

# BIODEX MOBILITY SOLUTIONS

Effective Rehabilitation for the Patient with Neurological Involvement

## Empowering Exercise at Movement Revolution

*Eric Johnson's neuro intensive training centers in the Chicago area break down barriers to exercise with a combination of peer motivation and Biodex technology.*



Eric Johnson, CSCS, CIFT, FMS,  
Owner, Movement Revolution

“Our mission is to empower people with neurological conditions to live stronger every day, in all phases of life,” explains Eric Johnson, owner of Movement Revolution neuro intensive training centers in the Chicago area. With a focus on intense exercise for people with disabilities and neurological conditions, his locations in downtown Chicago, Deerfield, and western suburbs of Chicago (coming soon) allow clients to benefit from individualized training, a sense of community, and advanced exercise technology from Biodex Medical Systems, Inc.

Johnson started Movement Revolution in 2013, initially doing in-home training for Chicago residents, then opening their first location in downtown Chicago. The growth of interest led to the opening of their new flagship facility in Deerfield, where their clients span the spectrum of neurological involvement including Parkinson's disease, stroke, brain injury, MS and spinal cord injuries, to name a few.

### Improving Access to Exercise

For Johnson, Movement Revolution was born out of an early passion for the neurological field. Starting out as an adaptive exercise physiologist at Shirley Ryan Ability Lab (formerly Rehabilitation Institute of Chicago), he worked with people at a range of ability levels and conditions, coordinating group exercise programs for people with Parkinson's disease and stroke.

Johnson's decision to pursue medical fitness was motivated by the limits on insurance-covered therapy, particularly for patients with neurological issues: “There are few resources for people after they're done with physical therapy. That was my driving force,” says Johnson. “I really like being on the community side of things and giving access to people to be active after they are done with physical therapy.”

### Breaking Barriers with Biodex

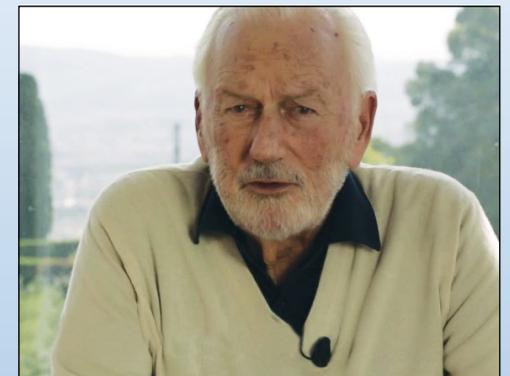
Having experience with Biodex equipment from his work at Shirley Ryan, Johnson understood the value advanced technology brings to the client experience. For the new Deerfield facility, it all began with eliminating obstacles with Biodex's FreeStep SAS Supported Ambulation System.

*Continued on page 2.*



## FRESCO NETWORK: Now a Parkinson's Network of Excellence

*Biodex congratulates the Fresco Network in Italy on being designated as a Parkinson's Network of Excellence by the Parkinson's Foundation.*



Paolo Fresco, President – Fresco Institute

On June 30, 2020 the Parkinson's Foundation announced that the Fresco Network in Italy is designated as a Parkinson's Foundation Network of Excellence. The Fresco Network is comprised of high-quality, patient-centered and multi-disciplinary care facilities for people with Parkinson's disease (PD) at sites throughout Italy.

“This newest designation expands our ability to support the international PD community alongside a network that demonstrates a commitment to providing the highest quality care for people with Parkinson's,” said John L. Lehr, President and Chief Executive Officer of the Parkinson's Foundation. “We look forward to working with the Fresco Network to make life better for the Italian PD community.”

*See the full story inside.*

*Continued from front cover.*

The FreeStep features harnesses attached to a ceiling-mounted track that is customized to suit the facility. Once in the harness, clients can perform standing and over-ground exercise, work out on a treadmill, and move from one task to the other, without fear of falling.

“We have to push one’s ability level and retrain the body to walk and balance with more confidence and build up strength. We would not be able to do this if it wasn’t for the access that the FreeStep gives us. It is a very unique tool that opens a lot of doors for more people to be more active.”

### **Progress... Powered by Data**

Parkinson’s diagnoses make up about 70 percent of the clientele, with adults typically ranging from 50 years old into their nineties. The new state-of-the-art Deerfield location offers a Parkinson’s program that integrates training using Biodex equipment, as well as objectively assessing each client in terms of ability level. Johnson views the concrete data as crucial to both staff and clients.



