



















Digital magazine for pediatric occupational and physical therapists.

## Issue 15 - June 2010













## **New and Popular Products**



#### Self Calming Strategies:

This download includes 16 strategies on cards and posters to encourage self calming skills.

#### SALE PRICE until 6/14/10: \$1.99

#### www.YourTherapySource.com/calm



#### **Summer Handwriting Activities:**

Summary: Get over 30 pages of Summer handwriting templates, visual motor and visual perceptual worksheets. Great to send home for the summer break.

List Price: \$4.99

#### www.YourTherapySource.com/summerhandwriting

### Effects of Goal Directed, Activity Focused Group Physical Therapy for Kids with CP

*MC Pediatrics* published a research study on the changes of basic motor abilities, quality of movement and everyday activities after intensive, goal directed, activity focused physical therapy is a group setting for children with cerebral palsy. Twenty-two children (mean age 5 years, 6 months), hemiplegia (7), diplegia (11), quadriplegia (2) and ataxia (2), participated in goal directed, activity focused group physical therapy for five days a week for three weeks. Each session was three hours.

The sessions consisted of:

- 1. functional goal directed training and practicing specific activities
- 2. family centered practice
- 3. carry over training to parents and other persons associated with the child's everyday life
- 4. motor learning techniques regarding motivation, environments and variation.

Immediately following treatment, the Gross Motor Function Measure scores significantly improved. Children in GMFCS Levels I and II improved more than Levels III-V. Positive changes were seen on the Quality of Upper Extremity Skills Test but no significant difference was found. The Pediatric Evaluation of Disability Inventory scores displayed significant improvement in the self care in the functional skills dimension, self care and mobility dimension and the Caregiver Assistance dimension. Goal Attainment Scales were developed for the children. Following the intervention, on average the children reached the predetermined goals. Seventy one percent of the activity goals, 50% of the movement goals and 80% of the combined goals were reached.

The researchers concluded that intensive training in a group setting may be a cost effective method to optimize function in young children with cerebral palsy.

Reference: Anne Brit Sorsdahl1, Rolf Moe-Nilssen1, Helga K Kaale, Jannike Rieber, Liv Inger Strand Change in basic motor abilities, quality of movement and everyday activities following intensive, goaldirected, activity-focused physiotherapy in a group setting for children with cerebral palsy BMC Pediatrics 2010, 10:26 doi:10.1186/1471-2431-10-26



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.

www.YourTherapySource.com/atoz

## **Television's Effects on Children**

he *Archives of Pediatrics and Adolescent Medicine* published research on television watching at 2 and 4 years of age and its effects when the children are 10 years of age. Parents reported how much television was watched during the early years. Parents and teachers also reported on academic, psychosocial, and health behaviors and body mass index measurements when the children were 10 years of age. The results indicated that television watching delayed development in children. The study indicated that every additional hour of television exposure at 29 months corresponded to:

- 1.7% decrease in classroom engagement
- 2. 6% decrease in math achievement
- 3. 10% increase in victimization by classmates
- 4. 13% decrease in time spent doing weekend physical activity
- 5.9% decrease in activities involving physical effort
- 6. 9% higher consumption of drinking soft drinks
- 7. 10% higher consumption of eating snacks
- 8. 5% increase in body mass index

According to the American Academy of Pediatrics the average child watches three hours of television per day. Can you imagine the effects on the children at the higher end of viewing times? Now add in computer use and video game use. Scary numbers for an upcoming generation. Turn off the television and let children play. Need ideas to encourage children's sensory motor development? Check out these titles:

Motor Magic - www.YourTherapySource.com/motormagic Sensory Motor Activities for Summer - www.YourTherapySource.com/summeractivities 50 Sensory Motor Activities for Kids! - www.YourTherapySource.com/50book Scavenger Hunts - www.YourTherapySource.com/scavengerhunts

Reference: Linda S. Pagani, PhD; Caroline Fitzpatrick, MA; Tracie A. Barnett, PhD; Eric Dubow, PhD Prospective Associations Between Early Childhood Television Exposure and Academic, Psychosocial, and Physical Well-being by Middle Childhood Arch Pediatr Adolesc Med. 2010;164(5):425-431

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.

