



Evidence-Based Resource

What Is The Ideal Post-Pyloromyotomy Feeding Regimen?

Evidence Level II

How post-pyloromyotomy feeding contributes to emesis, time to full feeds, and length of hospitalization is not well established, resulting in surgeons often prescribing feeding regimens based on preference.

Results of a systematic literature search did not overwhelmingly favour one feeding regimen over another to reduce emesis; however a late, gradual, standardized feeding schedule seems to be somewhat protective. Between early and late feeding schedules, late was more commonly favoured as it appears to reduce the incidence of emesis in both randomized (Turnock 1991) and non-randomized studies (El-Gohary 2010, Georgeson 1993, Lee 2001, van der Bilt 2004, Leahy 1982). However, several additional studies found no difference between early and late feeding regimens in terms of frequency of emesis (Wheeler 1990, Gollin 2000). Results were similarly split concerning the effect of ad libitum feedings versus standardized feeding on emesis. While three comparative studies showed no difference (Adibe 2007, Garza 2002, Adibe 2014), another two studies found ad libitum feedings to increase frequency of emesis (Carpenter 1999, Puapong 2002). Rapid feeding, however, was conclusively shown to increase postoperative emesis, as compared to a gradual, slow feeding protocol (Castellani 2014). Overall, one can conclude that postoperative emesis will occur regardless of feeding approach; however it may be reduced by utilizing a late, gradual, standardized feeding schedule.

When considering time to full feeds, however, the optimal feeding regimen appears to be the opposite. Ad libitum feeding as compared to a standardized schedule reduces the time required to achieve full feeds in patients (Adibe 2007, Carpenter 1999, Puapong 2002, Garza 2002). It is less clear, however, how an early versus delayed feeding regimen affects this outcome. While one comparative control study indicated that early feeding shortens the interval to full feeds (Gollin 2000) and another successfully paired earlier feeding times with an accelerated feeding advancement (Georgeson 1993), other studies show no difference between regimens (Lee 2001, van der Bilt 2004, Turnock 1991). Therefore, while results are not conclusive, time to full feed may be reduced by an early, ad libitum postoperative feeding schedule.

Results were also variable in the effect of ad libitum versus structured feeding on length of hospital stay (LOS). While four studies determined that LOS could be decreased through the utilization of an ad libitum feeding schedule (Carpenter 1999, Garza 2002, Puapong 2002, Ein 2014), an additional three studies concluded there was no difference (van der Bilt 2004, Adibe 2007, Adibe 2014). Comparing early versus late feeding, the majority of studies agreed that the timing of feeding did not affect length of hospitalization (Wheeler 1990, Lee 2001, van der Bilt 2004, Leahy 1982).

Based on the available evidence we recommend an early, ad libitum feeding schedule to decrease time to full feeds and length of hospitalization. While this approach may increase emesis, this does not appear to adversely affect patient outcomes. These results are similar to a published literature review on this topic which concluded that following a period of fasting, ad libitum feeding should be initiated post-pyloromyotomy (Graham 2013). In the future, well conducted randomized control trials are needed to further clarify the effect of feeding regimens on emesis and associated outcomes.

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The full systematic review can be found [here](#).

Randomized Controlled Trials

[Adibe OO, Iqbal CW, Sharp SW, Juang D, Snyder CL, Holcomb GW, Ostlie DJ, St. Peter SD. Protocol versus ad libitum feeds after laparoscopic pyloromyotomy: A prospective randomized trial. Journal of Pediatric Surgery 2014;49:129-32.](#)

[Turnock RR, Rangelcroft L. Comparison of postpyloromyotomy feeding regimens in infantile hypertrophic pyloric stenosis. Journal of the Royal College of Surgeons of Edinburgh 1991;36\(3\):164-5.](#)

[Wheeler RA, Najmaldin AS, Stoodley N, Griffiths DM, Burge DM, Atwell JD. Feeding regimens after pyloromyotomy. British Journal of Surgery 1990;77\(9\):1018-9.](#)

