natus
balance & mobility

NeuroCom®
Balance Manager® Systems

Balance Assessment & Rehabilitation

Advanced Solutions for
Postural & Gaze Stability

Expand Your Business with NeuroCom Balance Solutions

- Affordable Balance Solutions
- Evidence-based treatment planning
- Helping you Build a Balance Center
- G-Codes Below Norm Score Reports
- Target New Patients

Add New Services

- Concussion Management
- Fall Prevention
- NeuroRehabilitation
- Vestibular Therapy

www.mack-team.de

About Natus

Natus Medical Incorporated is a leading provider of healthcare products used for the screening, detection, treatment, monitoring & tracking of common medical ailments such as balance & mobility impairment, hearing impairment, neurological dysfunction, epilepsy, sleep disorders, newborn jaundice & newborn metabolic screening.

NeuroCom® balance solutions are known worldwide as leading edge computerized tools for the assessment and rehabilitation of balance and mobility disorders. This leadership is maintained through a commitment to products with strong clinical and scientific research justification.

Computerized Dynamic Posturography (CDP) on the EquiTest® system was initially developed with grant support from NASA to evaluate the effects of space flight on vestibular function and balance control in astronauts. Later support from the National Institute of Health (NIH) studied the effects of disease on balance and mobility functions. In 1984, the first NeuroCom Equitest dynamic balance system was launched to the market and has expanded ever since.

Today, there are over 2,000 NeuroCom Balance Manager® systems used around the world in a broad spectrum of medical disciplines, including otolaryngology, neurology, physiatry, orthopedics/sports medicine, geriatrics, and physical rehabilitation, to address a wide range of acute and chronic disorders.

Contents

STATIC SCREENING BALANCE SOLUTIONS

DYNAMIC ADVANCED BALANCE SOLUTIONS

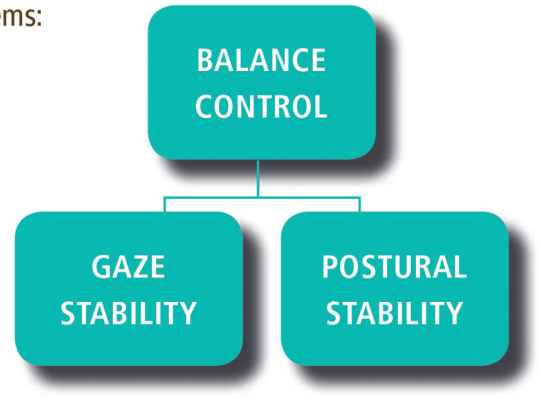
BALANCE EDUCATION

The Balance Control System: Posture and Gaze

Good balance is the complex processes of distinct, but interdependent systems:

1. The postural stabilization system keeps your body in balance while you stand and actively move about in daily life.
2. The gaze stabilization system maintains clear vision during activities where you are actively moving your head and body.

To understand how patients function in daily life requires an objective understanding of how the sensory and motor systems affect postural and gaze stability; this information is readily obtained from the NeuroCom Balance Manager System software.



"Sixty percent of Americans will have a balance problem during their life. If you are fortunate, it is a minor inconvenience, but in many cases it's debilitating and can lead to falls, injury and extended lifestyle changes. A baseline assessment can help active agers identify a balance issue that may be impacting their ability to fully participate in a vibrant and active lifestyle."

Centers For Disease Control

Accurate Assessment & Effective Rehabilitation

NeuroCom Balance Manager Systems' advanced computerized assessment tools differentiate among the sensory and motor impairments that contribute to balance problems and limit patients' daily activities, including:

