



















Digital magazine for pediatric occupational and physical therapists.

# **Issue 16 - July 2010**



## **New and Popular Products**



### **Physical Activity Cards and Game Ideas:**

Download of the materials to create 20 physical activity cards and 25 game ideas to use with cards.

SALE PRICE until 7/18/10: \$1.99

### www.YourTherapySource.com/activitycards



### **Visual Perceptual Games and Activities**

Download of an electronic book of 6 reproducible visual perceptual games and activities to promote form constancy and visual discrimination

List Price: \$4.99

### www.YourTherapySource.com/visualprocessing

### Steps to Promote Participation of Children with Disabilities in Physical Activities

• he recommended amount of physical activity daily for children is at least 60 minutes per day. This can be difficult to accomplish for many children with the busy schedules that face the young generation today. For children with disabilities, this can be very difficult to achieve each day for various reasons. Pediatric occupational and physical therapists can help parents, teachers and other members of the community to promote participation in sports, recreation and physical activities.

**1. Educate** on the benefits of sports participation and recreation: Regular physical activity helps the body by maintaining muscle strength and range of motion, increasing bone mass, and improving cardiovascular fitness. The brain also benefits from physical activity through elevating the mood, improving self concept, enhancing social skills and more. Specifically sports participation can create friendships, encourage creativity, foster teamwork and define meaning for one's life.

**2.** Choose appropriate activities: A child's disability or diagnosis needs to be taken into consideration when deciding upon an appropriate recreational or sporting activity. The American Academy of Pediatrics has produced various charts in the article Medical Conditions Affecting Sports Participation to help guide the decision making process. In general, it is recommended that children with disabilities participate in increased duration (minutes per session), frequency (times per week) and decreased intensity if comparing to typically developing children.

**3. Minimize risk of injury:** Once a sporting activity is chosen, modify the activities if necessary to ensure the safety of the child.

**4.** Adapt the activity: Offer suggestions to adapt the sporting activities so that the child may more fully participate.

**5. Have a positive, supportive attitude:** Unfortunately, society tends to view children with disabilities too susceptible to injury to participate in traditional sporting activities. Families and the environment seem to influence participation more than the child's choices. Remember the children have a right to participate!

Parents and professionals, want to help?

"The Participation and Environment Project seeks to develop and test a new measure of participation and environment for children and youth with disabilities, in the contexts of home, school, and community life. This new measure, called the Participation and Environment Measure for Children and Youth (PEM-CY) is intended to support research efforts investigating environmental supports and barriers that may impact children's participation".

Visit Boston University's Kids in Context website (http://www.bu.edu/kidsincontext/pep/participating-in-this-study/) to complete the survey or to help spread the word about the survey.

**Reference:** Murphy, Nancy A., Carbone, Paul S., and the Council on Children With Disabilities, Promoting the Participation of Children With Disabilities in Sports, Recreation, and Physical Activities Pediatrics 2008 121: 1057-1061

## **Exercise Participation: Juvenile Idiopathic Arthritis**

esearch has shown that children with juvenile idiopathic arthritis (JIA) can participate in exercise regimens without exacerbating the disease. In addition, research has shown that exercise for at least 6 weeks decreases disease activity, improves quality of life and decreases pain. In general, it is recommended that children with JIA participate in moderate fitness and strengthening activities.

There are precautions necessary to consider when recommending exercise or sports participation for children with JIA. Depending upon where the JIA is located, various risks may be present. For example, cervical arthritis makes a child at greater risk for neck injuries and temporomandibular joint disease may result in dental injuries. JIA may results in visual impairments making a child more susceptible to eye injury. If children have been diagnosed long term with JIA, research has shown aerobic fitness to be lower than typically developing peers.

In addition to the precautions, the following recommendations should be considered when suggesting exercise programs for children with JIA:

1. participation in contact sports or impact activities are permitted if the disease is well managed and the child has the physical capacity to participate in the sport (cervical spine should be screened with x-ray prior to contact sports)

- 2. activities should be pain free
- 3. if the JIA flares up, return to regular activity should be gradual
- 4. jaw protection and proper eye protection should be utilized

Overall, children with JIA may benefit from moderate fitness, flexibility and strengthening activities and may participate in exercise and sports without exacerbating the JIA.

