



July 2011

Occupational Therapy
Speech Therapy

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Serving children from
birth to 14 years old

Using therapy to improve
conditions such as:

- Delayed Speech
- Developmental Coordination Disorder
- Speech Impairments
- Non-communicative Speech
- Oral/Verbal Apraxia
- Language Disorders
- Feeding Difficulties
- Autism/Asperger's/PDD
- Developmental Delay
- Cerebral Palsy
- Sensory Integration Disorders
- Sensory Modulation Disorders
- Handwriting Impairments
- Fine & Gross Motor Delays

A Private, Independent
Provider

www.EmergeAChildsPlace.com



Bonnie Hacker, OT
Founder / Director

A Single Method for Improving Motor Skills, Behavior, and Cognitive Ability

A Foundation for Many Abilities: The mental skills of motor planning and sequencing serve as part of the foundation for many other skills.^{1,2} Improvements in motor planning and sequencing have been connected with improvements in attention, concentration, reading skills, behavior, balance, gait, endurance, strength, and coordination. Research shows that significant portions of children do not outgrow coordination difficulties.³⁻⁵ When children have difficulty developing in these areas, assessment of and training for the elemental underlying skills may be the most efficient way to enable timely development. As with any other skill, children can practice motor planning and sequencing, improve their abilities, and have fun doing it. One of the cutting-edge tools that Emmerge - A Child's Place has available for this therapy is the Interactive Metronome.



The Interactive Metronome: A growing body of research has connected the Interactive Metronome with improvements in attention, coordination, reading, aggression, impulsivity and other higher measures on the pyramid of learning.⁶⁻¹⁰ In one study involving 40 students with low reading achievement, students working with the Interactive Metronome increased their reading fluency the equivalent of 1.67 grade levels after just 12 Metronome sessions. The control group of students stayed the same or went down in reading proficiency. **A separate study involving 585 children found that 12 sessions of Interactive Metronome improved reading fluency by 2.25 grade levels and math fluency by 1.7 grade levels.** Interactive Metronome proves helpful to children with learning and developmental diagnoses such as:

- ADD / ADHD • Non-verbal Learning Disorder • Autism Spectrum Disorder • Dyspraxia
Developmental Coordination Disorder • Sensory Integration Disorder**

How It Works: With the Interactive Metronome at Emmerge, a child wears a headset and hears tones in a rhythmic pattern. Children try to clap or tap their toes at the exact time of the tone. Emmerge's Interactive Metronome uses sensors at the child's feet or worn on the child's hand to measure the timeliness of the clapping or toe tapping. This computerized system determines the accuracy of movements in milliseconds. The Interactive Metronome provides both visual and auditory feedback about the accuracy of the tapping or clapping. Years of clinical research has produced age-related normative ranges for performance, so children can be assessed for their development with these skills and trained until they reach normal or optimal development. Once children improve their rhythm, motor planning, and sequencing skills directly, improvements in motor control, cognitive skills, and behavior are often observed. Over the course of treatment, children learn to:



- Focus and attend for longer periods of time
- Increase physical endurance and stamina
- Filter out internal and external distractions
- Improve ability to monitor mental and physical actions as they are occurring
- Progressively improve performance

We would like to demonstrate the Interactive Metronome to you at your location, and give you a chance to experience it for yourself.

Please call to arrange a demonstration at your office.

References

1. Piek J, Dyck M. Sensory-motor deficits in children with developmental coordination disorder, attention deficit hyperactivity disorder and autism disorder. *Hum Mov Sci.* 2004 Oct; 23 (3-4): 475-88.
2. Piek J, Pitcher T, Hay D. Motor coordination and kinaesthesia in boys with attention deficit-hyperactivity disorder. *Dev Med Child Neurol.* 1999 Mar; 41 (3); 159-65.
3. Kanioglou A; Tsorbatzoudis H; Barkoukis V. Socialization and behavioral problems of elementary school pupils with developmental coordination disorder. *Percept Mot Skills* 2005; 101(1): 163-73.
4. Losse A, Henderson SE, Elliman D, et al. Clumsiness in children – do they grow out of it? A 10-year follow-up study. *Dev Med Child Neurol* 1991; 33: 55-68.
5. Skinner RA, Piek JP. Psychosocial implications of poor motor coordination in children and adolescents. *Hum Mov Sci* 2001; 20: 73-94.
6. Sabado J, Fuller D. A preliminary study of the effects of Interactive Metronome training on the language skills of an adolescent female with language learning disorder. *Contemporary Issues in Communication Science and Disorders.* 2008; 35: 65-71.
7. Cospser S, Lee G, Peters S, Bishop E. Interactive Metronome training in children with attention deficit and developmental coordination disorders. *Int J Rehab Res.* 2009 Dec; 32 (4): 331-6.
8. Shaffer R, Jacokes L, Cassily J, et al. Effect of interactive metronome training on children with ADHD. *Am J Occup Ther.* 2001 Mar Apr; 55 (2): 155-62.
9. Bartscherer M, Dole R. Interactive metronome training for a 9-year-old boy with attention and motor coordination difficulties. *Physiother Theory Pract.* 2005 Oct – Dec; 21 (4): 257-69.
10. A large list of scientific resources exists at this url:
<http://interactivemetronome.com/IMPUBLIC/research.aspx>.