

Nutrition in premature infants and their neurodevelopment

Isha Deshmukh

B J Government Medical College, India

Survival of preterm infants has been steadily improving in recent years because of many recent advances in perinatal and neonatal medicine. Despite these advances, the growth of survivors does not reach the ideal target level of the normal fetus of the same gestational age. Postnatal weight gain is often not achieved because extra uterine growth has higher energy requirements than intrauterine growth, due to the intensive care environment, illness and inadequate nutrition. Although many other factors influence infant brain development, including family socioeconomic and educational background, the role of nutrition is considerable and fortunately, amenable to intervention. In the preterm neonate, the brain is the most metabolically demanding organ, consuming the largest proportions of energy and nutrient intake for its function and programmed growth and maturation. Weight gain, linear and head circumference growth are all markers of nutritional status and are independently associated with long-term neurodevelopment. Brain development is not only the result of nutrients intake, but in addition, of the interaction with growth factors which depend on adequate nutrient supply and overall health status. This explains why conditions such as sepsis, necrotizing enterocolitis and chronic lung disease alter the distribution and accretion of

nutrients thereby suppressing growth factor synthesis. In this review, we will focus on the direct role of nutrition on neurodevelopment, emphasizing why it should be started without delay. The nutritional requirements of the preterm infant will be discussed, followed by the effects of general nutritional interventions and specific nutrients, as well as the role of nutritional supplements on neurodevelopment. The primordial role of human breast milk, breast milk fortifiers and human milk oligosaccharides will be discussed in detail. We will also examine the role of nutrition in preventing neonatal complications which can affect neurodevelopment in their own right.

Biography

Isha Deshmukh is employed as Assistant Professor in the Department of Pediatrics and Neonatology, BJGMC, Pune. She has academic interest and various publications in the field of neonatology as well as pediatrics. She has been an orator for many national and international conferences. Bayramjee Jeejabhoy Government Medical College, Pune, Maharashtra, India Acknowledgements: We express our gratitude for all national and international platforms for providing us an opportunity for expressing our thoughts and reviews in the topics of interest.

isha.deshmukh8@gmail.com

Received Date: October 17, 2022; **Accepted Date:** October 19, 2022; **Published Date:** November 30, 2022