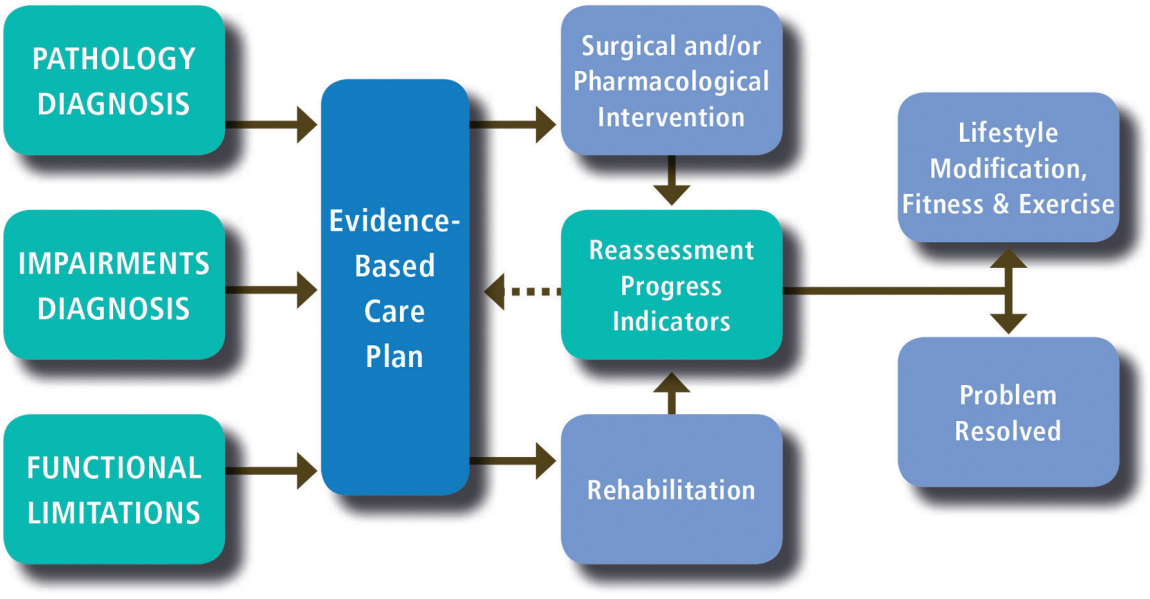
- Ineffective use of vestibular, somatosensory, and/or visual inputs to postural balance control
- Ineffective use of vestibular and visual systems for gaze control
- Delayed, weak, and/or asymmetric automatic motor responses
- Impaired center of gravity alignment and control
- Impaired planning and coordination of weight transfers

NeuroCom balance solutions help you assess, treat and document patient progress while offering quantifiable language clinical team members can share and understand.

Comprehensive Patient Management

Effective management of patients with balance and mobility disorders requires a comprehensive multidisciplinary approach with:

- Accurate assessment and patient classification
- Customized treatment focused on the impairments of the individual patient
- Evidence-based care plan, which may include rehabilitation, surgery, pharmacology and lifestyle counseling



Technology and Your Practice

Objective quantification of balance and mobility disorders helps clinicians navigate the complex arena of managing balance disorders.

- Clinical observation alone does not differentiate among the various sensory and motor impairments underlying a patient's balance problem
- NeuroCom Balance Manager Systems help pinpoint a patient's problem in daily functions to help you set a course for improved patient outcomes

NeuroCom technology distinguishes balance programs by delivering measurable results.

Static Balance Systems — Compare Patients to Normative Data

NeuroCom static systems are portable and easy to use. They can be used as basic screeners or for rehabilitation training and are a cost-effective way to start a balance program.*

Assessment & Rehabilitation Testing

- Modified Clinical test of Sensory Interaction on Balance (mCTSIB)
- Limits Of Stability (LOS)
- Weight Bearing Training
- Custom Training

VERY SIMPLE REHAB (VSR)

The **VSR Sport** system is perfect for athletic trainers responsible for concussion management.

Assessment & Rehabilitation Testing

- Stability Evaluation Test (SET)
- Modified Clinical Test of Sensory Interaction on Balance (mCTSIB)
- Limits Of Stability (LOS)
- Weight Bearing Squat (WBS)
- Sequence Training
- Weight Bearing Training
- Custom Training

VSR SPORT

Please see full product matrix on page 11 for full details on test protocols.

