



# **Iron – The Key Nutrient for Brain Development**

Iron deficiency anemia (IDA) can have profound effects on the brain development of infants and children. Here's a summary of how iron deficiency impacts brain development, further highlighting the importance of iron supplementation.

### **Impact of Iron Deficiency Anemia on Brain Development**

## **Cognitive and Behavioral Effects**



Reduced IQ and attention deficits1,2



**Delayed** psychomotor skills1



**Poor academic** performance<sup>1,2</sup>



**Behavioral issues: anxiety** and social withdrawal<sup>1</sup>

#### **Neurodevelopmental Consequences**

Role of Iron

Myelination, neurotransmitter function, and brain growth<sup>3</sup>



**Impact** 

May lead to irreversible changes in brain structure and function<sup>3</sup>

#### **Long-Term Consequences of Iron Deficiency Anemia**



May lead to higher rates of grade repetition\*,2,4,5



May lead to cognitive and emotional challenges<sup>2</sup>



**Difficulty in** concentrating\*,2,4,5

## **Role of Iron Supplementation**

**Prevention and Treatment:** Iron supplementation is effective in preventing and treating IDA, especially in high-risk groups such as infants, young children, and pregnant women. Early intervention is key to mitigating the adverse effects on brain development.6

Improvement in Developmental Outcomes: Supplementation can improve cognitive and motor development, particularly if started early. It helps restore normal iron levels, supporting optimal brain function and growth.7

**Guidelines and Recommendations:** Health organizations recommend routine screening and iron supplementation for at-risk populations to prevent IDA and its associated developmental delays.8,9,10

In summary, addressing iron deficiency through early detection and supplementation is crucial for supporting healthy brain development and preventing long-term cognitive and behavioral issues in children.