In this article...

- Why patients should be nil by mouth before and after surgery
- Best practice and how to educate patients
- How to relieve patients’ discomfort when they are nil by mouth

Intravenous fluids may be required when patients exceed fasting times.
surgery, patients should not be given an anaesthetic without a period of being NBM; this reduces the risk of pulmonary aspiration if gastric contents are regurgitated. The gag, swallow and cough reflexes usually protect the airway from aspiration of food or fluids but, when patients are anaesthetised, these are suppressed to varying degrees (Brady et al, 2010).

Brady et al’s (2010) review of randomised controlled trials suggested that patients who drank clear fluids up to a few hours before surgery were at no greater risk of aspiration than in those who fasted from midnight; those who fasted for the shorter period also had a lower gastric volume.

The RCN’s (2005) guideline states that prolonged fasting can increase the risk of aspiration of stomach contents, leading to respiratory problems and possibly death. Obesity, pregnancy, peptic ulcer, gastric reflux, stress and pain place patients at a higher risk of aspirating (Brady, 2010; RCN, 2005). A surgeon or anaesthetist may request a longer fasting time for these patients (RCN, 2005).

Jones and Swart’s (2013) Guidelines for the Provision of Anaesthetic Services recommends patients with diabetes are fasted for the minimum amount of time, as “fasting, surgical stress and inactivity can all have a negative effect on blood-sugar control”, and are placed at the top of the operating list.

A safety alert (National Patient Safety Agency, 2011) reported the risk of harm to patients who are kept unintentionally NBM for prolonged periods. This was prompted by the case of a patient kept NBM for 10 days awaiting a procedure. The alert underlines the fact that “vulnerability, dehydration, malnutrition or complications from omitted or delayed medication” are intensified when a patient is exposed to long periods of being NBM. It concludes by recommending that organisations:

- Assess for alternative methods of hydration, nutrition and medication;
- Document a NBM care plan;
- Communicate the patient’s NBM status to all relevant staff.

Patients should be reviewed indvidually by nursing and medical staff to ensure their NBM time is kept to a minimum. Nurses are pivotal in ensuring communication is maintained between theatre and ward staff and the patient.

The RCN (2005) published recommendations for pre-operative fasting for healthy adults (Box 1). These advise that sweets are classed as food and chewing gum should be avoided on the day of surgery; however, Poulton (2012) states “there is evidence that gum chewing promotes gastrointestinal motility and physiologic gastric emptying”.

When surgery is delayed, the guidelines recommend the surgical team consider allowing adults some water to prevent dehydration and relieve thirst; they do not, however, stipulate how much water can be drunk. Staff should consider giving children a drink of water or another clear fluid; if the delay is to be longer than two hours, one should definitely be given (RCN, 2005).

Roberts’ (2013) literature search revealed that, despite best-practice guidelines, pre-operative fasting times remain excessive. He recommended more detailed patient literature, including the implications of extending fasting times and the possibility of associated nausea and headaches.

Lorch (2007) undertook an action research study to improve the patient experience and implement the RCN’s (2005) guidelines. The outcome improved patient comfort and safety, ensured uniformity of practice, improved communication between patients and staff, and avoided the omission of prescribed medication.

**Pre-operative medication**

Prescribed regular oral medication and premedication, unless contraindicated and excepting oral hypoglycaemic medicines, should be administered pre-operatively to avoid surgery being cancelled, for example due to hypertension (Lorch, 2007; RCN, 2005). Adults can have up to 30ml of water and children up to 0.5ml/kg (up to 30ml) to take the medication (RCN, 2005).

**Risk assessment**

Pre-operatively, a malnutrition risk assessment should be performed, which should consider how long the patient will be fasting before, during and after surgery. National Institute of Health and Care Excellence (2006) guidance recommends using a validated screening tool (such as the Malnutrition Universal Screening Tool). Screening should include:

- Assessment of body mass index;
- Unintentional weight loss;
- Time of unintentional reduced nutritional intake or future impaired nutrient intake.

This is important to prevent surgery being cancelled due to malnutrition and related post-operative complications.

Patients who have post-operative nausea, vomiting or a non-functioning gut due to gastrointestinal surgery can remain NBM for longer; in some cases, nutritional support may be required.

NICE (2006) guidance provides flowcharts on when to consider oral, enteral and parenteral nutritional support pre-operatively. A few surgical patients will have artificial feeding pre-operatively – those with severe weight loss, very low body mass index or a risk of post-operative complications (Braga et al, 2009). Parenteral nutrition will be considered for patients who are malnourished and have an “inadequate or unsafe enteral intake” or a “non-functional inaccessible or perforated gastrointestinal tract” (NICE, 2006).

