

## Medical News Today

ADHD improves with sensory intervention, Study finds

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Preliminary findings from a study of children with attention deficit hyperactivity disorder (ADHD) show that sensory intervention -- for example, deep pressure and strenuous exercise -- can significantly improve problem behaviors such as restlessness, impulsivity and hyperactivity. Of the children receiving occupational therapy, 95 percent improved. This is the first study of this size on sensory intervention for ADHD.

The Temple University researchers, Kristie Koenig, Ph.D., OTR/L, and Moya Kinnealey, Ph.D., OTR/L, wanted to determine whether ADHD problem behaviors would decrease if underlying sensory and neurological issues were addressed with occupational therapy. Their study, "Comparative Outcomes of Children with ADHD: Treatment Versus Delayed Treatment Control Condition," will be presented Friday, May 13, at the American Occupational Therapy Association meeting in Long Beach, Calif.

Children with ADHD have difficulty paying attention and controlling their behavior. Experts are uncertain about the exact cause of ADHD, but believe there are both genetic and biological components. Treatment typically consists of medication, behavior therapy or a combination of the two.

"Many children with ADHD also suffer from sensory processing disorder, a neurological underpinning that contributes to their ability to pay attention or focus," explained Koenig. "They either withdraw from or seek out sensory stimulation like movement, sound, light and touch. This translates into troublesome behaviors at school and home."

Normally, we process and adapt to sensory stimulation in our daily environment. But children with ADHD are unable to adjust, and instead might be so distracted and bothered by a sound or movement in the classroom, for instance, that they cannot pay attention to the teacher.

All of the 88 study participants, who are clients at the OT4Kids occupational therapy center in Crystal River, Fla., were taking medication for ADHD. Of the 88, 63 children each underwent 40 one-hour sensory intervention therapy sessions, while 25 did not.

Therapy techniques appeal to the three basic sensory systems: The tactile system controls the sense of touch, the vestibular system controls sensations of gravity and movement, and the proprioceptive system regulates the awareness of the body in space. Therapy is tailored to each child's needs and can involve such techniques as lightly or deeply brushing the skin, moving on swings or working with an exercise ball.

"We found significant improvement in sensory avoiding behaviors, tactile sensitivity, and visual auditory sensitivity in the group that received treatment," said Koenig.

"The children were more at ease. They could better attend to a lesson in a noisy classroom, or more comfortably participate in family activities," said Kinnealey. "The behavior associated with ADHD was significantly reduced following the intervention."

The research team, which included Gail Huecker, the director of OT4Kids, believes that sensory intervention affects the plasticity, or adaptability, of the brain to sensory stimulation. In this study, changes were seen within six months.

Parents can learn how to continue the techniques at home. Koenig also observed that through this study, parents learned to view the disorder and the behaviors through a different lens.

"It's easy for parents to look at ADHD and blame themselves or the child for the bad behavior," said Koenig.

The goal of ADHD treatment is to prevent failure in school, family problems and poor self-esteem. If not addressed early, the disorder can trouble sufferers into adulthood.

In its current study, the group is working with a total of 135 children who have ADHD. Children who did not receive occupational therapy during the study have been scheduled to receive it afterward.

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