

# FPIN's Help Desk Answers

## Thickened Feedings for Infants with Gastroesophageal Reflux

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### Clinical Question

Does the use of thickened feedings lead to better outcomes in infants with gastroesophageal reflux?

### Evidence-Based Answer

Bottle-fed infants with gastroesophageal reflux should be given thickened formula feedings. (Strength of Recommendation: A, based on consistent meta-analyses of randomized controlled trials [RCTs].) Thickened formula feedings moderately decrease occurrences of regurgitation and parent-reported symptoms, and they improve weight gain compared with nonthickened formula feedings.

### Evidence Summary

A 2017 meta-analysis included eight RCTs comparing thickened feedings vs. usual formula in bottle-fed term infants up to six months of age with gastroesophageal reflux (N = 637).<sup>1</sup> Feed thickeners varied (carob bean gum, cornstarch, or rice cereals), and study duration ranged from one to eight weeks. At the end of therapy, there were fewer episodes of regurgitation per day in the thickened feedings group (eight RCTs; n = 637; weighted mean difference [WMD] = -1.97; 95% CI, -2.43 to -1.61), and infants receiving thickened feedings were more likely to be asymptomatic from regurgitation (eight RCTs; n = 637; relative risk [RR] = 2.5; 95% CI, 1.38 to 4.51). No major adverse effects were reported in term infants

receiving thickened feedings. The RCTs included in the systematic review were limited by unclear risk of allocation bias and potential lack of blinding of parents who may have noted the increased viscosity of thickened formula.

A 2008 meta-analysis of 14 RCTs (six of which were double-blinded; N = 877) of healthy infants and children 24 months or younger compared thickened feedings vs. placebo or usual formula for gastroesophageal reflux.<sup>2</sup> Control groups received nonthickened formula, and interventions lasted one to eight weeks. Primary outcomes were changes in reflux symptoms (e.g., regurgitation, vomiting, crying, gagging) and adverse effects as reported by parents, guardians, or physicians. Six of the RCTs were also included in the 2017 meta-analysis discussed above; however, this meta-analysis also reported weight gain. The other RCTs were excluded from the 2017 meta-analysis because of inclusion of infants older than six months and crossover studies. In trials reporting regurgitation, there was a decrease in episodes per day (seven RCTs; n = 369; WMD = -1.76; 95% CI, -2.72 to -0.80). Three RCTs showed an increased rate of resolution of regurgitation symptoms (n = 327; RR = 2.9; 95% CI, 1.7 to 4.9). Two RCTs showed a reduction in episodes of regurgitation and vomiting per day (n = 144; WMD = -1.37; 95% CI, -2.53 to -0.20). Two RCTs showed a reduction in episodes of vomiting per day (n = 156; WMD = -0.97; 95% CI, -1.54 to -0.39). In the four RCTs reporting data on weight gain, there was a statistically significant increase for infants fed with thickened formula (n = 265; WMD = 3.55 g per day; 95% CI, 1.55 to 5.80). The study was limited by significant heterogeneity of thickeners and parent questionnaires, potential reporting bias by parents, and potential bias due to inclusion of manufacturer-sponsored trials.

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### References

1. Kwok TC, et al. Feed thickener for infants up to six months of age with gastro-oesophageal reflux. *Cochrane Database Syst Rev.* 2017;(12):CD003211.
2. Horvath A, et al. The effect of thickened-feed interventions on gastroesophageal reflux in infants [published correction appears in *Pediatrics*. 2009;123(4):1254]. *Pediatrics*. 2008;122(6):e1268-e1277. ■

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