Artificial Food Dyes and ADHD

By Ruth Hughes, PhD

WHILE THE NEWS MEDIA recently focused many stories on food dyes and ADHD, there has been concern about synthetic food dyes and ADHD (think Feingold diet) for more than thirty years, and a fair amount of research has been done to investigate this connection. The conclusion of the scientific community has been that artificial food dyes are not a major factor in ADHD. But a small subset of people diagnosed with ADHD who also have food hypersensitivities may see symptom improvement when the food dyes or the offending foods are eliminated.

The U.S. Food and Drug Administration convened a meeting on March 30-31, 2011, to examine the scientific evidence and make recommendations in response to a petition from the Center for Science in the Public Interest, a food advocacy group opposed to the use of artificial food dyes in the food supply chain. One of the major questions before the FDA's Food Advisory Committee was the effect of food dyes on all children, not just those with ADHD. This is the distinction many journalists missed in reporting on the meeting. I listened to the presentations by a number of scientists, including Gene Arnold, MD (CHADD's representative). I want to share the discussion and conclusions of the FDA committee with all CHADD members.

Results mixed and confusing

The body of research to date, which has confusing and mixed results, suggests there may be a low-level, short-term effect on behavior for children in general. But both the severity and the chronicity of the symptoms of inattention, hyperactivity, and impulsivity needed for a diagnosis of ADHD are of a much higher magnitude than demonstrated in these studies. In addition, food dyes may lead to some mild increase in the level of symptoms for children who are diagnosed with ADHD.

An important change that led to the FDA hearing was a study published in 2007 in the British journal *The Lancet* looking at the effect of two mixtures of food dyes on children who were not diagnosed with ADHD. The investigators, from the University of Southampton (UK), found a small increase in activity levels and inattention by parent report. The changes were short-term in nature and would not lead to a diagnosis of ADHD. When increases in hyperactivity are reported in the media, they are referring to the activity changes reported in this study and not the symptoms of ADHD.

The Southampton study did raise many questions about the safety of food dyes on all children. As a result the European Union made the policy decision to add a label to foods containing artificial food dyes, warning that this food "may have an adverse effect on activity and attention in children." Although many food manufacturers in Britain and throughout Europe eliminated artificial food dyes rather than add the warning labels, the United Kingdom did not ban the use of these dyes, as some media have incorrectly reported.

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FOR MORE INFO

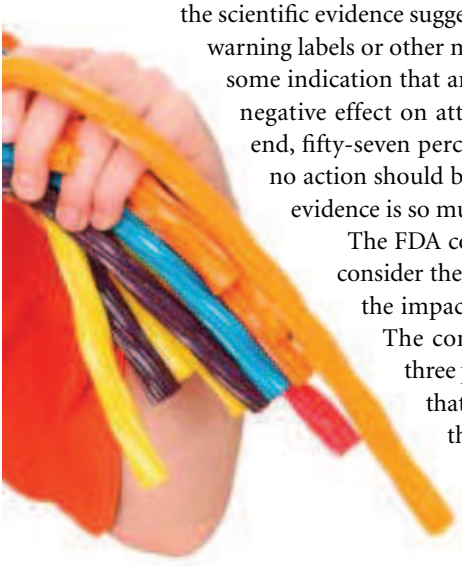
Visit Attention 2.0 at **chadd.org**, or the CHADD Leadership Blog at **chaddleadershipblog.blogspot.com**, for links to more information on the FDA hearing, the Southampton study, artificial food dyes, alternative treatments, and elimination diets.

Visit **help4adhd.org** to link to the NRC's What We Know #6 (WWK6), Complementary and Alternative Treatments for ADHD.

No action, more research recommended

At the end of the two-day meeting, the FDA's Food Advisory Committee voted to take no action on our current use of food dyes. Concern was expressed that there are many unresolved questions about the studies done to date and many design concerns. For instance, the Southampton study included a preservative in both mixes in addition to the dyes, and this could account for the results. The behavior changes were only noticed by parents and not consistently picked up by teachers, clinicians, or performance scores on an objective test of attention. The Food Advisory Committee concluded, by a vote of seventy-nine percent of its members, that the research to date is inadequate to conclude that food dyes have an adverse effect on children's behavior.

Concern was also expressed about the public health impact of waiting for better-designed studies and a larger body of research. Given the finding in some studies that both attention and activity levels in children are affected by artificial food dyes, should the FDA be more proactive than the scientific evidence suggests? There was much discussion about warning labels or other methods to inform parents that there is some indication that artificial food dyes might have a mildly negative effect on attention and activity levels. But in the end, fifty-seven percent of the committee members voted no action should be recommended because the scientific evidence is so muddled.



The FDA committee members were also asked to consider the prevailing guidance on food dyes and the impact on children diagnosed with ADHD. The committee voted no change by ninety-three percent, and was clear in the discussion that no new evidence had been presented that indicated any consistent connection between food dyes and ADHD. Current clinical guidance suggests that elimination of food dyes should not

be considered a mainstream intervention, but should be considered if there is a history of food sensitivities or if parents notice a behavior change after ingesting certain foods. And the FDA committee members agreed, by a vote of ninety-three percent, that more studies are needed to clarify these issues.

So what is the takeaway message for families coping with ADHD?

- A small number of kids who appear to be hypersensitive to foods and who are diagnosed with ADHD may respond well to a diet eliminating food dyes or other irritating foods.
- If your child's behavior or inattention gets worse after eating foods with artificial food dyes, then consider avoiding them. This will probably not make the symptoms of ADHD disappear, but it may reduce the severity.
- A healthy diet is important for all children, but especially for children with ADHD.

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- If there does not seem to be an effect from eliminating foods with dyes and/or if avoiding food dyes is too expensive, too difficult, or creates too much tension in your relationship with your child, then this may not be a change that is important in your child's overall treatment
- About eighty percent of all ADHD appears to be related to genetics. It is inherited. Other things happening in the environment may make the symptoms worse (no treatment, family stress, poor diet) and other factors may help to reduce the symptoms (good parenting, multimodal treatment, healthy diet). Our job as parents is to provide the best treatment and most supportive environment for our children that we reasonably can.
- If you are an adult with ADHD, there is no research available on the effect of food dyes in adults. Your best bet is to assume the effects may be similar, though we are not clear on what those effects are.

CHADD's job is to make sure you have the best information available so that you can make informed decisions about treatment and management of ADHD.

Reference for the Southampton study:
McCann D, Barrett A, Cooper A, Crumpler D, Dalen L, Grimshaw K, Kitchin E, Lok K, Porteous L, Prince E, Sonuga-Barke E, Warner JO, Stevenson J. (2007). Food additives and hyperactive behavior in 3-year-old and 8/9-year-old children in the community: a randomized, double-blinded, placebo-controlled trial. Lancet, 370*(9598):1560-7.*