

## The management of gastro-oesophageal reflux in infants (< 1 year)

**Proton pump inhibitors (PPIs) and H2 Receptor Antagonists (H2RAs) have been shown to cause harm in infants**

### What is gastro-oesophageal reflux (GOR)?

GOR is the passage of gastric contents into the oesophagus, often resulting in vomiting or 'possetting'. GOR is common affecting at least 40% of infants, usually beginning before 8 weeks of age, peaks at 4 months and resolves by 1 year in the majority of cases. There is no relationship between an infant with GOR and crying or irritability.<sup>1</sup> There is also no evidence that 'silent reflux' exists<sup>1</sup>.

### Acid suppression medication use in infants with reflux

The use of PPIs and H2RAs to manage infants with GOR has increased. These medications have been shown to have no benefit in improving symptoms in infant GOR.

In contrast, studies have shown that PPIs and H2RAs can cause harm, including:

- 3.6 times more likely to develop acute gastroenteritis<sup>2</sup>
- 6.4 times more likely to develop community-acquired pneumonia<sup>2</sup>
- 1.6 times more likely to have a fracture (with a higher dose, starting earlier (under 6 months old), and a longer duration all individually linked to increased fracture risk)<sup>3</sup>
- 5.24 times more likely to contract *Clostridium difficile* infection<sup>4</sup>
- Vitamin B12 deficiency, hypomagnesaemia and rebound hyperacidity after discontinuation<sup>5</sup>

If parents are requesting PPIs or H2RAs it is important to explain the harms associated with these medications and that there are no proven benefits in infants with reflux.

### Gastro-oesophageal reflux disease (GORD)

**The prescription of PPIs and H2RAs is only indicated in infants with Gastro-oesophageal reflux *disease* (GORD).** Only a small percentage of infants have GORD, characterised by frequent vomiting AND additional symptoms such as:

- Choking, coughing or wheezing during feeds
- Vomiting up blood
- Distress during feeds or refusal to feed
- Poor weight gain or weight loss

### How to know when it's GORD or something else

In some cases, infants presenting with GORD-like symptoms may actually have a Cow's Milk Protein Allergy (CMPA) or lactose intolerance.

Below is a useful flowchart to help guide your assessment process in determining if a crying/unsettled infant has GOR, GORD, CMPA or lactose intolerance.

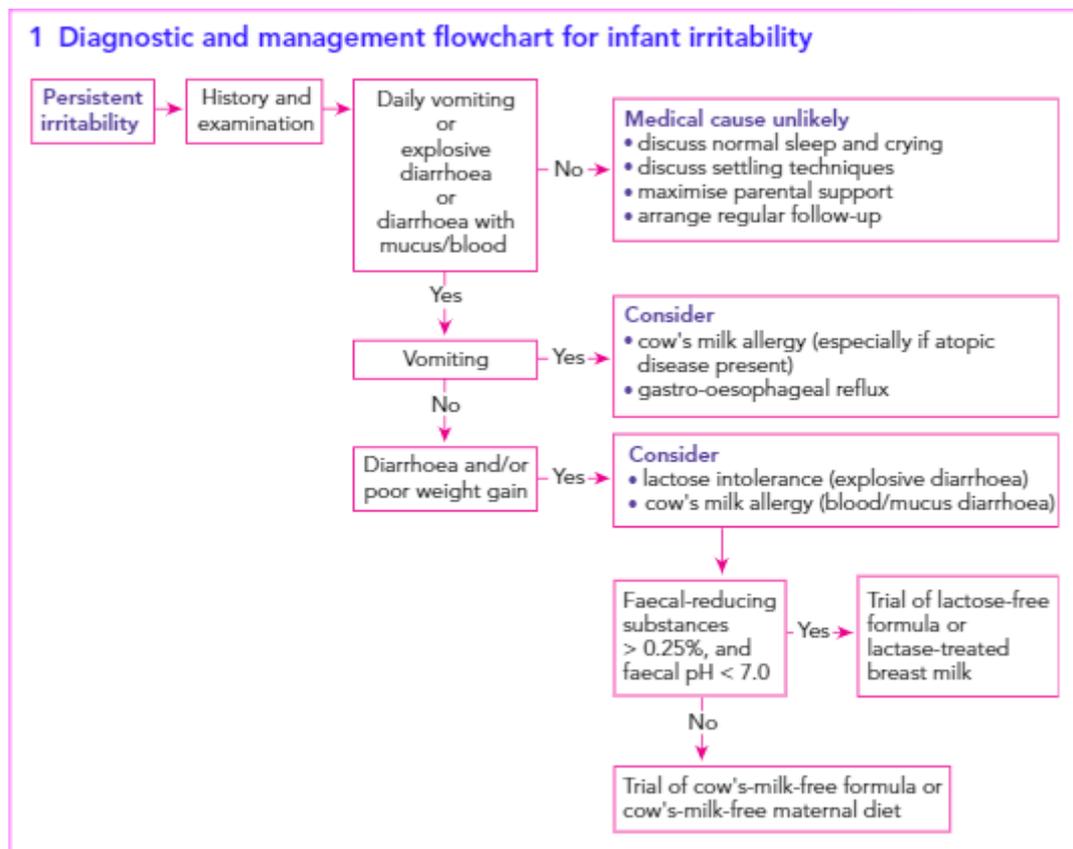


Image from: Hiscock and Jordan<sup>6</sup>, MJA 2004

## How to manage infants with reflux

Most importantly, listen to parents and validate their concerns.

