

"The Clinical Advantage"<sup>TM</sup>

# NEW Music-Assisted Therapy

For the Biodex Gait Trainer 3



## Harness the Power of Music for Movement Disorders

Music-Assisted Therapy combined with biofeedback technology revolutionizes treatment of movement disorders.

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

### In partnership with music therapists

Neurologic music combined with gait training technology brings music-enhanced therapy to the plan of care.



# BIODEX

[www.biodex.com](http://www.biodex.com)  
**1-800-224-6339**

Int'l 631-924-9000

# Music-Assisted Therapy

For the Biodes Gait Trainer 3

*Based on decades of research showing the power of music in treating movement disorders, Biodes brings Music-Assisted Therapy to the Gait Trainer 3.*

## NEW RESEARCH STUDY

### Walking to your right music: a randomized controlled trial on the novel use of treadmill plus music in Parkinson's disease



Patients with Parkinson's exposed to rhythmic auditory cueing (RAC), administered by the Gait Trainer 3 with Music-Assisted Therapy, exhibit sustained gait improvements over other treatment methods.

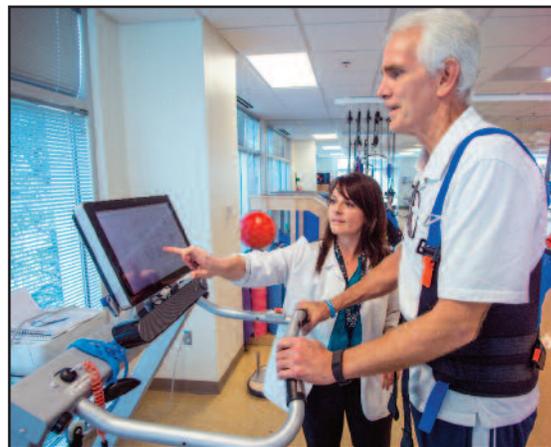
Calabrò et al. *Journal of NeuroEngineering and Rehabilitation* (2019). 16:68.

## Finalist at the SXSW 2018 Interactive Innovation Awards



## The Science of Sound Driving Functional Movement

Music-based therapy is well researched for its powerful effects in treatment of movement disorders. With the rate of Parkinson's, stroke and cerebral palsy diagnoses on the rise, so is the need for better treatment options. We equipped the Biodes Gait Trainer 3 with neurologic music compositions written and performed by music therapists to help more patients find their stride using the power of music.



*Fit the music to the patient. Select the correct tempo (bpm) to accommodate patient's step speed or steps per minute (spm).*

This revolutionary music integration provides an effective tool for physical therapists, occupational therapists, and neurologists to enhance treatments and drive faster outcomes. The advanced technology built into the Gait Trainer 3 documents progress, proving the value of treatment.

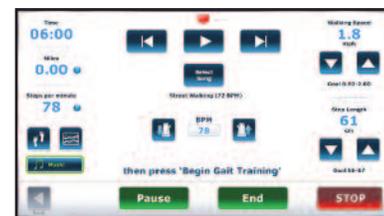
## Merge Music-Assisted Therapy with Technology

With our exclusive instrumented deck, real-time biofeedback and sophisticated analytics, the Gait Trainer 3 is the ideal platform for integrating music-assisted therapy. Using the Gait Trainer's intuitive interface, belt speed can easily be adjusted to match the patient's steps per minute (spm). Music tempo in beats per minute (bpm) can be managed to influence gait components. Biofeedback quantifiably displays step length, step speed (spm) and step symmetry to encourage patient progress.

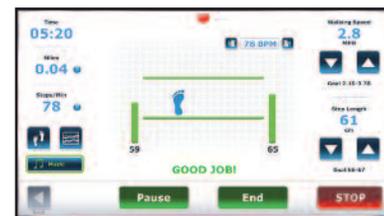
While the repetition of gait training encourages lasting effects through neuroplasticity, neurologic music is composed to facilitate correct movement. The Gait Trainer includes compositions created by music therapists that can be adjusted to a range of bpm without degrading music quality – even accommodating lower bpm for late stages of Parkinson's. Genre-preferred music can also be downloaded from the internet and tempo-adjusted (bpm) to an individual's walking speed (spm).