"I have been following young athletes with sports related concussion for over a decade, and have recently changed my practice to focus completely on sports medicine and concussion management. Prior to purchasing the VSR SPORT balance system, we utilized neurocognitive testing, in office vestibular exam, and the BESS balance protocol to help us determine appropriate Return To Play decisions. As our practice grew and we added a physician assistant and athletic trainer to help implement these tests, I became concerned with intra-examiner reliability on our balance testing. The VSR Sport has solved that problem, and I am pleased to see the response of parents when I can show them on paper how much their child's balance has improved. I am very pleased with the VSR Sport, and am now considering the addition of *in*Vision software to the system to improve and standardize my vestibular testing."

James Masterson, D.O.
Excela Health • Greensburgh, PA

Balance Master® Family

The Basic Balance Master system incorporates the *in*Vision module, which assesses gaze stability for increased functionality.

Assessment & Rehabilitation Testing

- Modified Clinical test of Sensory Interaction on Balance (mCTSIB)
- Limits Of Stability (LOS)
- Rhythmic Weight Shift (RWS)
- Weight Bearing Squat (WBS)
- *in*Vision Software Option
- Sequence Training
- Weight Bearing Training
- Custom Training
- Unilateral Stance (US)

BASIC BALANCE MASTER (BBM)

The Balance Master system is ideal for both injury assessment/rehabilitation exercises and senior population balance services.

Assessment & Rehabilitation Testing

- All the same tests as the Basic Balance Master
- Plus, 6 additional Functional Limitation Assessments (STS, WA, TW, SQT, SUO and FL)
- Stability Evaluation Test (SET) is optional
- NeuroGames for rehabilitation is optional

BALANCE MASTER (BM)

"We purchased the SMART Balance Master in April 2010 and it has been the talk of Glenaire. Residents are given the opportunity on their Birthday month to take a Balance Assessment. This gives our residents at Glenaire a balance base line. Residents are excited to have this opportunity; they say it helps them keep independent and active. Some residents have moved to Glenaire because of our programs like The Balance Center. Currently we are not charging residents to use the Balance Center. We plan on opening up our center to the outside community in 2014."

Wendy Heinzmann
Glenaire Retirement Community • Cary, NC

"We utilize our Equitest Balance System daily, and frequently have several therapists waiting to use it. The equipment allows us to more accurately identify functional impairments and target interventions to improve function. It allows us to use objective measurement and evidence based information to evaluate and treat patients more efficiently, as well as document progress. We have a large Vestibular Rehabilitation program and feel it adds to our ability to offer our patients the best care available. Thanks!"

Cathey P. Norton, PT
Pi Beta Phi Rehabilitation Institute at Vanderbilt Bill Wilkerson Center • Nashville, TN

Dynamic Balance Systems

SMART BALANCE MASTER (SBM)

The **Smart Balance Master** system provides full SOT capabilities with a dynamic surround environment.

Assessment & Rehabilitation Testing

- Sensory Organization Test (SOT)
- Adaptation Test (ADT)
- Limits Of Stability (LOS)
- Rhythmic Weight Shift (RWS)
- Weight Bearing Squat (WBS)
- Unilateral Stance (US)
- Sequence, Weight Bearing & Custom Training
- *in*Vision Software Option for Head-Shake SOT dual tasking
- *in*Vision assessment of Gaze Stability
- Long Force Plate (LFP) (Optional)

SMART EQUITEST (SMEQ)

The **Smart Equitest®** system is the gold standard in balance assessment with Computerized Dynamic Posturography (CDP).

Assessment & Rehabilitation Testing

- CDP combines SOT, MCT, ADT and much more*
- Sequence Training
- Weight Bearing Training
- Custom Training
- Long Force Plate (LFP) (Optional)
- *in*Vision Software (Optional)
- D.A.T.a Software Tool Kit (Optional)

LONG FORCE PLATE (LFP)

The **Long Force Plate** option provides additional functionality to any NeuroCom dynamic balance system for rehabilitation assessment and exercises.

