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Eating Lightly During Labor May Not Affect Obstetric or Neonatal Outcomes

CME

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Learning Objectives

Upon completion of this activity, participants will be able to:

1. Identify the principal concern associated with food intake during labor.
2. Specify the effect of eating during labor on maternal and fetal outcomes.

Authors and Disclosures

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Disclosure: Laurie Barclay, MD, has disclosed no relevant financial relationships.

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Disclosure: Charles Vega, MD, FAAFP, has disclosed no relevant financial relationships.

Brande Nicole Martin

Disclosure: Brande Nicole Martin has disclosed no relevant financial information.

March 30, 2009 — Eating a light diet during labor did not affect obstetric or neonatal outcomes or increase vomiting, according to the results of a prospective, randomized controlled trial reported online first in the March 25 issue of the *British Medical Journal*.

"The current rationale for women fasting during labour is to protect them from pulmonary aspiration should general anaesthesia be needed for an emergency operative delivery," write Geraldine O'Sullivan, MD, from St. Thomas' Hospital, Guy's and St. Thomas' National Health Service Foundation Trust in London, United Kingdom, and colleagues. "However, prolonged fasting in labour has never been proved to influence the incidence of pulmonary aspiration, and some clinicians and midwives consider that preventing food intake can be detrimental to the mother, her baby, and the progress of labour. Whether food intake in labour will influence the ability to deliver normally, the length of labour, or other obstetric and neonatal end points is not known."

The goal of this study was to evaluate the effect of feeding during labor on obstetric and neonatal outcomes. At a birth center in a London teaching hospital, 2426 participants at term were randomly assigned to receive a light diet or water during labor. The diet consisted of low-fat, low-residue foods eaten during regular intervals during labor. Foods included bread, biscuits, vegetables, fruit, yogurt, soup, and fruit juice. Inclusion criteria were nulliparity, lack of diabetes, singleton pregnancy, cephalic presentation, and cervical dilatation of less than 6 cm.

Spontaneous vaginal delivery rate was the main study endpoint, and secondary outcomes were duration of labor, need for augmentation of labor, rates of instrumental and cesarean delivery, incidence of vomiting, and neonatal outcomes.

Both groups had the same rate of spontaneous vaginal delivery (44%; relative risk, 0.99; 95% confidence interval [CI], 0.90 – 1.08) and similar neonatal outcomes. There were no clinically meaningful between-group differences in the duration of labor (geometric mean: eating, 597 minutes vs water, 612 minutes; ratio of geometric means, 0.98; 95% CI, 0.93 – 1.03), the cesarean delivery rate (30% vs 30%; relative risk, 0.99; 95% CI, 0.87 – 1.12), or the incidence of vomiting (35% vs 34%; relative risk, 1.05; 95% CI, 0.9 – 1.2).

"Consumption of a light diet during labour did not influence obstetric or neonatal outcomes in participants, nor did it increase the incidence of vomiting," the study authors write. "Women who are allowed to eat in labour have similar lengths of labour and operative delivery rates to those allowed water only."

Limitations of this study include insufficient power to show evidence of harm.

"Aspiration pneumonitis/pneumonia is significantly associated with intubation and ventilation," the study authors conclude. "In modern obstetric practice it is the use of regional anaesthesia, thereby avoiding intubation, rather [than] fasting regimens that is likely to have reduced mortality from aspiration. Although the National Institute for Health and Clinical Excellence has recommended, on the basis of consensus opinion, that women in normal labour may eat/drink in labour, our trial shows that this will not improve their obstetric and neonatal outcomes."

The Obstetric Anaesthetists' Association and the Special Trustees of the St Thomas' Hospital supported this study. One of the study authors is supported by Tommy's—The Baby Charity. The study authors have disclosed no relevant financial relationships.

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Learning Objectives for This Educational Activity

Upon completion of this activity, participants will be able to:

1. Identify the principal concern associated with food intake during labor.
2. Specify the effect of eating during labor on maternal and fetal outcomes.

Clinical Context

Some published guidelines recommend strict restrictions on the intake of solid foods during labor. The principal concern behind these recommendations is pulmonary aspiration if general anesthesia is required during an emergency delivery. However, the authors of the current study note that the rate of aspiration has actually decreased in the past 2 decades despite a more open attitude in general toward eating during labor.

Previous small, randomized trials have generally found that eating during labor does not promote negative outcomes, although 1 study suggested a higher rate of cesarean delivery among women who consumed food. The current study uses a larger cohort of women to address the safety of eating during labor.

Study Highlights

- The study was completed at 1 hospital in London. Women eligible for participation were at least 18 years old and nulliparous. All of the study cohort had a pregnancy at more than 36 weeks' gestation with a singleton fetus in cephalic presentation. Women with a history of diabetes were excluded from study participation.
- Women were randomly assigned to an "eating" or "water-only" group while in labor. All women had a cervical dilation of less than 6 cm at the time of randomization. The eating group was advised to consume small amounts of a low-fat, low-residue diet during regular intervals during labor. Foods consisted of bread, biscuits, vegetables, fruit, yogurt, soup, and fruit juice.
- The exact amount of food consumed was at the patient's discretion. Her diet during labor was recorded.
- Otherwise, women in both treatment groups received the same obstetric management protocols.
- The primary outcome measure was the rate of spontaneous vaginal delivery, and the main secondary outcome was the duration of labor. Researchers also followed neonatal outcomes.
- 2443 women participated in the trial, and 2426 participants provided data for study analysis. The mean age was 29 years, and nearly

- one quarter of women were African or Caribbean. More than 70% of participants had a light meal or snack in the 6 hours before labor.
- 20% of women in the water-only group broke protocol and consumed food during labor, while 29% of women in eating group did not consume food.
 - The rates of normal vaginal delivery were 44% in both treatment groups.
 - The mean durations of labor in the eating and water-only groups were 597 and 612 minutes, a nonsignificant difference.
 - Rates of instrumental and cesarean delivery were similar between randomized groups, as was the rate of vomiting. There was no difference between groups in the use of epidural anesthesia or oxytocin for augmentation of labor.
 - The mean birth weight was 3421 g in the eating group and 3428 g in the water-only group. There was no difference between groups in neonates' Apgar scores or rates of admission to the neonatal intensive care unit.
 - A per protocol analysis failed to alter the study's main finding.

Pearls for Practice

- Eating during labor has been traditionally discouraged because of the possibility of pulmonary aspiration if general anesthesia is required for an emergency delivery.
- In the current study, eating during labor did not significantly affect delivery or neonatal outcomes compared with advice to drink water only.

What has traditionally been the *main* safety concern of eating solid food during labor?

- A higher rate of cesarean delivery
- A higher risk for neonatal infection
- A higher risk for pulmonary aspiration
- A higher risk for shoulder dystocia

Which of the following statements regarding outcomes in the current study comparing consuming solid food with water only during labor is *most* accurate?

- Eating solid food was associated with higher rates of vomiting
- Eating solid food increased the duration of labor
- Eating solid food reduced the rate of normal vaginal delivery
- Eating solid food did not affect the rates of normal vaginal delivery, the duration of labor, or neonatal outcomes

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