*The Biodex FreeStep SAS keeps clients safe from falling during exercise.*

“I think a lot of times, people will join an exercise program, whether for Parkinson’s or to get more active in general, and there are no metrics to help them understand their progress,” Johnson explains. “We believe strongly in gathering data so we can be informed and track our clients’ progress, and also show them how their training is making a difference.”

### **Balance System™ SD**

Every client who comes into the facility is taken through a comprehensive evaluation that includes assessments using the Biodex Balance System. The Balance System SD offers a series of testing and training modes using either a static or dynamic platform. First, staff performs the limits of stability test.

“Many people with Parkinson’s experience difficulty shifting their weight,” Johnson explains. “The limits of stability test really allows us to figure out exactly where some of those imbalances are, and the underlying mechanisms that might be impacting their ability to shift their weight.”

For people with Parkinson’s who may experience instability, the postural stability test allows staff to understand how their degree of sway might be affecting their ability to maintain balance. This helps them tailor training to work on those issues.

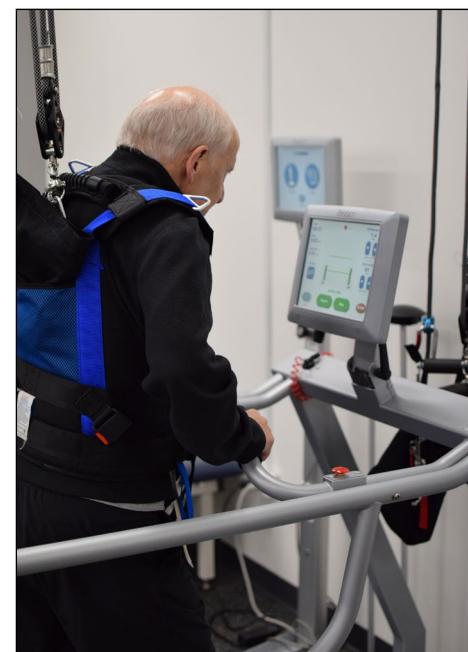
“A lot of times when we have clients with Parkinson’s, one side is more affected than the other. They tend to neglect or avoid the side that is more affected, so they naturally use the stronger side. We use the percent weight-bearing feature to allow people to visually see and understand how much weight they are actually putting to their left leg versus their right leg.”

### **Gait Trainer™ 3**

As part of the comprehensive assessment, clients are taken through a three-minute gait analysis on the Biodex Gait Trainer, which allows staff to understand the client’s ability to shift weight and its relation to stride length while walking. The system has an instrumented treadmill track that senses footfalls and records key gait parameters such as step length and step symmetry.

“The Gait Trainer is probably my favorite tool,” Johnson relates. “It allows us to track and see where our clients are from day one, and then use that as a coaching tool in their one-on-one or group training sessions to be much more mindful and aware of what they need to work on.”

On-screen guides help clients understand and correct foot placement in real time. Johnson praises the instant feedback and on-screen cueing: “For example, it shows you how a more affected leg is functioning as they’re walking on the treadmill. Repeated practice with visual feedback over and over allows us, and allows the client, to be more aware of these imbalances and see measurable improvements.”



*Audio/visual cueing and biofeedback provided by the Biodex Gait Trainer helps clients correct gait issues in real time.*

### **Looking to the Future**

Johnson and his staff have built relationships with the clinical community in the Chicago area, and see many referrals from local physicians and therapists. Recently, news of the programs and technology at Movement Revolution has spread through word-of-mouth.

“My goal from the beginning has been to increase accessibility to people with neurological conditions to be more active,” says Johnson. “Right now, these centers equipped with these unique Biodex devices and tools is a great way to do that.”

Movement Revolution is currently open for one-on-one training and has offered virtual classes throughout the pandemic.

## **Fresco Network: A PD Network of Excellence**

*Continued from front cover.*

In addition to its exemplary care facilities, Fresco Network maintains an innovative research portfolio, and demonstrates a formal commitment to medical professional training and to educating the community of people with and affected by Parkinson’s in Italy.

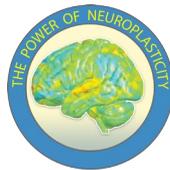


“It is an honor to receive this designation from the Parkinson’s Foundation and to solidify the Fresco Network as leader in PD care,” said Paolo Fresco, “I have personally experienced the long suffering and loss of my beloved wife, Marlene, to Parkinson’s disease so my commitment is deeply personal. That is why I look forward to working alongside the Foundation to provide essential care, education and resources to the PD community in Italy.”

