

"The Clinical Advantage"™

# VibroTactile™ System

Enhanced Biofeedback for Biodex Balance Technology



## Enrich Sensory Feedback for Postural Sway

Combine vibrotactile cueing with Biodex balance technology to boost vestibular therapy.

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



*Balance training with vibrotactile feedback*

**BIODEX**

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

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# VibroTactile System™



You are expecting a call. You're in a place where a ringing cell phone is bad form so you put your phone on vibrate. When the phone "rings" – you don't see it or hear it – but you know exactly where it is – that is vibrotactile cueing.

## Vibration cueing adds sensory feedback

Providing real-time biofeedback during rehabilitation is essential for patients and clinicians. Once integrated with the Balance System™ SD or the portable BioSway™, the optional VibroTactile™ System offers an additional form of sensory feedback to help detect changes in postural sway. Using wireless technology, the tactile belt responds with a vibrating sensation when the patient sways outside the therapist-set parameters.

“Finally, a means to provide balance feedback with eyes closed.”



Allows patients to receive positional feedback with their eyes closed.

## Adds sensory enrichment to therapy tasks

Real-time biofeedback is an important component of balance rehabilitation. Typically therapists cue patients with a tap or verbal command. Vibrotactile cueing heightens the therapy process by adding a mechanized, reproducible sense and objective feedback. More pronounced than audio and visual feedback, vibrotactile cueing directly engages the motor learning system, enhancing neuroplasticity and reducing falls.

## Especially suited for evaluation and treatment of vestibular disorders

Vibrotactile cueing allows patients to safely receive positional feedback with their eyes closed. Patients with vestibular challenges are overly dependent on visual and somatosensory systems. To bring a greater focus to the vestibular system during balance training, the visual sense needs to be eliminated.

Vestibular therapy includes balance training exercises which, when coupled with vibrotactile feedback as one of the interventions provided by physical therapists, has been shown to improve postural control.<sup>1</sup>



Vibrotactile cueing technology is rehabilitative, not prosthetic.

## APPLICATIONS

- Vestibular disorder
- Balance anxieties
- Stroke
- Proprioception such as peripheral neuropathy
- Cognitive impairment
- Amputation

## The principle behind the technology

Research and clinical experience demonstrate that vibrotactile cues that correct postural sway in one situation are retained and transferred to other types of situations. Vibrotactile cueing fosters adaptation to new, correct information.

The origin for this specific technology is from the military, to enhance spatial awareness for jet pilots, with sensors embedded into their flight suits. Since then, the technology has been adapted to balance rehabilitation with excellent results.

## SPECIFICATIONS:

### Belt

- Dimensions:
  - Small/Medium: 28"-36" (71-91 cm)
  - Large/Extra Large: 36"-48" (91-122 cm)

### Transmitter

- Voltage: 5v DC
- Current: 50 mA
- Auxiliary Ports: RS-232; USB

### Receiver Box

- Voltage: 5v DC
- Current: 260 mA (when charging)
- Auxiliary Ports: USB (wired); LR-WPAN (wireless)
- Total Shipping Weight: 5 lb (12.7 kg)

Compatible with Windows CE, Windows 7 and Windows 10. Field upgrades available.

**950-430** VibroTactile System  
Includes: transmitter, two tactile belts (S/M and L/XL), each with wireless receiver and connection cables.

**Optional 950-434** VibroTactile™ Belt Kit, XXL  
48"-66" (122-168 cm)  
Includes: Wireless receiver and connection cables.

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

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1. Whitney SL, Alghwiri A, Alghadir A. (2015). Physical therapy for persons with vestibular disorders. Pubmed.gov, 61-8. doi: 10.1097/WCO.0000000000000162.