











Your Therapy Source News

Digital magazine for pediatric occupational and physical therapists.

Issue 14 - May 2010















New and Popular Products



Wax String Activities:

Wax String Activities provide over 50 pages of activities to complete with wax strings i.e. Wikki Stix ® or Bendaroos ® (these are NOT included). The book includes shapes, simple shape pictures, letters A-Z (capital and lowercase), numbers, shape puzzles, dot to dots and shape patterns. The children use the wax strings to outline various shapes or to complete the puzzles.

SALE PRICE until 5/14/10: \$0.99

www.YourTherapySource.com/wax



Sensory Motor Activities for Summer:

Summary: Get 35 sensory motor games and activity ideas with a summer theme.

List Price: \$4.99

www.YourTherapySource.com/summeractivities

Disadvantaged Preschoolers and Gross Motor Skill Delays

wo recent studies report that disadvantaged preschoolers exhibit gross motor delays on the Test of Gross Motor Development - 2. Goodway et. al. reported in the *Research Quarterly for Exercise and Science* that 86% of Midwestern and southwestern preschoolers were delayed in locomotor and object control skills (< 30 percentile). Boys outperformed girls in both regions. The preschoolers from the Midwest had better locomotor skills.

Woodward and Yun report in *Early Child Development and Care* that 41% of 138 five years old enrolled in Head Start programs scored below average on the Test of Gross Motor Development. Sixteen percent of the 138 children exhibited substantial deficiency in overall gross motor skill development. The researchers recommend that Head Start curriculum should focus on the development of gross motor skills.

Pediatric occupational and physical therapists need to educate preschool staff in disadvantaged areas of these latest studies. Perhaps run group therapy sessions in the preschool classrooms so teachers can learn new lessons to teach when the therapists are not there. All children benefit from a push in model of pediatric therapy hopefully lessening referrals in the future.

References:

Goodway, Jacqueline D.; Robinson, Leah E.; Crowe, Heather **Gender Differences in Fundamental Motor Skill Development in Disadvantaged Preschoolers From Two Geographical Regions** *Research Quarterly for Exercise and Sport*, Volume 81, Number 1, March 2010, pp. 17-24(8)

Rebecca J. Woodard;Joonkoo Yun **The Performance of Fundamental Gross Motor Skills by Children Enrolled in Head Start** *Early Child Development and Care*, Volume 169, Issue 1 2001, pages 57 - 67



Sensory Motor Group Activities A to Z:

Download of an electronic book of over 50 sensory motor group activities for every letter of the alphabet plus over 20 printable sheets to compliment the activities.

List Price: \$9.95

www.YourTherapySource.com/atoz

Recent Autism Research

Utism and Picky Eating

The April issue of the *Journal of Pediatrics* reports on the rate of picky eating in children with autism compared to a control group without autism. The Children's Activity and Meal Patterns Study (CHAMPS) included 53 children with autism and 58 children without autism. A food diary was kept for 3 days and parents answered a questionnaire about food habits. The authors reported that children with autism "displayed more food refusal and exhibited a more limited food repertoire". Picky eating habits were not correlated with the child's age. Only 4 of the 53 children with autism exhibited extreme eating habits defined as "restricting food consumption to almost exclusively to one item eaten throughout the day". The researchers found that a nutritional risk existed from eating a limited repertoire of foods instead of food refusal. The autistic children exhibited a lack of vitamins A, C, D and zinc when compared to the control group.

Reference: Myers Lowe, Rachael. Nutritional risks of picky eating may be higher in autism Retrieved from the web on 4/17/2010 at

 $http://www.reuters.com/article/idUSTRE63F4SF20100416?feedType=RSS&feedName=healthNews&utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+reuters%2FhealthNews+%28News+%2F+US+%2F+Health+News%29$

nset of Autism and Effects on Child's Development

The *Journal of Autism and Developmental Disorders* will be publishing research on when and how autism symptoms appear and its effects on childhood development. Data was collected from 2720 parents via questionnaires. Children were divided into three groups:

1. Regression of skills - 44% of the children exhibited a regression of social, cognitive or communication skills before 36 months of age

2. No loss or no plateau - 39% of children exhibited the early warning signs of autism but no loss of skills

3. Plateau - 17% of children displayed mild developmental delays followed by a plateau of skill development.

The results of the study indicated that children who experience a regression of skills displayed a significant increase in severity of autism symptoms i.e. lack of conversational speech and increased educational supports. For the children in the plateau group, skills ceased to develop at about 24 months of age. These children were also at risk for receiving a diagnoses of autism and requiring educational supports. Children who displayed no loss or no plateau were at the least risk of poorer outcomes.

