NDTA Network

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DYNAMIC GROWTH OF NDTA

RESEARCH

Single-Subject-Design Research

By Judith G. Kimball, PhD, OTR/L, FAOTA

Research propels our knowledge and demonstrates our outcomes. Any therapist can do efficacy research by carefully structuring the data collected from patients. Single-subject-design research (SSD) is a systematic way to collect data and a systematic way to analyze it statistically. It is relatively easy to do and results in data which is publishable, especially when several patient records show similar results.

The key points of collecting data

Leaving Therapists Adrift

THOUGHTS ON THE QUESTION: ARE WE ANCHORED TO NDT?

By Janet M. Howle, PT, MACT

The spring 2008 issue of *Pediatric Physical Therapy* juxtaposed two articles with positions on NDT. A research report by NDT Coordinator-Instructor Sherry Arndt and colleagues described the use of an NDT protocol for infants, adding evidence in support of the NDT approach.[1] Leading the issue was an editorial by the editor, Ann VanSant, PT, PhD., questioning the value of anchoring pediatric intervention in NDT.[2] This is the second time in recent months that editorials in

A logical first step in evidence-based decision making is identifying the theoretical

remarks impact all of us.

Dr. VanSant proposed that we may be "dragging an anchor of the past" by continuing to adhere to an approach that has clearly changed over time both in its theoretical underpinnings and in its application of specific methods. She points out that NDT instructors have incorporated newer theories and ideas into their courses, but this, she believes, is the reason we should give up anchoring what we do

Two Tools in One

DEVELOPING WALKING SKILLS WITH THE UP N' GO

NDTA™ invites vendors to write about their products for Therapy Talk. This does not imply an endorsement from NDTA™.

By Eli Razon, BSc ME, President, Easy Walking, Inc.

The ability to walk is a commonly stated goal for pediatric patients with lower extremity disability. But approaches that can provide for some improvement in mobility in the near term may actually decrease the probability that the child will make long-term progress in learning to walk. A sobering question to ask is, "How many of my pediatric patients will spend evermore time in a wheelchair as they get older and heavier."

As we walk, we move our weight in two different ways. We shift weight from one leg to the other and in the process shift the position of our pelvis in the lateral direction (weight shifting) about 5 to 10 cm. We also raise and lower our center of gravity by about 1 to 2 cm. In order to make long-term progress, we need to teach and reinforce these motions.

As we think about existing classes of therapy tools, let's explore what they can and cannot do regarding these motions.

Sit-to-stand equipment assists in moving the user from sit to stand. However, it provides no practical way to assist in ambulation or allow the practice of any forward mobility.

Gait trainers, once patients have been assisted into them, allow patients to move about a flat surface and obtain some level of exercise. But are they walking? More important, are they *learning* to walk? The patients benefit from exercise and achieve some degree of short-term mobility and independence, but as they get older and heavier, how many of them will end up in a wheelchair?

Balance improvement.

COMBINING TOOLS

What if there were a device that could combine the sit-to-stand support of a stander and also provide the therapist with a tool to teach the individual elements of motor control required to walk with a normal gait? The Up n' Go, an adjustable partial weight bearing device from Easy Walking, Inc., does just that. It is used over ground (not a treadmill) and provides dynamic lifting support that delivers important benefits from sit to stand through a very diverse and patient-specific set of exercise/training activities.

The most straightforward issue is assisting the patient with sit to stand. The Up n' Go can be moved to the wheelchair or bedside of the user and will provide an adjustable level of support to help the patient stand with minimal or no assistance from the therapist. Once upright, patients discover that they are comfortably supported and the therapist will observe that the user has an appropriate level of supported motion from side to side and up and down. The patient's pelvis is stabilized, but the Up n' Go will move as the patient moves to give a "real world" sense of feedback that is important to improving neurological/balance skills.

Most importantly, sit to stand can be achieved without therapists using their hands for anything but facilitating/ teaching. We call this eliminating the 'Octopus Effect' wherein the therapist requires multiple hands to try to simultaneously support and guide the patient. Freed from the support task, the therapist can concentrate on developing the individual skills that the patient must learn in order to walk.

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(**Therapy Talk** *continued from page 33)*

Specific exercises using the Up n' Go to develop the strength and balance necessary for walking are described in detail in the web site, www.easy-walking.com. An important element in all of these exercises is that the therapist can initiate specific neurological and physical reactions at a pace much slower than real-time. This allows patients to let their bodies learn from the feedback they get as they perform a task correctly but at reduced speed and while their weight is being partially and dynamically supported.

While the Up n' Go provides a completely new tool to teach the individual elements of proper gait during therapy, it also allows for the learning to be reinforced at home and in school. Because the Up n' Go is both affordable and easy to use outside of therapy, care givers can work with patients daily to reinforce what's been learned in therapy.

All of us—therapists, equipment providers, patients, and parents—share the same goal: we want the patient to have the best possible outcome. But choosing the proper path in therapy is difficult. We need to choose therapy and equipment that will assist the best long term outcomes. I would like to put forth the argument that often sacrificing some short term "mobility" in favor of a rigorous program to develop the control and strength to walk correctly can have the most favorable long-term outcome. ■

Eli Razon, BSc ME is president of Easy Walking, Inc. in Maple Glen, PA.

Lower extremities strengthening

Posture improvement