If you have an infant who is happily vomiting and is growing well, provide reassurance to parents that their baby is physically healthy and a 'happy chucker'.

For infants who are crying and irritable, discuss normal sleep and crying patterns (PURPLE Crying Curve, below); baby could be 'physically healthy, but a high crier'; and settling techniques (see The Period of PURPLE Crying, and other resources below).

## Curves of Early Infant Crying 2 Weeks to 4 - 5 Months

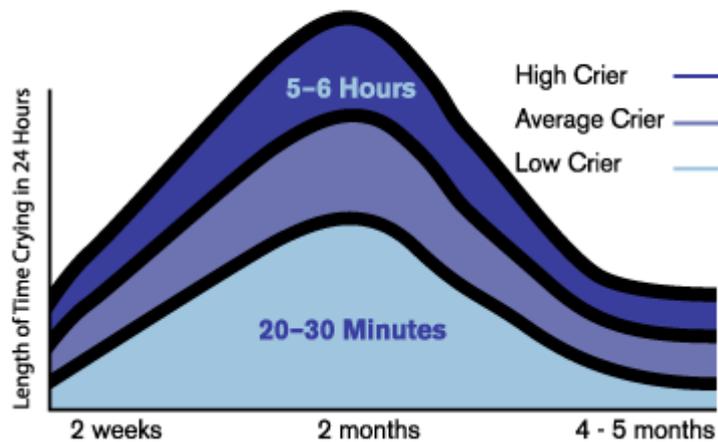


Image from: *The Period of PURPLE Crying*<sup>6</sup>

## Resources

For further information on infant GOR, crying patterns and settling techniques, refer to:

- The Royal Children's Hospital Clinical Practice Guidelines
  - Unsettled or crying babies (colic) [www.rch.org.au/clinicalguide/guideline\\_index/Crying\\_Baby\\_Infant\\_Distress/](http://www.rch.org.au/clinicalguide/guideline_index/Crying_Baby_Infant_Distress/)
  - Gastro-oesophageal reflux in infants [www.rch.org.au/clinicalguide/guideline\\_index/Gastrooesophageal\\_reflux\\_in\\_infants/](http://www.rch.org.au/clinicalguide/guideline_index/Gastrooesophageal_reflux_in_infants/)
- The Period of PURPLE Crying [purplecrying.info/](http://purplecrying.info/)
- MCRI Sleep Podcast [mcri.edu.au/sleeppodcast](http://mcri.edu.au/sleeppodcast)

For resources to direct parents to:

- The Period of PURPLE Crying [purplecrying.info/](http://purplecrying.info/)
- MCRI Sleep Podcast [mcri.edu.au/sleeppodcast](http://mcri.edu.au/sleeppodcast)
- Raising Children Network website
  - Gastro-oesophageal reflux and GORD [raisingchildren.net.au/guides/a-z-health-reference/reflux](http://raisingchildren.net.au/guides/a-z-health-reference/reflux)
  - Babies: Sleep [raisingchildren.net.au/babies/sleep](http://raisingchildren.net.au/babies/sleep)
- The Royal Children's Hospital Kids Health Info Fact Sheets (available online and via app):
  - Crying and unsettled babies – colic [www.rch.org.au/kidsinfo/fact\\_sheets/Crying\\_and\\_unsettled\\_babies/](http://www.rch.org.au/kidsinfo/fact_sheets/Crying_and_unsettled_babies/)
  - Reflux (GOR) and GORD [www.rch.org.au/kidsinfo/fact\\_sheets/Reflux\\_GOR\\_and\\_GORD/](http://www.rch.org.au/kidsinfo/fact_sheets/Reflux_GOR_and_GORD/)

## References

1. Heine RG, Jordan B, Lubitz L, et al. Clinical predictors of pathological gastro-oesophageal reflux in infants with persistent distress. *Journal of Paediatrics and Child Health* 2006; 42(3):134-9.
2. Canani RB, Cirillo P, Roggero P, et al. Therapy With Gastric Acidity Inhibitors Increases the Risk of Acute Gastroenteritis and Community-Acquired Pneumonia in Children. *Pediatrics* 2006; 117(5):e817-20
3. Malchodi L, Wagner K, Susi A, et al. Early Acid Suppression Therapy Exposure and Fracture in Young Children. *Pediatrics* 2019; 144(1):e20182625.
4. Freedberg DE, Lamoussé-Smith ES, Lightdale JR, et al. Use of Acid Suppression Medication is Associated with Risk for *C. difficile* Infection in Infants and Children: A Population-based study. *Clinical Infectious Disease* 2015; 61(6):912-7.
5. De Bruyne P, Ito S. Toxicity of long-term use of proton pump inhibitors in children. *Archives of Disease in Childhood* 2018; 103(1): 78-82.
6. Hiscock H, Jordan B. Problem crying in infancy. *Medical Journal of Australia* 2004;181(9):507-12.
7. The Period of Purple Crying. *Why does my baby cry so much?* Utah: National Center on Shaken Baby Syndrome. [Cited 15 August 2019] Available from URL: <http://purplecrying.info/sub-pages/crying/why-does-my-baby-cry-so-much.php>