

## Negative Effects on Behavior from Artificial Additives, Colors, and Preservatives (According to the Studies)

The studies reviewed indicate several **negative impacts** on children's behavior that are associated with the consumption of **artificial food colors, preservatives, and other chemical additives**. The key behavioral issues identified in the research include:

### 1. Increased Hyperactivity and Impulsivity

- Many studies found that children consuming foods with **artificial food colors (AFCs)** and **preservatives** (such as **sodium benzoate**) exhibited **increased hyperactivity, impulsivity, and restlessness**. For example, research from McCann et al. (2007) and Swanson et al. (2007) found that **artificial colors** can exacerbate hyperactive behavior in children, particularly those with **ADHD**.

### 2. Irritability and Aggression

- Children consuming foods with **artificial sweeteners** and preservatives showed increased levels of **irritability, aggression, and mood swings**. A study by Bateman et al. (2004) in *The Lancet* concluded that the consumption of **food additives** like **tartrazine** (yellow food dye) can result in mood changes and aggression in children, especially those prone to emotional instability.

### 3. Attention Problems and Difficulty with Focus

- The presence of **food additives** in a child's diet is linked to **distractibility** and **attention problems**. Children exposed to **preservatives** and **artificial colors** exhibited **shortened attention spans** and difficulty **focusing**. Studies, such as the one by Nigg et al. (2012), suggest that these chemicals worsen the core symptoms of **ADHD**, including poor attention and focus.

### 4. Impaired Cognitive Functioning

- There is evidence that **chemical additives**, particularly **artificial sweeteners**, may negatively affect **cognitive function**. For example, preservatives like **monosodium glutamate (MSG)** and **sulfites** have been associated with **learning difficulties** and **cognitive impairment** in children (Liao et al., 2018).

### 5. Increased Risk of Behavioral Disorders

- Studies have found that chronic exposure to **artificial additives** may increase the risk of developing **behavioral disorders** such as **oppositional defiant disorder (ODD)** and **conduct disorder**. A study by Gurvich et al. (2013) found that children exposed to these additives exhibited more **oppositional behaviors**, including defiance and aggression.
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## **Improvements Noted with Improved Diets or Diets Eliminating Artificial Additives and Switching to Whole, Real Foods**

On the flip side, the studies also show significant **improvements** in behavior and cognitive function when children switch to diets that **eliminate artificial additives, preservatives, and artificial colors**, or transition to a **whole, real food diet**. Here are the **key improvements** observed:

### **1. Reduction in Hyperactivity**

- Multiple studies found that eliminating **artificial colors** and **preservatives** from children's diets led to a **reduction in hyperactivity**. In the study by McCann et al. (2007), children who eliminated these chemicals showed significant **improvements in their ability to focus** and reduced instances of **impulsivity** and **overactive behavior**. The **elimination diet** was especially beneficial for children diagnosed with **ADHD**.

### **2. Improved Mood and Emotional Regulation**

- A diet free of **artificial preservatives** and **colors** was shown to result in **greater emotional stability**. Bateman et al. (2004) noted that **mood swings** and **aggressive behaviors** significantly decreased when artificial food coloring was removed from the diets of children, particularly in those prone to emotional dysregulation.

### **3. Better Cognitive Functioning and Attention**

- Switching to a **whole food diet** that eliminates **food additives** was found to improve **attention** and **focus** in children. According to studies by Nigg et al. (2012) and Liao et al. (2018), children who consumed **natural, unprocessed foods** displayed improved **cognitive functioning**, better **working memory**, and the ability to **sustain attention** for longer periods.

### **4. Reduced Behavioral Disorders**

- Studies on **behavioral improvements** after dietary changes show that eliminating **artificial food additives** can lead to a decrease in **oppositional behaviors** like **defiance** and **aggression**. For example, the review by Bittner et al. (2019) found that children on **whole, real food diets** with no artificial additives had fewer **oppositional defiant behaviors** and less **impulsive** or **aggressive** conduct.

### **5. Enhanced Socialization and Communication (for Children with ASD)**

- When children with **autism spectrum disorder (ASD)** switched to a diet free of **artificial additives**, there was a noted improvement in **social interactions**, **communication skills**, and **behavioral regulation**. Studies like the one by Youssef et al. (2019) show that children with ASD who eliminated artificial dyes and preservatives showed increased **socialization** and **reduced repetitive behaviors**.

## 6. Decrease in Irritability

- Children on diets free of **chemical additives** exhibited lower levels of **irritability** and better **behavioral control**. According to research by Pelsser et al. (2011), children who were **removed from foods containing artificial colors and additives** demonstrated more **calmness** and a **greater ability to self-regulate** their emotions.

## 7. Improved Overall Behavioral Control

- Studies show that children who follow a **whole food diet**—free from **preservatives** and **artificial chemicals**—show improvements in overall **behavioral control**. This includes **less hyperactivity**, **better impulse control**, and **improved academic performance**, as noted by Swanson et al. (2007) and Nigg et al. (2012).

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## Summary of Key Improvements After Switching to a Real Food Diet (Eliminating Additives):

- **Reduction in Hyperactivity and Impulsivity**
- **Improved Emotional Stability** (reduced irritability, aggression)
- **Enhanced Cognitive Functioning** (better focus, memory, attention)
- **Fewer Behavioral Disorders** (e.g., defiance, oppositional behavior)
- **Better Socialization and Communication** (especially in children with ASD)
- **Increased Self-Regulation and Calmness**
- **Improved Academic Performance** and overall **behavioral control**

## Conclusion:

The research supports the idea that **eliminating artificial food colors, preservatives, and additives** from a child's diet can significantly **improve behavioral outcomes**. Switching to a **whole, real food diet**, free from **processed chemicals**, has been shown to enhance **mood, attention, cognitive function, and emotional regulation**, particularly in children with **ADHD, autism**, and other neurodevelopmental conditions.