

New Jersey clinic enhances patient rehab using music-assisted gait training

Body In Balance Physical Therapy and Fitness Center



BIODEX

Biodesx Medical Systems, Inc.

20 Ramsey Road, Shirley, New York, 11967-4704, Tel: 800-224-6339 (Int'l 631-924-9000), Fax: 631-924-9241, Email: info@biodesx.com, www.biodesx.com

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Body In Balance

Stepping up mobility with therapy, exercise and technology

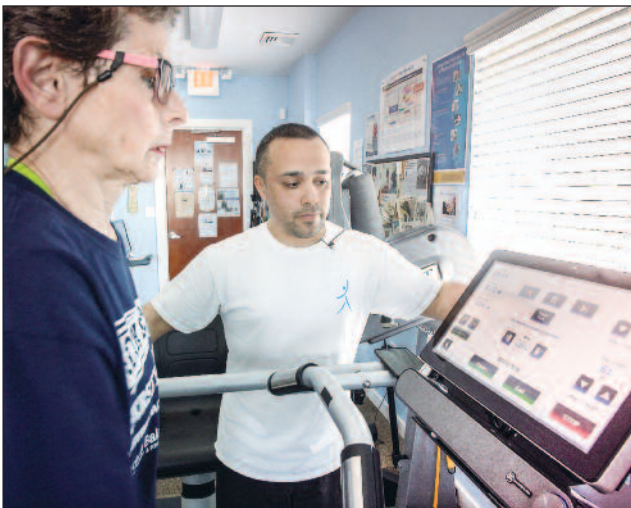
In 2013, physical therapist Eleanor “Ellie” Hagan and her husband Dan founded Body In Balance in Linwood, NJ – one small room for treatment, and another for exercise. As a sole practitioner at the time, she selected the Biodex Mobility package – Balance System, Gait Trainer, Unweighing System and BioStep Semi-Recumbent Elliptical – to help her to efficiently rehab a wide range of patients.

Today, Ellie and her husband and business manager, Dan Hagan, oversee a very busy practice that has expanded to dominate two floors of the original building where they launched their practice.

Body In Balance has grown their clientele by offering a healthy blend of services. In addition to physical, occupational and speech therapy, they have a fitness center staffed by certified personal trainers.

Dan explains, “Our fitness center serves current and former PT patients who practice the exercise on equipment originally prescribed to remedy their strength, balance and gait issues. But we also serve locals who join our gym simply to recover and maintain their general fitness.”

In 2018, Body In Balance added a new Biodex Gait Trainer with music enhancement to their technology suite. The specially composed music available on the system has improved the clinic’s ability to rehabilitate a diverse population of patients with mobility issues.



Patient with long-term Parkinson’s disease improves her gait while stepping on the clinic’s new music-enhanced Biodex Gait Trainer 3, supervised by José Mercado, graduate PTA certified in LSVT BIG.

“While we originally believed our new music-enabled Gait Trainer would see principal use with neuro patients, today, we evaluate almost every referred patient with a gait and balance issue on it,” says Ellie.

The new addition has also put the clinic at the forefront of a growing body of research recognizing music’s unique ability to transform movement.

Applying technology to more precisely assess, rehab and document

Studies show that balance training, gait training, strengthening and flexibility exercises not only improve mobility, but also reduce the risk of falling.



Clinic founder Ellie Hagan tests chronic stroke patient Sally on the Biodex Balance System, which offers both evaluation and training protocols.

“When an individual is referred – or self-refers – for balance and gait issues, we start by assessing their risk of falling by examining their lower body strength, balance and aerobic endurance. These three factors often determine whether an individual with balance and gait issues can safely remain independent in their home and community,” Ellie explains.

The clinic utilizes a Biodex Balance System SD and a Biodex Gait Trainer treadmill to assess and correct balance and gait dysfunction.

Balance System.

“Normal balance is controlled by a complex combination of visual, muscular, and neurological systems. Together, these keep us from falling when we encounter an unexpected disturbance,” Ellie observes.

Testing with the Biodex Balance System helps PTs determine the precise visual, muscular and neurological issues that contribute to a patient’s poor balance. The Balance System then provides a range of patient-specific exercises that target these issues, to improve an individual’s ability to remain upright under a range of conditions likely to challenge them in their home and community.

“We put almost every patient on the music-enhanced Biodex Gait Trainer 3 because once they’re on it, and we turn on the music, we see that their posture improves, and their gait and cadence increases.”