LFP Option includes:

- 60" Static Dual Force Place
- Force Plate Apron
- Foam Pad: 18 x 18 x 5 in (46 x 46 x 13 cm)
- Step Kit includes:
  - Low Step 4 in (10 cm)
  - Medium Step 8 in (20 cm)
  - High Step 12 in (31 cm)
  - Two-Step Stair 8 in (20 cm) 3° and 6° M/L
- Prep Kit includes:
  - Rocker Board
  - Step-up Blocks: 4 in (10 cm) and 6 in (15 cm)
  - Leveling Block 2 in (5 cm)
  - Heel/Toe Wedges: 6° and 12° A/P
  - Inversion/Eversion Wedges: 3° and 6° M/L

*See full product matrix on page 11 for full details on test protocols.

Clinical Research Systems (CRS)

The SMART Equitest CRS system is a unique combination of clinical and research systems. The CRS system consists of dual, independent 6-Degrees of Freedom AMTI force plates, supplying X, Y, Z Forces and X, Y, Z Moments. The CRS system has four input/output channels for TTL (transistor–transistor logic) synchronization with external devices. Their states are recorded and available for data export.

SMART EQUITEST CRS

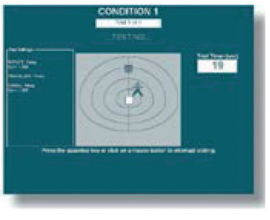
Key Benefits

- Available in the Equitest or SMART Equitest configuration with standard clinical test protocols
- NeuroCom Dual Top 6-Degrees of Freedom Forceplate from AMTI
- Turn-Key User Programmable Operating System
- Plus much more, see CRS brochure for details

Additional Capabilities

- Can independently and simultaneously operate all three Rotate, Translate and Visual axes in Sway, Ramp and Waveform modes
- Waveform mode can control any axis via trigonometric functions, discreet data points, VB script, and allows creation of multi-ramp profiles
- Visual review of motor positions, subject COF and COG performance post trial
- Customization for near seamless continuation from one trial or mode to the next

D.A.T.a® Software Option for Researchers



The Data Aquisition Toolkit (D.A.T.a) is designed specifically for researchers and clinicians who need greater flexibility and control in designing test protocols and gathering patient data. D.A.T.a allows the operator to manipulate specific data collection and test parameters, and provides easy data export for offline analysis.

Data Collection

Operator can specify:

- Trial Duration
- Cursor Display Status
- Targets
- Sway Reference Values*
- Ramp Start Delays*
- Amplitude*

**Dynamic Systems only*

Key Benefits

- Provides increased flexibility for designing test protocols
- Enhances data acquisition capabilities for clinical research
- Improves management of patient data
- Simplifies the export of patient data into other software programs

*in*Vision Software Option with Head Tracker

The *in*Vision system quantifies a patient's ability to maintain visual acuity and stable gaze while actively moving the head.

Holding steady — the importance of stable vision

The ability to maintain visual acuity and a stable gaze while moving forward, turning around, looking up or shaking one's head is a critical component of balance. NeuroCom *in*Vision will help answer:

- Under what circumstances and at what head speeds does his/her vision become inaccurate?
- How can one substantiate and measure the impairment of the vestibular system involved?

The world's first system for quantifying visual acuity and stable gaze — only with NeuroCom *in*Vision

*in*Vision offers practitioners the unique ability to accurately assess gaze control while a patient is moving his/her head. The Gaze Stabilization Test (GST) determines the head velocity at which accurate vision breaks down, and along with the Dynamic Visual Acuity (DVA) test, helps isolate and identify vesibulo ocular reflex (VOR) impairment. Together, these two protocols give audiologists, neurologists, ENTs and therapists an accurate glimpse into vestibular deficits underlying balance, assisting them in making better treatment decisions.

HS-SOT

*in*Vision is available as an add-on option to any NeuroCom static or dynamic balance system.

