An Objective Tool Used After Traumatic Brain Injury

In this report, the researchers depict how an objective measure, the Participation Assessment with Recombined Tools-Objective (PART-O), was developed and tested for survivors of traumatic brain injury (TBI). The PART-O was created through utilizing a pool of items from the Craig Handicap Assessment and Reporting Technique-Short Form (CHART-SF), Community Integration Questionnaire version 2 (CIQ-2), and Participation Objective, Participation Subjective (POPS). In addition, the Mayo-Portland Adaptability Inventory (M2PI) was used as a follow-up interview after the three instruments had been administered. The combined instrument was pilot tested with 13 individuals with TBI in person or by telephone as part of their scheduled TBI model systems (MS) follow-up. The investigation sampled 400 individuals (16 yrs and over) recruited from the TBIMS longitudinal database. Through the 24-item inventory, individual choice and abilities were found to be reflective of participants in the community. While there is a need for future research, the PART-O is a starting point in creating a replacement measure of participation for a TBIMS National Database instrument that had poor psychometric properties.


Gait After Stroke: Increases in Treadmill Walking Speed

In this study, the researchers attempt to contribute to existing literature by investigating sagittal- and frontal-plane gait kinematics and spatiotemporal gait deficits among survivors of stroke. This investigation identifies characteristics of effective systematic increases in treadmill speed on gait deviation often seen after the occurrence of a stroke. Participants included 20 individuals who sustained a single stroke at least six months prior to the beginning of the study. Through clinical testing, the lower extremity portion of the Fugl-Meyer Assessment and the timed Six-Meter Walk Test were used as measurements for all participants. Repeated-measures analyses of variance were used to evaluate step length, limb support, double-limb support, trailing limb angle, hip extension, knee flexion, circumduction, and hip hiking with respect to speed. It was found that some gait deviations (step length, single-limb support, hip extension, trailing limb angle, and knee flexion) were improved when treadmill speed was increased, while other gait deviations were unaffected. It was suggested that increasing treadmill speeds just slightly faster than self-selected speeds during training can improve gait pattern in survivors of stroke.

**Expanded Core Curriculum for Children With Visual Impairments**

Sapp and Hatlen (2010) published an article regarding the importance of the Expanded Core Curriculum (ECC) for children with visual impairments. Even though it has been reported that the ECC is vital to promote functional skills among this population, many teachers are not familiar with the nine components of the ECC. These nine components are (a) compensatory or access skills, (b) career education, (c) independent living skills, (d) orientation and mobility skills and concepts, (e) self-determination skills, (f) use of assistive technology, (g) sensory efficiency skills, (h) social interaction skills, and (i) recreational and leisure skills. The authors highlighted the importance of integrating each of these areas in the regular curriculum, as well as the importance of collaboration with other professionals. In the field of adapted physical activity, collaboration with teachers of the visually impaired and with orientation and mobility specialists can help physical education teachers to implement the components of the ECC. Infusion of these components will provide multiple benefits for children with visual impairments. Furthermore, Sapp and Hatlen indicated that in teacher preparation programs all the concepts of the ECC need to be introduced as early as possible. This suggestion can be applied to programs that prepare future physical educators.

Sapp, W. & Hatlen, P. (2010). The expanded core curriculum: Where we have been, where we are going, and how we can get there. *Journal of Visual Impairments & Blindness, 104*, 338-348.

**Impact of Physical Activity in Physical Work Demands**

Individuals with disabilities face many challenges when transitioning from school to the workplace environment. They are entitled to equal opportunities to be in the work force; yet, only a small number are employed. Ratzon, Schejter, Alon, and Schreuer (2011) explored workforce’s readiness of 39 individuals with developmental disabilities. The Physical Work Performance Evaluation (PWPE) test was used to assess functional abilities of participants. The PWPE include 36 subtest that examine different work activities in different areas (dynamic strength, position tolerance, hand functioning, mobility, and balance). Data were collected by trained occupational therapists. The results demonstrated that when compared to individuals without disabilities, participants scored lower in activities that require and measure time performance, lifting, and carrying activities. Lastly, results demonstrated lower dexterity performance as well as dynamic and static strength. According to the authors, these findings are alarming because this may reduce the productivity and may put workers at risk for musculoskeletal damage. The authors identified a gap between participant’s performance and job demands. For this reason, they recommend the implementation of specific physical training during transition programs. These recommendations can be implemented by physical education teachers who teach children with disabilities in their transition age.

