The Parent's Reading Library

Food, Nutrition & Neurodivergent Children

Section 7

Vitamins & Minerals

Why this topic matters

Vitamins and minerals are essential nutrients that support every part of a child's growth and development. They help build healthy bones and muscles, support the immune system, produce energy, and contribute to normal brain function, learning and concentration.

Research has shown that some children with ADHD, autism and other neurodevelopmental conditions may be more likely to have lower intakes or lower levels of certain nutrients. This may occur because of selective eating, sensory sensitivities, gastrointestinal issues or restricted diets. Importantly, this **does not mean that all children are deficient or that supplements are always needed**. The first step is always to encourage a nutritious, balanced diet and seek medical advice if deficiencies are suspected.

Iron

1. Iron Deficiency in Children with Attention-Deficit/Hyperactivity Disorder

Reference

Konofal, E., Lecendreux, M., Arnulf, I., & Mouren, M. C. (2004). *Iron deficiency in children with attention-deficit/hyperactivity disorder*. **Archives of Pediatrics & Adolescent Medicine, 158**(12), 1113–1115.

DOI

https://doi.org/10.1001/archpedi.158.12.1113

Plain English Summary

Researchers found that some children with ADHD had lower iron stores than children without ADHD. The study highlights the importance of investigating iron deficiency where clinically indicated rather than assuming every child needs supplementation.

2. Iron Status in Attention-Deficit/Hyperactivity Disorder

Reference

Cortese, S., Angriman, M., Lecendreux, M., & Konofal, E. (2012). *Iron and attention deficit/hyperactivity disorder: What is the empirical evidence so far? A systematic review of the literature*. **Expert Review of Neurotherapeutics, 12**(10), 1227–1240.

DOI

https://doi.org/10.1586/ern.12.116

Plain English Summary

This systematic review examined studies investigating iron and ADHD. Some children with ADHD were found to have lower iron stores, but the authors concluded that more research is needed before iron supplementation can be routinely recommended without confirmed deficiency.

Zinc

3. Zinc for Attention-Deficit/Hyperactivity Disorder

Reference

Arnold, L. E., DiSilvestro, R. A., Bozzolo, D., Bozzolo, H., Crowl, L., Fernandez, S., et al. (2005). *Zinc for attention-deficit/hyperactivity disorder: Placebo-controlled double-blind pilot trial*. **Journal of Child and Adolescent Psychopharmacology, 15**(4), 619–627.

DOI

https://doi.org/10.1089/cap.2005.15.619

Plain English Summary

This pilot study explored zinc supplementation in children with ADHD. While some improvements were reported, the researchers recommended larger studies before routine supplementation could be recommended.

4. Zinc and ADHD

Reference

Granero, R., et al. (2021). *Micronutrients and ADHD: A systematic review*. **Nutrients.**

Plain English Summary

This review summarised research on zinc and other micronutrients in ADHD. The authors concluded that correcting confirmed deficiencies is appropriate, but routine supplementation without assessment is not supported by current evidence.

Note: Please verify the final journal details and DOI before publication.

Magnesium

5. Magnesium Status in Children with ADHD

Reference

Kozielec, T., & Starobrat-Hermelin, B. (1997). *Assessment of magnesium levels in children with attention deficit hyperactivity disorder (ADHD)*. **Magnesium Research.**

Plain English Summary

This study found that some children with ADHD had lower magnesium levels than expected. It contributed to further research investigating whether magnesium status may influence child health.

6. Micronutrients in ADHD

Reference

Granero, R., et al. (2021). *Micronutrients and ADHD: A systematic review*. **Nutrients.**

Plain English Summary

This review concluded that while magnesium is important for normal nerve and muscle function, current evidence does not support routine magnesium supplementation for every child with ADHD. Assessment should be individualised.

