

Public Perceptions of Preoperative Fasting Among the General Public in Malta

INTRODUCTION

Preoperative fasting before general anesthesia is a crucial measure for reducing the risk of pulmonary aspiration. In Malta, patients are traditionally instructed by the Pre-Operative Assessment Clinic to commence fasting from midnight before their procedure. This practice persists despite local guidelines issued by Mater Dei Hospital (MDH), which recommend a fasting period of six hours for solid food and two hours for clear fluids. The MDH guidelines explicitly state that patients scheduled for morning surgery may consume solid food until midnight and clear fluids until 5:30a.m.

Emerging research indicates that shorter fasting durations offer significant benefits, particularly for elderly individuals and young children. Consequently, several organizations, including the European Society of Anaesthesiology and Intensive Care (ESAIC), have issued guidelines advocating for a standardized, evidence-based approach to preoperative fasting. These recommendations seek to minimize the risk of pulmonary aspiration while enhancing patient comfort and clinical outcomes. The most recent ESAIC guidelines, published in 2011, prohibit solid food intake within six hours of surgery but permit the consumption of clear fluids up to two hours before the procedure.

This study sought to evaluate public awareness and perceptions of preoperative fasting through two outreach events held in 2024: the Association of Anaesthesiologists of Malta's stand at *Science in the City 2024* in Valletta (September), and the *World Anaesthesia Day* celebrations at the Mater Dei Hospital main foyer (October).

METHODOLOGY

The educational events targeted the general public, welcoming participants from diverse age groups, nationalities, and backgrounds. A brief multiple-choice questionnaire was designed to gather information on participants' knowledge of preoperative fasting. The questions included: 'Are you aware that you need to fast before anaesthesia?', 'How many hours do you need to fast for food?', 'How many hours do you need to fast for clear fluids?', 'Do you know why we need to fast before anaesthesia?', and 'Do you think prolonged fasting can be harmful?'.

Trainees and specialists from the Department of Anaesthesia, Intensive Care, and Pain Medicine, as well as anaesthetic nurses, approached participants using random, convenience sampling during the events. Participation in the survey was voluntary, and responses were anonymized. Demographics of the sampled population were not recorded. Data were recorded using a Google Form and subsequently analysed.

RESULTS

Fasting before elective surgery is a critical aspect of preoperative preparation, yet public awareness of these fasting protocols varies significantly. This audit evaluates the understanding of fasting protocols among individuals randomly surveyed during two public events. A total of 125 responses were analysed. The first question assessed general awareness by asking participants, 'Are you aware that you need to fast before anaesthesia?' An overwhelming 92% of respondents answered 'Yes', indicating broad recognition of the necessity of fasting, while 8% responded 'No'.

Participants were then asked, 'How many hours do you need to fast for food?'. This multiple-choice question included options ranging from 2 to 12 hours, with the flexibility for unique responses. The results showed that 0.8% of participants thought the fasting period was one hour, 2.4% believed it was two hours, 7.2% chose four hours, 37.6% selected six hours, 34.4% opted for eight hours, 4.8% answered ten hours, 11.2% said twelve hours, and 1.6% responded with 24 hours. The most common responses were six and eight hours, accounting for 72% of the answers. A six-hour fasting period for solid food is consistent with current guidelines set by ESAIC, whereas an eight-hour fasting period - specifically for foods high in fat or protein - aligns with the recommendations issued by the ESAIC Guideline Task Force in preparation for their forthcoming updated guidelines on preoperative fasting.

The third question, 'How many hours do you need to fast for clear fluids?', revealed gaps in awareness. Responses showed that 48% of participants correctly identified two hours as the recommended fasting time for clear fluids. However, 15.2% believed four hours was necessary, 14.4% selected six hours, 16% chose eight hours, 2.4% answered ten hours, and 4% believed

twelve hours was required. This result highlights that more than half of the participants were unaware of the recommended guidelines for clear fluid fasting.

The fourth question sought to evaluate participants' understanding of why fasting is required. It provided three multiple-choice options: preventing food from coming up from the stomach and entering the lungs, preventing nausea after anaesthesia, and making organs easier to identify and handle during surgery. Additionally, participants could submit unique answers. The results showed that 52% correctly identified the prevention of aspiration as the primary reason for fasting. Another 25.6% believed fasting prevents nausea after anaesthesia, while 14.4% selected the facilitation of surgical visibility. A further 6.4% provided unique responses, such as "to ensure that the blood is pure", "to reduce the amount of energy wasted", "to prevent urination", "to relax the muscles", "to reduce the amount of anaesthesia used", "to prevent complications during surgery", and "to ensure that no pain is felt". 1.6% recorded no response for this question.

The final question, 'Do you think prolonged fasting can be harmful before surgery?', yielded varied responses. A majority of 60% acknowledged the potential harm of extended fasting, while 39.2% did not. One response was not recorded. These results underscore the need for improved staff education on preoperative fasting and the risks associated with prolonged fasting, to ensure that patients receive accurate and informed guidance.

DISCUSSION

The findings of this study demonstrate that there is a general awareness of the need of adequate fasting guidelines and the rationale behind preoperative fasting for elective surgery. However, significant scope remains for further education and awareness. International guidelines issued by ESAIC provide a comprehensive overview of current knowledge on preoperative fasting. These guidelines enable medical practitioners, including anaesthesiologists across Europe, to incorporate this knowledge into their daily practice to ensure optimal patient care.