## **Recent Research on Hemiplegia**

## **Prip in Children with Congential Hemiplegia**

*Neurorehabilitation and Neural Repair* published research comparing predictive and reactive control of grip force in children with congenital hemiplegia. The precision grip of 12 children (ages 10-16 years) with hemiplegia were compared to a control group in two different conditions - predictive and reactive. For the predictive control, the child triggered the drop of an object to grip before it fell completely. For the reactive control, the examiner triggered the drop of the object for the child to grip before it fell completely. Results indicated the following:

1. Predictive grip in the hemiplegic hand was intact but was changed after impact "suggesting an inability to anticipate the consequences of a dynamic perturbation".

- 2. Under the reactive conditions, a delay was seen in the hemiplegic hand
- 3. Both predictive and reactive conditions were intact in the non hemiplegic hand.

Reference: Bleyenheuft, Yannick, Thonnard, Jean-Louis Predictive and Reactive Control of Precision Grip in Children With Congenital Hemiplegia Neurorehabil Neural Repair 2010 24: 318-327

#### odified Constraint Induced Movement Therapy and Gait Characteristics

In a recent issue of *Disability and Rehabilitation* there was research published on an intervention using modified constraint induced movement therapy (mCIMT) with 12 preschool children with hemiplegic cerebral palsy. The intervention consisted of mCIMT for 5 consecutive days at 6 hours per day. Following the experiment, the data was analyzed revealing a significant decrease in base of support and improvements were noted in most other temporal spatial aspects of gait. The researchers recommend additional studies on the long term effects of mCIMT for the lower extremity deficits.

Reference: Patricia Coker, Tasos Karakosta, Cindy Dodd, Simon Hsiang Gait characteristics of children with hemiplegic cerebral palsy before and after modified constraint-induced movement therapy Disability & Rehabilitation 2010, Vol. 32, No. 5, Pages 402-408

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.

### Mother's Touch Effects on Brain Development

ecent research published in the Journal of Neuroscience, indicates that a mother's touch not only provides security, comfort and love but also cognitive function and stress reduction. This study was performed using rats. The results indicate that "sensory stimuli from maternal care can modify the gene that controls a key messenger of stress called corticotropin-releasing hormone (CRH)" (1). Basically, when a baby senses soothing touch, DNA in the brain cells activate a "silencer" of CRH in the hypothalamus. As a result of decreased CRH, neural dendrites can fully develop in the hippocampus (2). This is important information for early intervention therapists to reassure mother's that their touch alone is a positive intervention in their babies brain development.

An additional study of valuable information regarding human touch was published in Nature Neuroscience. This study indicated that people preferred to be touched (soft brush stroking) at a certain speed: 4-5 cm per second. When the touch was pleasurable it activated "C-tactile" nerve fibers which are only present on skin with hair on it (3).

#### **References:**

1. University of California Irvine. Mother's Touch. Retrieved from the web on 5/6/10 at http://www.uci.edu/features/2010/05/feature\_sensory\_100503.php

2. Aniko Korosi, Marya Shanabrough, Shawn McClelland, Zhong-Wu Liu, Erzsebet Borok, Xiao-Bing Gao, Tamas L. Horvath, and Tallie Z. Baram Early-Life Experience Reduces Excitation to Stress-Responsive Hypothalamic Neurons and Reprograms the Expression of Corticotropin-Releasing Hormone J. Neurosci. 30: 703-713; doi:10.1523/JNEUROSCI.4214-09.2010



#### **Cut and Paste Sensory Diet**

Download of the materials to create 2 sensory diet books, one for home and one for school with over 150 picture word cards.

www.YourTherapySource.com/sensorydiet

## **Hot Topics**

#### **Exercise and Bone Density**

Over 200 six year olds, had their bone mass measured and femoral neck and thigh bones analyzed. The physical activity of the 6 year olds was measured for 7 consecutive days. The results indicated that vigorous physical activity time was related to the strength and mineral density of the femoral neck. The researchers from Southhampton and Cambridge Universities in the United Kingdom, concluded that vigorous physical activity in childhood is likely to improve bone development and prevent osteoporosis.

