

Postoperative feeding practices and nutritional intake in patients with head and neck cancer undergoing surgery with flap tissue transfer reconstruction: a scoping review

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Background: Surgical resection of larger head and neck tumours (HNC) often leave “volume” defects requiring reconstruction with flap tissue. Postoperatively, patients are made nil-by-mouth to facilitate wound healing and enterally tube fed until they can recommence oral intake. Practices for the timing/type of oral intake reintroduced varies internationally, including how patients are tapered off tube feeding and the impact this may have on nutritional adequacy. ‘Early oral feeding’ (EOF) has gained momentum as part of enhanced recovery after surgery initiatives with reported patient and service benefits.

Objectives: This scoping review aimed to map the evidence on post-operative feeding practices of patients with HNC undergoing flap surgery when transitioning from tube to oral intake.

Methods: Review was conducted using JBI guidance and registered with Open Science Framework (doi:10.17605/OSF.IO/2E38C). The PCC criteria was employed:

- Population (HNC, flap surgery);
- Concept (postoperative feeding practices);
- Context (acute postoperative settings).

A search of six databases and grey literature was jointly undertaken with a medical librarian: Medline, Embase, CINAHL, Scopus, Cochrane, and Web of Science. Titles/abstracts and full-text articles were independently screened by two researchers. Eligible articles: RCTs, observational studies, qualitative studies, reviews, case series (with $n > 10$), conference abstracts and guidelines. No date restrictions were applied. Backward and forward citation was conducted. Results were reported in accordance with PRISMA-Scr. Patient and Public Involvement informed the review question and search terms, especially for grey literature.

Results: 5093 citations were retrieved and imported into Covidence. Following deduplication, 2535 titles/abstracts and 405 full-texts were screened, 36 were included. Findings were synthesised using a narrative description approach:

- Type/timing of enteral feeding: intraoperative nasogastric tube or gastrostomy pre-, intra- or postoperatively, with feeds commencing within 24hrs of surgery.
- Type/timing to oral feeding: most sources defined EOF as ≤ 5 days, as early as postoperative day 1 (sterile water \pm fluids \pm smooth puree \pm solid/semi-solid diet). Delayed/traditional feeding was defined as > 5 days (fluids progressing to soft diet), or after a 6-12- or 20-day nil-by-mouth period.
- Adequacy of intake: threshold for withdrawing enteral feeding varied from 60-100% of estimated nutritional requirements. Postoperative underfeeding common, affecting 40% of patients.

Conclusion: Postoperative feeding practices in HNC vary and are associated with clinician preferences and unit culture. Further research is required investigating the optimal postoperative feeding practices.

Postoperative feeding practices and nutritional intake in patients with head and neck cancer undergoing surgery with flap tissue reconstruction: a scoping review

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Background

'You go from being told not to eat or drink to suddenly being told to get on with it. The nose tube got pulled out, I felt rushed and had to make my own breakthrough with eating. I wish I had had more support' – (Patient and Public Involvement Contributor)

Surgical resection of larger head and neck tumours (HNC) often leave "volume" defects requiring reconstruction with flap tissue. Postoperatively, patients are made nil-by-mouth to facilitate wound healing and reduce the risk of flap dehiscence and/or fistula, receiving enteral tube feeding until they can recommence oral intake. Practices for the timing and type of oral intake reintroduced varies internationally, including how patients are tapered off tube feeding and the impact this may have on nutritional adequacy^{1,2}. 'Early oral feeding' has gained momentum as part of enhanced recovery after surgery initiatives with reported patient, service, and economic benefits³⁻⁵. This scoping review aimed to map the evidence on post-operative feeding practices of patients with HNC undergoing flap surgery when transitioning from tube to oral intake.