Reference: Kennedy Krieger Institute (2010, April 20). New insights into the implications of autism onset patterns. ScienceDaily. Retrieved April 24, 2010, from http://www.sciencedaily.com/releases/2010/04/100420114231.htm

Recent Cerebral Palsy Research

readmill Training or Overground Walking?

Archives of Physical Medicine and Rehabilitation published research comparing partial body weight supported treadmill training (PBWSTT) versus overground walking. Thirty four children (mean age 10 yrs, 10 months)classified Level III or IV on the Gross Motor Function Classification System were assigned to the experimental group (PBWSTT) or the control group (overground walking). After 9 weeks of the training, 2 times per week, the overground walking group "showed a trend for an increase in the distance walked over 10 minutes". No significant difference was found in the School Function Assessment in walking speed or walking function. The researchers concluded that PBWSTT may be no more effective than overground walking for improving walking speed and endurance.

Reference: Kate L. Willoughby,Karen J. Dodd, PhD, Nora Shields, PhDd, Sarah Foley. Efficacy of Partial Body Weight–Supported Treadmill Training Compared With Overground Walking Practice for Children With Cerebral Palsy: A Randomized Controlled Trial Archives of Physical Medicine and Rehabilitation Volume 91, Issue 3, Pages 333-339 (March 2010)



otox, OT, PT and E Stim

An initial study was undertaken on the use of Botox Type A injected into the upper limb muscles of 10 children followed by 10 sessions of OT and PT and then followed by 10 sessions of neuromuscular electrical stimulation on the wrist extensors. Results indicated an improvement in hand function. A trend was seen in a reduction of spasticity and an increase in range of motion but no significant difference was noted. The researchers plan on doing a future study to determine the exact effects of the treatments.

Reference: Rodríguez-Reyes, Gerardo; Alessi-Montero, Aldo; Díaz-Martínez, Leticia; Miranda-Duarte, Antonio; Pérez-Sanpablo, Alberto Isaac Botulinum Toxin, Physical and Occupational Therapy, and Neuromuscular Electrical Stimulation to Treat Spastic Upper Limb of Children With Cerebral Palsy: A Pilot Study Artificial Organs, Volume 34, Number 3, March 2010, pp. 230-234(5)



Therapeutic Activities for Home and School:

Therapeutic Activities for Home and School provides pediatric therapists with over forty, uncomplicated, reproducible activity sheets and tips that can be given to parents and teachers.

www.YourTherapySource.com/therexbook

Motor Activities and Brain Functioning

Physical Activity and Brain Health

The *American Journal of Lifestyle Medicine* has published a review of the research on academic performance and physical activity levels. Studies have shown that physical activity increases arousal, self esteem and increased secretion of neurotrophins (help the development and function of neurons). In the case of sports participation, attention and mental performance have improved immediately following the activity. In elementary schools, academic performance has been maintained even with decreases in instructional times to increase physical activity time. The authors conclude that physical activity is needed for healthy child development. Physical activity time can be included in the school day without compromising academic performance.

This is a great study to reference to teachers and administrators to justify increased physical activity time in the classroom or throughout the day.

Reference: Trudeau, Francois, Shephard, Roy J. **Relationships of Physical Activity to Brain Health and the Academic Performance of Schoolchildren** *American Journal of Lifestyle Medicine* 2010 4: 138-150

Hand Clapping Games and Motor Abilities

Would you like children to have neater handwriting, write better and have better spelling? A recent study suggests to teach hand clapping games to improve motor and academic abilities. For ten weeks, two groups of children, at different elementary schools, participated in either a music appreciation program or hand clapping songs training. According to one of the researchers, Dr. Idit Sulkin a member of BGU's Music Science Lab in the Department of the Arts:

"We found that children in the first, second and third grades who sing these songs demonstrate skills absent in children who don't take part in similar activities. We also found that children who spontaneously perform hand-clapping songs in the yard during recess have neater handwriting, write better and make fewer spelling errors."