Assessment Testing

- Perception Time Test (PTT)
- Dynamic Visual Acuity (DVA)
- Gaze Stabilization Test (GST)
- Head-Shake SOT (HS-SOT)*

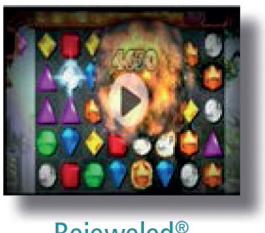
Head Shake — Sensory Organization Test (HS-SOT) identifies impairments in a patient's effective use of the vestibular inputs required to maintain balance during complex task conditions.

**Included with inVision Software Option for Dynamic Systems only*

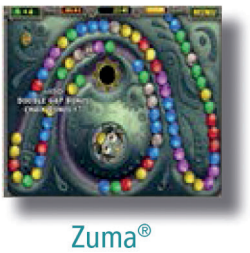
NeuroGames Software Option

NeuroCames balance retraining software provides a fun and motivating way to enhance rehabilitation training of balance and mobility.

- Optional software add-on to any NeuroCom Balance Manager System to help maximize rehabilitation training options
- Includes five computerized games that patients "play" by shifting their center of gravity (COG) to control the game pieces
- The difficulty level and the movement range of each game can be adjusted to meet the specific needs and performance capabilities of the individual patient



Bejeweled®



Zuma®

Solitaire

FreeCell

Chess

Systematic Rehabilitation Training Protocols

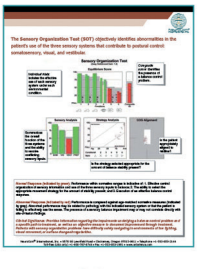
NeuroCom systematic training protocols can be customized to target specific sensory and/or motor impairments identified through assessment and to support effective treatment planning, resulting in better functional outcomes for your patients. You can:

- Select from an extensive library of sensory and motor training protocols
- Match task difficulty with patient ability using automated compliance scores
- Progressively increase task difficulty and environmental challenge to maximize training effectiveness
- Enhance motor learning by providing visual biofeedback for your patients

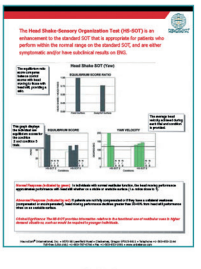
Objective Documentation

NeuroCom systems provide clear, objective documentation to enhance effective clinical decision-making and demonstrate the value of your programs to your patients, referring physicians, and third party payers. The systems also save you time by automatically documenting patient performance from the initial evaluation through follow-up treatments/interventions and final outcome. NeuroCom documentation includes:

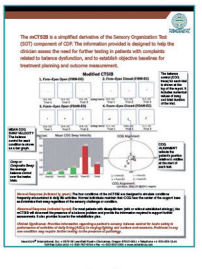
- Comprehensive Reports of assessments performed, including identification of specific sensory and motor impairments and age-related normative data
- Text summaries of the comprehensive data, which are provided in the Evaluation Notes
- Progress and Daily Training Reports, which record changes in impairments and functional limitations over time, as well as patient compliance with prescribed exercises



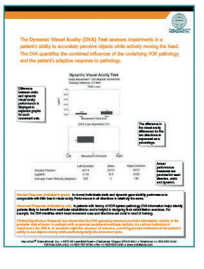
SOT



HSSOT



mCTSIB



DVA

Setting The Standard In Balance and Mobility

Comprehensive evidence-based patient management requires objective tools that have:

- Sensitivity and specificity to identify and differentiate sensory and motor impairments accurately
- Standardized protocols that are backed by extensive scientific and clinical evidence
- Flexibility to meet individual patient needs
- Proven value in clinical decision-making and outcomes

NeuroCom systems exceed these demands and set the standard in balance and mobility.