Methods

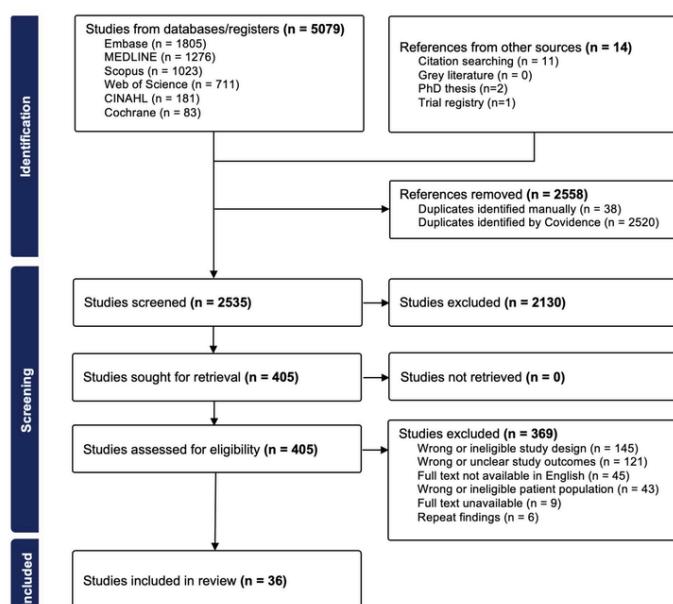
JBI guidance was followed to answer the following review question using the Population, Concept and Context criteria:

What are the postoperative feeding practices and nutritional intake of patients with head and neck cancer transitioning from tube to oral feeding after undergoing reconstructive flap surgery?

- Six databases were searched with a medical librarian: Medline, Embase, CINAHL, Scopus, Cochrane, and Web of Science.
- Grey literature was searched through google scholar and relevant society websites.
- Titles, abstracts and full-text articles were screened independently by two researchers. A third reviewer was consulted when required.
- Results were reported in accordance with PRISMA-Scr.

Results:

36 articles were included comprising 4 RCTs, 1 registry, 6 audits/service evaluations, 4 prospective studies, 6 literature reviews, 3 systematic reviews, 11 retrospective studies and 1 guideline.



Timing and type of feeding tubes

Sources identified that feeding tubes placed mainly comprised

- 1) Nasogastric tube (mainly intraoperatively)
- 2) Gastrostomy (pre-, intra- or postoperatively)

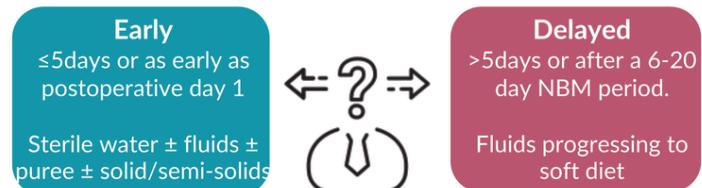
Factors associated with requiring gastrostomy included:

- Prior or adjuvant radiotherapy
- Advanced tumour stage or recurrent disease
- Tumour site, resection extent, type of flap or ≥2 flaps
- Poor baseline swallow or dysphagia anticipated to worsen
- Pre-op BMI <18.5kg/m², Age >70 years, Medication >3
- Alcohol >40units/week, ASA grade III-IV, patient preference
- Intraoperative tracheostomy



Timing and type of first oral intake

Timing to oral feeding is influenced by the operating surgeon and fell into early or delayed/traditional feeding approaches



Adequacy of nutritional intake

- Thresholds for withdrawing tube feeding vary from 60-100% of estimated nutritional requirements. An average of 3 days is required to achieve adequate oral intake from restarting.
- Postoperative underfeeding is common and associated with poorer outcomes (flap loss, infection and dehiscence).
- Inadequate nutritional intake associated with overweight status, older age, tracheostomy and bilateral neck dissection. Adequate intake associated with a higher number of oral feeding days

Conclusion

Postoperative feeding practices vary. Benefits of early oral feeding include reduced LoS without increased complications. Further studies should identify candidacy for this approach. Limited literature has explored patient experiences or staff practices.