

VSR SPORT Portable Balance System

Ensure balance is a part of your test battery with reliable and valid technology!

Program Management

- Concussion
- Fall prevention

Vestibulo-Ocular Reflex (VOR) Assessment

- Gaze stability
- Dynamic visual acuity

Balance Assessment

- Baseline and compare to post-injury
- Compare to normative data

Normative Data

- Modified Clinical Test of the Sensory Interaction on Balance (mCTSIB)
- Stability Evaluation Test (SET)
- Weight Bearing Squat (WBS)

Rehabilitation Training

- Sequence training
- Customized rehabilitation programs

Performance Optimization

- Measure speed and accuracy
- Off-the-block reaction time



The **VSR SPORT** is a portable, easy-to-use solution.



Balance – so essential, so miraculous – is the foundation of any athlete’s performance. The ability to execute rapid-fire movements, change direction and speed, and hold a steady gaze while running and turning the head all rely on balance.

Play a smarter game

VSR SPORT is a portable, easy-to-use solution for assessing balance objectively, ideal for athletic trainers, sports medicine practitioners, physical therapists and physicians who want to optimize athletic performance, speed rehabilitation, and make safer play and return-to-play decisions following any mild traumatic brain injury.

Balance assessment has been identified as one of three essential elements of a successful concussion management program.

“VSR SPORT was designed specifically for the athletic market by Natus, the world leader in balance and mobility solutions. The Stability Evaluation Test (SET) measures postural sway and other protocols to objectively assess an athlete’s functional balance control across multiple stances.”

This is also a portable balance system that can screen older adults to help assess for falls and try to prevent them by using the popular modified Clinical Test of the Sensory Interaction on Balance (mCTSIB). It incorporates the same NASA-based science as in the company’s high-end systems, which are used by more than 90% of the nation’s top hospitals. Read on to learn more about the how SET and CTSIB are correlated to the well-researched Sensory Organization Test (SOT).

Concussion Management Program

Better data, better decisions

Benefits for your concussion management program:

- **Create baseline assessments:** Know before you let an athlete play how stable they are. Establish a database for measuring an athlete’s performance progress or injury impact. A reference database is also available for comparison to peers.
- **Improve concussion care and make safer play and return-to-play decisions:** Base decisions on objective assessments of postural control and sway velocity – data that can’t be hidden or under-reported, no matter how eager an athlete is to get back to play.
- **Safeguard athletes’ long-term health:** Reduce the possibility of second-impact syndrome following concussion and subsequent permanent damage by utilizing the Rule of Three: Symptoms, Cognitive and Balance assessments. These assessments help to make the most objective decision possible for returning an athlete to play.

Move beyond the sidelines – with VSR SPORT you can also:

- Measure off-the-block reaction time, speed and accuracy and compare results to baseline data or between athletes using LOS (Limits of Stability).
- Identify subtle ankle, hip and knee instabilities and otherwise unseen compensations that might put athletes at risk for overuse injuries (by relying too heavily on one leg) or injury due to mild instabilities (shifting off the unstable side) using WBS (Weight Bearing Squat).
- Customize rehabilitative programs with progressive weight-bearing exercises for strengthening ankle, knee, hip and lumbar stability with Custom Training.

Assess the vestibular system

- One of the ways to test the vestibular system post-concussion is to assess the function of the vestibulo-ocular reflex (VOR)
- Two clinical tests of the VOR are dynamic visual acuity (DVA) testing and gaze stabilization testing (GST)
- DVA examines the VOR during normal head movement to assess how well one can see
- GST examines the VOR while the head is moving actively at high velocities

Both DVA and GST have been shown to be reliable tools for assessing vestibular function and measuring rehabilitation progress in those with vestibular deficits or concussion.



Reliable and valid “evidence-based” data

- The clinical literature is solid in its support of the Sensory Organization Test (SOT) as the best approach for the detailed objective analysis of balance control
- The Balance Error Scoring System (BESS) was developed as low cost sideline tool and tested against the SOT
- These two approaches track global balance deficits in a similar manner over time
- Subjective scoring of the BESS is prone to errors between and within clinicians
- The Stability Evaluation Test (SET) protocol was developed to bring objective forceplate data to the BESS protocol as a best practice.

