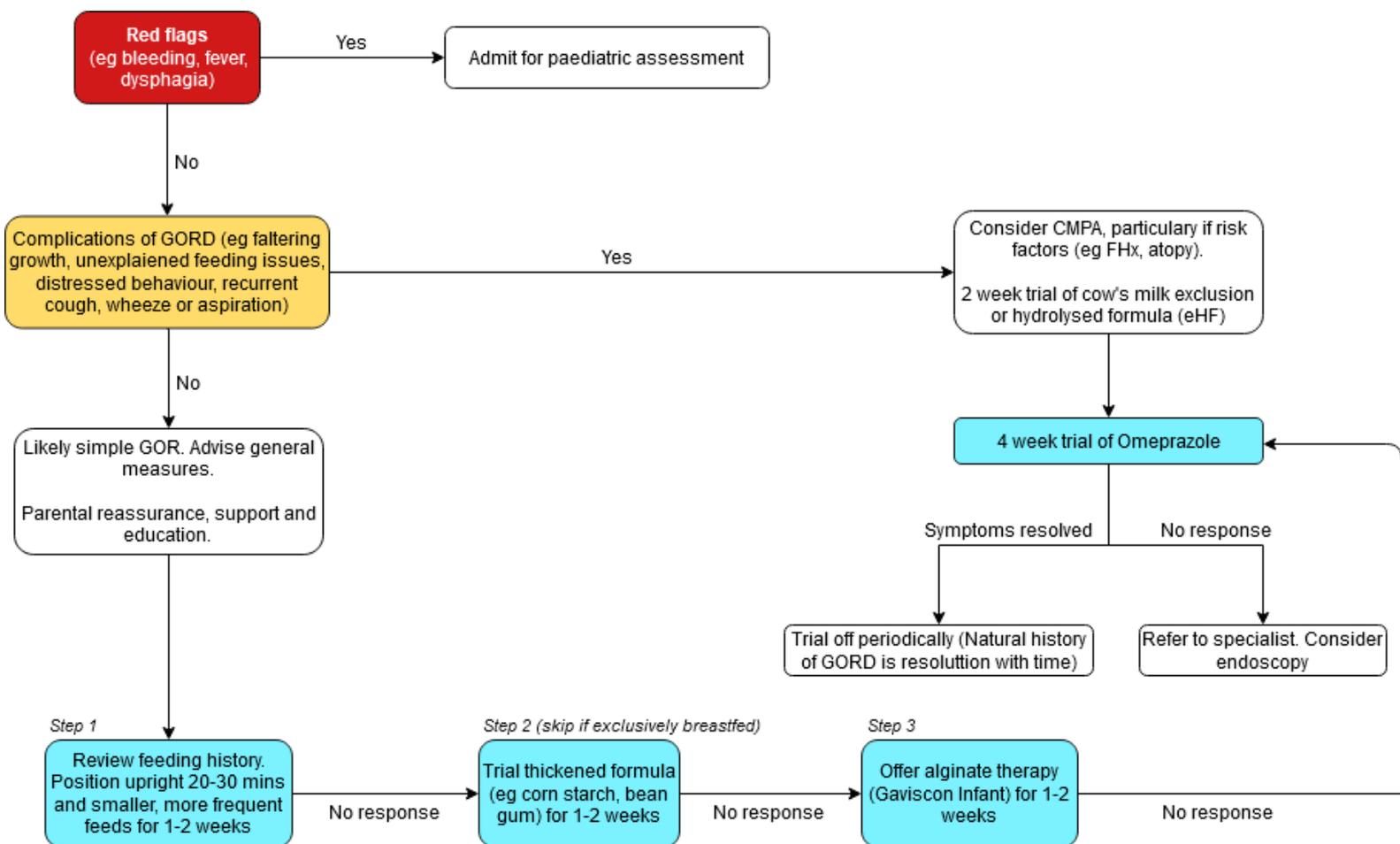


# **GASTROESOPHAGEAL REFLUX DISEASE (GORD) IN INFANTS, CHILDREN AND YOUNG PEOPLE GUIDELINE**

*Adapted from: NICE Clinical Guidance [NG1]. Gastro-oesophageal reflux disease in children and young people: diagnosis and management [October 2019]*

Author	Dr Osman Janjua
Ratified	
Date written	January 2020
Next review	

**Figure 1: Management flowchart for a child presenting with frequent vomiting or reflux**



## 1. Key points

- Gastro-oesophageal reflux disease (GORD)** should be differentiated from **physiological gastro-oesophageal reflux (GOR)**, which is common in healthy, thriving babies and does not require specific investigations or management.
- GOR** affects **40%** of infants. It usually begins at **8 weeks**, peaks at **4 months**, and resolves by **12 months** in 90%. It arises due to an **immaturely developed lower oesophageal sphincter**. **GOR** rarely requires investigations and does not cause crying and irritability in healthy infants.
- Conversely, **GORD** features **regurgitation or vomiting with poor growth; refusal to feed; pronounced irritability with feeding; and/or chronic cough, wheeze, aspiration**
- The natural history of GORD is of resolution with time; **any therapy should be reviewed regularly**. Empiric use of acid suppression for unsettled infants is **not effective and may cause harm**

