



Bradford Teaching Hospitals
NHS Foundation Trust

Title:
**Fasting of Children Admitted for Planned Procedures
Requiring General Anaesthesia**

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1. Purpose

This standard operating procedure (SOP) is designed to clearly define the guidelines by which to fast well children, who are admitted on the day of surgery, for a planned procedure prior to undergoing a general anaesthetic. By developing a practice of encouraging clear fluids on admission to the hospital we aim to reduce the period of fluid fasting and so improve hydration status in this population.

2. Acknowledgements

This SOP has been developed with the help and advice of specialist tertiary paediatric anaesthetic departments including the Leeds Teaching Hospitals and Great Ormond Street Hospital whilst also referring to their agreed and implemented SOPs for the same.

3. Introduction

Fasting prior to general anaesthesia is designed to reduce the risk of pulmonary aspiration of gastric contents. However, there are numerous benefits when children are fasted before an operation as briefly as possible, including improved patient and parental satisfaction, increased gastric pH, ingestion of calories, decreased risk of hypoglycaemia, decreased lipolysis, improved fluid homeostasis and in turn improved hunger, thirst and irritability.

The Association of Anaesthetists of Great Britain and Ireland (AAGBI) have published nationally accepted guidelines for fasting prior to undergoing general anaesthesia¹ which state the following recommended fasting times (6-4-2 rule):

- 6 hours for food
- 4 hours for breast milk
- 2 hours for clear fluids

However, more recent publications challenge these traditionally accepted fasting times. A recent study by Anderson et al of 10000 children over a 6 year period, demonstrated that drinking clear fluids up until the time of surgery does not increase the risk of aspiration². Furthermore, when rare (0.03%) episodes of pulmonary aspiration did occur there were zero episodes of patients requiring postoperative ventilatory support^{2,4}. This is supported by evidence from Schimdt et al who showed that there was no difference in gastric pH or gastric volume in those fasted for 1 or 2 hours⁵. In addition to this there is evidence from radionucleotide studies which show that the time taken for 80% of clear fluids to leave the stomach is under one hour⁶ and furthermore, if the clear fluid contains glucose then gastric emptying is significantly quicker⁷.

Following this increasing evidence, a consensus statement has been released by the APAGBI, ESPA and ADARPEF stating that children who are able to take clear fluids should be allowed and encouraged to have fluids up to one hour prior to elective general anaesthesia³.

4. Scope

This SOP is intended to improve the period of time that children remain fasted whilst maintaining safe provision of anaesthesia in elective admission for planned procedures for otherwise well children. These recommendations are only for patients in the hospital and the advice given to parents/children pre-admission will remain the same, ie the 6-4-2 rule.

Exclusions

There are children who will need longer for gastric emptying to occur. In order to reduce their risk of aspiration they should follow the pre-existing hospital policy of fasting for 6

hours for food, 4 hours for breast milk and 2 hours for clear fluid. As such, children with the following conditions should be excluded from this SOP and in some cases a specific individual plan may be required;

- GORD – either on treatment or under investigation
- Renal failure
- Enteropathies – problems with digestion and absorption
- Oesophageal strictures or those booked for oesophageal dilatation
- Achalasia
- Diabetes mellitus
- Extremely anxious children
- Those with known unsafe swallow should also be excluded
- Those admitted for unplanned/emergency care- once reviewed by anaesthetist may be suitable to be managed under this SOP.

In addition, children with conditions impacted by fasting should follow the pre-operative instructions specified for that child in their medical records. This includes but is not limited to children with some Endocrine, Metabolic and/or Cardiac conditions. If pre-operative instructions for the child are not available or there is any doubt regarding a particular patient, fasting times should be discussed with the Consultant Anaesthetist for the list or with the specialist paediatrician under whom the child's care is being directed.

Fluid Definitions

- Clear fluids are defined as water, squash/dilute cordial, non-fizzy sports drinks such as Lucozade sport, pre-diluted juice such as Orange Fruit Shoot©, orange/apple Ribena©
- Clear fluids include sugary drinks such as Ribena©(apple or orange only) but **do not** include
 - Pure fruit juices (with or without pulp)
 - Fizzy/carbonated drinks
 - Milk of any kind (breast, formula, cows etc.)
 - Caffeinated or hot drinks
 - Red or purple drinks

5. Specific Procedure

This SOP recommends the following fasting times for those admitted within the scope of this SOP;

- Six hours for food
- Four hours for breast milk
- One hour for clear fluids

These times should be calculated from the planned procedure/general anaesthesia time. As patients should be admitted at least 1 hour prior to the planned procedure there should be time for every patient to receive clear fluid. On admission all children, who are appropriate for 1hr clear fluid fasting, will be offered an appropriate drink. If the weight of the child is known, then the volume of that drink should be 3ml kg-1. If the weight of the child is not known immediately, for there to be no delay in offering a drink of clear fluid, the following recommendations should be followed.

- **Age 3 months (or >52 weeks post conceptual age for premature children)- 1 year – 30mls**
- **Age 1-5 years – 60mls**
- **Age 6-15 years and over – 140mls**

Once the list order has been specified children will be allowed to drink up until one hour before surgery. This should be discussed at the theatre team brief. List order changes, and therefore changes to fasting times, will be communicated to ward staff and parents in a timely manner. A member of the ward staff admitting the patient will explain to the family that we allow small volume drinks in well children and that these should be sipped rather than drunk all at once.

Escalating Prolonged Fasting

The maximum clear fluid fasting should not exceed four hours, where possible, without another source of hydration. Where a child has been clear fluid fasted for four hours or more without another source of hydration, the Anaesthetist should be contacted to ask if the child can be given a clear fluid drink.

6. Emergency/Unplanned Admissions

This SOP is specifically for the management of the elective admission for planned procedures in well children. However, if the anaesthetist that will be looking after the patient feels it is appropriate other children may be managed with this SOP. This is entirely at the discretion of the consultant and the decision to allow the patient to receive clear fluids will be communicated clearly to the ward team to avoid confusion and delay to the patient attending theatre.

7. References

1. AAGBI safety guideline: Pre-operative Assessment and Patient Preparation – The role of the Anaesthetist (2010). The Association of Anaesthetists of Great Britain and Ireland. <http://www.aagbi.org/sites/default/files/preop2010.pdf>
2. Andersson H, Zaren B, Frykholm P. Low incidence of pulmonary aspiration in children allowed intake of clear fluids until called to the operating suite. *Pediatric Anesthesia* 2015; 25 (8) 770-777.
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4. Mesbah A, Thomas M. Preoperative fasting in children. *BJA Education*, 17 (10): 346–350 (2017)

5. Schmidt A, Buehler P, Seglios L et al. Gastric pH and residual volume after 1 and 2 h fasting time for clear fluids in children. *British Journal of Anaesthesia* 2015;114 (3): 477-82
6. Malmud, LS, Fisher RS, Knight LC et al. scintigraphic evaluation of gastric emptying. *Semin Nucl Med.* 1982; 12: 116-125.
7. Schmitz A, Kellenberger C, Lochbuehier N et al. Effect of different quantities of a sugared clear fluid on gastric emptying and residual volume in children: a crossover study using magnetic resonance imaging. *British Journal of Anaesthesia* 2012: 108: 644-7.