

1. Genetic Differences in Nutrient Metabolism

MTHFR Gene Mutation

- Some children with ADHD have a mutation in the **MTHFR (methylenetetrahydrofolate reductase) gene**, which affects how the body processes **folate (vitamin B9)** and converts it into its active form.
- This can lead to **low dopamine production**, which is crucial for focus and impulse control.
- It can also impact **methylation**, a process needed for brain function and neurotransmitter balance.

COMT & MAO-A Genes

- These genes affect how the body breaks down **dopamine and norepinephrine**, key neurotransmitters for focus and emotional regulation.
 - If these processes are slower or inefficient, it may contribute to ADHD symptoms and difficulty utilizing certain nutrients.
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2. Gut Health & Absorption Issues

Leaky Gut & Dysbiosis

- Many ADHD children have **gut imbalances (dysbiosis)**, meaning harmful bacteria outnumber beneficial bacteria. This can interfere with the absorption of **iron, zinc, magnesium, and omega-3s**—all crucial for brain function.
- **Leaky gut syndrome** (increased intestinal permeability) can also cause nutrient malabsorption, meaning even a healthy diet may not provide adequate nutrition.

Food Sensitivities

- Some children with ADHD have undiagnosed **gluten, dairy, or artificial additive sensitivities**, which may trigger inflammation and interfere with nutrient uptake.
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3. High Nutrient Demand for Brain Function

Fast Metabolism & Nutrient Burnout

- ADHD brains tend to have a **higher metabolic demand** for nutrients like **magnesium, zinc, iron, and B vitamins**.
- Since these children are constantly in a state of **high energy and movement**, they **burn through nutrients faster** than neurotypical children.

Deficiency-Driven ADHD Symptoms

- **Iron Deficiency** → Low dopamine levels, leading to inattention and impulsivity.
- **Zinc & Magnesium Deficiency** → Increased hyperactivity and poor emotional regulation.
- **Omega-3 Deficiency** → Poor memory, low focus, and increased anxiety.

4. Blood Sugar Imbalances & Poor Diet

High-Sugar & Processed Diets

- Diets high in **refined sugar, artificial dyes, and processed foods** can cause **blood sugar spikes and crashes**, leading to **poor focus and mood swings**.
- **Excess sugar competes with key minerals (like magnesium) for absorption**, leading to deficiencies.

Low Fiber & Protein Intake

- Many ADHD children **skip breakfast or eat high-carb meals**, leading to nutrient imbalances and unstable blood sugar.
- **Protein and fiber help slow digestion** and provide steady energy, which can improve focus and behavior.

How to Improve Nutrient Absorption in ADHD Children

- ✓ **Support Gut Health** – Add probiotics (kefir, yogurt, sauerkraut) to improve nutrient absorption.
- ✓ **Use Active Vitamin Forms** – For kids with MTHFR mutations, **methylated B vitamins (methylfolate, methylcobalamin)** work better than standard forms.
- ✓ **Balance Blood Sugar** – Focus on **protein, healthy fats, and complex carbs** to avoid sugar crashes.
- ✓ **Choose Whole Foods** – Nutrient-dense foods (leafy greens, lean meats, nuts, and seeds) provide bioavailable vitamins and minerals.

✓ **Consider Targeted Supplements** – If deficiencies are present, **high-quality omega-3s, zinc, iron, and magnesium** may help.

Would you like recommendations for ADHD-friendly vitamin brands or meal plans? 😊