Promoting Imitation in Young Children With Autism

The inability to imitate is a salient diagnostic marker for autism. It has been suggested that for children with autism, imitation may be a prerequisite skill that can assist in the development of various skills. Using a multiple baseline design across subjects and two treatment conditions, the purpose of this study was to determine if two interventions, reciprocal imitation training (RIT) and video modeling (VM), were effective in promoting imitation acquisition in young children with autism. Participants included six boys between the ages of 20-48 months with a diagnosis of autism who were matched across various features (i.e., age, language, autism severity) and randomly placed in a treatment condition. Results indicated that all six participants increased their imitation skills to varying degrees in both conditions and imitation maintained and generalized at higher than baseline levels post treatment. Participants in the VM condition demonstrated a rapid increase in their imitation skills overall, whereas the participants in the RIT condition showed more of a steady increase over sessions. Imitation skills maintained and generalized at one and three weeks follow-up visits in both conditions. This abstract would particularly be of an interest to researchers with specialization in motor control and occupational therapy.


Differences in Aerobic, Anaerobic, and Skill Performance of Wheelchair Rugby Players

The purpose of this study was to examine player performance of wheelchair rugby athletes with regard to their competition classification. To make competition more equitable, wheelchair athletes are classified into one of seven groups based on functional level. In this study, researchers examined the differences in aerobic, anaerobic, and sport specific skills among the classification groups. Thirty Polish male wheelchair rugby players were classified into four groups. Participants engaged in a maximal treadmill test adapted for wheelchairs, a Wingate Anaerobic Test with an arm crank ergometer, and the Beck Battery of Quad Rugby Skill Tests. Results indicated most differences were between Group I (most impaired) players and all others. Other results indicated anaerobic performance as the most sensitive to classification differences. Also of importance was the finding that adjacent groups did not differ in aerobic, anaerobic, and sport-specific skill performance.


Metabolic Rate and Accelerometer Output in Adults With Down Syndrome

Individuals with Down syndrome (DS) exhibit physiological characteristics potentially influencing the metabolic costs associated with activity. This study examined the relationship between metabolic rate and activity counts produced by
a uniaxial accelerometer during ground walking in adults with and without DS. A second purpose was to explore the between-group differences that determine the relationship between metabolic rate and activity-count rate. Wearing hip-mounted accelerometers, 18 individuals with DS (10 women; mean age 24.7 ± 6.7 years) and 18 individuals without DS (10 women; mean age 26.3 ± 5.2 years) had their metabolic rates measured in METS via portable spirometry. All participants engaged in five ground walking trials, each lasting six minutes at speeds of 0.5, 0.75, 1.0, 1.25, and 1.5 meters per second. Results found significant interactions between groups and activity-counts (p < 0.001). Bland-Altman plots showed greater variability in the difference between actual and predicted METs for participants with DS. Overall, individuals with DS showed altered METs to activity-count relationships during over ground walking and had lower predictability of metabolic rate from uniaxial accelerometer output than individuals without DS.


**Working With Parents of a Student With Challenging Behaviors**

It is important for the adapted physical education teacher to collaborate with parents when implementing a behavior change program. The authors present a rationale for collaboration and several strategies to successfully work with parents of a student with challenging behaviors at home and in school. The authors state the teachers should understand the parents and family to determine the behaviors to be changed and the best strategies to change them. Next, the teacher should help parents understand the behavioral approach and collaborate with them to design the best behavioral intervention. Once the intervention has been established, teachers should teach parents how to record children’s behavior, respond to problem behaviors, model appropriate behaviors, implement the feedback system, and teach and encourage all family members to participate in the intervention. Finally, teachers and families should provide feedback to each other about the intervention. Teachers could implement these steps when trying to develop their own intervention programs, including ones in physical education.