

Guideline for Eating and Drinking in Labour and the Early Postoperative Period

Best Practice Points:

1. When a definite decision has been made to transfer to theatre for any operative procedure, including trial of assisted vaginal delivery, the woman must be kept starved i.e. no food or liquids should be allowed.

2. Women in the following categories may drink clear fluids (water, clear squash, isotonic sports drinks*) throughout their labour. They should not eat any food:
 - a. Body mass index >40 at booking
 - b. Multiple pregnancy
 - c. Breech presentation
 - d. Oxytocin for augmentation
 - e. Pathological cardiotocograph / fetal scalp pH done
 - f. Significant meconium staining of liquor
 - g. Some women with epidural analgesia (discuss with anaesthetist)

* *Isotonic sports drinks (with ≤ 30 kcal/100ml) include lucozade sport and powerade. The non-sport variety of lucozade is **hypertonic** and not suitable.*

3. All other women may drink clear fluids (as above) and eat a light diet throughout their labour.

4. Eating and drinking should be re-established as soon as possible and safe, in the postoperative period

Written by: FD, CL – Feb 2008

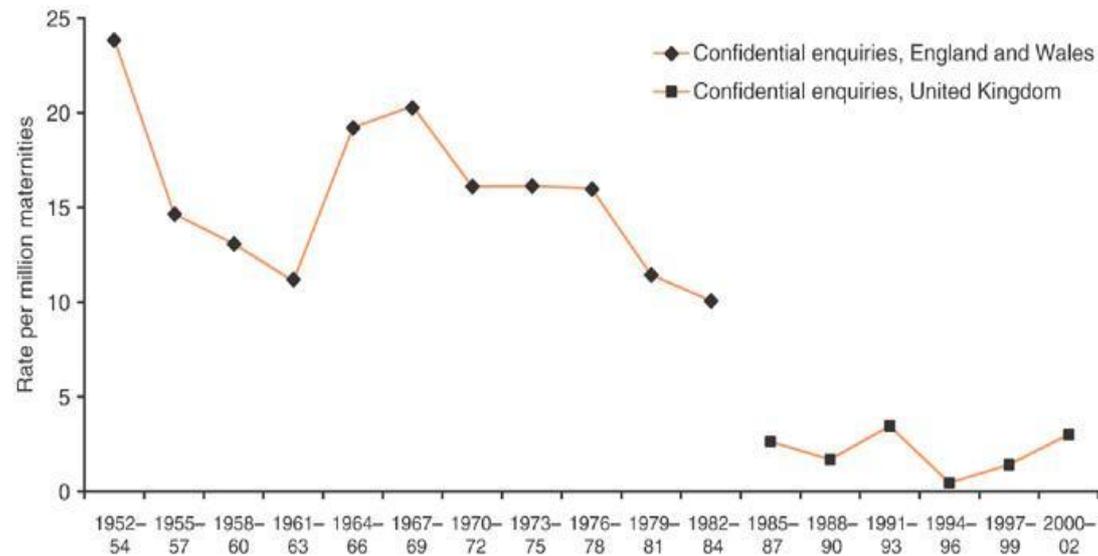
Ratified by Intrapartum Clinical Team – May 2008

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Background:

Maternal mortality from aspiration / asphyxiation due to regurgitation of gastric contents has virtually disappeared.

Direct deaths from Anaesthesia¹:



In the 1960 -1970s almost all reports of the Confidential Enquiries contained 1-3 women who had died from asphyxia from regurgitation of solid material (personal communication, G Lyons). Starvation policies in labour were introduced. In addition the widespread use of regional anaesthesia for caesarean section (LSCS) and the improvement in measures to prevent acid aspiration under general anaesthesia (acid aspiration chemoprophylaxis and tracheal intubation by rapid sequence induction with cricoid pressure) has meant that deaths due to acid aspiration +/- asphyxiation by solid material are now very rare.

