

AD/HD THROUGH THE YEARS: FROM SCIENCE TO PRACTICE



Highlights from the 15th Annual Conference, October 29-November 1, 2003, Denver, Colorado



DEVELOPED AROUND THE THEME, "AD/HD through the Years: From Science to Practice," the 15<sup>th</sup> Annual CHADD International Conference provided attendees with a wealth of information on the newest developments in the field. Under the direction of Conference Chair Mary Robertson, R.N., Conference Director Marsha Bokman, CMP, and CHADD National President Mary Durheim, the 2003 conference brought the science and real world together in downtown Denver. More than 1,200 participants attended 150 sessions in nine tracks. Individuals from as far afield as Japan and the Netherlands learned best practices within two research symposia, two networking sessions and three plenary sessions. Approximately 60 exhibitors displayed materials and information for attendees to bring back to their communities.

#### Part One: The Power of Resiliency

The opening plenary session featured clinical psychologist Robert Brooks, Ph.D., who led the audience on an emotional and highly encouraging journey through the mindsets of children with AD/HD and those with whom they have frequent contact.

Brooks described mindsets as assumptions that affect behavior, how we see kids and how we respond to them. "Kids are very intuitive when it comes to the mindsets of the people around them," Brooks said. "Kids know how we feel about them." When dealing with children with AD/HD or learning problems, Brooks emphasized the importance of having a mindset that radiates support, optimism and a willingness to help—as opposed to one of negativity, hopelessness or contempt.

According to Brooks, positive mindsets are critical to nurturing resilient children. Resilient children see the world as a challenge to confront and master rather than as a stress to avoid. The audience laughed and cried as Brooks recounted stories of hope and resilience and outlined the characteristics of resilient children, drawing from 25 years of research on the topic. Traits most commonly observed in resilient children include the following:

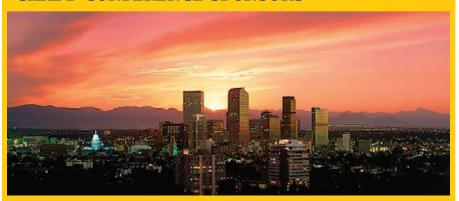
Resilient children believe that a "charismatic adult" is available to help them. "A 'charismatic adult' is an adult from whom a child gathers strength," Brooks explained. When asked why they have overcome adversity, resilient children, teens and adults consistently reply that somewhere along the way they could turn to and find support from an adult who truly believed in them and stood by them. Charismatic adults put themselves in the child's shoes and see the world through their eyes and—no matter what—do not give up on the child.

Resilient children can solve problems and make decisions. Brooks emphasized the importance of helping children solve problems by involving them in developing solutions to problems, rather than getting angry at the situation. The ability to constructively solve problems gives children a sense of ownership in that

Resilient children have "islands of competence" that are recognized by the people around them. "Islands of competence" are defined as areas of strength. Brooks completely changed the way he approaches clinical

Opposite page, (top row) CHADD President Mary Durheim, Editorial Advisory Board member Mark Katz and Conference Chair Mary Robertson. CHADD CEO Clarke Ross welcomes conference attendees. (middle) The Denver skyline. Saxophonist Khris Royal entertained conference attendees. He also served as a panelist for the Advice from the Real Experts on AD/HD panel. (bottom) Ruth Ault and Gail Stevens from the National Institute of Mental Health were among the 60 exhibitors presenting valuable information at the conference. CHADD Immediate Past President Evelyn Green receives a gift for her two years of presidential service.

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Keynote Speaker Robert Brooks emphasized the importance of positive mindsets in nurturing resilient children.

evaluations when he began focusing on children's strengths rather than their deficits. Instead of asking a child first about his or her problems, he suggests that adults ask about the things the child enjoys, likes and does best. It is important to identify and define every child's "island of competence." Children need to feel that they have strengths, and they should be encouraged to display, practice and reinforce them whenever possible.

