

Editorial on Neonatal Nutrition and Maternal factors

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EDITORIAL

Health and development are contingent on sound nutrition during the neonatal period. Needs of all infants include adequate intake of balance diet among proteins, carbohydrates, fats, vitamin, and mineral intake. Preterm infants have similar nutritional requirements but demand more frequent assessment of nutritional health and ongoing adjustment of nutritional intake throughout the neonatal period to ensure appropriate growth and development. Evidence based nursing practice calls for an update on the specific nutritional requirements of infants, special nutritional needs of preterm infants, and the most recent.

Current nursing practice can benefit from an update on the specific nutritional requirements of infants, special nutritional needs of preterm infants, and the most recent changes in the composition of infant formula. This article informs clinicians about the nutritional requirements of the term and preterm infant and how nutritional needs vary with neonatal illness. It outlines the most recent science behind infant formula composition, specifically the role of long-chain polyunsaturated fatty acids in infant nutrition, growth, and development, and offers relevant implications for nursing practice. Infant Nutritional Requirements. Infants receive nutrition orally, enterally, or via parenteral infusion, depending on gestational age and the unique clinical factors associated with each infant during the neonatal period. Most infants born after 34 weeks gestation without significant complications are mature enough to coordinate a suck, swallow, and breathe reflex, allowing them to be fed by mouth. Infants born prior to this gestational age typically begin parenteral nutrition within the first 24 hours of life.

Fluid and Energy Requirements

Water is the major constituent of all body tissues and the most abundant substance in the newborn [1,2] composing 70% to 75% of the full-term infant's body weight. Water is especially important during the newborn period, as infants have a greater need for water and are more sensitive to changes in fluid and electrolyte balance. Water balance for adequate nutrition and cell growth must provide sufficient volume for appropriate urine output, stool formation, insensible water losses due to respiration and thermoregulation, and formation of new tissue. Fluid intake, protein and mineral content of infant food sources, metabolic rates, and body temperature

influence an infant's water balance [3]. A positive water balance is required for adequate growth to build tissue and to support the increased volume of body fluids.

Maintenance water requirements vary with infant age and are summarized. These requirements are typically met by breast- or bottle-feeding. Problems related to inadequate water balance in the full-term newborn often arise when formula is inappropriately prepared at concentrations greater than 100 kcal/100 ml (30 kcal/oz).

Proteins, Carbohydrates, and Fats

Proteins, carbohydrates, and fats are the building blocks of human nutrition. Nutritional health, physiological integrity, and infant growth are contingent upon an appropriate balance among this triad. Carbohydrates, proteins, and fats are all present in breast milk and infant formulas; however, it is believed that every mother's breast milk is unique in composition for her baby infant formulas, on the other hand, vary based on constitution for term or preterm infants. Protein is necessary for the synthesis of body proteins, enzymes, and hormones and is crucial for growth, development, and tissue repair. Protein accumulation occurs during the third trimester, so preterm infants with little protein accumulation are at especially high risk for catabolism. With an almost immediate infusion of protein, preterm infants can achieve a positive protein balance without acidosis, elevated creatinine, or elevated plasma urea.

Minerals and Vitamins

Minerals and vitamins are essential nutritional components that maintain physiological integrity through the regulation of body fluids, acid-base balance, and metabolic processes. The importance of vitamins and minerals in infant nutrition merits a great deal of discussion, but this article will be limited to a brief overview of calcium, phosphorous, iron, and the essential fat-soluble vitamins.

In addition to weight gain, nurses can assess skin integrity, hair growth, bone density, and achievement of overall growth and development milestones in older infants as signs of nutritional health. Nursing care that is focused on the importance of infant nutrition and health not only serves the infant and family well during the phases of infancy and childhood but also helps ensure proper growth and development throughout the lifespan.

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