies that are now accepted by doctors to augment standard medical treatments.

A lawyer, a social worker, and a teacher walk into a sunshine-filled studio, and break out into a grapevine to the sounds of "Whatever Lola Wants, Lola Gets."

It sounds almost like the beginning of a joke, but Carroll Neesemann isn't laughing. Ever since Parkinson's disease affected his career in litigation more than a decade ago, he's found new life as a dancer here on a Brooklyn corner.

For the past five years, Neesemann, 66, has come to the Mark Morris Dance Group headquarters for a dance class designed for people with Parkinson's disease. Taught by company members and filled with as many as three-dozen participants, it's a combination support group, workout, and brain exercise.

"It's nice not to be clumsy," says Neesemann. "It's wonderful to be in control and be somewhat graceful again."

Across the country, those living with brain disorders, from

Parkinson's to stroke to traumatic brain injuries, are finding ease doing the tango or tap or even a bit of modern dance choreography. Patients say the classes help loosen tight joints, improve overall movement, and generally lift spirits in a way other forms of therapy do not, and researchers are trying to find out why.

Dance therapy began more than a half-century ago, when Marian Chace began offering dance classes to psychiatric patients at St. Elizabeth's Hospital in Washington D.C. Now there are more than 1,200 dance therapists in the country, according to the American Dance Therapy Association.

There is no standard class or specific moves, says Sally Totenbier, a spokeswoman for the dance association. "It's about the movement and the rhythm and the shape."

Not all teachers are formally trained therapists, and not all classes are taught by formally trained dancers.

The class at Mark Morris started out as a whim. Olie Westheimer was just helping out her husband, Ivan Bodis-Wollner, M.D., a neurologist and director of the Parkinson's Disease Center of Excellence in Brooklyn, N.Y. She was running a Parkinson's support group and listening to participants express their frustrations that their bodies didn't move like they used to.

"I don't have a medical background at all," she says. "But I knew that dancers use all the tricks in the book to get their bodies to do difficult things. That was my gamble—that it would be beneficial."

She saw a newspaper article on the dance company's new building in the Fort Greene section of Brooklyn, and there was a quote saying that they wanted to connect to the community. Westheimer called up cold and said she had an idea for a dance class; they told her to come on in.

"I said I can bring my record player and the woman at the dance company said, 'We have an accompanist.' I said I don't know who is going to come and she asked, 'Well, would one person come?'" says Westheimer. "And I thought that was the nicest, most understanding thing. So I said yes, one person will come."

Before the class could begin, they needed a teacher. John Heginbotham, one of the company members, stepped forward. He had taught dance classes before, but nothing geared to a particular group.

The first day of class, a family member got sick. Another member, David Leventhal, stepped in. The two have been teaching the class ever since, with faculty member Misty Owens taking over during tour time.

The dancers approached the class as they would any other



basic level—with combinations and repetition—but with the focus on grace and personal success, not group memorization. At the beginning, there was a little too much emphasis on strict modern dance movement, but now the teachers say the class has taught them to lighten up.

"Parkinson's is so much in the forefront of their lives," says Leventhal. "This is a chance to put it on the back burner—it's just a dance class, we don't look at it like a therapy class."

At first the class met once a month, then twice, now it's every Wednesday afternoon for 75 minutes, with a separate group meeting on their own on Mondays. Both patients and caretakers come, hanging canes on the ballet barres and parking walkers in the lobby.

It begins with everyone seated. As Pachelbel's "Canon in D Major" floats in the background, Owens starts with a "sun salutation," arms stretched to the ceiling, palms together, up and over and down to the floor.

Then Heginbotham takes over, demonstrating a series of poses known as the "embracing" phrase in the Mark Morris repertoire. The teachers often steal bits and pieces from the dances they do and modify them for the class.

"We have some 'greatest hits' of exercises that we do that we've

learned have worked for the students," says Heginbotham. "Strong and sharp versus light and airy, sustained versus staccato."