We at Biodex are proud of our connection to many of the professionals of the Fresco Network in Italy, who will now play a role in a larger international effort – sharing ideas and research across the Atlantic in the name of improving the lives of people with Parkinson’s.

# Harness Neuroplasticity for Patient Recovery

Individuals recovering after a stroke or other neurological event can benefit from activating neuroplasticity – the brain’s ability to change or “rewire.” A body weight support system can be a useful tool for implementing neuroplasticity principles for faster outcomes.



## Here’s why:

- The earlier the intervention, the better for the patient. A harness system helps patients start exercising earlier in their recovery.
- Changing the brain requires repetition. With their weight supported, patients may exercise longer knowing they are safe from a fall.
- When a person feels safe from falling, they’ll be more willing to break out of their comfort zone and correctly repeat exercises.
- Therapists can also feel safe motivating patients to improve function using body weight support.



Learn more about equipment to help promote neuroplasticity:

[www.biodex.com/sphm](http://www.biodex.com/sphm)

## Practice, Repetition, Intensity = Neuroplasticity

If you want neuroplasticity you must have intensity.

If you want intensity you must have the patient’s interest.

If you want their interest it’s extremely important to show patient progress that they can see and feel.

# Music Drives Single-Session Gait Progress for Incomplete Spinal Cord Injury

## Sheridan VA Hospital

*Since April 1922, the Sheridan VA Medical Center has been treating Veterans in Wyoming who served our country. This property was once a military fort set aside by President William McKinley in 1898, but now roughly 12,500 Veterans are treated annually at Sheridan VA. Les Smith, a patient, is rehabbing from an incomplete SCI. Biodex Clinical Educator David Wilcox had the pleasure of working alongside Les and Dr. Joseph Hagy, DPT. Using the Gait Trainer 3 with Music-Assisted Therapy, the patient made significant improvements in a single session.*

By combining the Gait Trainer 3 with Music-Assisted Therapy, specific songs can be used to facilitate desired gait patterns. Music tempo can be adjusted to influence gait components, while biofeedback is used to inform patients about their step lengths, step symmetry, and other parameters. It is the music-focused approach that enhances traditional methods of rehabilitation.

### Starting Out Gait Training

Early in the session, Les had an average walking speed of .31 m/s, an average step cycle of .31, an average step length of 59/70, and a 92/108 coefficient of variation. He also spent a significantly uneven portion of time on each foot. These results were captured by the instrumented deck of the Gait Trainer 3.

### Gait Training with Practice

Next, Mr. Smith was cued by Dr. Hagy to take big steps so the Gait Trainer 3 would beep. This auditory feedback was used to keep each step consistent and to lengthen the patient’s strides. After only 3-4 minutes, the patient saw improvement.

### Gait Training with Music-Assisted Therapy

Lastly, Music-Assisted Therapy was engaged on the Gait Trainer 3. This process was used to encourage neuroplasticity and improve the patients’ movements, muscle control, and cognitive skills through learning. By the end of the session, Les had an average walking speed of .68 m/s, an average step cycle of .63, an average step length of 51/53, and a 10/8 coefficient of variation. His time spent on each foot also drastically improved; from 45/55 at the beginning, to a much more evenly distributed 49/51 split.

### Sheridan VA Equipped for Success

With the help of numerous Biodex products, Sheridan VA Medical Center is able to safely and effectively work with patients suffering from neurological situations, traumatic brain injuries, and spinal cord injuries. Equipped with Biodex’s

Gait Trainer 3 with the Music-Assisted therapy application, the facility is prepared to work tirelessly to honor America’s Veterans by offering health and mental wellness services to the Rocky Mountain Region.



*Working with Biodex equipment in a supported environment helped Les safely improve his condition and enhance traditional rehabilitation methods.*

## Single-Session Results

### Gait Training early in session

Average walking speed: .31m/s	Coeff of variation: 92/108
Average step cycle: .31	Time on each foot: 45/55
Average step length: 59/70	

### Gait Training with auditory feedback

Average walking speed: .57m/s	Coeff of variation: 21/15
Average step cycle: .57	Time on each foot: 49/51
Average step length: 46/47	

### Gait Training with Music-Assisted Therapy

Average Walking Speed: .68m/s	Coeff of variation: 10/8
Average step cycle: .63	Time on each foot: 49/51
Average step length: 51/53	

## Remember learning to ride a bike?



It is widely accepted that patients should avoid holding on in order to reap full functional benefits of balance training. However, patients with fear of falling require some degree of stability. Think of the FreeSway Handles as training wheels for balance.