1. Select appropriate song from library



2. Adjust tempo



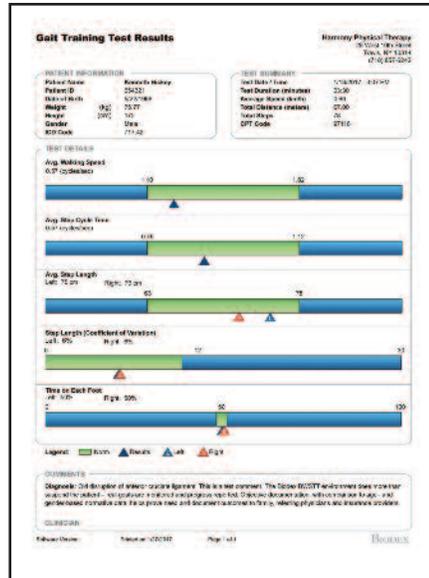
3. Provide gait training biofeedback with music-assisted therapy

**bpm = spm**

## How Music-Enhanced Therapy Impacts Rehabilitation

Those affected by debilitating neuropathologies respond favorably to rhythmic auditory cueing (RAC) and musical elements carefully chosen to enhance functional movement. Music is shown to jumpstart the brain's neuroplasticity, reorganizing neural pathways to help patients regain motor function that had been lost to brain injury or disease.

Fitting the music to the patient synchronizes gait for entrainment. Walking can be aligned with rhythmic auditory cueing to improve temporal (step speed), special gait (step length) and left/right stride deviations (step symmetry). The qualitative component of what is done musically is quantified and documented by the system's computer. The pretest, comparison to normative data, and posttest results are presented objectively.



An Exercise Summary Report shows need, progress and outcome of therapy.

## Clinical Application

Biodex provides a manual, rehabilitative performance plan, and other clinical application tools to help you understand which compositions are best suited to various clinical categories, for example:

Neurologic Diagnosis:

- Extreme gait impairment
- Moderate to severe gait impairment coupled with cognitive impairment

Orthopedic Diagnosis:

- No cognitive impairment

The Music-Assisted Therapy Package offered for the Biodex Gait Trainer 3 is accessed via USB flash drive that activates the music player software. A library of neurologic music compositions, as well as various metronome beats and tones are provided. For those clinics fortunate to collaborate with a music therapist, the Gait Trainer 3 also accommodates custom recordings.



Sound Bar shown beneath the Gait Trainer 3 display.

## APPLICATIONS

Music-Assisted Therapy can be used in rehabilitation and medical settings to improve functional movement, treating such conditions as:

- Parkinson's Disease
- Multiple Sclerosis
- Cerebral Palsy
- Stroke
- Traumatic Brain Injury
- Orthopedic Dysfunction

*The right music, the correct beats per minute (bpm) and gait repetition help enhance neuroplasticity and get patients better, faster. Documented.*



The Gait Trainer 3 provides real-time biofeedback and quantifiably displays step length, step speed (spm) and step symmetry.

**950-413** Music-Assisted Therapy Package Compatible with Gait Trainer 3 featuring Windows OS. Includes music library and sound bar with input for headphones and microphone.

## Music Library – recorded among top performers

The Music-Assisted Therapy Package contains a library of recordings produced at historic and internationally renowned studios, known for high commitment to sound integrity and technological excellence. Locations include Premier Studios, New York City, NY, where industry artists such as Madonna have recorded, and Bismieux Studio, Austin, TX, which has seen the likes of Ray Benson and Asleep at the Wheel, Willie Nelson, George Strait and many others.

**Silvery Moon Medley**® is a music therapy arrangement that has a clear, complementary playback structure for walking patterns. Available in tempo ranges from 90-140 bpm. *Original arrangement from The Center for Music Therapy, Inc.*

**Street Walking**® is an original music therapy-informed composition provided at two different tempos between 60- and 140 bpm, each with a different arrangement, and geared toward specific movement needs. The composition provides a clear, complementary playback structure for walking patterns that are well below normal gait ranges. *Composed by The Center for Music Therapy, Inc.*

**Animals Everywhere**® is an original music therapy-informed composition provided at five different tempos between 45- and 130 bpm, each with a different arrangement and geared toward initiation and continuation of gait at extremely impaired levels of spm or bpm. *Composed by The Center for Music Therapy, Inc.*

These songs are in 4/4 time signature, with distinct, consistent down beat, without the confusion of non-complementary instrumentation for gait training. Street Walking® and Animals Everywhere® were recorded in DXD format as is used in SACD, (Super Audio CD) for Full Analog Bandwidth.

Studies show listening to music you love releases more dopamine. Once the kinematics of gait are re-established using neurologic music, patients can switch to their preferred music genre at the right tempo.

**Also available in Music Library:**  
Non-neurologic compositions of various genres and bpm  
Wide range of metronome tempos and sounds



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**BIODEX**

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

