NHS
Vale of York
Clinical Commissioning Group

NHS
York and Scarborough
Teaching Hospitals
NHS Foundation Trust

# Referral Support Service

## Paediatrics

## PA29 Gastro-Oesophageal Reflux

| Paediatric Normal Values (adapted from APLS) | | | |
|---|---|---|---|
| Age | Resp Rate | Heart Rate | Systolic BP |
| Neonate <4w | 40-60 | 120-160 | >60 |
| Infant <1 y | 30-40 | 110-160 | 70-90 |
| Toddler 1-2 yrs | 25-35 | 100-150 | 75-95 |
| 2-5 yrs | 25-30 | 95-140 | 85-100 |

### Definition

**Gastro-oeophageal reflux:** the passage of gastric contents into the oesophagus. It is a common physiological event that can happen at all ages and is often asymptomatic.

**Gastro-oesophageal reflux disease:** gastro-oesophageal reflux which leads to symptoms severe enough to merit medical treatments or lead to complications such as oesophagitis or pulmonary aspiration.

### Exclude Red Flag Symptoms

- Faltering growth
- Hepatosplenomegaly

| Clinical Feature | Possible diagnosis | Action |
|---|---|---|
| **Abdominal distension, tenderness or palpable mass** | Intestinal obstruction | Same day |
| **Bile-stained vomit** | Intestinal obstruction | URGENT same day |
| **Frequent, forceful vomiting** | Hypertrophic pyloric stenosis in infants ≤ 2m | Same day if unwell, or rapid access clinic |
| **Haematemesis** | Bleed from oesophagus, stomach or upper GI tract | Same day if unwell, or rapid access clinic |
| **Blood in stool** | Bacterial gastroenteritis<br>Cows milk protein allergy<br>Acute surgical condition | Stool for MC&S<br>Same day if unwell, or rapid access clinic |
| **Chronic diarrhoea** | Cows milk protein allergy | Assess as per guidelines |
| **Onset >6m or persisting >1y** | Urinary tract infection | Urine dip |
| **Altered responsiveness, irritability** | Illness such as meningitis<br>Safeguarding – occult head injury | URGENT same day |
| **Bulging fontanelle** | Raised intracranial, pressure e.g. meningitis | URGENT same day |
| **Rapidly increased head circumference, seizures** | Raised intracranial pressure, e.g. hydrocephalus, brain tumour<br>Sandifer syndrome | Same day if unwell, or rapid access clinic |

| | | |
|---|---|---|
| **Unwell, fever** | May suggest infection | Assess as per NICE traffic light |
| **Dysuria** | Urinary tract infection | Clinical assessment and urine dip |
| **High risk atopy** | Cows milk protein allergy | Assess as per guidelines |
| **Recurrent pneumonia** | Tracheoesophageal fistula | Same day if unwell, or rapid access clinic |
| **Aspiration** | Laryngotracheal cleft | Same day if unwell, or rapid access clinic |
| **Hypo- or hypertonia** | Cerebral palsy | Same day if unwell, or rapid access clinic |
| **Stigmata of genetic disorder** | Trisomy 21 | Same day if unwell, or rapid access clinic |

*High risk of GORD*

- Premature birth
- Parental history of GORD
- Obesity
- Hiatus hernia
- History of congenital diaphragmatic hernia (repaired)
- History of congenital oesophageal atresia (repaired)
- Neurodisability

**General Points**

- Affects 40% of infants
- Usually begins before the infant is 8 weeks old
- Transient lower oesophageal sphincter relaxations have been shown to be the predominant mechanism of reflux
- Signs and symptoms of possible regurgitation, reflux and colic are rarely associated with any underlying pathology in infants who are gaining weight and developing normally.
- Only a small proportion will need to be clinically managed as GORD
- Symptoms in infants typically resolve without treatment (resolves in 90% by 1 year)

**Differential Diagnoses**

- Safeguarding – persistent irritability and vomiting may be a sign of occult head injury. You must document head circumference every time you see an infant
- Intestinal obstruction – bile-stained vomit
- Hypertophic pyloric stenosis – frequent, forceful vomiting

**Investigations**

Usually investigations aren't indicated for GOR, therefore most children will not require any investigations.

## Management

*Key principles*

- Do NOT recommend positional management to treat GOR in sleeping infants. Infants should be placed on their back when sleeping.
- Keep baby upright for as long as possible after feeds
- Baby-wearing (use of slings/carriers)
- Avoid tobacco smoke exposure
- Encourage breastfeeding

*Formula Fed Infants*

- Formula fed, check for overfeeding: normal volume of feed in 100-150ml/kg/d
- If excessive, reduce feed volumes for infants weight (>150ml/kg/d)
- If normal feed volume, suggest smaller volume, more frequent feeds (6-7 feeds/24h)

*Thickened Formula*

- Thickened formulae reacts with stomach acid, thickening in the stomach rather than the bottle so there is no need for a fast-flow teat.
- Thickened formula needs to be prepared with cooled pre-boiled water, which is against recommendation of using boiled water to make the milk which is then cooled to 70°C
- Consider trial of thickened formula for 2 weeks
    - If no improvement after 2 weeks stop
    - If improvement continue for 3m or until weaning

**Carobel:** first line option to thicken feeds. It enables easy reassessment of ongoing need as it can easily be omitted from periodic feeds.

