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MEASURABLE RESULTS IN GAIT, BALANCE & STRENGTH



BIODEX

World-leading objective testing
& rehabilitation equipment

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NEW MOBILITY ASSIST

**Reduce patient falls and risk to staff
– improve rehabilitation**

It is important to get patients up and walking. This basic activity overcomes circulation problems, disuse atrophy, stimulates neural pathways, and plays a role in the psychology of a patient’s sense of independence.

Multi-functional sit-to-stand and ambulation therapy device - Supports independent movement



The **Biodex Mobility Assist™** is a motorised stand-assist device used to help therapists, nurses and caregivers work with patients who have difficulty with ambulation; **Mobility Assist™** is a motorised stand-assist device and walker in one. Supporting correct bio-mechanics, patients are upraised from a seated to standing position while in a safety harness. Once standing, if they can move their legs, they can walk with **Mobility Assist**.

Once standing, the patient has controlled body weight and standing balance and can initiate ambulation. If they can move their legs, they can walk with the **Mobility Assist**. From bedside or wheelchair to anywhere in the clinic or hospital setting – even outside to enjoy good weather in the courtyard – the **Mobility Assist** will mobilise patients who have difficulty rising from a seated to standing position.

Safe Patient Handling

While essential to invest in equipment and training to prevent patient falls, it is equally important to protect therapists, rehabilitation nurses, caregivers and visiting family from injury when trying to lift or support a patient.



Powered lift-assist devices promote rehabilitation and facilitate functional recovery – while maintaining safe conditions for patients and clinicians – assisting providers to adhere to “Safe Patient Handling” regulations that improve safety for both patient and provider.

Suitable for any weakened or deconditioned patient, the **Mobility Assist supports patients from a seated to standing position, then allows them to proceed as with a durable walker. Safety of the harness protects patient and therapist from risk of injury while strengthening ambulation skills.**



NEW NXSTEP UNWEIGHING

A simple, cost-effective way to reduce a patient's weight during rehabilitation. The **Biodex Nxstep Unweighing System** enables partial weight-bearing therapy with open access to the patient. Unique to Biodex's design, the Unweighing System allows the necessary movements to replicate natural ambulation.

The only mobile unweighing system that provides quantifiable, dynamic, partial weight-bearing therapy without electric motor, weights or air compressors.

Allows functional gait patterns to be practised.

Early rehabilitation, BWSTT or over ground...



The unique, forward corner-mounted design of the Unweighing System enables many advantages.

Therapists can view patients from all angles; patients have full visibility of treadmill display and, the open design allows natural arm swing, an essential component to encourage neuroplasticity.

01

Full patient access

Open frame design encourages therapist facilitation and clears an unobstructed forward view for patients.

02

One-Handed Control

Press a button to raise or lower patient; another to set unweighing load.

03

Counters Harness Slippage

Auto Unload feature compensates for potential harness movement due to slippage or posture changes.

04

Convenient Control

Newly designed hand-held remote can be magnetically attached anywhere on the frame.

05

Safe Environment

Dynamic, single-point suspension is safer for patients and negates the need for therapist support and risk of personal injury.

06

Pelvic Stabilisation

Possible as single- or two-point stabilisation with retention cords.



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GAIT TRAINER 3

**Treadmill Training
+ Biofeedback
+ Informed Music
= Better Outcomes, Faster**



AUDIO AND VISUAL BIOFEEDBACK OF STEP LENGTH AND STEP SPEED

The Biodex Gait Trainer™ 3 is **more than just a rehabilitation treadmill**... it is designed with an instrumental deck that issues both audio and visual real-time biofeedback to prompt patients into their correct gait pattern. **Gait analysis and gait rehabilitation at its best**; step length, step speed and right-to-left time distribution (step symmetry) are directly addressed. Patient footfall is compared to desired footfall step after step, both on the display in real time and documented in an easy to read histogram.