**Reference:** Philpott, John F MD, Dip Sport Med; Houghton, Kristin MD, Dip Sport Med; Luke, Anthony MD, MPH, Dip Sport Med Physical Activity Recommendations for Children With Specific Chronic Health Conditions: Juvenile Idiopathic Arthritis, Hemophilia, Asthma, and Cystic Fibrosis Clinical Journal of Sport Medicine: May 2010 - Volume 20 - Issue 3 - pp 167-172 doi: 10.1097/JSM.0b013e3181d2eddd



## **Exercise Participation: Cerebral Palsy**

hen recommending exercise and sports participation for children with cerebral palsy, there are many factors to consider. Research is constantly being collected and analyzed on the benefits of physical activity for people with cerebral palsy. One topic is the use of muscle strengthening exercises. Some current research states that progressive resistance exercises have been shown to improve muscle strength and function. Some research has concluded that muscle strengthening does not increase muscle spasticity.

Regarding cardiovascular health, children with cerebral palsy:

- 1. have 2-3 times higher energy expenditure rates while walking
- 2. may have poor cardiovascular health
- 3. take many less steps per day than their typically developing peers

With these statistics in mind, aerobic exercise can be beneficial for children with cerebral palsy. Some examples of research studies indicating this are the following:

1. lower limb cycling (3x/week, 20 min sessions for 1.5 - 16 months) resulted in improved aerobic fitness 2. a community fitness program of aerobics, strength training, and stretching (3x/week for 10 weeks) resulted in increased muscle strength and improved perception of physical appearance

3. a systemic review of research indicated that short-term cardiorespiratory training (i.e. 2–4 months) increased aerobic fitness by 18–22% and long-term training (i.e. 8–9 months) by 26–41%. Short-term training (i.e. 2–4 months) increased activity by 0–13%, and long-term training (i.e. 8–9 months) by 2–9%. Aerobic activity provided little carry over into activity.

When deciding what sports or recreational activities are suitable for children with cerebral palsy, each child would have to be evaluated individually. Basically, once a child is thoroughly evaluated, a pediatric therapist can help to suggest recreational activities such as boccie ball, fishing, horseback riding and more. For formal sports such as swimming, wheelchair basketball, soccer or baseball, the therapist can help to suggest which sport would make a good fit for a particular child based on functional levels. In addition, any adaptations or modifications to the sports or recreational activity should be considered. For more information on sports and leisure activities for people with cerebral palsy visit the United Cerebral Palsy website at http://www.ucp.org/ucp\_channel.cfm/1/15.

References:

Darrah, Johanna PhD, PT; Wessel, Jean PhD, PT; Nearingburg, Patricia PhD, PE; O'Connor, Marjorie BEd, PE Evaluation of a Community Fitness Program for Adolescents with Cerebral Palsy Pediatric Physical Therapy Spring 1999 - Volume 11 - Issue 1

Butler, Jane M.; Scianni, Aline; Ada, Louise Effect of cardiorespiratory training on aerobic fitness and carryover to activity in children with cerebral palsy: a systematic review International Journal of Rehabilitation Research: June 2010 - Volume 33 - Issue 2 - pp 97-103 doi: 10.1097/MRR.0b013e328331c555



Teaching Motor Skills to Children with Cerebral Palsy

www.yourtherapysource.com/CPmotorskills

## **Exercise Participation: Asthma**

sthma is a common chronic disease in the pediatric population. Having this condition, does not indicate that children should avoid exercise or sports participation. Although exercise and emotions can trigger bronchospasm with mild inflammation. Statistics show that almost 90% of asthmatics and 40% of people with allergic rhinitis suffer from exercise induced bronchospasm (EIB). This bronchocontriction typically occurs after 8-15 minutes of physical activity and clears up with 60 minutes. The usual triggers for EIB are running and other cardiovascular activities excluding swimming.

### Some of the **benefits of exercising for asthmatics** are the following:

- 1. improves aerobic capacity (although does not change pulmonary function tests)
- 2. swimming can decrease asthma morbidity
- 3. potential for decrease in EIB severity (exercise may increase the threshold for triggering bronchospasm)

There are possible risks to asthmatics with exercise such as:

- 1. high intensity exercise can trigger EIB
- 2. bronchial changes with endurance athletes
- 3. any sports or recreational activities that expose the athlete to dry, cool air, allergens or pollutants could triager asthma (winter sports avagarbate symptoms more)
- trigger asthma (winter sports exacerbate symptoms more)
- 4. scuba diving may be dangerous

When children with asthma exercise the following tips are **recommended**:

- 1. asthmatic children can participate is any physical activity if symptoms are controlled. A lower risk activity to trigger symptoms is swimming.
- 2. keep a log of physical activity, triggers and symptoms

3. should be followed by a medical doctor to diagnosis EIB, prescribe proper medications and when to take the medications prior to exercise

- 4. avoid scuba diving is asthma symptoms are present or abnormal pulmonary function tests
- 5. for major competitions may need documentation from physician to use certain medications.

