

Effect of food intake during labour on obstetric outcome: randomised controlled trial

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STUDY QUESTION To determine whether food intake in labour affects women's ability to deliver normally, the length of labour, or other obstetric and neonatal end points.

SUMMARY ANSWER Consumption of a light diet during labour did not influence obstetric or neonatal outcomes in participants, nor did it increase the incidence of vomiting. Women who were allowed to eat in labour had similar lengths of labour and operative delivery rates to those allowed water only.

Design

Women were randomised into an "eating" or "water only" group. Entry of a woman's initials, hospital number, and date of birth onto a dedicated computer on the labour ward automatically generated the allocation group together with a study number, which was then recorded on the outcome sheet. Women in the eating group were advised to have a low fat, low residue diet at will.

Participants and setting

2426 nulliparous, non-diabetic women at term, with a singleton cephalic presenting fetus and in labour with a cervical dilatation of at least 5 cm were randomised in a birth centre in a London teaching hospital.

Primary outcome(s)

Normal vaginal delivery rate.

Main results and the role of chance

By intention to treat, we found no significant difference in the rate of normal vaginal delivery between the two groups. The rates were 533/1219 (44%) in the eating group and 534/1207 (44%) in the water only group (risk ratio 0.99, 95% confidence interval 0.90 to 1.08). We found no significant difference in the duration of labour between the two groups: the geometric mean duration was 597 minutes for the eating group and 612 minutes for the water group (ratio of geometric means 0.975, 0.927 to 1.025). We found no significant difference between the groups with respect to the rate of instrumental vaginal delivery or caesarean delivery, the incidence of maternal vomiting, or the use of epidural analgesia or of oxytocin for augmentation of labour (table).

We also found no differences between the two groups with respect to infants' Apgar scores or admission to neonatal intensive care or special care units.

Harms

No cases of aspiration occurred during the study period. One maternal death occurred in the water only group, related to a cerebral event.

SECONDARY OUTCOMES FOR WOMEN WHO ATE OR TOOK ONLY WATER DURING LABOUR

Outcome	No (%) of women		Risk ratio (95% CI)
	Eating group	Water only group	
Instrumental delivery	324 (27)	310 (26)	1.04 (0.91 to 1.19)
Caesarean section	362 (30)	363 (30)	0.99 (0.87 to 1.12)
Vomited	430 (35)	406 (34)	1.05 (0.94 to 1.17)
Oxytocin for augmentation	647 (53)	673 (56)	0.95 (0.88 to 1.02)
Intravenous fluid >500 ml	820 (67)	838 (69)	0.97 (0.92 to 1.02)

Bias, confounding, and other reasons for caution

When we compared women who ate with those who did not the results were similar (normal vaginal delivery 44% v 44%; risk ratio 0.99, 0.91 to 1.08).

Generalisability to other populations

We did not recruit multiparous women, given their potentially quicker labours and low operative delivery rates—that is, less exposure to the intervention and high prevalence of the primary outcome measure. As no effect was found in a primiparous population, this is likely to be so in multiparous women. We excluded women who had a known obstetric or medical complication that could have increased the likelihood of an operative delivery, were in severe pain, or intended to use parenteral opioids for analgesia during labour.

Study funding/potential competing interests

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Trial registration number

Current Controlled Trials ISRCTN33298015

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