

A 10-week-old girl is brought to the office by her mother for a well-infant examination after missing her visit 2 weeks earlier. She was born at 34 weeks gestation and weighed 2.2 kg (4 lb 14 oz) at birth. She has been breastfed exclusively since then, and her growth and development are appropriate for her chronological and gestational ages. Her physical examination is notable for mild pallor but is otherwise normal. The mother eats a balanced diet that includes meat products. At this time, which of the following is the most appropriate nutritional intervention for this patient?

- ☐ A. Introduction of eggs and meat to the diet
- ☐ B. Introduction of fruit juices to the diet
- ☐ C. Introduction of pureed vegetables to the diet
- ☐ D. Iron and vitamin D supplementation
- ☐ E. No additional supplementation needed
- ☐ F. Vitamin B 12 supplementation
- ☐ G. Vitamin C supplementation

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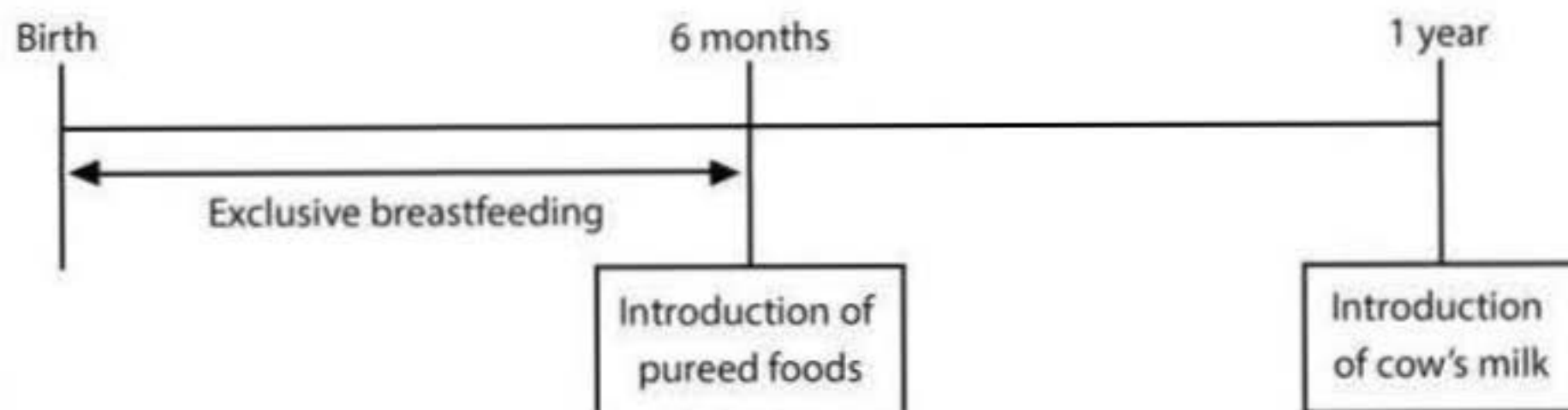
- ☐ A. Introduction of eggs and meat to the diet [0%]
- ☐ B. Introduction of fruit juices to the diet [0%]
- ☐ C. Introduction of pureed vegetables to the diet [1%]
- ☒ D. Iron and vitamin D supplementation [87%]
- ☐ E. No additional supplementation needed [10%]
- ☐ F. Vitamin B 12 supplementation [0%]
- ☐ G. Vitamin C supplementation [0%]

Proceed to Next Item

Explanation:

User Id: [REDACTED]

