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INSTRUMENT STANDARD OPERATING PROCEDURE MANUAL

College of Medicine

SAFETY AND LABORATORY COOMMITTEE, C.O.M, K.F.U.

Prepared by

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Document History

Document Section	Details of Amendments	Date	Modified by (Initials)
SOP	First Draft on SOP for the operation of Balance Manager Equitest.		

1.OBJECTIVE

- The document describes the operation of Balance Manager Equitest.

2.OVERVIEW OF INSTRUMENT:

The strength of the EquiTest is that it allows clinicians an objective and systematic way of manipulating somatosensory and visual information. The precise test data accurately identifies and differentiates underlying sensory and motor impairments and enhances the ability to diagnose and treat problems of imbalance and postural instability, especially for those persons who previously proved difficult to diagnose.

The EquiTest includes the following standardized assessment protocols:

1-Standardized Assessment Protocols Sensory Organization Test (SOT) The SOT is a six-condition assessment providing information about interactions among the three sensory systems contributing to postural control. The SOT isolates and quantifies impairments in the patient's use of somatosensory, visual, and vestibular inputs to balance, and impairments related to the patient's use of specific sensory input when it is incorrect. The SOT also quantifies secondary maladaptive impairments related to the patient's ability to select appropriate movement strategies and to accurately align their center of gravity (COG) relative to their base of support.

2-Motor Control Test (MCT) The MCT assesses the ability of the automatic motor system to quickly and effectively recover following unexpected support surface disturbances. The MCT isolates and quantifies impairments in the timing and strength of the automatic response in each leg, as well as impairments in coordination of responses between the two legs and movement directions.

3-Adaptation Test (ADT) The ADT is an assessment of the automatic motor system that quantifies impairments in the patient's ability to adapt automatic responses to minimize sway when exposed to surface irregularities and unexpected changes in support surface inclination. The ADT quantifies the patient's ability to systematically reduce their sway energy during repeated exposure to the same surface tilt disturbance.

3.RESPONSIBILITIES:

- It is the responsibility of designated personnel in the lab to train new staff and students on this procedure and to ensure adherence to this procedure under supervision.
- It is the responsibility of designated personnel (staff or Student) to follow the instructions of this procedure under supervision.
- The head of the physiology department must resolve any problem with the process and difficulties in using this SOP.

4.REFERENCES:

- Equitest System operating Manual, NeuroCom.

5.DEFINITIONS:

SOT: Sensory Organization Test

MCT: Motor Control Test

ADT: Adaptation Test

COG: center of gravity

6.SAFETY PRECAUTIONS:

- Wear gloves, a lab coat.

7.PROCEDURE FOR OPERATING of Balance Manager Equitest

7.1.Turning on the instrument:

To turn on the EquiTest, flip the power switch on the bottom right hand side of the device. You will know there is power to the machine when the lights in the EquiTest turn on. Then, turn the operating computer on. When the screen turns on, it will display a 'System Initialization' screen. Ensure there is nothing on the force plates and that nothing is obstructing the path of the visual surround of the EquiTest. Press 'Continue' on the initialization screen to zero the force plates and visual surround.To begin testing, click on 'Clinical Module' in the main screen. From there, you will be in the 'File Cabinet', where you have the option of searching a previous participant or creating a new one. If this is a new participant, click 'New Patient File' to open the participant information window. If it is a previously entered participant, simply highlight the desired participant and click 'Continue'. The 'Quick Find' function may also be used to quickly search for the participant. Ensure the participant information is correctly filled; height and age are important for calculating variables and normative comparisons. Click on 'Assessment' to bring up the different tests available on the EquiTest. Click on Sensory Organization Test (SOT).Place the harness of appropriate size on the participant and instruct them it is a precautionary measure in case of a loss of balance which is unlikely. Instruct them that the amount of movement on the device is minimal but that it may be disorienting. The carabineers must be fastened to the harness but must still allow for natural movement and sway. A good way of ensuring the individual still has normal mobility is by loosening the top straps until the carbineers lay flat on the participant's shoulders. Ask them to move side to side and front to back, asking them if they feel the straps pulling. If they do, loosen them slightly and ask the participant

to move around again. Place the participant's feet. First, line-up the participant's ankles with the thick horizontal line that passesthrough the axis of rotation of the force plates. This can easily be achieve by using your hand; line-up your thumb with the participant's medial malleolus and your fingers with the horizontal line. Then, place the outside of the participant's heels on the vertical line marked by a 'T'. Once the participant's ankles are lined up and their heels are in place, they may splay their feet in a more comfortable position, ensuring their heels remain in place.

7.2.Data Export:

In the main menu of the 'Balance Manager', click on 'Data Analysis' on the lefthand side to bring up the 'NeuroCom System Data Analyzer' window. In the Clinical Module, you have 2 options for data export: Clinical Report format or raw data. To generate a Clinical Report, select the participant of interest and click 'Analysis'. This will open the participant's file which contains all of the tests performed, in chronological order. From here, you can select the kind of results that will be generated in your report and you can choose to create a PDF or print it right away. To export a participant's raw data, in the 'Data Analysis', select the participant you wish to export the data for and then click 'Export'. You will be prompted to select the 'Export Destination' and rename the file if desired (users should ensure the file name is comprehendible to them and note the folder the files are being saved to). Of note, when exporting data from the Clinical Module, all data from all completed tests for the participant of interest will be exported, regardless of the trial type or trial date. Once the files have been exported, you can save them on to your personal data device.

7.3.Turning off the Instrument:

1-Turn off the comput.

2-Press the power off to turn off the device.

7.4.Warning:

In order to use the Balance Manager safely and effectively, and avoid possible dangers caused by improper operation, please read through the user manual and be sure to be familiar with all functions of the equipment and proper operation procedures before use.