

## IS EXCESSIVE TELEVISION VIEWING IN CHILDREN LINKED TO ADHD?

Watching too much television has been implicated in increased violent behavior and obesity in young children, and now there is evidence that it may promote inattention. Researchers have found that television exposure in children ages 1 to 3 is associated with attention problems at age 7. Furthermore, the investigators concluded that each hour of television watched per day increases these children's risk of attention problems, such as attention-deficit/hyperactivity disorder (ADHD), by almost 10% at age 7.

Based on these findings, lead investigator Carolyn A. McCarty, PhD, and colleagues advised that efforts to limit television viewing in early childhood may be warranted. "Using a nationally representative survey sample, we found a significant association between the amount of television watched between ages 1 and 3 and subsequent attentional problems at age 7," Dr. McCarty told *NEUROPSYCHIATRY REVIEWS*. "These results held when controlling for other factors that might explain this association, such as the amount of cognitive stimulation in the home." Dr. McCarty is a Research Assistant Professor of Pediatrics and Adjunct Research Assistant Professor of Psychology at the University of Washington in Seattle.

The findings are consistent with the American Academy of Pediatrics' recommendation that parents not allow their children younger than 2 to watch television because of concerns that it affects early brain growth and the development of social, emotional, and cognitive skills. The American Academy of Pediatrics also encourages parents to exert caution—such as setting limits on television viewing, helping children develop media literacy skills to question, analyze, and evaluate television messages, and taking an active role in their children's television viewing—in children older than 2. Although previous cross-sectional research has suggested that television viewing may be associated with decreased attention spans in children, longitudinal data of early television exposure and subsequent attention problems have been lacking, according to Dr. McCarty and colleagues.

### THE MEDIUM IS THE MESSAGE

The researchers sought to test the hypothesis that early television exposure (at ages 1 and 3) is associated with attention problems at age 7. They used the National Longitudinal Survey of Youth, a representative longitudinal data set, and the main outcome was the hyperactivity subscale of the Behavioral Problems Index determined for all participants at age 7. The main predictor was hours of television watched daily at ages 1 and 3. The study controlled for other attributes of the home environment, including cognitive stimulation and emotional support. Children who were rated as 1.2 or more standard deviations above the mean were classified as having attention problems.

"Attention problems include impulsivity, restlessness, and difficulty concentrating," explained Dr. McCarty. "We did not use a diagnostic test to assess whether the children had clinically evident ADHD but instead looked at the degree of attention problems their parents reported they had."

Data were available for 1,278 children at age 1 and for 1,345 children at age 3. Children ages 1

to 3 were chosen to participate because their brains are still developing rapidly, and symptoms of attention problems, such as ADHD, do not typically manifest in children until later years, noted Dr. McCarty. The investigators found that children watched an average of 2.2 hours of television per day at age 1 and 3.6 hours per day at age 3. Ten percent of children subsequently developed attention problems at age 7. In a logistic regression model, hours of television viewed per day at both ages 1 and 3 was associated with attention problems at age 7.

#### TIME TO TURN OFF THE TELEVISION?

“Our results have some important implications if replicated in future studies,” the researchers summarized in the April issue of *Pediatrics*. “First, we added inattention to the previously studied deleterious consequences of excessive television viewing, including violent behavior and obesity. Second, our findings suggest that preventive action can be taken with respect to attentional problems in children. Limiting young children’s exposure to television as a medium during formative years of brain development consistent with the American Academy of Pediatrics’ recommendations may reduce children’s subsequent risk of developing ADHD.”

#### ET TU, MISTER ROGERS?

Dr. McCarty’s team did not distinguish among different types of content of television programs in their study. “This study was designed to look at the impact of television as a medium rather than the content of programming,” Dr. McCarty pointed out. “It suggests that excessive viewing of television during early development is related to later attentional problems. However, we cannot infer causality based on the design of the study, nor can we surmise what kind of impact television viewing has on individuals later in development. Other research has certainly shown that some educational programs, such as ‘Sesame Street’ and ‘Mister Rogers’ Neighborhood,’ may be beneficial to the cognitive and creative development of school-aged children. However, no previous studies have looked at television viewing during the infant and toddler years, as we have. Clearly, our study has highlighted the need for more research to better understand the impact of media exposure on child development.”

#### AN “IMPORTANT” STUDY

In an editorial appearing in the same issue of *Pediatrics*, Jane M. Healy, PhD, called the study “important and long overdue. Approximately three decades ago, teachers of young children at all socioeconomic levels began to report troubling changes in their students, mainly centering on decreasing abilities to listen, pay attention, and engage in independent problem solving,” she reported. “Frequently, the teachers blamed the advent of fast-paced, attention-getting children’s programming for this trend. Now that the trend is viewed nationally as an ‘epidemic’ of ADHD, perhaps it is indeed time to ask the research questions so ably initiated by Christakis et al and to consider that pediatricians may have yet one more job to do in early parent education about placing limits on screen time.”

—Colby Stong