The Biodex Gait Trainer 3 is quiet, non-intimidating and allows the therapist to get in there and treat their patients. Real goals are monitored and progress reported. **Objective documentation, with comparison to age- and gender-based normative data, helps prove need and document outcomes.**

The Biodex Gait Trainer 3, with or without the Unweighing System for BWSTT, is suitable for all rehabilitation pathologies. Biodex has recently published Body Weight Support Treadmill Training (BWSTT) with Transition to Over Ground Ambulation: **A Clinical Guideline for the Treatment of Patients with Neurological Conditions using Biodex Unweighing System and Gait Trainer**. The document classifies the neurologically involved patient, then steps the user through the various phases of recovery for profound, moderate and minimal neurological impairments.

Gait Trainer™ 3 is the **only treadmill with an instrumented deck that monitors and records step length, step speed and right-to-left time distribution (step symmetry).**



Results and Benefits

The Gait Trainer forces the patient to focus on foot placement, which is reinforced through visual cues on the display.

Improved right to left time distribution and increased step time during ambulation is achieved in an upright and fully supported position through repetitive and rhythmic movements.

Treadmill training effects are readily transferred to improved over ground walking speed and endurance.

NEW INTEGRATED MUSIC THERAPY OPTION



In response to the strong, evidence-based value of Rhythmic Auditory Cueing (RAC) and sensory-enhanced movement, Biodex brings Integrated Music Therapy to the Gait Trainer 3.

Sensory Enhanced Option

Rhythmic Auditory Cueing (RAC) is well researched for its efficacy with the relationship between music and healing dating back to early civilisations. Working in conjunction with The Centre for Music Therapy, Austin, TX, Biodex offers an integrated starter library of music therapy-informed compositions for the **Gait Trainer 3**. These high-quality recordings use **specifically chosen musical elements to facilitate proper gait patterns**. Therapists can easily adjust tempo during treatment, incorporate their own songs onto the trainer, and download music onto a patient's mobile device for home use. **The right music, the correct beats per minute (bpm) and gait repetition help reinforce neuroplasticity and get patients better, faster.**

Documented.

Music therapy is the use of music in rehabilitation and medical settings to improve functional movement, treating such conditions as:

- Parkinson's disease
- Multiple Sclerosis
- Cerebral Palsy
- Stroke
- Traumatic Brain Injury



How Music Therapy Impacts Physical Rehabilitation

Those affected by debilitating neuropathologies such as Parkinson's, Stroke, Cerebral Palsy, and TBI will respond favourably to Rhythmic Auditory Cueing (RAC). When music carefully chosen for this purpose is applied by a therapist, the brain's plasticity is enhanced, reorganising neuropathways to relax and/or induce muscles for movement. Fitting the music to patient synchronises gait for sensory-enhanced movement.

Walking can be aligned with Rhythmic Auditory Cueing (RAC) to improve step length, step speed (velocity) and step symmetry (left/right side deviations). The Qualitative component of what is done musically is quantified and documented by the system's computer. The pre-test, comparison to normative data, and post test results are presented in scientific data; the songs, beats per minute, the dates and progress are now part of the treatment conversation.

BALANCE SD

Assess Neuromuscular control by quantifying the ability to maintain dynamic bilateral and unilateral postural stability on a static or unstable surface.



The Balance System SD is used to enhance kinesthetic abilities that may assist with impaired proprioception and encourage motor control associated with TBI. Patients are challenged to shift and control their centre of gravity through various rehabilitative training strategies.

Multiple applications and pathologies with a single investment

The Biodex Balance System SD has been designed to meet the needs of everyone looking to improve balance, increase agility, develop muscle tone and treat a wide variety of pathologies. Featuring easy-to-follow “touch-screen” operation, the Balance System SD is simple to learn and operate, leading the user step-by-step through testing protocols including gait analysis, and balance training modes in both static and dynamic formats.

- Static and Dynamic (SD)
- Custom Reporting
- Balance Training
- Audio & Visual Biofeedback
- Objective Documentation
- NEW VibroTactile Feedback

Featuring seven test protocols, six training modes and intuitive touch screen operation, the Balance System SD allows testing and training in both static and dynamic bilateral and unilateral postural stability on a static or unstable surface.

