

SOUTHWESTERN NEWS

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RESEARCHERS STUDY HOW CHILDHOOD BRAIN INJURIES AFFECT PROBLEM-SOLVING ABILITIES

DALLAS — June 19, 1997 — Researchers at UT Southwestern Medical Center at Dallas are analyzing the everyday behavior of area school children to understand how brain injury or dysfunction affects problem-solving abilities.

Dr. Cheryl Silver, assistant professor of rehabilitation science at Southwestern Allied Health Sciences School, is overseeing the project centering on executive functioning in children and adolescents. By executive functioning, researchers are referring to a person's ability to recognize a problem in daily life and solve it by thinking carefully, not acting on impulse. Executive-functioning difficulties in adults are associated with frontal-lobe brain damage, frequently the result of a car accident or a fall.

Considerable research has been conducted regarding the effect that brain injuries have on the executive-functioning abilities of adults, Silver said, but relatively little attention has been paid to children who have undergone similar head trauma. In adults, the irregularities may be easier to spot and the cause easier to identify, she said.

Some signs of executive dysfunction in children may be inappropriate or rude behavior on the playground, or acting without thinking, Silver said. Measuring executive function in children has been difficult in the past because no standard has existed by which to compare children's behavior.

UT Southwestern researchers now are attempting to analyze information gathered from parents to determine what kind of behavior is average and what is abnormal. Silver is requesting input from parents with children who have experienced traumatic brain injuries. She said she would like to hear from parents willing to discuss their child's condition and interested in assisting with comparative behavioral testing.

Silver also has asked several area schools to circulate a questionnaire to parents concerning their children's conduct and demeanor. They are asked how their children behave

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in certain situations and how quickly they adapt to challenges.

"We're interested in figuring out what behaviors in daily life would indicate potential trouble," she said.

Silver believes that if executive dysfunction can be better identified in children, then parents and teachers can take steps to prevent later learning or behavioral problems. Structure is important, so a teacher may help students with poor executive-functioning skills by encouraging them to write out and follow a precise daily schedule. And parents may prevent their children from misplacing their homework by teaching them to put notebooks in the same place each night.

Parents and teachers may not always know if brain damage has occurred. A child may have fallen off a bike and hit his head, but the parents don't remember the injury as severe and don't realize that brain damage may have occurred. Therefore, it is sometimes hard to know whether a link exists between a child's executive-functioning irregularities and possible unreported brain injury. One study indicated that 185 children out of 100,000 need hospital care for a head injury.

Silver also conducts neuropsychological testing of certain children. In one exercise, children are asked to sort cards without being told how. They are expected to recognize a pattern and group the cards accordingly.

Difficulties with executive functioning may not be as obvious as other disabilities, such as memory loss, after brain injury. But children and adults eventually may run into difficulty in classes, on the job or in social settings because they are unable to regulate their reactions and control their anger or to organize tasks.

Children with executive-functioning difficulties may have trouble in school when, for instance, they fail to allow enough time to get from one class to another. They may stand in the hallway visiting with friends without recognizing that they should be spending that time hurrying to their lockers. They also may consistently have trouble keeping track of deadlines for school assignments.

One of the key factors in executive functioning involves an individual's ability to benefit from mistakes, to learn and not make the same mistake again, or to figure out

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different approaches to overcoming an obstacle. For example, an adult may be preparing to drive to work along his usual route, but he hears on the radio that an accident has caused a traffic jam. A person with appropriate executive function probably would figure out a different road to take to work, adapting to an unexpected situation by settling on a sensible action. But a person without the necessary functioning skills might not be able to decide how to react, take the same route as always and get in trouble for being late to work.

Parents with children who have experienced traumatic brain injuries may get more information about Silver's project by calling (214) 648-1740.

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