



### 1. Treadmill Training Normalizes Gait Also Builds Endurance



### 2. Biofeedback in Treadmill Training Significantly Improves Patient Outcome

- Journal of Rehabilitation Medicine

#### Gait Trainer Treadmill



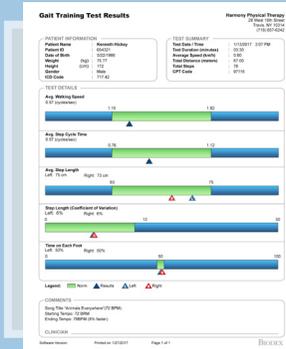
Collects performance data



#### Visual Biofeedback



Real-time visualization influences normalization



#### Objective Documentation

- Need
- Progress
- Outcome

For patient, referrer and payer

### 3. Neurologic Music Influences Rhythm & Movement



#### Functional improvements from specific elements:

- Rhythmic cueing stimulates implicit motor response, improves stride length and step symmetry.
- Use of melody, harmony and complex elements of sound stimulates implicit postural control.



# Neurologic Music Promotes Correct Movement

## Brings gait training to a whole new level

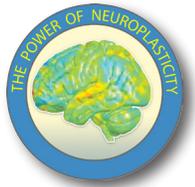
For example, it has been observed:



- Sound of a **Harp** causes a patient to stand up straighter
- Sound of a **Clarinet** raises the head
- Sound of a **Drum** promotes heel plant (Heel plant decreases spasticity)
- Sound of a **Bass** causes longer stride
- Sound of a **Saxophone** facilitates arm swing
- Sound of a **Trombone** facilitates trunk rotation
- Sound of a **Guitar** causes forward, upward leg lift
- Sound of a **Harmonic Structure** inhibits hand tremor

Note: Some researchers are cautious about mapping rigid connections.

Repetition of correct movement promotes neuroplasticity, creating new and retraining old neural pathways to regain motor function.



## 4. Music the Patient Likes Increases Enjoyment and releases Dopamine

### Functional improvements from specific elements:

- Gait Training + Biofeedback + Neurologic Music activates areas of the brain responsible for functional movement. Gait improves after only a few sessions.
- Once the kinematics of gait are re-established, patients can switch to their preferred music genre at the right tempo. Studies show that listening to music you love releases more dopamine.

Upon discharge from therapy, patients can maintain their gains with downloaded, prescribed music and tempo for their unique movement goals.



Treadmill Training

+



Biofeedback

+



Neurologic Music

+



Music Patients Like

=

Better Outcomes Faster

## The Science of Sound Driving Functional Movement



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