Not sure about how solid this research design was, but hand clapping games obviously help to develop motor planning skills, bilateral coordination skills, timing, body awareness and eye hand coordination skills. All those skills play a major role in handwriting and learning. Why not try a good old fashioned game of Miss Mary Mack today?

Reference: American Associates, Ben-Gurion University of the Negev (2010, April 28). Hand-clapping songs improve motor and cognitive skills, research shows. ScienceDaily. Retrieved April 30, 2010, from http://www.sciencedaily.com/releases/2010/04/100428090954.htm



Get Up and Learn! - Download of over 35 activities that incorporate movement with learning.

www.YourTherapySource.com/getuplearn

Hot Topics

Elbow ROM Following Humeral Fractures

The *Journal of Bone and Joint Surgery* published research on the longitudinal evaluation of elbow range of motion following pediatric supracondylar humeral fractures. Three hundred seventy three patients who had a diagnosis of supracondylar humeral fractures were either treated with casting or surgery. Follow up revealed that elbow flexion and extension increased the most during the first month following cast removal with improvements seen up to 48 weeks after the injury. The younger patients (less than 5 years of age) fared better than older patients. The fractures that required surgery exhibited a 10% decreased in range of motion (with respect to the contra-lateral side) when compared to the group whose elbows were casted.

Reference: Spencer, Hillard T., Wong, Melissa, Fong, Yi-Jen, Penman, Adam, Silva, Mauricio **Prospective Longitudinal Evaluation of Elbow Motion Following Pediatric Supracondylar Humeral Fractures** *J Bone Joint Surg Am* 2010 92: 904-910

Gender Differences and Head Movements

Gait and Posture published research on gender differences in head stabilization during level walking in youth. Fifteen females and fifteen males, ages 8-11, underwent gait analysis walking at their own speed. Sensors were placed at the pelvis, shoulders and head. The results indicated no differences in acceleration values between the genders at the pelvis and shoulders. However, lower head acceleration values were seen in females with regards to medio lateral and anterior posterior directions. The researchers disagreed with a previous study indicating that these gender differences were due to mass distribution, greater pelvic movement or walking habits (i.e.wearing high heels).

References: Claudia Mazzà, Mounir Zoka and Aurelio Cappozzoa **Head stabilization in children of both genders during level walking** *Gait & Posture* Volume 31, Issue 4, April 2010, Pages 429-432

Bayley III Accuracy for Detecting Development Delay

For any of you who use the Bayley Scales of Infant and Toddler Development (Bayley-III), recent research indicated that the scale "seriously underestimates developmental delay in 2 year old Australian children". The subjects were 221 children who were born extremely pre term (<28 weeks gestation) or low birth weight (<1000 grams) and a control group of 220 children who were full term and normal birth weight. All the subjects were evaluated using the Bayley III at 2 years of age, corrected for prematurity. The pre-term children scored significantly below the control group on the Bayley III. Although, the mean values of the pre-term children were close to the normative mean of the Bayley III. Therefore, the researchers concluded that developmental delay is underestimated when using the Bayley III.

References: Peter J. Anderson; Cinzia R. De Luca; Esther Hutchinson; Gehan Roberts; Lex W. Doyle; **Underestimation of Developmental Delay by the New Bayley-III Scale** *Arch Pediatr Adolesc Med.* 2010;164(4):352-356.

These pages are not intended to provide medical advice or physician/therapist instruction. Information provided should not be used for diagnostic or training purposes. Consult a therapist or physician regarding specific diagnoses or medical advice.

More Hot Topics

Water Intake and Cognitive Performance

With the weather getting warmer, parents and school staff need to remember to remind children to drink plenty of water. Not only will water hydrate their bodies it appears to effect cognitive performance as well.

Three articles from *Appetite*, report on the benefits of children drinking water and its effects on cognitive performance:

1. Edmonds and Jeffes reports that children (6-7 yrs old) who drank more water showed improvements in thirst and happiness ratings, visual attention and visual search skills. No difference was found in visual motor or visual memory skills.

2. Edmonds and Bufford report that children (7-9 years old) who drank more water again rated themselves less thirsty and showed improvements on visual attention tasks.