Unweighing System.

Body In Balance is equipped to rehabilitate individuals recovering from a wide range of neurological, orthopedic and cardiovascular challenges, as well as traumatic and postop conditions.

Ellie explains, “One tool for such patients is our Biodex Unweighing System, which we use for patients who have weight-bearing restrictions from an orthopedic injury, a neurological incident, or who present a generally high fall risk. This system enables us to unload the legs and knees of patients who experience pain or weakness, or are fearful of falling when either on the Gait Trainer or exercising over ground.”

Gait Trainer.

For many, aging causes slower walking speeds, and progressively shorter steps that vary in length. Research has shown these factors are related to fall risk. Testing on the clinic’s Biodex Gait Trainer 3, combined with specific functional exercises, has proven to help Body In Balance clients learn to walk safely and more confidently.

To encourage proper step cadence and length, the Gait Trainer contains sensors under the treadmill track that detect precisely where and when each foot strikes. Each detected footfall is displayed in relation to an ideal objective in real time on a large LCD display. The display is mounted in front of the patient, so they can see and correct any differences between the left and right side.

Both the Balance System and Gait Trainer record and store each patient’s performance history, from assessment through each therapy session – and can map patient performance against comparable populations of the same sex and age.

Music-enhanced gait training for modern rehab

While a lengthy history of research shows outcomes improved when music-based treatments were applied during therapy, Biodex’s combination of therapist-informed music and a biomedical system is a first in neurological rehab.



Ellie oversees patient on Gait Trainer 3, who is safe from falls thanks to the support of the Biodex Unweighing System.

At the 2017 Combined Sections Meeting of the American Physical Therapy Association (CSM/APTA), Ellie recalls seeing one of the first music-enhanced Biodex Gait Trainers. She realized how it could enhance her clinic’s capability to better serve the growing number of people with Parkinson’s disease that Body In Balance attracts.

“We already had a very diverse range of programs for people with Parkinson’s disease – ballroom dancing, yoga, and recently, Rock Steady Boxing four classes a week,” Ellie notes.

However, once Body In Balance took delivery of their new Gait Trainer, Ellie recalls it quickly became part of the clinic's standard evaluation and treatment of patients with Parkinson's disease, as well as stroke and some orthopedic conditions.

Ellie continues, "Many doctors send us patients with just a prescription for balance training, or gait evaluation and training. We put almost every patient on the music-enhanced Biodex Gait Trainer 3 because once they're on it, and we turn on the music, we see that their posture improves, and their gait and cadence increases."

When they take patients off the Gait Trainer, they see an improvement in their walking, when they're on level ground.

"I'm very happy with the results," says Ellie.

Body In Balance - Patient Perspectives

Fran: Fighting long-term Parkinson's

Fran has been coming to Body In Balance for five years, first just for the support group, then the exercise program and various group exercise classes. Her therapy sessions, strength training, boxing and balance classes help her through the limitations she experiences as a result of the disease.



Fran – Long-term Parkinson's patient

According to Ellie's account, Fran believes she first began to exhibit signs of Parkinson's disease – tremors in her affected left foot – as early as the third grade. Her family history includes one sister with MS and another with Parkinson's disease.

"When I am on the Gait Trainer, I might feel my body getting ready to slow down, and yet the gait trainer keeps my brain aware that my feet should keep going."

"My left side is affected by Parkinson's disease, and sometimes my left foot feels like it's in cement. My brain is telling my body that it wants to move, but my feet just do not respond," explains Fran.

Ellie adds, "She has her medication well regulated at this point, and exercises every day. She actively participates in our support groups, and is the star of our Rock Steady Boxing program. She may weigh no more than a hundred pounds, but she can throw a mean punch."

As part of her evaluation, Fran was introduced to the music-enhanced Biodex Gait Trainer. She claims her ability to move is totally different when she uses the Gait Trainer, and praises the combination of visual biofeedback and rhythmic music.

"It shows a little diagram of where your feet should be and at what pace you should be walking. It gives you a regular musical beat to keep up with."

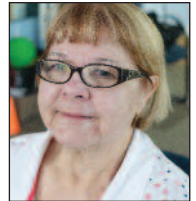
Fran feels the Gait Trainer does more than just keep her in rhythm, but makes it so that she wants to keep in rhythm.