Timeline of infant nutrition



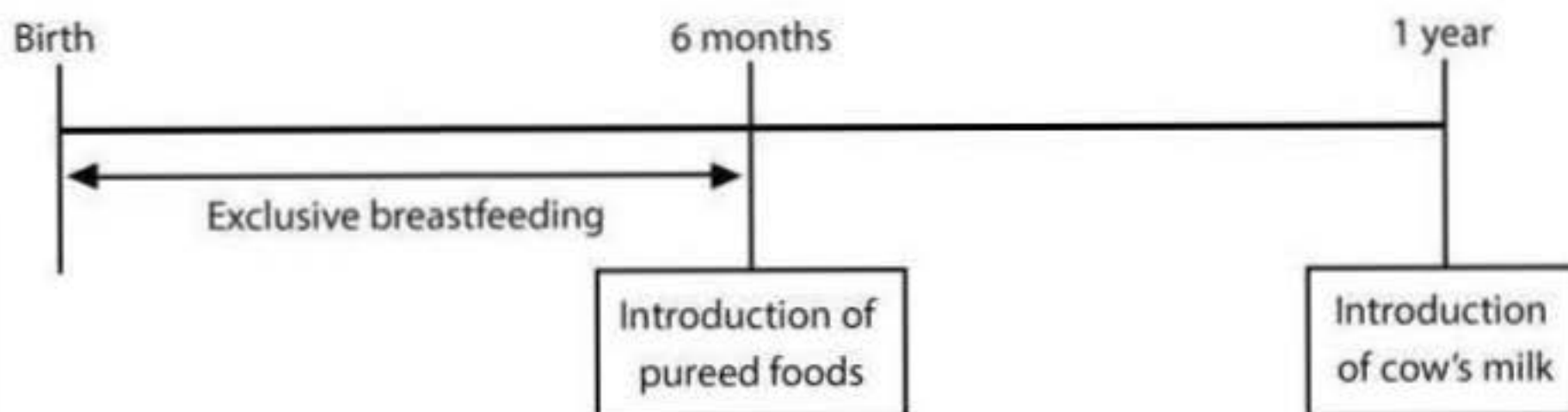
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Iron deficiency anemia is the single most common nutritional deficiency in infants and children and is often asymptomatic. Fullterm, healthy infants are born with robust iron

Explanation:

User Id: [REDACTED]

Timeline of infant nutrition



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Iron deficiency anemia is the single most common nutritional deficiency in infants and children and is often asymptomatic. Fullterm, healthy infants are born with robust iron stores that generally prevent them from developing iron deficiency anemia until age 4-6 months, regardless of dietary intake. However, the presence of maternal iron deficiency, **prematurity**, and early introduction of **cow's milk before age 12 months** increases the risk of iron deficiency anemia in infants.

Human breast milk contains only small amounts of vitamin D that are inadequate for meeting the infant's daily requirement. All exclusively breastfed infants should be started on 400 International Units of vitamin D daily within the first month of life.

Given that this infant was born prematurely and is exclusively breastfed, she is at significantly increased risk for iron deficiency anemia, and both iron and vitamin D supplementation should be initiated. Iron supplementation should be continued until age 1 year in preterm infants.

(Choices A and C) The American Academy of Pediatrics (AAP) recommends **exclusive breastfeeding until age 6 months** given that earlier introduction of solid foods is associated with an increase in gastrointestinal infections. Pureed fruits and vegetables should be introduced first followed by pureed proteins such as meats. There is no evidence suggesting that early introduction of highly allergenic foods such as eggs is associated with an increased risk of allergies; these foods can be introduced any time after age 6 months.

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(Choice B) Although some fruit juices contain vitamins, the AAP does not recommend routine introduction of juice into an infant's diet. For families who choose to offer juice, no more than 4-6 ounces per day should be given (after age 6 months) and it should never be given in a bottle given the significantly increased risk of dental caries.

(Choice F) Supplementation of vitamin B12 is recommended for exclusively breastfed infants born to strict vegetarian mothers.

(Choice G) Vitamin C deficiency is exceedingly rare in exclusively breastfed infants given that breast milk contains adequate amounts of vitamin C to meet the infant's daily requirement until at least age 6 months.

Educational objective:

Full-term infants are born with adequate iron stores to prevent anemia for the first 4-6 months of life regardless of dietary intake. Preterm infants are at significantly increased risk for iron deficiency anemia. Iron supplementation should be started at birth in exclusively breastfed preterm infants and continued until age 1 year. All exclusively breastfed infants should also be started on vitamin D supplementation.

References:

1. [Iron homeostasis in the neonate.](#)
2. [Diagnosis and prevention of iron deficiency and iron-deficiency anemia in infants and young children \(0-3 years of age\).](#)
3. [Breastfeeding and the use of human milk.](#)