



Carrot

Revised: June 21, 2021.

Drug Levels and Effects

Summary of Use during Lactation

Carrots (*Daucus carota*) contain alpha- and beta-carotene. A poultice of raw carrots applied to the breast has been used to treat uncomplicated breast engorgement during breastfeeding;[1,2] however, as with topical cabbage leaves, evidence of efficacy is lacking because engorgement tends to improve over time regardless of treatment.[3] Both beta-carotene and carrot flavor are transmitted into breastmilk. Carrot intake can improve maternal and breastmilk beta-carotene and vitamin A status,[4,5] but excessive maternal intake of carrots can lead to a harmless, reversible discoloration of the breastfed infant's skin. Exposure to carrot flavor in breastmilk can improve the future acceptance of carrots by the infant.

Drug Levels

Maternal Levels. Beta-carotene is a normal component of breastmilk and supplementation of nursing mothers with beta-carotene supplements increases the concentration in breastmilk.[6-9] However, beta-carotene from carrots and other vegetables are less bioavailable than from pharmaceutical supplements.[5]

A sensory panel of at least 8 participants smelled the breastmilk of 5 mothers who had been given 500 mL of carrot juice. The consensus of a panel was that the odor of carrots was strongest 2 hours after ingesting the carrot juice. The mothers were presented with timed samples of their own breastmilk and judged that the taste of carrot was strongest at 3 hours after carrot juice ingestion.[10]

Twelve women were given fresh carrot paste containing 15 mg of all-trans beta-carotene daily for 3 days. Milk samples were collected on 3 days at least 3 hours after the meal containing the beta-carotene. Milk beta-carotene levels increased by an average of about 80% over the 3-day period.[11]

Infant Levels. Relevant published information was not found as of the revision date.

Effects in Breastfed Infants

A nursing mother was eating 2 to 3 pounds of carrots a week as raw and cooked carrots. The mother's skin was yellow in color, but her sclera were clear. At 2 months of age, her breastfed infant was diagnosed as having

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jaundice because of a yellow coloration of the skin. Breastfeeding was discontinued and the infant's skin returned to a normal color. The mother continued her diet and examination of the maternal serum found elevated levels of beta-carotene which was probably the cause of her infant's skin discoloration.[12]

Nursing mothers ingested either 300 mL of carrot juice (n = 20) or water (n = 18) 2 to 3 hours before nursing daily for a week. Their infants were then tested for their acceptance of cereal prepared with either carrot juice or water. The infants who had been exposed to carrots in breastmilk consumed less flavored cereal relative to plain cereal than the control infants and they spent less time feeding. The authors interpreted these results to be a form of sensory-specific satiety in which the infants become less responsive to a flavor that they have been extensively exposed to in the very recent past.[10]

Seventeen nursing mothers were given 300 mL of carrot juice or water for 4 days per week for 3 consecutive weeks during the first 2 months of lactation. Other study groups received carrot juice during the last trimester of pregnancy or water during pregnancy and breastfeeding as a placebo. At a mean of 5.6 months postpartum, the infants were tested twice, once with cereal prepared with carrot juice and once with cereal prepared with water. Infants whose mothers received carrot juice during lactation scored higher on measures of acceptance of carrot-flavored cereal and took in more cereal than those whose mothers received water, but the latter difference did not reach statistical significance. These effects were similar, but stronger among infants exposed prenatally.[13]

Effects on Lactation and Breastmilk

Relevant published information was not found as of the revision date.

References

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Substance Identification

Substance Name

Carrot

Scientific Name

Daucus carota

Drug Class

Breast Feeding

Lactation

Complementary Therapies

Food

Phytotherapy

Plants, Medicinal