

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

# **NEW** Music-Assisted Therapy

For the Biodex Gait Trainer 3



## The Science of Sound Driving Functional Movement

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

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

### **Under guidance of a Music Therapist**

Music therapy-informed compositions combined with gait training technology brings music-based therapy to the plan of care.



# BIODEX

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

*Int'l 631-924-9000*

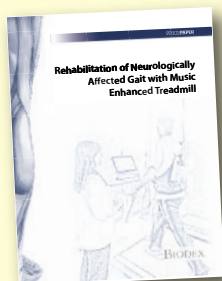
# Music-Assisted Therapy

For the Biodex Gait Trainer 3

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

## WHITE PAPER

### Rehabilitation of Neurologically Affected Gait with Music Enhanced Treadmill



Hope Young, MT-BC outlines the history of evidence supporting music-enhanced treatments for movement disorders, and describes new technological solutions for bringing this treatment into broader clinical use.

Download the White Paper  
[www.biodex.com/wp/17310](http://www.biodex.com/wp/17310)



## The Power of Music for 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, access to a music therapist does not always meet demand. Biodex partnered with the Center for Music Therapy in Austin, TX and the Movement Tracks Project to equip the Gait Trainer 3 with musical compositions written and performed by music therapists to broaden clinical use and help more patients walk again.



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

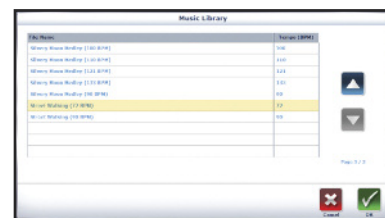
This revolutionary music integration provides tools for physical and occupational therapists to enhance treatment and drive faster outcomes. The advanced technology built into the Gait Trainer 3 also serves music therapists by quantifying and documenting progress, proving the value of treatment.

## 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, music therapy-informed song selections facilitate desired gait patterns. The Gait Trainer includes a starter library of compositions created by music therapists that can be adjusted to a range of bpm's without degrading music quality – even accommodating lower bpm's for late stages of Parkinson's. The system allows music therapists to upload their own music, and transfer to a patient's personal device to reinforce training outside the clinical setting.

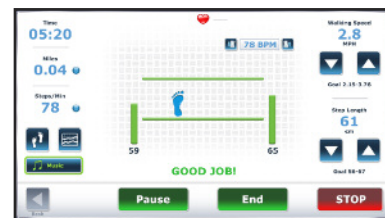
The right music, the correct beats per minute and gait repetition helps therapists get patients better, faster. Documented.



1. Select appropriate song from library



2. Adjust tempo

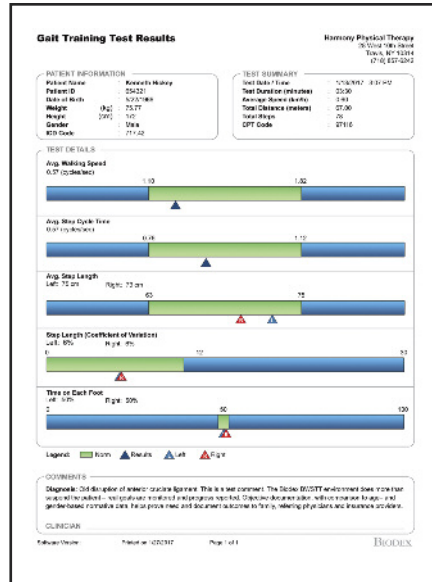


3. Provide gait training biofeedback with music-assisted therapy

## How Music Therapy Impacts Physical 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, realigning 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 (velocity), spatial gait (stride length) and gait symmetry (left/right stride deviations). 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 in scientific data: the songs, beats per minute, the dates and progress are now part of the treatment conversation, proving the value of music therapy in the plan of care.



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

## Clinical Application

Biodex provides a manual and eLearning instructional videos to help choose which compositions are best suited for 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 music therapy-informed 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 to broaden their sphere of influence.



Sound Bar shown beneath the Gait Trainer 3 display.

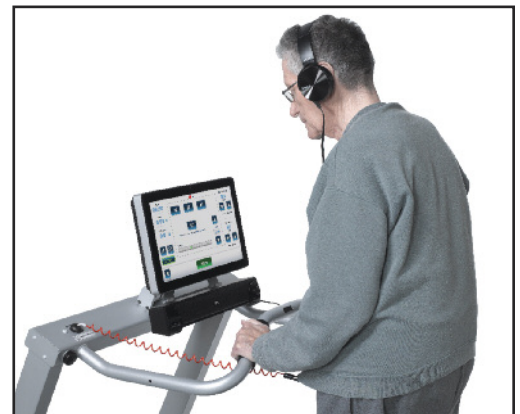


## APPLICATIONS

Music 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.*

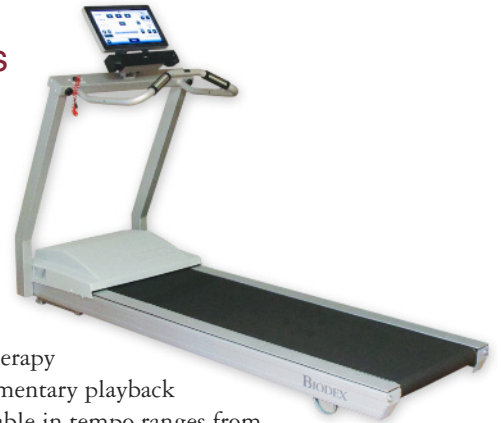


The Gait Trainer 3 provides real-time biofeedback and quantifiably displays step length, step speed (spm) and step symmetry.

**950-413** Music-Assisted Therapy Package Compatible with Gait Trainer 3 featuring Windows 7 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 recorded “Erotica”) 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.

**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.

**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 steps per minute or beats per minute.

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.

Additional non-music therapy-informed compositions of various genres and tempos, as well as a wide range of metronome tempos and sounds are available in the Biodex Music Library.

Silvery Moon Medley® is an original arrangement from The Center for Music Therapy, Inc.  
Street Walking® and Animals Everywhere® are original compositions from The Center for Music Therapy, Inc.

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

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