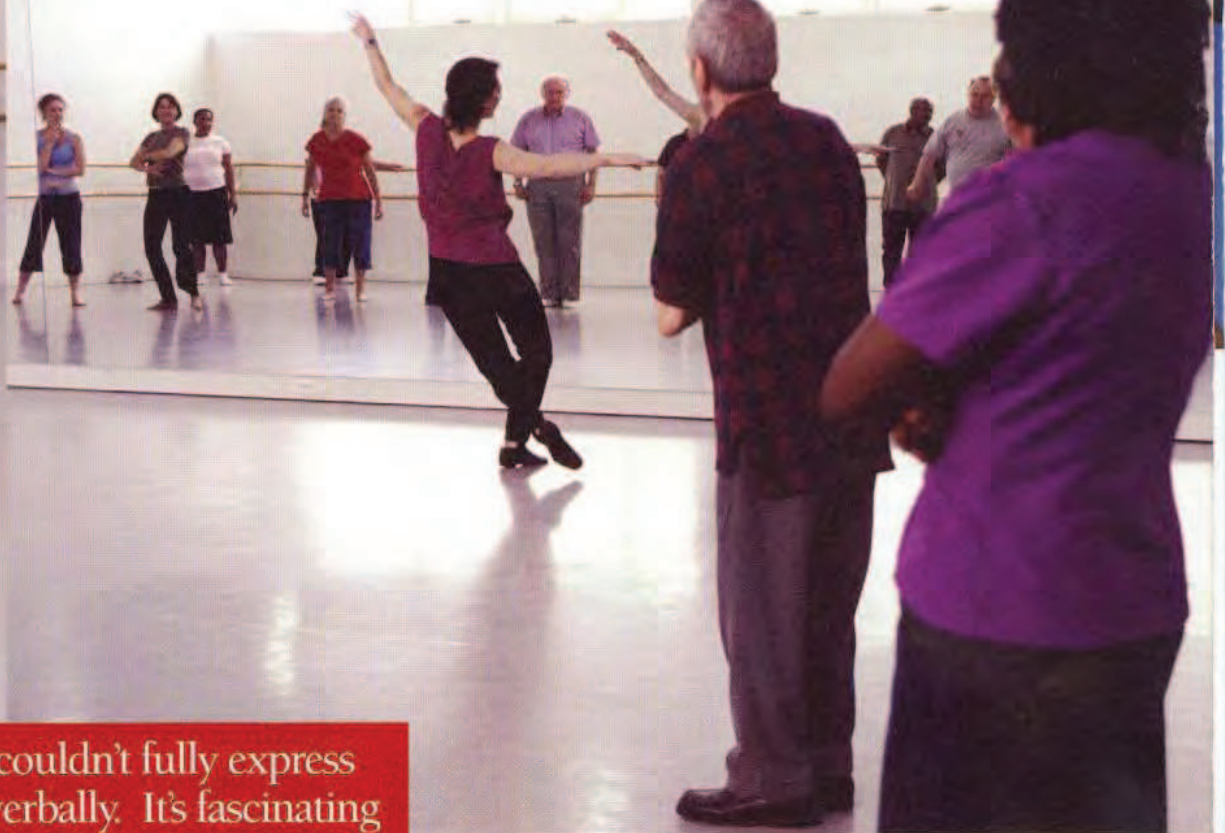
The point of certain movements is to work on specific problems Parkinson's patients have, like mobility freeze or doing two things at once, such as reaching the arm one way and the leg another.

Much like people who stutter who don't do so when singing, the thought is that by reinforcing walking or reaching or moving to music, that the brain will reinforce the pathways, or simply create new ones, says Owens, who is writing a master's thesis on dance therapy and Parkinson's.

"I started including a lot of tap steps because it's sharp and you're striking the floor, spanking the floor—it's clean and clear and direct," she says. "I have seen major improvement, even in just lifting the toes up and down. It activates both mirror neurons and the muscle memory."

Beth Kaplan Westbrook, Ph.D., a former dancer turned clinical psychologist in Oregon who published a study on dance movement therapy and Parkinson's in the *American Journal of Dance Therapy*, says it's beneficial to other groups as well, not just for the exercise, but also for mood.

"People with stroke and MS and other disorders, when they



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moved, they began to see a great benefit because often they couldn’t fully express themselves verbally,” she says. “It’s fascinating that a nonverbal approach can make such a difference.”

Teachers at Mark Morris watch the students to see how the exercises are being accepted. If it’s too complicated or too difficult, or perhaps needs to be repeated, they adapt.

Dr. Westbrook says that’s the way she led her classes as well. “From my own experience, you let the class evolve from the patients,” she says.

As the Mark Morris class moves into its sixth year, Westheimer, who started it all, now has a \$15,000 grant from the National Parkinson Foundation to tape the classes, in the hopes of inspiring other dance companies, teachers, and therapists across the country.

On a recent Wednesday, as a cameraman strolled around the class, focusing on hand gestures and body movement, Judy Rosenblatt noticed only the music.

A retired social worker who was diagnosed in 2004, she says the class brings back memories of folk dancing. She

found the Brooklyn gathering while looking for a support group a year ago.