The **NEW** FreeSway Handles for the Balance System SD are the only balance training option that “float” to provide security – without impeding balance recovery. Patients will progressively gain an understanding of their sway envelope, which will carry over into everyday activities.



**Think of the FreeSway Handles as training wheels for balance.**

[www.biodex.com/freesway](http://www.biodex.com/freesway)

## SHOW THE NUMBERS



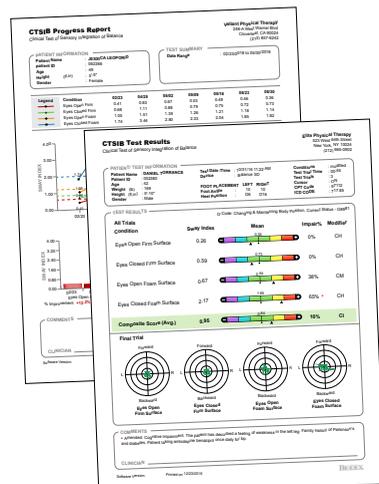
### Position Your Clinic as a Partner for Value-Based Care

PROVE that your therapy programs and technology get patients better, faster.

Biodex technology provides positive outcomes, accelerates rehabilitation and reduces readmission. DOCUMENTED.

Contact Biodex today and ask us how.

View sample reports:  
[www.biodex.com/reports/balance](http://www.biodex.com/reports/balance)



Attract ACO partnerships with objective reporting and efficient rehabilitation.

## CASE STUDY

### Body In Balance Steps Up Mobility with Biodex Balance Technology

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, Ellie needed to find an efficient way to rehab a wide range of patients while standing out from competitors.

She selected the Biodex Mobility package of devices. Assessment using the Balance System SD became an important first step to determine the right treatment program for each patient.

Studies show that balance training, strengthening and flexibility exercises not only improve mobility, but also reduce the risk of falling. The clinic began using the Biodex Balance System SD to assess and correct balance dysfunction in every patient.

Testing with the Biodex Balance System has helped PTs determine the precise visual, muscular and neurological issues that contribute to a patient’s poor balance. Since most patients with neurological involvement present with balance issues, these assessments help set a growing patient population with Parkinson’s or stroke on the right treatment path.

Ellie explains, “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.”

#### Poised for further growth

Today, Body In Balance has grown their clientele significantly, and have expanded to dominate two floors of the original building where they launched their practice. With a variety of options for patients, enhanced by Biodex technology, Body In Balance is more than equipped to improve lives in their community.

Read full case study:  
[www.biodex.com/casestudy/body-balance-bsd](http://www.biodex.com/casestudy/body-balance-bsd)



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

## Take Therapy to New Heights with Vibrotactile Feedback

### Did You Know...

To enhance spatial awareness for jet pilots, sensors were embedded into their flight suits? Since then, vibrotactile technology has been adapted to balance rehabilitation with excellent results.

Learn treatment strategies for applying vibrotactile feedback in therapy using balance technology.

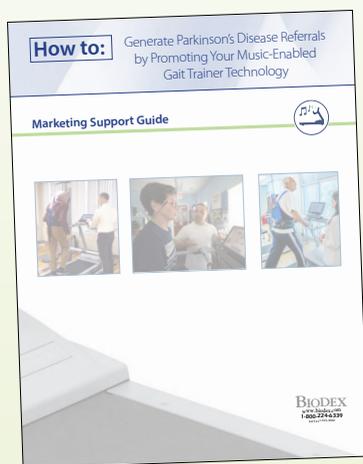
[www.biodex.com/vibrotactile](http://www.biodex.com/vibrotactile)

# Marketing Support

Committed to helping you improve patient care and drive referrals to your clinic, Biodex extends value beyond the product with lead generation materials.