**Reference:** Vigorous exercise strengthens hip bones in young children Retrieved from the web on 5/11/10 at http://www.physorg.com/news192711079.html.

#### **Recheck ADHD Symptoms Yearly**

An interesting study was published in the Journal of Developmental and Behavioral Pediatrics on teacher's assessment of inattentive symptoms. Three groups of children were followed: 27 first graders, 24 fourth graders and 28 first through fourth graders with a diagnosis of ADHD. The children were rated twice (12-14 months apart) on their inattentive symptoms by teachers. The results indicated that for all three samples, the ratings persisted for less than 50% of the children and 25-50% of the children's ratings decreased to within the normal range. The researchers concluded that children should be evaluated yearly to avoid continuing to treat children if it is not necessary.

This is important research. Many school districts only perform complete evaluations every three years. Many children are simply tagged as ADHD and the label never disappears. The child moves on to the next grade level and some teachers immediately assume the child will be inattentive.

Reference: Rabiner, David L. PhD; Murray, Desiree W. PhD; Rosen, Lisa PhD; Hardy, Kristina PhD; Skinner, Ann MEd; Underwood, Marion PhD Instability in Teacher Ratings of Children's Inattentive Symptoms: Implications for the Assessment of ADHD Journal of Developmental & Behavioral Pediatrics: April 2010 - Volume 31 - Issue 3 - pp 175-180 doi: 10.1097/DBP.0b013e3181d5a2d8

#### **Idiopathic Toe Walking and Botox**

The Journal of Children's Orthopaedics has published research on the use of Botox A in children with idiopathic toe walking. Fifteen children (ages 5-13)with a diagnosis of idiopathic toe walking underwent a gait analysis followed by Botox in the calf muscles and an exercise program. Gait analysis was repeated at 3 weeks, 3 months, 6 months and 12 months after treatment. Results from the gait analysis indicated significant improvements in decreased plantar flexion angle at initial contact and during swing phase and increased dorsiflexion during midstance. At 12 months post treatment, parents reported that 3 of the 11 children stopped toe walking completely, 4/11 decreased toe walking, and 4/11 continued to toe walk. The researchers concluded that Botox and exercise treatment for idiopathic toe walking displays gait pattern changes but does not always stop toe walking.

Reference: Pähr Engström1, Elena M. Gutierrez-Farewik1,Åsa Bartonek1, Kristina Tedroff1, Christina Orefelt1 and Yvonne Haglund-Åkerlind1 (2010) Does botulinum toxin A improve the walking pattern in children with idiopathic toe-walking? Journal of Children's Orthopaedics DOI 10.1007/s11832-010-0263-9 Published online 5/12/2010.

## **More Hot Topics**

#### **Benefits of Sensory Integration Interventions**

The American Occupational Therapy Association released information on the sensory integration interventions resulting in positive outcomes. This press release discusses a review of 27 studies on the effectiveness of sensory integration therapy. The researchers found that:

"Results of the systematic review suggest the sensory integration approach may result in positive outcomes in sensorimotor skills and motor planning; socialization, attention, and behavioral regulation; reading-related skills; participation in active play; and achievement of individualized goals. Additionally, gross motor skills, self-esteem, and reading gains may be sustained from three months to two years".

