



ABSTRACT

## Iron deficiency and its impact to children's cognitive and development

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Children are born to learn, and they develop and learn very quickly in their early years. Brain development milestones in children aged 0-5 years and Iron plays an important role in many neurodevelopmental processes, and animal studies have shown that adequate iron requirements in pregnancy and childhood are critical for a child's brain and neurodevelopment. Early childhood has been associated with permanent cognitive deficits related to CNS structure, metabolic disturbances, growth retardation, impaired immune response, psychological abnormalities, and behavioral delays, including learning skill, performance at school. Iron is necessary for various cellular processes in the growing brain especially in terms of memory and learning. Children in early life show enduring cognitive deficits. Iron plays an important role in encouraging the growth and development of children. Physical health and nutrition are important in the first five years of life. Children who are unable to achieve adequate substance intake are likely to show permanent cognitive decline and impaired motor development. The *Dietary Reference Intakes* (DRI) recommendations include the *Recommended Dietary Allowance* (RDA) for iron, iron requirements are based on iron amounts in the average amount of breastmilk consumed and their mix diet. This refers to the average daily iron intake level that is sufficient to meet the requirements of nearly all healthy individuals at a given life stage. Iron deficiency occurs on a continuum with symptoms including focus, lack of appetite and anger; Unstable growth and delayed development are often not apparent until the deficiency becomes severe. Therefore, it needs professional help.

**Keywords:** iron deficiency, brain and neurodevelopment, children's cognitive

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