Resilient children believe they can contribute to and make a positive difference in the world. The most positive memory that people have about school and what motivated them to be in class was the opportunity to contribute. "I believe very strongly that there is an inborn desire for children to help others," Brooks said. "They need to know that they have something to offer. This is a very simple but powerful concept: everyone wants to feel that they can make a difference and touch somebody's heart."

Resilient children develop self-discipline and self-control. This skill can be difficult for many children with attentional and impulse problems to master, and the process may be slow. Self-discipline is ownership, acceptance and adherence to the given rules and an understanding about why they exist. Brooks offered as an example the following questions (which are posed from a teacher's



Above, Approximately 60 exhibitors displayed materials and information for attendees to take back to their communities. Below, Participants at the International Networking Session exchanged common experiences.

standpoint but can be altered to apply to other situations) to encourage children to begin taking ownership of their feelings and behaviors:

- What rules do you think we need in this class for everyone to learn best and feel comfortable? (Often kids come up with the same rules as the adults.)
- As an adult, I sometimes forget the rules. This is how you can remind me . . . (Adults must be part of the process.) How would you like me to remind you? (Kids won't feel like you are nagging them because they offered the idea.)
- What consequences should be in place if you forget a rule? (Kids will be more accepting of the given consequences if they helped identify what they should be.)

Resilient children believe that mistakes are experiences to learn from rather than be defeated by. "The fear of mistakes is one of the greatest impediments to learning," Brooks said. "Kids would rather seem violent or isolate themselves from others than look stupid." The best way to deal with the fear of mistakes in children is to openly discuss the issue. For example, a teacher

acknowledging in front of the class on the first day of school that he or she will make mistakes can go a long way in minimizing students' fear of making them.

Brooks also discussed how stress affects the way we see the world. A person who is less stressed sees the world differently than someone who is under constant stress. Brooks identified three characteristics necessary for developing "stress hardiness:"

- Commitment—People need to consider "what brings purpose to my life?" Brooks says people never forget why they do what they do.
- Challenge—Stresshardy people see life as a challenge to master rather than a stress to avoid.
- Control (personal)-People are more stressed when they focus on things over which they have little or no control. Instead, try to focus on what one does have control over, such as attitude and behavior.

## Part Two: The Science Behind AD/HD

CHADD also was honored with an exceptional presentation by three of the leading scientists in mental health research in the country: Thomas Insel, M.D., director of the National Institute of Mental Health; former CHADD Professional Advisory Board member and renowned researcher F. Xavier Castellanos, M.D.; and Nora Volkow, M.D., director of the National Institute of Drug Abuse.

Insel launched the discussion with key insights about the current state of the



research on the genetics of AD/HDparticularly the human genome. For example, studies of identical twins and adoption cases have shown that AD/HD is genetic and that the heritability rate (a measure of how much a trait is inherited) of AD/HD is close to that of height.

Since the sequencing of the human genome was completed in April 2003, "we have seen the beginning of a revolution in biomedical research," Insel said. Genome scan studies have identified several areas on the genome that may be linked to AD/HD.

Insel also added that children with AD/HD respond to psychostimulants that are associated with the release of dopamine (a chemical that transmits signals in the brain) and that scientists have, therefore, focused on the numerous genes associated with dopamine function. Researchers have found some differences in the genes of people with AD/HD that are associated with dopamine function and are looking into whether these differences can help predict response to treatment.

"In the field of genomic research, nothing is quite as exciting as this research because the results have been consistent," Insel said. It is quite clear that a single gene does not cause this disorder. A number of genes contribute to a person's response to environmental risk factors—which are unknown at this time—and thus the likelihood that the person will develop AD/HD. However, the contribution of environmental factors does not even begin to come close to measuring up to the contribution of genes to the development of the disorder, according to Insel.

Recent advances in brain imaging and other techniques have allowed scientists to examine brain activity of people with AD/HD and the correlations with behavior. Using functional magnetic resonance imaging (a technique for determining which parts of the brain are activated by different types of physical sensation or activity), continued on page 30



Next year's Conference Chair Anne Teeter Ellison presents the Hall of Fame Award to Mark Wolraich.

