

Preoperative Fasting for Patients Undergoing Elective Surgery

A Clinical Practice Guideline developed by the
University of Toronto's Best Practice in Surgery
and Department of Anesthesia

Current status

- Despite evidence showing that a shortened fast does not increase the risk of aspiration and pulmonary complications, most hospitals continue to require patients to fast for 8 hours (after midnight) prior to elective surgery

Benefits of a shortened fast

- Shortened fast decreases the likelihood of patients coming to the operating room:
 - dehydrated
 - hypoglycemic
- Decreases the need for extra fluid intra-operatively
- Improves post-operative convalescence

Overview of CPG development

- Recommendations based on evidence from a Cochrane Review and five guidelines:
 - Canadian Anaesthesiologists' Society
 - American Society of Anaesthesiologists
 - American Society for Parenteral and Enteral Nutrition
 - European Society of Anaesthesiology
 - Royal College of Nurses
- Consensus of local experts at U of T from Surgery and Anesthesia

Patient Population

In scope:

- All patients undergoing elective surgical procedures under general anaesthesia

Out of scope:

- Patients with comorbidities which make them prone to pulmonary aspiration including gastroesophageal reflux disease, dysphagia symptoms or other gastrointestinal motility disorders should be assessed individually
- Patients having emergency surgery should be assessed individually with the risk of aspiration balanced against the risk in delay of surgery

Recommendations and Supporting Evidence

Clear fluids: Recommendation

Patients should be encouraged to drink clear fluids up to 2 hours before anesthesia administration

- Clear fluids include but are not limited to water, pulp-free juice, clear tea, black coffee, carbonated beverages, and clear carbohydrate-rich drinks
- Milk in tea and coffee is considered a solid since amount and possibility of curdling are difficult to control. Therefore, the fasting time should be similar to that after ingesting a light meal

Level of evidence: High

Clear fluids: Supporting evidence

- Cochrane review of 22 RCTs with a total of 2270 participants
- Optimum duration of fast for fluids:
 - None of the trials noted an increased occurrence of aspiration or regurgitation with a fast of 2 hours
 - There was no difference in pH between groups
- Volume of Fluids: the Cochrane Review classified volume into low ($\leq 150\text{mL}$), high ($>150\text{mL}$), and unlimited
 - No difference in the rate of aspiration or regurgitation.
 - No difference in gastric content volume or pH
 - patients in the trials that allowed unlimited fluids preoperatively had significantly less thirst both preoperatively and postoperatively.

Carbohydrate loading: Supporting evidence

- Canadian Anesthesiologists Society and the American Society of Anesthesiology recently published clinical practice guidelines that support the intake of clear fluid intake (including CHO drinks) two hours prior to induction
- Additionally, the Canadian Agency for Drugs and Technologies in Health (CADTH) reviewed 5 systematic reviews and seven evidence-based guidelines on the clinical effectiveness of preoperative CHO loading in patients undergoing surgery under general anesthetic
 - Majority of the evidence showed no benefit with preoperative carbohydrate drinks
 - Some studies showed modest effects for reduced length of stay, postoperative insulin resistance, return to GI function, and patient wellbeing

Solid food: Recommendations

Patients should be allowed to eat solid foods until midnight the night before surgery

Level of evidence: High

Solid food: Supporting evidence

Cochrane review of 22 RCTs with a total of 2270 participants

Optimum duration of fast for solids

- Two trials compared shortened to a standard fast for individuals taking solids (1983)
- Participants randomized to the treatment group received a small preoperative breakfast (mean of 249min or 199min prior to induction)
- In both trials there was no difference in the control group compared to the group who received a standard fast after midnight in regards to gastric residual volume and pH
- These trials had very small sample sizes, and thus, the quality of the evidence is low

Summary of supporting evidence

	American Society for Parenteral and Enteral Nutrition (2015)	Canadian Anaesthesiologists' Society (2015)	American Society of Anesthesiologists (2011)
Patients can drink clear fluids up to 2 hours before anesthesia administration	X	X	X
Patients can consume a light meal up to 6 hours prior to anesthesia administration	X	X	X
Patients can consume a heavier meal up to 8 hours prior to anesthesia administration (e.g. fried or fatty food or meat)	X	X	X

Special circumstances

Patients with GERD, dysphagia symptoms, or other GI motility disorders preoperatively as they may require individual recommendations for perioperative fasting



Level of evidence: Low

Based on recommendation of the American Society of Anesthesiologists

Use of antiemetics, antacids, H2 blockers and gastric stimulants

The routine use of antiemetics, antacids, H2 blockers and gastric stimulants are not recommended

- These medications should be considered when GI motility is impaired or patients are not NPO but require an urgent surgical intervention.



At this time, there is limited evidence to support the use of these agents

Consumption of breast milk

Patients can consume breast milk up to 4 hours prior to anesthesia administration



Level of evidence: Low

Implementation strategies

- Make the recommendations part of the electronic/standardized patient orders
- Make the recommendations a medical directive if possible
- Update patient education materials to reflect the changes
- Provide education to the preadmission staff, surgical secretaries, anesthesia staff, surgical staff and residents and fellows
- Have a Preadmission Nurse Champion
- Have reminders/posters for the new fasting times on display in the preadmission unit