During the class, the 64-year-old moved easily, even lightly. By the end of the class, students sidestepped across the floors as “We Will (We Will) Rock You” by Queen became the Jewish folk dance “Hava Nagila,” and she said she felt free.

“It’s a pleasure,” Rosenblatt says. “It’s easier to move when you hear the music, when you feel the music.”

Neeseman, the litigator, says his medications are not working for him much anymore, and the class gives him some respite from the symptoms. So when other patients ask him why he goes to class, why dancing?

“I tell them it takes my symptoms away.”

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Dawn Fallik’s work has appeared in The Philadelphia Inquirer, The St. Louis Post-Dispatch, and The Associated Press.

For more on why exercise helps people with movement disorders, see page 33.



For more information about dance therapy, see Resource Central on page 46.

WHY EXERCISE HELPS PEOPLE WITH MOVEMENT DISORDERS

Julie Robichaud, Ph.D., a research assistant professor at the department of movement sciences at the University of Illinois, knows that her Parkinson's study subjects feel better after they exercise and that their symptoms subside. In a recent study she completed involving strength conditioning, their balance improved, walking velocity increased, and the ability to release a contraction improved by 30 percent. But she just doesn't know why.

"We know that in rats exercise stimulates dopamine production," she says. "Is that happening in humans when they exercise? We just can't measure that yet."

Generally, neurologists and other brain-disorder specialists believe that exercise of any form can do no harm, as long as it is approved and monitored by a health professional.

"There's no such thing as overdosing from exercise, if patients do it at their own pace," says Howard Hurtig, M.D., chair of neurology at Pennsylvania Hospital in Philadelphia. Those with balance issues or whose disease is simply too advanced might have more difficulties, but they could benefit from trying.

"The mystical side is how it affects their attitude—they get revved up, become much less depressed, and feel like they're in better control of their destiny."

Would a stroke patient respond as well to a dance class as someone living with Parkinson's disease? It's unclear. But researchers suspect that a better understanding of brain plasticity may help answer that question.

THE PLASTICITY OF THE BRAIN allows it to heal and rewire after an injury, and exercise may play a role in that, says Chen Daofen Chen, Ph.D., program director for sensorimotor integration at the National Institute of Neurological Disorders and Stroke.

"With stroke patients, it's a use it or lose it factor," he said. "We know that when animals are engaged in voluntary exercise that it increases new neuronal survival, but does it bring new neurons into functional structure or new neurons?"

"There is a window of vulnerability where the movement therapy could have a maladaptive effect," he says. "If you do it too early, the nervous system may not be ready to accommodate those increased behaviors, and it may adapt in a way that would not help future recovery."

Ivan Bodis-Wollner, M.D., the director of the Parkinson's Disease and Related Disorders Clinic Center of Excellence at the

State University of New York at the Downstate Medical Center, believes that dance therapy helps because it works the body as a whole, not as an isolated muscle group. In addition to feeling support from the group and from feeling better from doing exercise—which in itself produces dopamine, Dr. Bodis-Wollner says—there's another benefit as well.

"There's an enormous internal reward as well to dancing," he says. "You move your arm and it looks good and you're satisfied."

"The quintessential neural transmitter in the reward system is dopamine, so part of how dance therapy works is that it's stimulating that dopamine and other transmitters."

"Parkinson's patients have a tendency to freeze when they walk or when they turn, and some patients say if they listen to the music and walk to the beat, they walk much better and have less freezing," he says.



BY REPEATING THE THOUGHT over and over, patients create a new map in their heads—not exactly rewiring the neurons, but theoretically "reprogramming" the brain to find alternate pathways to successful movement.

So when Parkinson's patients experience bradykinesia, a general slowing of movement, that new pathway can get them back into step—literally. That internal ignition that makes the hand pick up the coffee cup slows and sometimes

stops. But doing it to music, or even thinking about doing it to music, causes a shift in thinking.

Part of the ways dance teachers accomplish this is by doing the same movement over and over, reinforcing a toe-heel step instead of walking, a sideways grapevine, not a turn. That way, when a patient gets stuck, they can think of another movement and take that different map to get them to the same place.

Dr. Bodis-Wollner tells stroke patients who have lost ability in a particular limb to imagine that it is moving in a specific way. See your hand pick up the coffee cup, the toothbrush, the newspaper, he says.

"We know that imagining things creates brain activity, there's more blood flow going to a certain area of the brain," he says. "I don't know if it recircuits the brain," but maybe it reorganizes.

"The conundrum for neurologists is saying 'it helps to do exercise' but not knowing exactly what kind of exercise to prescribe," Dr. Robichaud says. "We have to figure out what works, and then figure out what's best for different types of people." —DAWN FALLIK