# **CHADD 2003 AWARD WINNERS**

Each year, CHADD presents a number of awards at its Annual Conference to recognize the efforts and contributions that CHADD volunteers and other individuals have made in furthering research on AD/HD, improving the lives of those with the disorder and promoting education about AD/HD.

**CHADD Hall of Fame Award** 

Michael Gordon, Ph.D. Ellen Kingsley Mark Wolraich, M.D.

**CHADD Legislative Award** 

The Late Senator Paul Wellstone (Minnesota)

CHADD Public Policy Award JoLeta Reynolds, Ed.S., Ed.D.

**CHADD Volunteer Leadership Award** 

Catherine Adams, Northern Virginia Chapter Lea Burnside, West Virginia Chapter **CHADD Innovative Program** of the Year Award

The Summer Treatment Program, William Pelham, Ph.D. (Buffalo, NY)

**CHADD Student Research Award** 

Eduardo Cumba-Avilés, M.A., University of Puerto Rico

CHADD Student Research Award— Honorable Mention

Susan Hayut, M.Ed., McGill University, Montreal, Quebec, Canada



CHADD President Mary Durheim and Past President Matt Cohen present the 2003 Public Policy Award to JoLeta Reynolds (center) for her dedication to improving special education.

researchers have found that children with AD/HD have a significant decrease in brain activity in the inferior frontal regions and the anterior cingulate, compared to children without AD/HD.

Children who had been treated with stimulant medication for at least one year but had been off medication for several weeks prior to the study showed recovery and

normalization of brain activity in the inferior frontal region but not the anterior cingulate, suggesting that stimulant treatment results in partial recovery of function even when the children are off medication. Brain activation in the anterior cingulate is present, however, when children are taking medication.



Insel said that it is clear that stimulants activate the very brain areas that need to be activated for controlling attention and inhibiting behavior.

# Brain Size of Children with AD/HD

From there, Castellanos presented similar data from a landmark study on which he was lead investigator that

followed children both with and without AD/HD and in which brain scans were obtained as the children grew. The study found that the brain as a whole and the cerebellum in particular were smaller in the children with AD/HD who had never taken medication. According to Castellanos, these developmental anomalies are associated with

Left, Thomas Insel discussed the current state of the research on the genetics of AD/HD. Right, Nora Volkow presented her research on the therapeutic effects and nonaddictive nature of stimulant medication. Far right, F. Xavier Castellanos discussed his study in which brain scans were taken of children with AD/HD.

AD/HD, not with stimulant treatment. Interestingly, although the AD/HD brain was smaller, it followed a normal growth curve indicating a normal growth process with a smaller base.

Children with AD/HD, both medicated and unmedicated, had less total gray matter (brain tissue containing nerve cells and blood vessels) than children without AD/HD. Total white matter (brain tissue responsible for carrying information between nerve cells) was much less in unmedicated children with AD/HD. Medicated children with AD/HD had the same volume of white matter as



children without AD/HD. "It is possible that stimulant medication is enhancing the maturation process and increasing white matter," Castellanos said.

Castellanos is now looking at adults in their 40s, who were hyperactive as children and started treatment almost 30 years ago. His team is investigating whether these adults still have AD/HD, how their lives have evolved, what their brains look like and whether there is a difference relative to when each person started receiving treatment. "We're just around the corner from an amazing torrent of knowledge that's going to completely transform how we think of AD/HD," he said.

#### **Annual Conference Recap**

# Stimulants: The Path to Treatment, Not Addiction

Concluding the plenary, Volkow, an internationally recognized leader in drug addiction research, presented her findings on the therapeutic effects and nonaddictive nature of the stimulant medication, methylphenidate (MPH). Stimulant medication is an integral part of multimodal treatment.

Volkow's interest in MPH stems from her extensive research into the mechanisms

underlying the reinforcing, addictive and toxic properties of drugs of abuse, such as cocaine. Cocaine is one of the most widely abused drugs because it goes into the brain rapidly and leaves the brain rapidly, especially when it is injected or snorted. This means dopamine levels increase and decrease rapidly, leading the user to want more cocaine.