- Add ½ scoop to 90ml cooled boiled water (still warm). Shake well and leave to thickened for 3-4 minutes
- Shake again and feed
- Thickness can be increased using 1 scoop in 60ml
- These thicken in the bottle, so need to be given with a fast-flow teat
- Do not prescribe Gaviscon concurrently with a thickening agent

Evidence of benefit for thickeners is mixed. They may delay gastric emptying.

*Breast Fed Infants*

- Skilled breastfeeding assessment
- Breastfeeding should not be stopped for the purposes of thickening feeds

*Medication*

- Evidence suggests acid-suppressing medications are not effective in infants for treatment of symptoms such as regurgitation and irritability
- NICE gives some recommendations for prescribing Gaviscon if conservative measures have failed

**Infant Gaviscon:** 1 dual sachet = 2 doses

<4.5kg: 1 dose when required up to a maximum of 6 times in 24 hours
>4.5kg: 2 doses when required up to a maximum of 6 times in 24 hours

Bottle fed: Mix in 115ml (4oz) of feed
Breast fed: Mix into cooled boiled water or expressed breastmilk and give with a spoon

N.B. prescribed with directions in terms of 'dose' to avoid errors. Many notice their baby's stool becomes firmer.

If no improvement after 2 weeks, consider Cow's milk protein allergy (CMPA) or refer to paediatrician
If improvement after 2 weeks, try stopping at regular intervals for recovery assessment

*Safety Netting*
Advise parents they should return for review if any of the following occur

- Regurgitation becomes persistently projectile
- Bile-staining vomiting (green)
- Haematemesis (blood in vomit)
- New concerns such as marked distress, feeding difficulties or faltering growth
- Persistent, frequent regurgitation beyond the first year of life

## Referral Information

*Indications for referral*

- No improvement in regurgitation >1y
- Persistent faltering growth secondary to regurgitation, feeding aversion and regurgitation
- Suspected recurrent aspiration pneumonia
- Frequent otitis media
- Suspected Sandifer syndrome
- Unexplained apnoea

## Patient information leaflets/ PDAs

Great Ormond Street link
Patient.info leaflet

# Gastro-Oesophageal Reflux Disease Pathway

## Suspected GORD (<12m)

- Hoarseness and/or chronic cough
- Pneumonia
- Faltering growth
- Distressed (e.g. excessive crying, crying while feeding)
- Unexplained feeding difficulties (e.g. refusing to feeding, gagging, choking)

## Risk factors for GORD

- Premature birth
- Parental history of GORD
- Obesity
- Hiatus hernia
- History of congenital diaphragmatic hernia (repaired)
- History of congenital oesophageal atresia (repaired)
- Neurodisability

- Abdominal distension with vomiting
- Bile-stained vomit
- Altered responsiveness, irritability
- Bulging fontanelle

YES → **Urgent same day review**

- Frequent, forceful vomiting
- Haematemesis
- Blood in stool
- Rapidly increased head circumference
- Faltering growth
- Hepatosplenomegaly

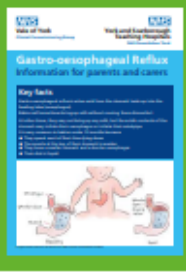
UNWELL → **Urgent same day review**

WELL → **Rapid access clinic**

## Consider differentials:

- Cow's milk protein allergy
- Urinary tract infection
- Tracheoesophageal fistula
- Laryngotracheal cleft
- Cerebral palsy
- Trisomy 21
- Raised ICP
- Intestinal obstruction
- Pyloric stenosis

Provide information leaflet




**Formula fed**

**>150ml/kg/d**

Yes → **Reduce feeds to 150ml/kg/d**

No → **Smaller more frequent feeds**

**Response at 2 wks**

Yes → **Continue**

No → **Add thickener**

**Response at 2 wks**

Yes → **Continue for 3m or until weaning**

No → **Stop**

**Start alginate therapy (e.g. Gaviscon)**

**Response at 2 wks**

Yes → **Try stopping every 2 wks to assess recovery**

No → **Consider CMPA, particularly if risk factors 2 week cow milk exlusion**

No improvement → **Start PPI (e.g. omeprazole)**

**Response at 4 wks**

Yes → **Try stopping every 4 wks to assess recovery**

No → **Stop**

Symptoms recur after stopping → **Refer to paediatrics**

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