**Reference:** Philpott, John F MD, Dip Sport Med; Houghton, Kristin MD, Dip Sport Med; Luke, Anthony MD, MPH, Dip Sport Med Physical Activity Recommendations for Children With Specific Chronic Health Conditions: Juvenile Idiopathic Arthritis, Hemophilia, Asthma, and Cystic Fibrosis Clinical Journal of Sport Medicine: May 2010 - Volume 20 - Issue 3 - pp 167-172 doi: 10.1097/JSM.0b013e3181d2eddd



### 50 Sensory Motor Activities for Kids!

Download of an electronic book of 50 sensory motor activities that get children moving.

www.YourTherapySource.com/50book

### **Sensory Processing Disorder**

### Sensory Processing Disorders and Social Play

The *American Journal of Occupational Therapy* has published research on children with sensory processing disorder (SPD) and social participation. The social participation of twelve children with sensory processing disorder and 12 children without were compared. The results indicated that children with sensory processing disorder exhibit similar response patterns as children without SPD. A significant difference was noted on the enjoyment scale as the children with SPD enjoyed the activities more than the typically developing peers. They particularly enjoyed skill based (formal activities such as sport lessons) and recreational based (informal play i.e. playground) activities. Children with SPD did not prefer highly structured games or games with rules.

The children without SPD had a larger social circle to interact with beyond the immediate family.

Although there are many limitations to this study (i.e. small sample size, how the children were diagnosed with SPD, etc.), the results indicate that the social participation of children with SPD may not be significantly influenced by SPD.

**Reference:** Joanna Cosbey, Susan S. Johnston and Louise Dunn. Sensory Processing Disorders and Social Participation. American Journal of Occupational Therapy May/June 2010 vol. 64 no. 3 462-473

### Sense of Touch Effects Thoughts and Behavior

The journal Science published research on how a human's sense of touch influences thoughts and behavior. Subjects participated in various experiments to see how an object's weight, texture and hardness can influence decision making.

In one experiment, the researchers had the subjects sit in hard or soft chairs and negotiate prices of a car. The subjects who sat in the harder chairs drove a harder bargain than the ones that sat in the softer chairs.

In another experiment, subjects were given information (resumes or surveys) on heavy versus lighter clipboards. The heavier clipboards resulted in the subjects stating that the information was more serious and important.

A separate experiment comparing smooth textures to harder textures had subjects handle rough or smooth puzzle pieces followed by listening to a story. The subjects who had the rough puzzle pieces stated that the interaction in the story was "harsh and uncoordinated".

Although this research was done with adults it poses many questions relative to children with sensory processing disorder, autism, ADHD, etc. Would love to see some direct research on this topic with the previously mentioned groups of children. How does a child's sense of touch directly influence certain social situations? For example, when playing with softer objects do children tend to be more flexible when sharing toys? Does performing heavy work activities (proprioceptive input) influence how serious a child interprets a situation? Interesting topic...

Reference: Touch: How a hard chair creates a hard heart. Retrieved from http://www.physorg.com/news196605902.html on 6/28/2010.

## **Hot Topics**

#### Activity Levels and Electronic Media Use of Youth with Diabetes

*Pediatrics* published research on the physical activity levels and electronic media use for 384 children with Type 1 diabetes, 90 children with Type 2 diabetes and 173 control subjects ranging in age from 10 to 20 years old. The results indicated that male subjects with Type 2 diabetes reported lower levels of vigorous physical activity per day than the control subjects. Youth with type 1 diabetes compliance to the recommended physical activity levels (more than 60 minutes per day) was 68.3%. In comparison, the youth with type 2 diabetes were 81.7% compliant and the control group was 80.4% compliant. The rates of compliance for daily electronic media use (less than 2 hours per day) ranged from 29.5% to 49.1%.

**Reference:** Lobelo, Felipe, Liese, Angela D., Liu, Jihong, Mayer-Davis, Elizabeth J., D'Agostino, Ralph B., Jr, Pate, Russell R., Hamman, Richard F., Dabelea, Dana Physical Activity and Electronic Media Use in the SEARCH for Diabetes in Youth Case-Control Study Pediatrics 2010 125: e1364-e1371

### **Therapeutic Listening and Preschoolers**

*Journal of Occupational Therapy*, *Schools and Early Intervention* published research on the benefits of a Therapeutic Listening program for preschoolers with developmental disabilities. The study was performed with one group of 15 preschoolers using a pre-test and post-test design. The preschoolers received their traditional therapy sessions along with the Therapeutic Listening program. Six assessments were used to measure fine motor, visual motor, social, language and sensory processing. Significant improvements were seen in all areas except sensory processing and the behavior sub test of the Social Skills Rating System. Parents, teachers, and therapists observations were consistent with the results. The researchers concluded that Therapeutic Listening with typical therapy services may have a role in encouraging developmental skills for preschoolers with developmental disabilities.