Get the most out of objective testing with SET!

For more information please contact Marketing at Natus.

Standardized assessment protocols

NEW Stability Evaluation Test (SET) The SET protocol provides objective analysis of the athlete’s functional balance control based on the individual’s postural sway velocity during six testing conditions over a period of 2-5 minutes.

The results of the SET protocol are presented in graphical form, with COG traces shown for each condition tested and a composite score provided that quantifies the COG sway or postural stability in a weighted average of all six conditions.

Limits of Stability (LOS) The LOS is an assessment of the voluntary motor system that quantifies impairments in ability to intentionally displace the center of gravity (COG) to the patient’s stability limits without losing balance.

Weight Bearing Squat (WBS) During WBS, the patient is instructed to maintain equal weight on each leg while standing erect and then squatting in three positions of knee flexion.

Unilateral Stance (US) The US quantifies postural sway velocity with the patient standing on either the right or left foot with eyes open and with eyes closed.

Rhythmic Weight Shift (RWS) The RWS quantifies the patient’s ability to rhythmically move their COG from left to right and forward to backward between two targets at three distinct speeds. The measured parameters are the on-axis COG velocity and directional control.

Training protocols with visual biofeedback

Sequence Training provides the clinician with exercise options that may be used with diverse patients to achieve a wide variety of treatment goals.

Closed Chain Training activities are specifically designed for patients with ankle, knee, hip, and spine (lumbar) problems. They provide options for progressive weight bearing activities from partial- to full-weight bearing status, allowing for early mobilization.

Fall Prevention Program

Reach older adults at risk for falls

- Modified Clinical Test of the Sensory Interaction on Balance (mCTSIB) includes four conditions designed to simulate visual and support surface conditions frequently encountered in daily life activities
- A simplified derivative of the well-known Sensory Organization Test (SOT) that provides objective evidence of sensory dysfunction
- mCTSIB will uncover most patients with disequilibrium balance problems and provide the information required to support further assessments
- Expanding your patient base from pediatrics to older adults to maximize on your investment to assess and rehabilitate balance disorders
- Assess the need for further testing in patients with complaints related to balance dysfunction, and to establish objective baselines for treatment planning and outcome measurement
- Document progress in a rehabilitation program



Ready, SET, Go!

natus

Natus Medical Incorporated
1501 Industrial Road
San Carlos, CA 94070 USA
1-800-303-0306
+1-650-802-0400
www.natus.com

For more information or to purchase this product contact us at 1-800-303-0306!

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Technical specifications

Components

- NeuroCom® Balance Manager® software suite
- 18" x 30" static force plate
- Windows®-based laptop computer
- Wireless mouse
- Medical-grade isolation power supply

Accessories included

- NCM-SPORTFOAM
SET Blue foam pad: 16 x 30 x 2 in (41 x 76 x 5 cm)
- NCM-FOAM
CTSIB Black foam pad: 18 x 18 x 5 in (46 x 46 x 13 cm)
- 010523
VSR SPORT soft case (fits force plate and 30" long foam pad)
- 010524
VSR SPORT roller bag (fits laptop, power, cables and head tracker)

Options available

- NCM-VSRSTAND
VRS SPORT roll stand with handle
 - 011786
VSR stand telescopic roll stand kit with 21" base with locking casters and 24" adjustable pole with knob
 - 011787
VSR stand handle
- NCM-SPORT-CASE
Hard black case
- NCM-INV-S
inVision software and head tracker (PTT/DVA/GST)

Additional options/configurations are available. Contact NeuroCom for more information.

Electrical characteristics

- 100-240 VAC / 50-60 Hz / 180 W

Compliant with the latest medical standards.

Dimensions

W x D x H	in	cm
Force plate	18 x 30 x 2	46 x 76 x 5
Min. footprint required	36 x 78	92 x 199
Weight	lb	kg
Max. patient weight	500	227
Total system weight	70	32
Packaged weight	75	34

Specifications subject to change without notice.