**Reference:** AOTA Press Release. Study: Sensory Integration Intervention May Result in Positive Outcomes. Retrieved from the web on 5/21/10 at http://www.aota.org/News/Media/PR/2010-Press-Releases/Slintervention.aspx

#### **Recommended Evaluation Tools for Developmental Coordination Disorder**

Pediatric Physical Therapy has published research analyzing seven performance based measures of gross motor skill development for use with children with developmental coordination disorder. The Movement Assessment Battery for Children (MABC - Version 1) and the Test of Gross Motor Development Version 2 scored highest on the comparison. The researchers recommend starting with these two previously mentioned tests when evaluating gross motor performance in children with developmental coordination disorder.

**Reference:** Slater, Leanne M.; Hillier, Susan L.; Civetta, Lauren R. The Clinimetric Properties of Performance-Based Gross Motor Tests Used for Children With Developmental Coordination Disorder: A Systematic Review Pediatric Physical Therapy. 22(2):170-179, Summer 2010. doi: 10.1097/PEP.0b013e3181dbeff0

#### Effects of Standing Programs on Walking in Children with CP

Physical and Occupational Therapy in Pediatrics published research on the effects of prolonged standing on the walking patterns of children with cerebral palsy. Six children with spastic cerebral palsy (Gross Motor Function Classification Levels II and III) participated in this study over a period of 9 weeks. The first three weeks the children received physical therapy. The second three weeks the children received physical therapy and prolonged periods of standing, 3x per week. The last three weeks the children received only physical therapy again. Before and after each 3 week phase, gait analysis and spasticity assessment was performed. The results indicated that after the middle three week period with prolonged standing, testing showed a significant difference in improvements noted in the following areas: stride length, gait speed, stride time, stance phase time, double support time, muscle tone, and peak dorsiflexion angle during midstance. These results were not sustained when tested again 3 weeks later. The researchers recommend additional research with larger sample size to establish specific duration and frequency of the standing program.

**Reference**: Yasser Salem, Venita Lovelace-Chandler, Reta J. Zabel, Amy Gross McMillan. Effects of Prolonged Standing on Gait in Children with Spastic Cerebral Palsy Physical & Occupational Therapy in Pediatrics February 2010, Vol. 30, No. 1, Pages 54-65

## How to Find OT and PT Blogs

Blogs can offer great inside information on a variety of topics, although it can be hard to sift through all the daily information that is posted. In addition, it can be difficult to even find niche blogs to begin with. Here are several suggestions on how to find blogs specific to pediatric occupational and physical therapy.

**1. Blog Rolls:** Some blogs offer blog rolls on the side of the blog. This is a list of blogs that the writer recommends. There are usually some that have similar topics.

**2. AllTop**: This website offers popular stories that hit the web on certain topics. They have an occupational therapy page (<u>http://occupational-therapy.alltop.com</u>/) and a physical therapy page (<u>http://physical-therapy.alltop.com/</u>).

**3. OT Blogs:** This is my favorite. This is a collection of OT blogs with the title of the posts listed. It is an easy way to scroll through lots of information very quickly. Check it out at OTBlogs.org, <u>http://www.otblogs.org/</u>.

**4. Google Alerts:** You can set Google alerts to send you emails when specific topics are discussed. If you follow keyword phrases i.e. occupational therapy, physical therapy for children, etc Google will send you email alerts when those topics are posted to the web. This is a nice feature but you do get a significant amount of junk along with it.

**5. Comments Sections:** If you find a blog that you like, check out the comment sections. Usually, the people who comment may have blogs of their own on similar topics and you can track them down.

Don't forget to check out our blog, <u>www.YourTherapySource.blogspot.com</u> for information on current research, activity ideas and more.



### Free sample page from Self Calming Strategies

Go to <u>www.YourTherapySource.com/calm</u> for the complete download.



 Put your hand on your stomach.
Take a deep breath in slowly through your nose. Your stomach should rise.

2. Let your breath out slowly through your mouth. Your hand on your stomach should move in as your stomach muscles tighten to help you exhale.

# 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!