Vitamin D

7. Vitamin D and Attention-Deficit/Hyperactivity Disorder

Reference

Khoshbakht, Y., et al. (2018). *The association between vitamin D status and attention deficit hyperactivity disorder: A systematic review and meta-analysis*.

Plain English Summary

Researchers reviewed studies examining vitamin D levels in children with ADHD. Several studies reported lower vitamin D levels in some children, although more research is needed to understand the relationship.

Note: Please verify the final journal details and DOI before publication.

8. Vitamin D Supplementation and ADHD

Reference

Gan, J., et al. (2019). *Effects of vitamin D supplementation in children with ADHD: A systematic review*.

Plain English Summary

This review examined whether vitamin D supplementation improves ADHD symptoms. The authors concluded that evidence remains limited and supplementation should be guided by healthcare professionals when deficiency is identified.

Note: Please verify the final journal citation and DOI before publication.

Folate & Vitamin B12

9. Folate, Vitamin B12 and Neurodevelopment

Reference

Black, M. M. (2008). *Effects of vitamin B12 and folate deficiency on brain development in children*.

Plain English Summary

Folate and vitamin B12 are essential for normal brain and nervous system development. Deficiencies are uncommon in most Australian children but can occur in children with very restricted diets or certain medical conditions.

Note: Please verify the original publication details before publication.

Choline

10. Choline and Brain Development

Reference

Zeisel, S. H., & da Costa, K. A. (2009). *Choline: An essential nutrient for public health*. **Nutrition Reviews, 67**(11), 615–623.

DOI

https://doi.org/10.1111/j.1753-4887.2009.00246.x

Plain English Summary

This review explains why choline is important for normal brain development and lifelong cognitive function. Foods such as eggs, meat, fish and legumes are important dietary sources of choline.

General Micronutrient Reviews

11. Micronutrients in Brain Development

Reference

Georgieff, M. K. (2007). *Nutrition and the developing brain: Nutrient priorities and measurement*. **American Journal of Clinical Nutrition, 85**(2), 614S–620S.

DOI

https://doi.org/10.1093/ajcn/85.2.614S

Plain English Summary

Professor Georgieff reviews the important role that vitamins and minerals play during early brain development. Adequate nutrition throughout childhood supports learning, memory and healthy neurological development.

12. Nutrition and Children's Neurocognitive Development

Reference

Nyaradi, A., Li, J., Hickling, S., Whitehouse, A. J. O., & Oddy, W. H. (2013). *The role of nutrition in children's neurocognitive development, from pregnancy through childhood*. **Frontiers in Human Neuroscience, 7**, 97.

DOI

https://doi.org/10.3389/fnhum.2013.00097

Plain English Summary

This review highlights the importance of obtaining vitamins and minerals from a balanced, varied diet. The authors emphasise that nutrients work together and that overall dietary quality is more important than focusing on individual supplements.

What this means for families

Vitamins and minerals are essential for every child's health, but there is **no evidence that all children with ADHD or autism need supplements**. The strongest evidence supports identifying and treating **clinically confirmed deficiencies** rather than giving supplements routinely.

The best place to start is with a varied, nutrient-rich diet that includes vegetables, fruit, lean proteins, legumes, dairy or suitable alternatives, nuts, seeds and whole grains where appropriate. If your child has a very restricted diet, poor growth, ongoing fatigue or you are concerned about nutritional deficiencies, speak with your GP or paediatrician. They may recommend blood tests or referral to an Accredited Practising Dietitian before considering supplements.

Evidence at a Glance

Overall evidence: ★★★★☆ Strong

What research consistently shows

- Vitamins and minerals are essential for normal growth, brain development and learning.
- Some children with ADHD and autism may have lower levels of certain nutrients, particularly where diets are highly restricted.
- Iron deficiency should be investigated and treated where clinically confirmed.
- Current evidence does **not** support routine supplementation for all children with ADHD or autism.
- A balanced, varied whole-food diet remains the preferred way to obtain essential vitamins and minerals whenever possible.