
Purpose

To identify the Nebraska WIC Program's position on the introduction of whole cow's milk to infants.

Position Statement

The Nebraska WIC Program recommends the introduction of whole cow's milk after one year of age and its continued use until the age of two.

Rationale

- The digestive and enzymatic systems of the infant mature during and after the first year enabling the child to better digest and absorb cow's milk (1).
 - The infant kidney is functionally and anatomically immature. Measurable functions of the kidney approach adult levels between 10 months and one year of age (2). Since cow's milk has a higher renal solute load than human milk, the use of whole milk after one year of age should cause no problem under conditions where there is no risk for dehydration, total fluid intake is adequate, and renal concentrating ability is not impaired (3).
 - The intestine of the newborn infant is permeable to macromolecules, thus increasing the chance that allergens are absorbed (4). The prevalence of food allergy is inversely proportionate to age due to either the maturation of the gastrointestinal tract or development of acquired immunity (5). Permeability of the gut is greatest in infancy and decreases after 6 months (6). Introducing cow's milk after one year of age decreases the chance of an allergic reaction (6,7).
 - The most rapid and critical period of brain growth (cell manipulation) in humans begins at conception and continues into the second year (8,9). This period of cell multiplication is vulnerable to compromised nutrition (9). Diets of children fed lowfat milks are lower in linoleic acid which is an important nutrient for growth and membrane composition (10,11)
 - It is also difficult for energy needs of the child to be met when serving lowfat milk. Reduced fat milks such as lowfat, light, 2%, 1%, fat free or skim are not recommended for infants during the first two years of life (12).
-

Policy

- The WIC Program cannot issue cow's milk before 12 months of age.
 - Whole cow's milk is recommended between 12 and 24 months of age.
 - Skim, fat free, lowfat, and 1% cow's milk are not recommended for use between 12 – 24 months of age.
 - Two percent cow's milk can be used by children over age 1 year if growth is optimal and diet is varied and contains other sources of fat.
-

References

-
1. Pipes PL, Trahms CM. *Nutrition in Infancy and Childhood*, 5th ed.; 1993
 2. Polacek E, Vocel J, Neugebauerova L, Sevkova M, Vachetove E. The osmotic concentrating ability in healthy infants and children. *Arc of Dis in Child*. 1965; 40:291.
 3. Fomon SJ. *Nutrition of Normal Infants*. St. Louis, MO: Mosby-Year Book, Inc.; 1993.
 4. Walker WA. Antigen absorption from the small intestine and GI. *Pediatric Clinics of North America*. 1975; 22(4): 731-746.
 5. Terr AI. Allergic diseases. In: HH Fudenberg, DP Stites, JL Caldwell, JV Wells, eds. *Basic and Clinical Immunology*, 3rd ed. Los Altos, CA: Lange Medical; 1980.
 6. Bierman CW, Furukawa CT. Food Allergy. *Pediatric Review*. 1982; 3:213.
 7. Bahna SL, Heiner DC. *Allergies to Milk*. New York, NY: Grune and Stratton Inc.; 1980.
 8. Dobbing J, Sands J. Quantitative growth and development of human brain. *Arc of Dis in Child*. 1973; 48:757.
 9. Stoch MB. The effect of undernutrition during infancy on subsequent brain growth and intellectual development. *South African Medical Journal*. 1967; 41:1027-1030.
 10. Ernst JA, Brady MS, Rickard KA. Food and nutrient intake of 6 to 12 month old infants fed formula or cow milk: a summary of four national surveys. *Pediatrics*. 1990; 117:S86-S100.
 11. Yeung DL, Pennell MD, Leung M, and others. The effects of 2% milk on infant nutrition. *Nutrition Research*. 1982; 2:651-660.
 12. American Academy of Pediatrics Committee on Nutrition. Prudent life-style for children: dietary fat and cholesterol. *Pediatrics*. 1986; 78:521-525.
- Committee on Nutrition: Use of whole cow's milk in infancy. *Pediatrics*. 1992; 89:1105-1109.

**Adapted from the Utah Department of Health WIC Program*