Preoperative fasting is defined as a prescribed period before a surgical procedure during which

patients are prohibited from consuming solids or liquids orally. This standard surgical practice aims to minimize the risk of pulmonary aspiration during anaesthesia. However, prolonged liquid fasting beyond the recommended guidelines can lead to a range of complications, including dehydration, acute kidney injury, hypoglycaemia, discomfort, and an increased physiological stress response. Prolonged fasting has also been associated with delayed recovery, postoperative nausea and vomiting, and impaired wound healing, all of which compromise patient safety, prolong hospital stays, and escalate healthcare costs.¹⁻³

Prolonged fasting contributes to hunger, thirst, and activation of the sympathetic nervous system, resulting in irritability and anxiety. It suppresses insulin secretion while elevating growth hormone and glucagon levels, thereby disrupting glucose metabolism and causing electrolyte imbalances. Insulin resistance, a common postoperative phenomenon, is further exacerbated by excessively long fasting periods, reducing the body's ability to combat infections, repair tissues, and heal wounds effectively.²⁻³

Recent studies have explored the minimal safe fasting period for solid foods. Evidence suggests that residual solids in the stomach at the time of anaesthetic induction cannot be reliably excluded with fasting durations of only 2-4 hours.^{1,4} Consequently, the current recommendation is to avoid solid foods for at least six hours before surgery, with the ASA guidelines extending this requirement to eight hours for meals high in fat or protein.⁵ Adherence to this guideline is improved when patients are allowed to consume clear fluids closer to the time of the procedure.^{2,3,6}

One of the primary recommendations from ESAIC is to encourage adults to consume clear fluids - such as water, tea or coffee without milk, or pulp-free juice - up to two hours before elective surgery. For children, clear fluid intake is permitted up to one hour prior to the induction of anaesthesia.^{1,6} Alcohol is excluded from this recommendation. Evidence supports the safety of clear fluid intake, highlighting its role in reducing patient discomfort and improving well-being.²⁻⁴

Additionally, chewing gum or sucking on a boiled sweet immediately before anaesthetic induction should not result in the cancellation or delay of surgery.

ONE OF THE PRIMARY RECOMMENDATIONS FROM ESAIC IS TO ENCOURAGE ADULTS TO CONSUME CLEAR FLUIDS - SUCH AS WATER, TEA OR COFFEE WITHOUT MILK, OR PULP-FREE JUICE - UP TO TWO HOURS BEFORE ELECTIVE SURGERY

Studies indicate that gastric fluid volume and pH levels are not significantly elevated in such cases compared to those who abstained. Conversely, smoking prior to surgery has been associated with increased gastric fluid volumes and more acidic gastric pH levels, making it advisable to discourage smoking before elective surgical procedures. Factors such as oesophageal reflux, diabetes, obesity, and pregnancy, which delay gastric emptying, do not necessarily warrant deviations from these fasting guidelines. However, these conditions may require adjustments in overall anaesthetic management.^{2,3,4,6,7}

The results of this research highlight the fact that while the general public understands the importance of adequate preoperative fasting as part of the perioperative process, their awareness may not reflect current practice. It is essential for healthcare professionals to remain informed about updated fasting recommendations and ensure they provide patients with up-to-date information and mitigate the complications arising from extended fasting periods. Enhancing both staff and patient knowledge can significantly improve safety and optimize the perioperative experience.⁷

Several factors contribute to non-adherence to fasting guidelines, including inadequate staff knowledge, inconsistent or insufficient patient instructions, patient anxiety, and changes in operating room schedules.⁸ Many patients are still instructed to remain 'nil by mouth' from midnight before elective surgery, which often leads to unnecessarily prolonged fasting, particularly for patients scheduled for afternoon procedures.⁹ To address this, preoperative assessments should include comprehensive patient education, incorporating both verbal and written information, and a 'Sip til Send' protocol should be implemented and reinforced. A 'Sip til Send' protocol allows patients to consume clear liquids until the time of being sent to the operating theatre.⁷ This approach is pivotal in improving patient understanding, satisfaction, and compliance with fasting protocols.^{5,10,11}

Implementing standardized algorithms for staff to improve coordination and communication across theatres, wards, and admission areas, has proven successful in enhancing adherence to fasting guidelines in centres abroad. Furthermore, additional procedural improvements could be implemented, such as providing clear fluids to patients in the early morning if they are not scheduled for the first time slot in the operating theatre.¹¹ These strategies emphasize the importance of efficient perioperative care and underscore the need for systemic changes to eliminate outdated practices, such as prolonged

fasting, and thus ensure alignment with evidence-based recommendations.^{3,5,9,10,11}

CONCLUSION

This audit concludes that, amongst a sample of the general public, there is a general awareness of the current fasting guidelines and the rationale behind why patients are asked to fast before elective surgery. However, there remains a significant need for further education and awareness on this matter. It is particularly noteworthy that many participants demonstrated an understanding of the distinction between fasting requirements for solids and clear fluids, despite this practice still not being implemented locally. This should primarily be addressed at the Pre-Operative Assessment Clinic, but efforts should also be made to improve communication with patients across all clinical settings.

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