

GASTRO-OESOPHAGEAL REFLUX

Supporting information

This guideline has been prepared with reference to the following:

NICE. Gastro-oesophageal reflux disease in children and young people: diagnosis and management : guidance. 2019. NICE. London

<https://www.nice.org.uk/guidance/ng1>

Rosen R, Vandenas Y, Singendonk M et al. Pediatric Gastroesophageal Reflux Clinical Practice Guidelines: Joint Recommendations of the North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition and the European Society for Pediatric Gastroenterology, Hepatology, and Nutrition. *J Pediatr Gastroenterol Nutr.* 2018;66:516-54

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5958910/>

Does positioning have an effect on GOR?

A systematic review of RCTs (Carroll, 2002) quotes a controlled prospective study of 9 infants with GOR which found that positioning at a 60 degree elevation in an infant seat increased reflux compared with the prone position.

The “supine reversed-Trendelenburg sleeping position” was found to increase acid reflux parameters in all 10 consecutively investigated infants in a Belgian study (Bagucka, 1999).

A prospective sham-controlled trial of 51 patients found that left lateral positioning did not result in a significant improvement in symptoms other than vomiting (Loots, 2014). An earlier study of 18 preterm infants with GOR (Ewer, 1999) compared prone, left lateral and right lateral positions. The reflux index was significantly less in prone (6.3) and left lateral (11.0) positions compared to the right lateral (29.4).

A study in 22 premature infants (Corvaglia, 2007) found that oesophageal exposure to acid and nonacid GOR was lower in the prone (4.4% and 0.3%, respectively) and the left lateral (7.5% and 0.7%, respectively) positions than in the right lateral (21.4% and 1.2% respectively) and supine (17.6% and 1.3%, respectively) positions.

Bagucka B, De Schepper J, Peelman M, et al. Acid gastro-oesophageal reflux in the 10 degrees-reversed-Trendelenburg-position in supine sleeping infants. *Acta Paediatr Taiwan* 1999;40:298-301

Carroll AE, Garrison MM, Christakis DA. A systematic review of nonpharmacological and nonsurgical therapies for gastroesophageal reflux in infants. *Arch Pediatr Adolesc Med* 2002;156:109-13
<http://archpedi.jamanetwork.com/article.aspx?articleid=191516>

Corvaglia L, Rotatori R, Ferlini M, et al. The effect of body positioning on gastroesophageal reflux in premature infants: evaluation by combined impedance and pH monitoring. *J Pediatr* 2007;151:591-6

Ewer AK, James ME, Tobin JM. Prone and left lateral positioning reduce gastro-oesophageal reflux in preterm infants. *Arch Dis Child Fetal Neonatal Ed* 1999;81:F201-5
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1721012/pdf/v081p0F201.pdf>

Loots C, Kritas S, van Wijk M et al. Body positioning and medical therapy for infantile gastroesophageal reflux symptoms. *J Pediatr Gastroenterol Nutr.* 2014;59:237-43.

Evidence Level: I (Against infant seats and head-elevation); II (for the use of the left lateral position)

Are thickened feeds of use for GOR?

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A 2017 systematic review of RCTs found that formula-fed term infants with GOR on feed thickeners had nearly two fewer episodes of regurgitation per day (mean difference -1.97 episodes per day, 95% confidence interval (CI) -2.32 to -1.61; 6 studies, 442 infants, moderate-certainty evidence) and were 2.5 times more likely to be asymptomatic from regurgitation at the end of the intervention period (risk ratio 2.50, 95% CI 1.38 to 4.51) when compared to infants with GOR on unthickened feeds (Kwok, 2017).

Kwok TC, Ojha S, Dorling J. Feed thickener for infants up to six months of age with gastro-oesophageal reflux. *Cochrane Database Syst Rev.* 2017 Dec 5;12:CD003211
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD003211.pub2/full>

Evidence Level: I

Is Gaviscon of use in GOR?

A systematic review of RCTs (Tighe , 2014) concluded that moderate evidence exists to indicate the Gaviscon improves symptoms of GOR in infant. A meta-analysis was not possible due to the changing formulation of Gaviscon, the diversity of study methods and heterogeneity of results.

Tighe M, Afzal N, Bevan A et al. Pharmacological treatment of children with gastro-oesophageal reflux. *Cochrane database of systematic reviews.* 2014.
<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD008550.pub2/full>

Evidence Level: I

Is domperidone of use in GOR?

No robust RCT evidence is available to support the use of domperidone. A 2014 systematic review of RCTs found two paediatric studies (n=80 and n=17) which found no statistically significant improvement in GOR symptoms.

Tighe M, Afzal N, Bevan A et al. Pharmacological treatment of children with gastro-oesophageal reflux. *Cochrane database of systematic reviews.* 2014.
<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD008550.pub2/full>

Evidence Level: I

Is ranitidine/cimetidine plus a pump inhibitor of use in relieving oesophagitis caused by GOR?

A small (n=18) prospective, double-blind study (Pfefferkorn, 2006) compared the use of proton pump inhibitors for reflux esophagitis in children with and without ranitidine. The authors concluded that there appeared to be no additional benefit to supplementation with ranitidine.

Pfefferkorn MD, Croffie JM, Gupta SK et al. Nocturnal acid breakthrough in children with reflux esophagitis taking proton pump inhibitors. *J Pediatr Gastroenterol Nutr.* 2006;42:160-5.

Evidence Level: III

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