While MPH is very similar pharmacologically to cocaine, it is rarely abused in the clinical setting. First, it is taken in relatively low doses. Second, oral MPH enters the brain slowly and does not produce fast changes in dopamine levels that are associated with feeling high—thus it does not produce the desire for more MPH. The desire to want more of a drug is a hallmark of addiction.

Volkow's research also touches on MPH's

therapeutic effects. Increases in dopamine levels that are associated with MPH produce two therapeutic changes: an increase in the signal-to-noise ratio in the brain and an increase in the saliency (significance) of a task to an individual, making the task more interesting and thus improving attention.

According to Volkow, random firing of nerve cells in





BBC Reporter Sarah Sturdey and British Police Officer Phillip Anderton interview a CHADD conference attendee.

the brain is normal. It allows the brain cells to react more quickly when there is an actual stimulus. However, if there is too much random firing, real signals can get lost in the noise. Increases in dopamine, like those associated with oral MPH,

## **Annual Conference Recap**

enhance task-specific signaling in the brain and decrease random firing and background noise.

Volkow stated that dopamine also signals to the brain when something is salient and requires attention, such as things that are pleasurable, aversive, novel or unexpected. All of these events increase dopamine. The increase in dopamine drives a person's motivation to respond to these particular stimuli.

### **Part Three:** AD/HD and Addiction

As many as two-thirds of people with AD/HD have a co-existing condition. Wendy Richardson, M.A., a marriage and family therapist for 30 years, closed the conference by discussing one of the most damaging co-existing conditions: addiction.

According to Richardson, addiction happens when a person uses a substance or behavior to the point where it affects work,

school, relationships with other people, health, issues with the law, self-esteem and finances. Also, the person cannot stop in spite of the consequences. An estimated 30–50 percent of people with drug and alcohol dependence or other addiction also have co-occurring conditions, according to Richardson, who has spent more than a decade focusing on AD/HD and addiction. "When you hear AD/HD, you want to look for substance abuse and when you hear substance abuse, you want to look for AD/HD," she said, "because chances are that half the time you'll find the other."

Having spent a fair amount of time working with the prison population, Richardson is very familiar with the fact that co-existing AD/HD and addiction that is not treated can lead to incarceration. Many of the prisoners she meets are people with untreated AD/HD who are in prison for repeat offenses to support their drug habits, such as petty theft, prostitution and welfare fraud. According to Richardson, people with



Wendy Richardson presented the closing plenary on addiction as a co-existing condition.

AD/HD are not good criminals; they get caught because they're impulsive and can't pay attention.

Richardson emphasized the need to

educate individuals recovering from alcohol and drug addictions about the neurobiology of AD/HD and the utility of medication, including stimulant medication, in treating AD/HD. While people who have abused stimulants may have problems with stimulant treatment in recovery and may do better with a nonstimulant, someone with a history of drug addiction should not be ruled out as a candidate for stimulant treatment. In Richardson's experience, recovering addicts suspected of having AD/HD are often prescribed an antidepressant or anti-anxiety medication. When the person does not respond to the treatment, it is assumed that the person did not have AD/HD in the first place. Nonstimulant medications are important treatment options, "but if they're not working, let's not make them the only medication," Richardson said.

Richardson used images and metaphors from both her professional and personal

life to advocate for a social movement on behalf of those with AD/HD and addiction. "AD/HD with substance abuse is too big for any one discipline. We have to all work together," she said. She concluded her presentation by urging attendees to take the information home and continue being the bridge between science and practice.

For many, the 15<sup>th</sup> Annual CHADD International Conference provided an excellent opportunity to obtain best evidence-based practices to take back to their communities. The research symposia and networking and plenary sessions covered valuable information for clinicians, researchers and individuals with AD/HD and their families. Next year's conference is scheduled for October 27–30 in Nashville, Tenn. The deadline for abstracts is June 2, 2004. For more information, visit www.chadd.org.

Winnie Anne Imperio is CHADD's communications associate.



CHADD's **16th** Annual International Conference on AD/HD

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