**Reference:** Susan Bazyk; Janet Cimino; Kim Hayes; Glenn Goodman; Pamela Farrell The Use of Therapeutic Listening with Preschoolers with Developmental Disabilities: A Look at the Outcomes Journal of Occupational Therapy, Schools, & Early Intervention, Volume 3 Issue 2 2010 Pages 124 – 138

### Movement Quality of Infants Correlates with IQ at School Age

*Pediatrics* published research on 60 preterm infants (range 25-33 weeks) without cerebral palsy. The infants were videotaped and movement was analyzed until 17 weeks post term. General movements were established as normal or abnormal. When the children were then 7-11 years old, intelligence testing was performed. Results indicated that if general movements were normal by 8 weeks post term, IQ scores were in the normal range. Abnormal general movements after 8 weeks post term were associated with lower IQ scores.

**Reference**: Bruggink, Janneke L. M., Van Braeckel, Koenraad N., Bos, Arend F. The Early Motor Repertoire of Children Born Preterm Is Associated With Intelligence at School Age Pediatrics 2010 125: e1356-e1363

### PT Education and Cystic Fibrosis

A recent article in the *Journal of Cystic Fibrosis* reports that physical therapy education was very stressful for parents of toddlers with cystic fibrosis. The parents reported "psychological distress" from PT education. There were three factors that influenced the parents education: large volumes of information, educational resources and timing of education. The researchers recommend specific development of educational resources for parents.

Reference: Claire J. Tipping, Rebecca L. Scholes, Narelle S. Coxb. A qualitative study of physiotherapy education for parents of toddlers with cystic fibrosis. Journal of Cystic Fibrosis Volume 9, Issue 3, Pages 205-211 (May 2010)

## **On the Web...**

#### Visual Impairment and Wii

Here is an interesting free download to adapt two Wii games for use with children who are visually impaired - **VI Fit**. This adapts Wii Tennis and Bowling. The VI Fit download provides audio and vibrotactile cues to direct the players where to hit and direct the balls. VI Tennis was tested on a group of 13 children who were blind and resulted in increased active energy expenditure. VI Bowling was tested on 6 adults who also increased active energy expenditure during the game.

Go to <u>www.vifit.org</u> to get the download and directions.

#### Grant Available for Children with Disabilities

CVS Caremark Community Grants are accepting applications for grant awards until October 31, 2010. These grants are specifically for children with disabilities:

"Our CVS Caremark Community Grants support programs that promote independence among children with disabilities including physical and occupational therapies, speech and hearing therapies, assistive technology and recreational therapies."

These grants are awarded to non profit organizations and public schools. For the public school grants they are looking for fully inclusive programs. The non profit organizations should be encouraging free, unstructured play and physical movement. The maximum award is \$5000.

More information on the grants can be found at CVS Caremark at: http://info.cvscaremark.com/community/our-impact/community-grants/children-disabilities

#### **Occupational Therapy Briefs**

Check out this website - <u>www.OTCats.com</u>. This is a collection of critically appraised topics (CAT) in occupational therapy. Although the brief summaries on topics are not peer reviewed it is a great place for information. You can submit CATS on different topics if interested. Click on topics to read the OT CATS that are currently available such as multi sensory techniques, upper extremity muscle strengthening in children with cerebral palsy, special needs playgroup, baby walkers and more.

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## **Survey Results - Caseloads**

### The questions for the Spring 2010 Survey were the following:

Question #1: Are you a OT, PT, COTA or PTA?

- Question #2: What region do you currently practice in?
- Question #3: Do you work part or full time?
- Question #4: How many children are on your caseload?
- Question #5: If you work in schools, on average how many schools do you travel to on a daily basis?
- Question #6: How many evaluations do you perform per week?

#### Below is a brief summary of 2 questions:

**Question #1:** 224 OT and COTA responded 60 PT and PTA responded

#### Question #4: Average number of children on caseload

COTA -full time : 45.1 OT - full time: 49.8 PTA - part time: 30 PT - part time: 26.3

To view all the data visit <u>www.YourTherapySource.com/caseload</u>

## Respond to the new Survey on favorite resources at <u>www.YourTherapySource.com/survey</u>

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