Over the last 20 years a conflict has arisen between satisfying women's desire for oral intake and the restrictive standards of fasting in labour, and many units in the UK and more recently in the US have relaxed their policies. However there remains a wide variation in practice; in 1991 a UK survey found 96% units allowed mothers some form of oral intake, with 68% selecting mothers according to risk categories. Of the units allowing oral intake 67% allowed drink only while 33% allowed drink and food². In the US in 1998 a survey of 740 hospitals in 1998 revealed more than 70% of units allowed fluid but no food.

Current Evidence:

2 randomised controlled trials have compared eating a low residue diet with taking water alone.

The first trial included 88 women and concluded that eating in labour prevents ketosis but significantly increases residual gastric volumes. Restriction of food in labour resulted in a significant increase in plasma β – hydroxybutyrate and non-esterified fatty acids, while in the eating group there was a significant increase in plasma glucose and insulin. There were no differences in plasma lactate between the groups. However, in the eating group the gastric antral cross sectional areas measured in labour were significantly higher. These women were twice as likely to vomit at or around the time of birth and the volumes vomited by the eating group were significantly larger compared to the water only group. There were no differences in maternal outcome (duration of 1st and 2nd stage, oxytocin requirements, mode of birth) or neonatal outcomes (Apgar scores, umbilical artery and venous blood gases) between the 2 groups³.

The second much larger and more recent study included 2426 primiparous women in labour, who were randomised to an eating group or water only group. This study was designed to investigate the effect of feeding on obstetric and neonatal outcome. There was no difference in the spontaneous vaginal delivery rate (SVD) which was 44% in both groups. Likewise there was no difference in the duration of labour, instrumental delivery rate, LSCS rate or use of oxytocin. The incidence of vomiting was similar in the 2 groups. Neonatal outcomes were also similar. However, in a subgroup of 152 women who completed a post partum questionnaire women in the eating group rated their experience of labour as better because of eating. The authors concluded that low risk women should be allowed a light diet in labour provided there are no risk factors suggesting the need for anaesthesia⁴.

Other studies have been unable to demonstrate an improvement in the progress of labour, or on neonatal outcomes by eating food during labour^{5,6}.

There have been several studies investigating interventions to prevent ketosis.

3 studies from the same group of investigators, involving 201, 202, and 100 women randomised at 2-4cm, 5-7cm and 8-10cm respectively. Women were randomised to receive carbohydrate solution or water. The studies did not demonstrate any difference in SVD rates, need for augmentation, or instrumental delivery. The carbohydrate group in the first study had a higher LSCS rate. Neonatal outcomes (based on Apgar and umbilical artery acid - base) were similar. In the 2nd study carbohydrate solution just before the 2nd stage of labour resulted in a reduction of maternal free fatty acids and an increase in lactate; although venous – arterial cord blood differences suggested lactate transport this did not result in fetal acidaemia^{7,8,9}.

Isotonic sports drinks:

A further randomised controlled trial conducted in the UK involved 60 women randomised to receive isotonic sports drinks or water only in labour. The mean quantity of liquid drunk in the sports group was 925mls (SD 384mls) which was significantly more than in the water group (478mls). The calorific intake by the sports drink group was 47kcal/hr. By the end of labour plasma β hydroxybutyrate and non esterified fatty acids were significantly increased and plasma glucose significantly decreased in the water only group. Gastric antral cross sectional area measured within 45 mins of delivery was not significantly different between the groups. There were no differences in the number of episodes of vomiting or the volume vomited.

The authors concluded that a small calorific intake prevents the development of ketosis and isotonic sports drinks are rapidly emptied from the stomach in a labouring mother. To be isotonic, the calorific load of such drinks should be limited to approximately 30kcal/100mls¹⁰.

The development of ketosis in labour may be associated with nausea, and headache, and maternal satisfaction in labour may be improved by allowing a light diet. However the volume of the stomach contents may increase if food is allowed. There are no differences in any measured maternal or neonatal outcomes.