**Post-operative care**

**Fasting**

Patients with a short fasting time are less likely to experience post-operative nausea and vomiting and are more likely to have a quicker and more comfortable post-operative recovery and experience (Chand and Dabbas, 2007).

RCN (2005) guidelines state that as long as there are no contraindications, patients can be offered and encouraged to drink fluids post-operatively. They say it may be better for children to try breast milk or clear fluids first. This does not apply to patients who have had gastrointestinal or major abdominal surgery.

**Enhanced recovery programme**

The NHS Institute for Innovation and Improvement’s enhanced recovery programme, launched in 2008, has been used in many specialties. It aims to minimise the body’s stress response to anaesthesia and surgery, reducing post-operative recovery time so patients can be discharged earlier (Foss and Bernard, 2012; Slater, 2010).

Key aspects are managing fluid balance and fasting times, and ensuring patients do not become malnourished or dehydrated.
Patients are given a clear, carbohydrate-rich drink before midnight and a second drink 2-3 hours before surgery to reduce their discomfort from fasting and pre-operative thirst and hunger (Brady et al., 2010). The evidence suggests that carbohydrate drinks pre-operatively result in a shorter stay in hospital due to a quicker return of bowel function, a reduced loss of body mass and a decrease in post-operative nausea and vomiting (Jones et al., 2011).

Fluids and diet are often reintroduced on the day of surgery to promote gut motility and reduce the risk of the patient developing an ileus (when peristalsis stops and the bowel ceases to function) (Varadhan et al., 2010).

**Intravenous therapy**

Nurses need to know when patients exceed their fasting time and discuss introducing intravenous fluids with doctors. BAPEN (2011) offers recommendations on pre-, intra- and post-operative fluid management in adult surgical patients. Mechanical bowel preparation is avoided where possible but, if it is necessary, it is common for an electrolyte imbalance and dehydration to occur; this should be corrected with IV fluid and closely monitored (BAPEN, 2011; National Confidential Enquiry into Patient Outcome and Death, 2011).

Nursing care should include maintenance of an accurate fluid balance chart; cannula care should include the use of a phlebitis scale to prompt action.

**Fluid balance**

Patients receiving additional fluid or nutritional support should have their fluid balance recorded on a fluid balance chart so it can be assessed. This should include:

- Urine output (minimum of 0.5ml/kg/hr);
- Any other output;
- All IV fluids;
- Parenteral nutrition/feeds.

**Oral hygiene**

Fasting can cause oral discomfort (Box 2) and be an infection risk. Oral care is sometimes neglected by nurses and not considered a priority (RCN, 2012; Bisset and Preshaw, 2011).

Some patients will have experienced oral problems before surgery due to treatment or an existing problem, for example:

- Xerostomia (dry mouth) is common in older people and patients who have had chemotherapy, causing soreness and an unpleasant taste;
- Fear of surgery raises anxiety levels, which can contribute to a decreased, thicker flow of saliva due to activity of the sympathetic nervous system.

In dehydrated patients, saliva secretion stops to conserve water (Jenkins et al., 2010).

Post-operatively, patients may remain NBM for several hours or longer and be prone to xerostomia due to dehydration, oxygen therapy and side-effects of the anaesthetic. They will need frequent oral care (Bisset and Preshaw, 2011).

Mouthwash should be available for patients; they may prefer to use their own but those that contain alcohol can have a drying effect on the mouth. Chlorhexidine mouthwashes can reduce the level of plaque and bacteria but should not be used more than twice a day because of their alcohol content. Dingwall (2010) suggests using 0.9% saline as this does not affect the pH of saliva and is flavourless. Lemon and glycerine swabs can reduce the level of plaque and bacteria; however, a dry mouth can make cleaning teeth difficult. Patients’ own lip balm or a water-soluble gel can be used (Dingwall, 2010).

Patients who wear dentures may prefer to keep them in for as long as possible, sometimes until induction of the anaesthesia; however, a dry mouth can make wearing them uncomfortable.

**Pressure ulcers**

Nurses need to use a validated assessment tool to assess pressure ulcer risk before and after surgery, and as the patient’s condition changes. Nutrition is important in preventing pressure ulcers (NICE, 2014) and forms part of the risk assessment. Nurses must consider other factors that could increase the risk, such as:

- Length of operation;
- Hypotension and low core temperature during surgery;
- Possible post-operative reduced mobility.

Patients must not fast for longer than necessary and, if they are at risk of developing pressure ulcers, pressure-redistributing mattresses should be used and patients’ positions varied.

**Conclusion**

Educational and clinical institutions must work together to educate all healthcare workers so patients have the best possible care when they are NBM. Surgeons, nurses, theatre staff, students and housekeeping staff need to follow the most recent guidelines. Patients must be educated and kept informed about their NBM status. The RCN (2005) guidelines inform practice; local policies should reflect them.

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