Non-Randomized Trials: Comparison Studies

[Adibe OO, Nichol PE, Lim FY, Mattei P. Ad libitum feeds after laparoscopic pyloromyotomy: a retrospective comparison with a standardized feeding regimen in 227 infants. Journal of Laparoscopic & Advanced Surgical Techniques 2007;17\(2\):235-7.](#)

[Carpenter RO, Schaffer RL, Maeso CE, Sasan F, Nuchtern JG, Jaksic T, Harberg FJ, Wesson DE, Brandt ML. Postoperative ad lib feeding for hypertrophic pyloric stenosis. Journal of Pediatric Surgery 1999;34\(6\):959-61.](#)

[Castellani C, Peschaut T, Schippinger M, Saxena AK. Postoperative emesis after laparoscopic pyloromyotomy in infantile hypertrophic pyloric stenosis. Acta Paediatrica 2014;103:e84-7.](#)

[El-Gohary Y, Yeap BH, Hempel G, Gillick J. A 9-year single center experience with circumumbilical Ramstedt's pyloromyotomy. European Journal of Pediatric Surgery 2010;20\(6\):387-90.](#)

[Garza JJ, Morash D, Dzakovic A, Mondschein JK, Jaksic T. Ad libitum feeding decreases hospital stay for neonates after pyloromyotomy. Journal of Pediatric Surgery 2002;37\(3\):493-5.](#)

[Georgeson KE, Corbin TJ, Griffen JW, Breaux CW Jr. An analysis of feeding regimens after pyloromyotomy for hypertrophic pyloric stenosis. Journal of Pediatric Surgery 1993;28\(11\):1478-80.](#)

[Golladay ES, Broadwater JR, Mollitt DL. Pyloric stenosis – a timed perspective. Archives of Surgery 1987;122:825-6.](#)

[Gollin G, Dosluglu H, Flummerfeldt P, Caty MG, Glick PL, Allen JE, Azizkhan RG. Rapid advancement of feedings after pyloromyotomy for pyloric stenosis. Clinical Pediatrics \(Philadelphia\) 2000;39\(3\):187-90.](#)

[Leahy A, Fitzgerald RJ. The influence of delayed feeding on postoperative vomiting in hypertrophic pyloric stenosis. British Journal of Surgery 1982;69:658-9.](#)

[Lee AC, Munro FD, MacKinlay GA. An audit of post-pyloromyotomy feeding regimens. European Journal of Pediatric Surgery 2001;11\(1\):12-4.](#)

[Leinwand MJ, Shaul DB, Anderson KD. A standardized feeding regimen for hypertrophic pyloric stenosis decreases length of hospitalization and hospital costs. Journal of Pediatric Surgery 2000;35\(7\):1063-5.](#)

[Puapong D, Kahng D, Ko A, Applebaum H. Ad libitum feeding: safely improving the cost-effectiveness of pyloromyotomy. Journal of Pediatric Surgery 2002;37\(12\):1667-8.](#)

[van der Bilt JD, Kramer WL, van der Zee DC, Bax NM. Early feeding after laparoscopic pyloromyotomy: the pros and cons. Surgical Endoscopy 2004;18\(5\):746-8.](#)

Non-Randomized Trials: Non-Comparison Studies

[Ein SH, Masiakos PT, Ein A. The ins and outs of pyloromyotomy; what we have learned in 35 years. Pediatric Surgery International 2014;30:467-80.](#)

[Foster ME, Lewis WG. Early postoperative feeding--a continuing controversy in pyloric stenosis. Journal of the Royal Society of Medicine 1989;82\(9\):532-3.](#)

Other Study Designs

[Graham KA, Laituri CA, Markel TA, Ladd AP. A review of postoperative feeding regimens in infantile hypertrophic pyloric stenosis. Journal of Pediatric Surgery 2013;48:2175-9.](#)