## Gait Trainer™ 3 with Music-Assisted Therapy

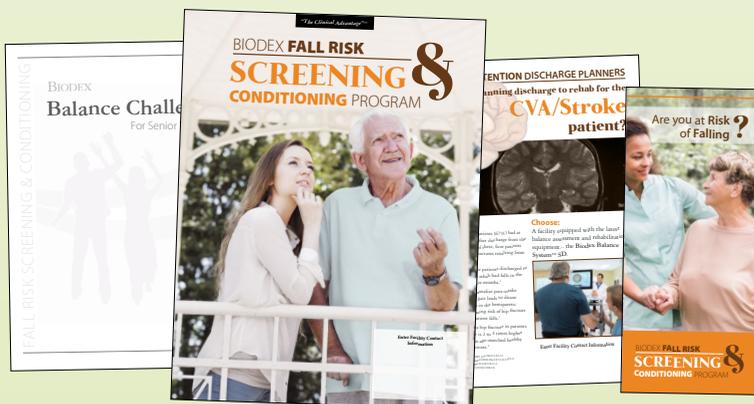
These educational and promotional assets will help you educate physicians, patients and community members on how this enhanced gait training technology supports better, faster outcomes for patients with movement disorders.



*This comprehensive guide teaches you step-by-step how to use Biodex marketing materials and other resources to identify, target and connect with referring physicians and patients in your community.*

## Fall Risk Screening & Conditioning

When you invest in the Biodex Balance System SD, you gain access to a series of marketing materials and sample communications to assist you with physician and patient education as well as community outreach to increase awareness and build your Fall Risk Screening & Conditioning Program.



*Customizable marketing tools and sample communications to help promote the benefits and uniqueness of your clinic.*

### Value Beyond the Product

Educational and promotional materials to help attract referrals.

# Expand Your Programs

with Package Pricing

## Music Moves Me

### Parkinson's Program

Help patients with Parkinson's disease improve ambulation, increase function and reduce the risk of fall. With more than 60,000 new Parkinson's cases reported annually, Biodex Balance & Mobility devices can help this growing, and underserved population. Intense exercise has been shown to slow the progression of symptoms.



### FINANCE TO OWNERSHIP

Includes:

- 950-194** medBike® Whole Body Cycle
- 950-440** Balance System™ SD
- 950-400** Gait Trainer™ 3 Treadmill
- 950-413** Music-Assisted Therapy

**Finance combination for 60 months.**

*Ask about term details.*

*Freight calculated separately.*

## NEW Balance Challenge

### Fall Risk & Mobility Program

Biodex offers a six-week Balance Challenge to help attract older adults to a Senior Wellness program. Designed to improve balance and mobility, the challenge takes members through a series of progressive exercises. Objective results show progress in numbers from beginning to end.

The numbers create an environment of friendly competition. Whether they challenge themselves to improve, or compare scores with others in the program, the Biodex Balance Challenge helps older adults achieve balance goals and maintain their independence.



### FINANCE TO OWNERSHIP

Includes:

- 950-560** Sit2Stand™ Squat-Assist Trainer
- 950-440** Balance System™ SD
- 950-240** BioStep 2™ Elliptical Ergometer

**Finance combination for 60 months.**

*Ask about term details.*

*Freight calculated separately.*

BIODEX

# MOBILITY SOLUTIONS

BIODEX

Biodesx Medical Systems, Inc.  
20 Ramsey Road, Shirley, New York, 11967-4704

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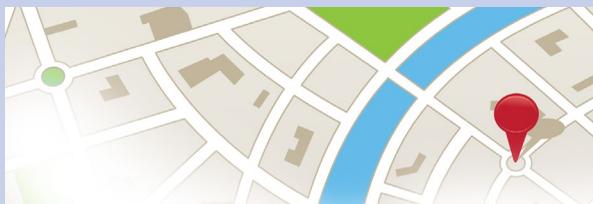
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Register at:  
[www.biodesx.com/add-clinic](http://www.biodesx.com/add-clinic)



## GAIT TRAINER™ 3 WITH MUSIC-ASSISTED THERAPY

**Making the Brain-Body Connection**  
Harness auditory cueing to restore gait kinetics in Parkinson's disease

**Introducing New Treadmill Therapy Based in Science**  
Profitably attract and retain residents with Parkinson's disease

**Patient Perspective: Francine**  
Woman with Parkinson's Steps to the Right Music

**Exploring the Science behind the Gait Trainer**  
Bilateral computer-assisted gait training with music-assisted therapy...

**How can music break the freezing gait of a partner?**  
Music-assisted therapy, the bilateral and sensor systems appear to regulate...

### Value Beyond the Product

Marketing Support materials to help attract referrals.

See details inside.

## Parkinson's Resource Center

Stay informed and start making huge strides for Parkinson's today.