## 2. Definitions

**Gastro-oesophageal reflux (GOR)** is the passage of gastric contents into the oesophagus. It is a common physiological event that can happen at all ages from infancy to old age and is often

asymptomatic. It occurs more frequently after feeds/meals. In many infants, GOR is associated with a tendency to 'overt regurgitation' (possetting) – the visible regurgitation of feeds.

**Gastro-oesophageal reflux disease (GORD)** refers to gastro-oesophageal reflux that causes symptoms (eg discomfort or pain) severe enough to merit treatment, or to cause associated complications (eg oesophagitis or pulmonary aspiration).

### 3. Presentation

Possible symptoms of GORD include:

- **Recurrent 'effortless' regurgitation or vomiting**
- **Heartburn + epigastric pain**
- **Witness episode of choking or apparent life-threatening event (ATLE)** can sometimes occur
- **Respiratory problems** (eg chronic cough, recurrent wheeze, apnea, aspiration)
- **Feeding and behavioural problems**
- **Poor weight gain or faltering growth**

**Known risk factors for GORD include:** premature birth, family history, obesity, hiatus hernia, history of congenital diaphragmatic hernia or oesophageal atresia (repaired), neurodisability.

Complications of GORD include:

- **Oesophageal strictures**
- **Reflux oesophagitis**
- **Dental erosion** (particularly if neurodisability or cerebral palsy)
- **Aspiration pneumonia**
- **Frequent otitis media** (more than three episodes in 6 months)
- **Failure to thrive**

### 4. Red flag symptoms suggesting disorders other than GORD

In infants, children and young people with vomiting or regurgitation, assess for 'red flags' which may suggest disorders other than GOR. Investigate or refer using clinical judgement.

Gastrointestinal	
Forceful, projectile vomiting	<b>Hypertrophic pyloric stenosis</b> in infants up to 2 months
Bile-stained vomiting	<b>Intestinal obstruction</b> (midgut volvulus)
Abdominal distension or mass	<b>Intestinal obstruction or acute abdomen</b>
Hematemesis <i>Exclude cracked breast nipple in breastfed infants</i>	<b>Potentially serious upper GI bleed</b> (oesophagus, stomach, duodenum)
Chronic diarrhoea, atopy (eg eczema)	<b>Cow's milk protein allergy (CMPA)</b>
Blood in stools	<b>CMPA, gastroenteritis, intussusception, inflammatory bowel disease (IBD)</b>
Dysphagia, food impaction, atopy	<b>Eosinophilic oesophagitis</b>

Dysphagia	<b>Structural abnormalities</b> (eg cleft palate, tracheo-oesophageal fistula, oesophageal atresia), <b>tumours/masses, oesophagitis</b>
<b>Systemic</b>	
Dysuria or vomiting/regurgitation after 6 months old	<b>UTI</b>
Appearing unwell/fever	<b>Infection</b>
Bulging fontanelle, altered responsiveness (eg lethargy, irritability)	<b>Raised ICP</b> (meningitis)
Rapidly increasing head circumference (>1cm per week), persistent morning headache, vomiting worse in the morning, nocturnal headache	<b>Raised ICP</b> (hydrocephalus or brain tumour)

## 5. Investigations

Investigations are rarely necessary. Consider if the following features are present:

- **Urinalysis** – exclude UTI if faltering growth, late onset (after the infant is 8 weeks old), or frequent regurgitation and marked distress
- **24-hour ambulatory esophageal pH study** – offer if recurrent pneumonia, frequent otitis media, dental erosion associated with a neurodisability, unexplained apnea, unexplained non-epileptic seizure-like events, unexplained upper airway inflammation.
- **Upper GI contrast** – offer if GORD with dysphagia. **Arrange urgently if persistent bile-stained vomit to exclude obstruction.**
- **Upper GI endoscopy** – refer if esophagitis, bleeding, dysphagia, no improvement after 1 year, overt regurgitation with faltering growth, iron-deficiency anaemia, retrosternal/epigastric pain requiring ongoing medical therapy,

## 6. Management – Refer to Figure 1 (Management Flowchart)

### **Reassure parents/carers that effortless regurgitation of feeds in well infants:**

- Is very common (affects at least 40%) and usually begins before 8 weeks of age
- May be frequent (5% of those affected have six or more episodes each day).
- Usually becomes less frequent with time (resolves in 90% of affected infants before 1 year).
- Does not usually need further investigation or treatment.

