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NeuroGym Technologies and RAI MDS 2.0 in Long Term Care:
Enhancing Mobility and Tracking Improvement

Implementation of the Resident Assessment Instrument – Minimum Data Set 2.0 (RAI-MDS) in long term care facilities in Ontario is now well underway, and homes are looking forward to the improvements it will bring to quality of care through standardization of clinical assessments and resident care planning processes. Having a common assessment tool will also provide a way to compare the quality of care across the province as well as identify best practices. This, in turn, will inevitably mean a greater focus on improving the MDS scores of residents and searching for effective means to make this happen.

The NeuroGym® line of mobility training equipment is designed to enhance functional movement and the underlying physical skills and abilities necessary to improve balance, gait and motor control. The NeuroGym tools were originally developed to create more effective physical re-training in neurorehabilitation. The equipment is specifically designed to enable the type of exercise and movement training that will lead to real changes in functional mobility and consequently improved functional independence. At the same time, the tools are designed to be used in a way that does not necessarily require specialized staff or increased staff time and resources. These are all important factors in choosing equipment that will help long term care facilities improve the functional independence of their residents.

The MDS protocol is comprehensive and covers various domains of the resident's well being. Section G, "Physical Functioning and Structural Problems", evaluates activities such as bed mobility, transfer, walking (either in or outside the resident's room), dressing, toilet use, and bathing amongst others. A resident's ability is scored on a scale of 0-8 where 0 is 'normal' and 8 is 'no function noticed'. It is a simple but effective scale to record measures of function and is reasonably sensitive to change. In other words, if a resident's ability to transfer improves from requiring a mechanical lift to a 2 person transfer, his/her MDS score would improve from 8 to 3. Over many residents, a facility that effectively promotes mobility training would stand out on the MDS scores of Physical Functioning and Structural Problems.

The 0-8 functional MDS scoring tool is one example of a valid, relatively simple and sensitive measuring tool. The RAI-MDS 2.0 employs other scales for functional activities. One such example is the 'Test for Balance' (G3) where on a 4-point scale, 0-3 describes balance ability (say – standing with eyes open). Again, the low score 0 describes 'normal' behavior and the high score of 4 stands for inability to execute the tasks without physical help. As in the 0-8 scale described earlier, this scale, too, is sensitive and simple to score. When residents improve their stability to the point at which they are able to stand without support for a few seconds, the relevant MDS score would change from 3 to 1. Evaluated regularly (and not

Figure 1. A resident practicing with the Sit to Stand Trainer can regain the ability to stand independently, making transfers both easier and safer. This would be reflected in a number of scores in Section G of RAI-MDS 2.0.

necessarily by physiotherapists or occupational therapists), the MDS scores will clearly indicate the effectiveness of functional training in a facility. Due to the standardized nature of the scales, these scores could also be effectively used for various research projects inside and across different facilities.

Ultimately, the MDS process will be able to identify those facilities with effective means of mobility and stability training. The NeuroGym enablers offer nursing and retirement facilities dedicated, evidence-based and tremendously effective means of producing valid and

exciting changes in residents' motor skills. Regular use of the MDS evaluation tool would then easily and clearly validate the achievement of these functional goals.

For example, with regular use of tools such as the NeuroGym Sit to Stand Trainer (Figure 1), the Bungee Walker (Figure 2) and the Ankle Trainer (Figure 3), residents should dramatically improve on measures of transfers, walking, dressing, toilet use, dressing, bathing and even on their urinary continence level. The NeuroGym Trainer (Figure 4), an innovative biofeedback device with a choice of movement-sensitive sensors, would be an invaluable tool in the balance and range of motion domains.

In previous application notes, it has been suggested that the NeuroGym technology would be cost-effective with regard to expenses associated with higher levels of disability, for example, in urinary incontinence. With the introduction of the MDS protocols, facilities will stand to achieve significantly better scores by also demonstrating effective management of immobility and of physical disability. Considerable effort has been put into structuring the MDS data management. The measures described above and the illustrated scales are all easy to implement and should be sensitive to effective training. Moreover, some simpler measures such as a three-point scale for 'Change in ADL Function' (G9: 0-no change; 1-improved; 2-deteriorated) should quickly show change and demonstrate improvement in function following even short periods of effective training.

The ability to accurately and consistently determine changes in function forms the basis of any good measurement tool. The NeuroGym line of enabling equipment presents nursing facilities with powerful tools to improve residents' function; RAI-MDS now provides them with an effective measurement tool to document their achievements.
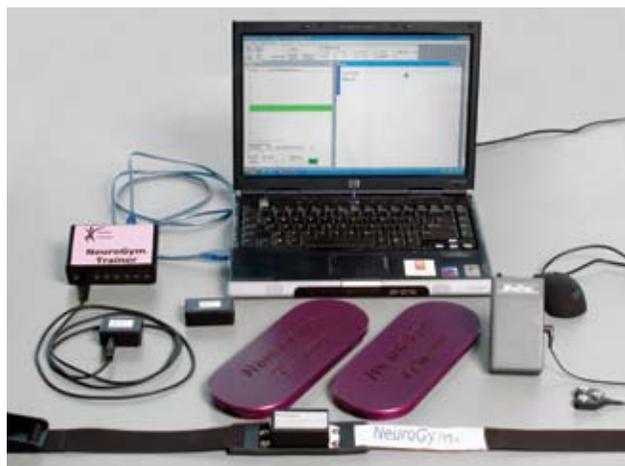

Figure 2. The Bungee Walker.

Figure 4. The NeuroGym® Trainer and sensors.

Figure 3. The Ankle Trainer.

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