Risk factors for surgical intervention

- Obesity is associated with an increased need for medical intervention and increased need for LSCS.
- Women who require oxytocic augmentation in labour are more likely to require interventional delivery or LSCS. In a recent survey at NBT, 74% of women receiving augmentation went on to have an assisted vaginal delivery (39%) or LSCS (35%) in theatre¹¹.
- Pathological CTG, especially where fetal scalp pH measurements are required is an indication that surgical intervention may be required.
- Opioid drugs given parenterally cause a marked delay in gastric emptying^{12,13}. The evidence regarding epidural opioids is conflicting.
- Studies on the effect of epidural infusions containing fentanyl 2mcg/ml have not demonstrated a profound delay in gastric emptying^{14,15}. It has been suggested that the delay in gastric emptying may occur in a dose dependent manner¹⁴.

NICE Guidelines: Intrapartum Care Sept 2007

NICE recommendations on eating and drinking in labour¹⁶:

1. All women may drink in established labour, and should be informed that isotonic drinks may be more beneficial than water.
2. Women may eat a light diet in established labour unless they have received opioids or develop risk factors that make a general anaesthetic more likely.

Guidelines for Eating and Drinking in Labour

1. All women may drink during established labour – this may include water, clear fluids such as squash, and isotonic sports drinks e.g. Lucozade Sport, Powerade. Women may be informed that isotonic sports drinks (containing no more than 30kcal/100mls) may be more beneficial than water.

2. Once a decision to proceed to theatre for LSCS, assisted vaginal delivery, or another operative procedure has been made, women should be kept NBM (Nil by Mouth – including fluids)

3. Women at risk of requiring assisted / operative delivery in theatre should also refrain from eating solid food. Women at risk include:
 - a. Body Mass Index >40 at booking
 - b. Multiple pregnancy
 - c. Breech
 - d. Oxytocin augmentation
 - e. Pathological CTG, especially if fetal scalp pH measurements required
 - f. Significant meconium staining of liquor
 - g. Some women with epidurals*

* Not all women with epidurals will be at increased risk of surgical intervention. The anaesthetist should decide whether the patient needs to be given regular oral ranitidine and restricted to clear fluids only at the time of insertion of the epidural.

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Guidelines for Eating and Drinking in the Early Postoperative Period

Background:

There is growing evidence that early oral fluids, or even food, after anaesthesia and surgery are beneficial to the mother in terms of gut function. In one study mothers encouraged to start drinking as soon as they felt thirsty had significantly earlier return of bowel sounds than mothers restricted to intravenous fluids for the first 24 hours(1). There were no adverse side effects in the oral hydration group. Other studies (2,3) have shown that food can be started within the first 6-8 hrs without detriment to the mother. Indeed gut function returned to normal more quickly in these mothers.

The Cochrane review on this subject (4) states that there is no evidence to support the withholding of oral fluids after uncomplicated Caesarean section and that early oral intake may speed gastrointestinal recovery. Conversely, the Confidential Enquiries into Maternal and Child Health for 2000-2002 and 2003-2005 have highlighted difficulties in airway management and postoperative care as direct causes of maternal death. Thus it would seem unwise to allow mothers to eat and drink until it is deemed unlikely that they would need to return to the operating theatre.

The following guidelines have been written in order to make the mother's experience as pleasant as possible whilst protecting her from harm. They also apply to postoperative women who return to a delivery room rather than to recovery.

Women who have had an uncomplicated Caesarean section (or other surgery):

1. Should be allowed to drink water as soon as they feel able. Other fluids (tea, coffee) may be given only after consultation with the anaesthetist if less than one hour has elapsed since surgery.
2. If they remain in recovery for more than two hours for non-medical reasons (eg no beds on the postnatal wards, waiting to be washed, baby is cold, no porter available) they may drink freely and eat light snacks such as toast. This can be done without discussion with the anaesthetist.
3. Normal eating and drinking should be encouraged on return to the ward

Women in whom there are medical complications such as bleeding or pre-eclampsia, or where there is a possibility of return to theatre:

1. Should not be allowed to eat or drink in recovery. Water may be given after consultation with the anaesthetist who will make an assessment of the likelihood of return to theatre.
2. Women who remain in recovery or on delivery suite because they have a syntocinon infusion running should not be allowed to eat or drink without consultation with the anaesthetist as above.

References:

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