Do **not** use positional management to treat GOR in sleeping infants. Infants must be placed on their back when sleeping (reducing the risk of SIDS).

### **Consider cow milk protein exclusion:**

- Up to 40% of infants with symptoms of GORD have non-IgE mediated Cow Milk Protein Allergy (CMPA). Symptoms usually occur within a few weeks of exposure to cow milk protein.
- If suspected, the infant should have a **2 week trial of strict cow milk protein elimination** from their diet.

- Breast fed infants **require strict maternal dairy avoidance**
- Formula fed infants require **extensively hydrolysed formula (eHF)** – options include Althéra, Aptamil Pepti 1, Nutramigen LGG1, and Similac Alimentum.

### Review the feeding history

- Breast-fed infants: **Breastfeeding assessment and advice in distressed infants.**
- Formula-fed infants: **Reduce feed volumes only if excessive for infant's weight.** A total feed volume of **150 mL/kg** body weight over 24 hours [6–8 times a day] is usually recommended.

### Stepped-care approach

1. **Position upright after feeds for 20-30 minutes, with smaller and more frequent feeds for 1-2 weeks.**
2. If unsuccessful, trial **thickened formula** (eg Enfamil AR and SMA Staydown) or **thickening agent** (eg Instant Carobel) for **1-2 weeks**. *Skip Step 2 if exclusively breastfed.*
3. If unsuccessful, stop thickened formula and offer **alginate therapy (Gaviscon Infant)** for **1-2 weeks**
4. If unsuccessful, consider **4-week Omeprazole trial** (see below). *If no response, refer to specialist for possible endoscopy.*

### 4-week Omeprazole trial

- Age 1-12 months:
  - **700mcg/kg/d** (increased if necessary, to 3mg/kg/d, max 20mg/d)
- Age 2-17 years:
  - **10mg/d** if **≥10kg** (increased if necessary, to 20mg/d).
  - **20mg/d** if **≥20kg** (increased if necessary, to 40mg/d)

Consider in infants and young children with overt regurgitation *PLUS*:

- **Unexplained feeding difficulties (eg refusing feeds, gagging, choking)**
- **Distressed behaviour**
- **Faltering growth**

Consider in children and young people with:

- **Persistent heartburn, retrosternal pain or epigastric pain**
- **Endoscopy-proven esophagitis**

**Adverse effects.** *Important to review ongoing PPI therapy + cease if no benefit.*

- Increased risk of pneumonia & gastroenteritis (includes *C. difficile* colitis)
- Increased fracture risk
- Micronutrient deficiencies (iron, B<sub>12</sub>, calcium, magnesium)

Do **not** routinely investigate or treat GOR in an infant or child **without overt regurgitation** that presents **with only 1** of the following:

- Unexplained feeding difficulties

- Distressed behaviour
- Faltering growth
- Chronic cough or hoarseness
- A single episode of pneumonia

## 7. Enteral tube feeding in GORD

**Only consider** enteral tube feeding to promote weight gain in infants and children with overt regurgitation and faltering growth if:

- Other explanations for poor weight gain have been explored and/or
- Recommended feeding and medical management of overt regurgitation is unsuccessful.

Before starting enteral tube feeding for infants and children with faltering growth associated with overt regurgitation, **agree in advance**:

- A specific, individualised nutrition plan,
- A strategy to reduce it as soon as possible,
- An exit strategy, if appropriate, to stop it as soon as possible.

In **infants and children receiving enteral tube feeding** for faltering growth associated with overt regurgitation:

- Provide oral stimulation, continuing oral feeding as tolerated
- Follow the nutrition plan, ensuring that the intended target weight is achieved, and that appropriate weight gain is sustained
- Reduce and stop enteral tube feeding as soon as possible.

Consider **jejunal feeding** for infants if:

- Unable to tolerate intragastric feeds
- If reflux-related pulmonary aspiration is a concern

## 8. Referral guidance

**Arrange specialist assessment (i.e. paediatric gastroenterologist) for a possible upper GI endoscopy with biopsies if any of the following are present:**

- No improvement in reflux after 1 year of age
- Symptoms of GORD unresponsive to medical therapy
- Persistent, faltering growth associated with regurgitation
- Feeding aversion *and* a history of regurgitation
- Unexplained iron deficiency anaemia
- Unexplained distress in children with communication difficulties (eg neurodisability)
- Suspected Sandifer's syndrome (spasmodic episodic torticollis with neck extension/rotation and arching of the back. Associated with GORD and oesophagitis)
- **Same-day specialist assessment if haematemesis, melena, or dysphagia**