NeuroCom Product Matrix

		VSR	VSR Sport	BASIC Balance Master	Balance Master	SMART Balance Master	EquiTest	SMART EquiTest
PRODUCT CATEGORY		**STATIC**				**DYNAMIC**		
STANDARDIZED ASSESSMENT PROTOCOLS		**VSR**		**BALANCE MASTER**			**EQUITEST**	
SENSORY	Sensory Organization Test (SOT)*					√	√	√
	Head Shake-Sensory Organization Test (HS-SOT)					Optional	Optional	Optional
	modified Clinical Test of Sensory Interaction Balance (mCTSIB)	√	√	√	√			
	Center of Gravity (COG) Alignment	√	√	√	√	√	√	√
VOR	Dynamic Visual Acuity (DVA) Test	OPTIONAL						
	Gaze Stabilization Test (GST)							
AUTO. MOTOR	Adaptation Test (ADT)*					√	√	√
	Motor Control Test (MCT)*						√	√
VOL. MOTOR	Limits of Stability (LOS)	√	√	√	√	√		√
	Rythmic Weight Shift (RWS)			√	√	√		√
	Weight Bearing Squat (WBS)		√	√	√	√	√	√
FUNCTIONAL LIMITATIONS	Stability Evaluation Test (SET)**		√		Optional			
	Unilateral Stance (US)			√	√	√	√	√
	Sit-To-Stand (STS)				√	OPTIONAL Requires the Long Forceplate Option**		
	Walk Across (WA)				√			
	Tandem Walk (TW)				√			
	Step/Quick Turn (SQT)				√			
	Step Up/Over (SUO)				√			
	Forward Lunge (FL)				√			
REHAB	Seated Balance Training		√	√	√	√		√
	Weight Bearing and Mobility Training	√	√	√	√	√		√
	Custom Training	√	√	√	√	√		√

*Computerized Dynamic Posturography (CDP) includes SOT, MCT, and ADT, available on EquiTest® and SMART EquiTest® only.

**SET is optional on any Balance Master with long force plate (LFP) or dynamic sytstem with LFP.

BALANCE EDUCATION

Dynamic Users

NeuroCom **Clinical Integration Seminars (CIS)** are designed to demonstrate how to apply the full capabilities of NeuroCom balance systems to specific clinical needs and enhance patient management.

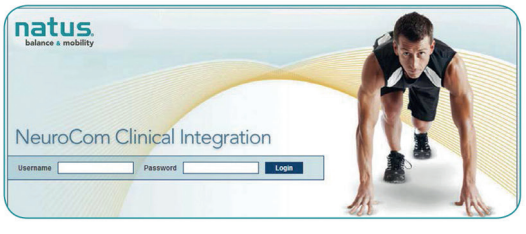
CIS Course Objectives

- Differentiate balance control and impairments
- Integrate test findings into patient management strategies
- Illustrate how your management protocols and leadership approach improve patient outcomes
- Recognize the broad spectrum of patient populations with balance/mobility disorders and a range of possible treatment options
- Position your program for success, program growth and practice expansion

NOTE: Anyone may attend a CIS. The course content, however, is specific to dynamic systems and Balance Master customers only. VSR and BASIC Balance Master customers are encouraged to utilize Education On Demand (EOD).

Static Users

NeuroCom **Education On Demand (EOD)** is comprised of online elearning courses that help clinicians integrate their balance systems into their clinical practice.



EOD Course Objectives

- Prepare clinical staff for use of the Balance Manager sytem
- Teach the fundamental skills necessary to begin patient testing and treatment
- Resource for practical application of the information presented during system installation inservice

Purchase additional online education licenses today, then go online to www.neurocomeinstitute.com to cover the introduction of your new system, how to operate it and interpret the objective data from the reports.

Balance eSeminar Series — FREE for all interested in balance topics

Key industry experts speak on various balance topics, presenting their knowledge through a live webinar. Find previous recorded links online at www.natus.com under Education and review at your own pace.

For more information on Balance & Mobility, please visit our other sites:

natus

www.onbalance.com
www.resourcesonbalance.com
www.playasmartergame.com
www.balanceandmobility.com

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