"When I am on the Gait Trainer, I might feel my body getting ready to slow down, and yet the gait trainer keeps my brain aware that my feet should keep going. It's like mind over matter, you listen to the music and keep up with the rhythm of the music. It's very effective."

Fran is one of the many patients who have observed that she retains the effects of the music-enhanced gait training, even when a session on the Biodex system ends. With her mind still on the rhythm, her feet can keep that rhythm when she walks over ground.

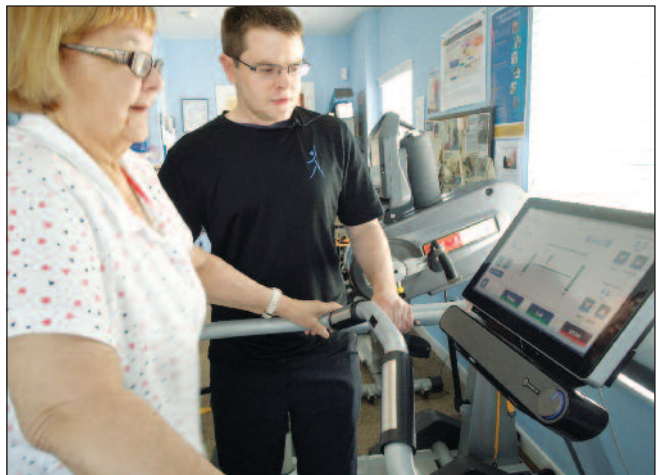
Sally: Regaining independence after stroke

Sally was post-CVA with some weakness in her left side when she arrived at Body In Balance. In the beginning, she struggled to lift her leg and control movement of her right arm and hand. Living alone, she wanted to get stronger and improve her balance so that she could continue to live alone, and get back to driving.



Sally – Chronic stroke patient

After about seven weeks of intensive inpatient therapy, she did some outpatient rehab, but wasn't progressing as she had hoped. Her doctor recommended Body In Balance Fitness Center.



On-screen visual cues from the music-enhanced Gait Trainer help Sally correct her gait during therapy.

“When I came to join, they evaluated me for therapy. I then did about six weeks of therapy on the Biodex Balance System and BioStep,” recalls Sally.

Like Fran, Sally is a fan of the music-enabled Gait Trainer. With music plus footfall display, Sally sees she has increased her gait speed, and feels more confident walking short distances in the community without her cane.

“She loves the Biodex Gait Trainer 3. She feels that the music really helps her to walk better, and I see a big improvement in her,” says Ellie.

“With music plus footfall display, Sally sees she has increased her gait speed, and feels more confident walking short distances in the community without her cane.”

But, when it comes to conditioning, her favorite machine is the BioStep Semi-Recumbent Elliptical.

“I like the BioStep because it’s not too hard on my legs. I have arthritis in my right knee, and even though I have to bend it, I don’t have to put my weight on it. And it’s a good cardiac workout too,” Sally explains.

Body In Balance patient-customized rehab

What differentiates Body In Balance from other facilities is their ability to offer therapy combined with a therapy-enhancing fitness.

To encourage utilization, fitness center membership is only \$39 per month, with class fees as low as \$3 per class – though, many of the classes are free for those with Parkinson’s. Body In Balance also participates in several gym reimbursement programs such as Silver Sneakers, AARP Medicare Supplement, Optum Fitness Advantage, Horizon B Fit, and others.

With a variety of options for patients, and an impressive array of Biodex devices, Body In Balance is more than equipped to improve lives in their community.



After 40 years with Parkinson’s disease, Fran “fights back” and finds relief in Rock Steady Boxing class at Body In Balance.

About Ellie Hagan



Ellie Hagan

Body In Balance founder Ellie Hagan received her master’s degree in physical therapy from Stockton University. She is a geriatric specialist, board-certified through the American Physical Therapy Association. She is also certified in LSVT BIG and power exercises, and is certified in the specialized programs of the Parkinson’s Foundation.

We are always advancing our technology to serve you better. See the latest updates:

NxStep™ Unweighing System

www.biodex.com/nxstep

Gait Trainer™ 3

www.biodex.com/gait

Balance System™ SD

www.biodex.com/balance

BioStep™ 2

www.biodex.com/biostep

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(800) 224-6339

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Biodex Medical Systems, Inc.

20 Ramsey Road, Shirley, New York, 11967-4704, Tel: 800-224-6339 (Int'l 631-924-9000), Fax: 631-924-9241, Email: info@biodex.com, www.biodex.com