NEW VibroTactile System

Vibration cueing adds sensory feedback

When the phone “rings” – you don’t see it or hear it – but you know exactly where it is. That is Vibrotactile cueing. Providing



real time bio-feedback 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.



PORTABLE BALANCE OPTION

BIODEX BioSway

Portable balance assessment & training; sets up in minutes

The Biodex BioSway is a fixed platform, portable balance assessment and training device - bringing testing and training technology to the patient. The BioSway is a lightweight instrumental platform with a high resolution colour touch screen display.



BIOSTEP 2

Semi-Recumbent Elliptical

01

Elliptical motion

provides smooth continuous “zero joint impact” exercise

02

Self-powered, self-charging, cordless capability - use it anywhere

03

1:1 arm to leg motion for natural arm swing rhythm

04

Pivoting hand-grips provide comfort for patients with forearm or wrist impingement

05

Hand and foot straps provide a simple solution to secure the user’s feet and hands

06

Sturdy, well placed grab handles to facilitate patient transfer

07

Seat Belt Support and security for patients with limited torso control. Retractable when not in use.

08

Movable Padded Armrests users obtain an added level of comfort and stability when needed. Can be used with or without the armrests in position. Armrest folds up flush against the side of the seat back to provide easy-on and off access.

Ideal for pre-ambulation

The low-impact elliptical motion of the BioStep 2 helps strengthen the muscles important to maintaining function – those muscles specifically associated with mobility, gait and balance.

The difference is still in the motion...



Naturally Smooth...

Positively Effective

A semi-recumbent elliptical upper body cycle that combines the benefits of smooth elliptical cross-training exercise with the safety, comfort and stability of semi-recumbent positioning. The Step-through frame, simple easy to see and use display and comfortable, robust design make the BioStep 2 the obvious choice for cross training.

The elliptical motion of the Biodex BioStep 2 is naturally smooth and continuous; very different from the stuttering stop-start motion associated with other recumbent steppers.

NEW Stabilisation Accessories for Neurological and Musculoskeletal Challenges

Biodex offers stabilisation accessories to meet the challenges of patients with neurological and musculoskeletal issues. Articulating hand-grips and footplates add comfort while strengthening the primary muscles associated with balance, gait and mobility.

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SYSTEM 4

ISOKINETIC DYNAMOMETER

One of the main treatment protocols for stroke survivors is acute physical therapy. The new Upper Extremity Hemiparetic Attachments from Biodex are uniquely made for the rehabilitation of post-stroke patients left with upper-extremity hemiparesis.

Designed for overall multi-joint strengthening, range of motion and speed specific training, the System 4 accommodates a wide variety of positions and exercises.

The lightweight, carbon fibre Upper Extremity Hemiparetic Attachments are available as a set, including attachments for shoulder patterns as well as wrist and elbow patterns. There is also an integrated ROM stop and lock knob, which allows for the same attachments to be used for either the left or right side, without having to remove them from the dynamometer head. The attachments are designed to accommodate the weakened grasp associated with stroke hemiplegia.

The Biodex System 4 Dynamometer makes a point of being easy to use for all skill levels, bringing the clinical advantages of this technology to every application...

Touch-screen panel for quick, easy operation. Positioning set-ups are as simple as turning the dynamometer and chair to the labelled joint pattern. The simple step-by-step touch screen operations makes the System 4 easy for everyone to operate. Innovative on-demand action videos demonstrate exercise and test patterns - so there is no forgetting how to set up!

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...the only choice
for those who know
the difference



While upper-extremity weakness is a common result of strokes, current methods of stroke rehabilitation therapy often overlook it, resulting in compromised post-stroke motor function. Most common hand- and upper-extremity rehabilitation practices include approaches that don't adequately address the progression of strengthening exercises that are needed to improve function. In contrast, the use of the Biodex dynamometer ensures that the patient's trunk stays stabilised, while the Upper Extremity Hemiparetic Attachments help organise neuro-motor output through specific joint patterns for the shoulder, elbow and wrist.

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