

Editorial

Better Nutrition during First 1000 Days of Life: A Golden Opportunity to Improve Childhood Growth and Development

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The first 1000 days of life starting from the antenatal period until the kid's second year of life provides a golden opportunity to have a healthier future generation. It's also a time period which has enormous potential for growth and development but also comes with a huge vulnerability. This is the time during which the child's brain attains most of its growth and the foundations for lifelong health are laid upon. It can lead to obesity, diabetes and other chronic diseases later in life, which can be a harbinger of a lifetime of health problems.¹

During the first 1000 days of life, neurological development happens incredibly quickly. Changes start to take place after conception and last until two years old. Particularly during the early stages of embryonic development, nerve cells multiply at a very fast rate. By the time of birth, this expansion has resulted in a network of billions of nerve cells and trillions of brain circuits. The prefrontal cortex, hippocampus, and sensory systems go through enormous development throughout foetal and early childhood development that cannot happen later in life.²

Nutritional requirements fluctuate as a result of physiological changes during pregnancy. The foundational growth of the baby takes place in the first two to eight weeks of pregnancy, and early embryonic development, organogenesis, and neural development are all influenced by the mother's nutritional state. It's crucial to get a sufficient quantity of all necessary nutrients since during the second and third trimesters, foetal nutrients build up for usage after birth. The development of the foetus depends on nutrients including iron, folic acid, iodine, vitamin D and omega-3-fatty acids and choline as well as carotenoids.³

The most prevalent dietary deficiency in the world is iron deficiency. Anaemia affects 42% of pregnant women and 47% of pre-schoolers worldwide, with iron deficiency accounting for around half of all cases. The fetal/newborn period and infancy/ toddlerhood are the times of highest brain iron demand and, hence, of most prone to iron deficit-related neurobehavioral dysfunction (6 months to 3 years). At these stages of development, the brain needs iron for the formation of proteins that

control the synthesis of myelin, neurotransmitters, and neuronal energy.⁴

The discovery that nutritional deprivation-induced deviations from predicted development early in life can alter mature brain function long after resources have been replenished is one of the most surprising elements of developmental nutritional neuroscience. The window of opportunity closes with age, but young brains are incredibly malleable in their ability to recover from early trauma and, ideally, it's too late to at least partially correct the loss. According to science, it is far preferable to grow the brain properly from the start through nutritional deficit prevention programmes than to rely on replacement therapy once a deficit has already arisen. One of the best ways we can accomplish this is by ensuring that prenatal, infant, and young children receive the correct nutrition.⁵

References

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