3. Benton and Burgess reported that when children (mean age 8 yrs 7 months) drank more water, recall was significantly better. There was no effect on the ability to sustain attention.

Easy, free, research based tip to tell your school staff today! Don't forget to remind them about increased physical activity time as well.

References: Caroline J. Edmonds, Ben Jeffes **Does having a drink help you think? 6–7-Year-old children show improvements in cognitive performance from baseline to test after having a drink of water** *Appetite*, Volume 53, Issue 3, December 2009, Pages 469-472

Caroline J. Edmonds, Denise Burford **Should children drink more water?: The effects of drinking water on cognition in children** *Appetite*, Volume 52, Issue 3, June 2009, Pages 776-779

David Benton, Naomi Burgess **The effect of the consumption of water on the memory and attention of childre**n *Appetite*, Volume 53, Issue 1, August 2009, Pages 143-146

Self Regulation and Academic Abilities

More research is being published in the *Early Childhood Research Quarterly* on self regulation skills in young children. The researchers studied 1298 children from birth through first grade. After controlling for at risk factors such as ethnic minority status, low maternal education, low family income and chronic depressive symptoms in the mother, children with strong self regulation skills in preschool and kindergarten did significantly better on math, reading and vocabulary at the end of first grade. The researchers recommend that we teach young children how to self regulate.

Need ideas for teaching self regulation? Check out some self regulation activities suggested by one of the authors of this research study at <u>www.YourTherapySource.com/selfregulation</u>

Reference: Michaella Sektnana, Megan M. McClellanda, Alan Acocka and Frederick J. Morrison **Relations between early family risk, children's behavioral regulation, and academic achievement** Article in press *Early Childhood Research Quarterly* doi:10.1016/j.ecresq.2010.02.005

These pages are not intended to provide medical advice or physician/therapist instruction. Information provided should not be used for diagnostic or training purposes. Consult a therapist or physician regarding specific diagnoses or medical advice.

Assistive Technology

Wii Games for Different Abilities

Without trying out each of the Wii games, it can be hard to determine specific games to recommend for children. Ability Technology has provided an overview of the skills that 6 popular Wii games require. The table describes each game and then rates the following areas: cognitive, physical/sensory, psychosocial, adaptation, set up and general ease of use. Wii Music scored the highest. They have also reviewed X-Box360, PlayStation 3, and games for the computer. View the Wii ratings at http://www.abilitycorp.com.au/index.htm

Track Physical Activity with the iPhone

There is an interesting free app for the iPhone entitled Walk n' Play. Developed by Chinmay Manohar in the Department Endocrinology, Nutrition and Diabetes of the Mayo Clinic, Walk n' Play tracks normal day to day physical activity. Once you put in the height and weight of the user, it tracks your movements and tells you if you are winning or losing against the computer or a buddy via your own social networking. This app is different from a pedometer or other devices for it measures small movement changes as well (as little as half mile per hour).

After testing this app today with a few kids (ages 4 through 10 years of age), I give it a thumbs up. The cartoon images of the people moving or sleeping was highly motivating to the children. If they realized the cartoon was sleeping, they immediately got back to moving around - walking, running, stair climbing and marching in place. It worked best as a motivator to set it to the hand held motion detector that way the kids could see how they were doing. They loved competing against the computer cartoon constantly working towards being ahead of "his" calorie burner count. I am sure the novelty factor would wear off after awhile, but today this was a big hit in increasing physical activity in the children.

Any child or adult would benefit from this app to track their progress in increasing physical activity throughout the day. Perhaps track a student's progress who is trying to increase physical activity throughout the day for weight control. Maybe give to a student to see if a weighted vest or pressure garment is improving the student's ability to stay in one place to focus. And, you can't beat free to give it a try!

Follow us on Twitter www.Twitter.com/YTherapySource

Follow our blog at www.YourTherapySource.blogspot.com





Your Therapy Source Inc.



www.YourTherapySource.com

Visit <u>www.YourTherapySource.com</u>

for a full list of our products including:

- documentation forms
- sensory motor activity ideas
- sensory processing resources
- visual perceptual activities
- music downloads

We ship digital items worldwide for FREE!

Visit our website for FREE hand-outs, articles, free newsletter, recent pediatric research and more!