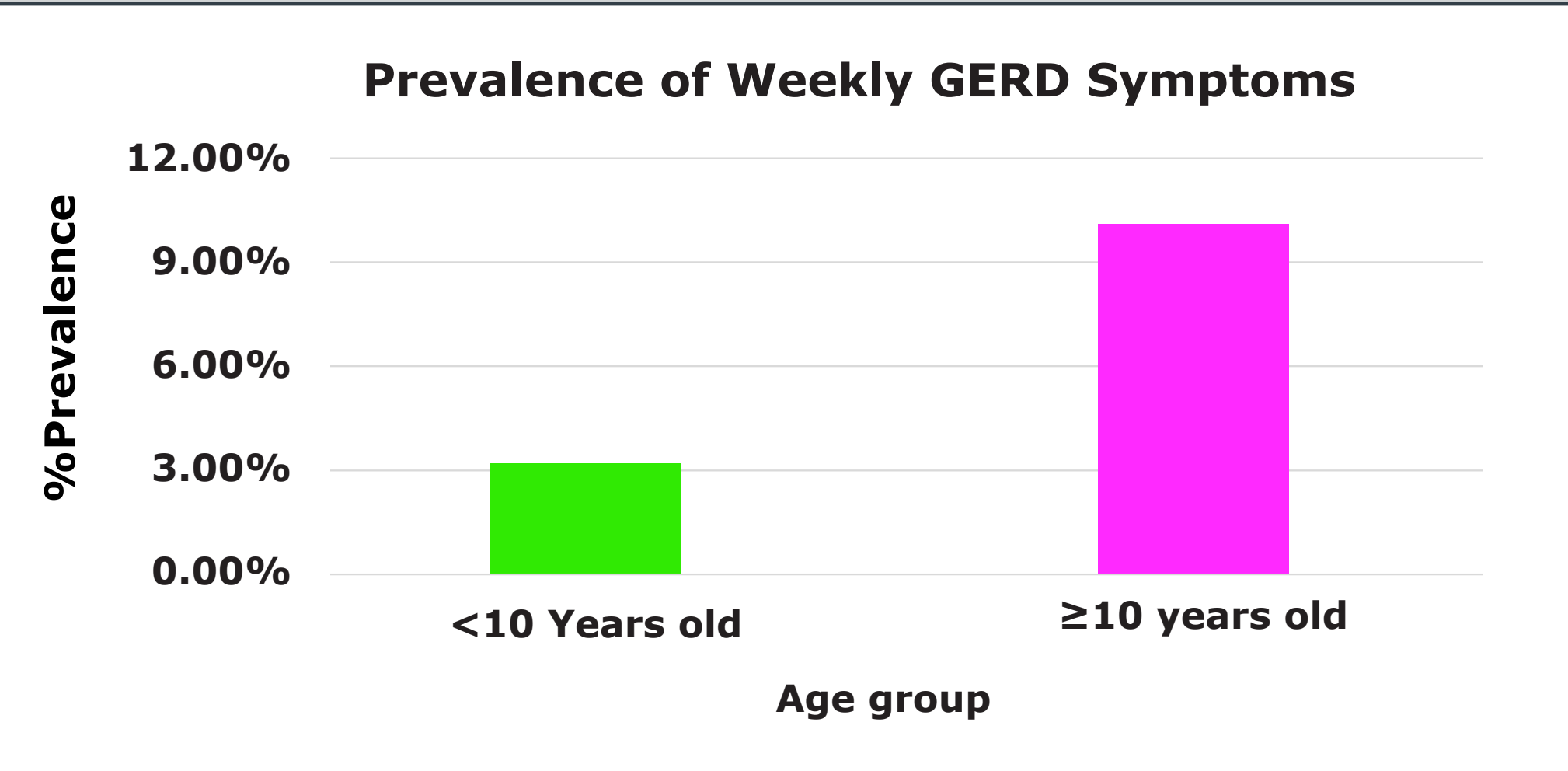


Introduction

- Gastroesophageal reflux (GER) is caused by backup of gastric contents into the esophagus and mouth
- Risk factors include obesity, consumption of acidic/fatty foods and defective esophageal sphincter
- GER symptoms include heartburn, nausea, vomiting, and erosive tooth wear (ETW)
- Impact of GER in children include refusal to eat, irritability, poor growth, and unusual weight loss
- Acid reducer therapies are used by pediatricians for treating chronic GER in children
- Dental healthcare professionals (DHCP) awareness, early detection of ETW, proper diagnosis and management of GER are important to prevent further oral-systemic disease complications



Heartburn and acid reflux¹

- Children between 1 and 18 years old have GER occasionally
- Research suggests that GERD is more common among children aged 10 and older than among younger children
- Children age < 10 years old:
 - » Overall prevalence of weekly GERD symptoms: 3.2%
 - » Prevalence of weekly heartburn: 0.5% and 1.8% (2 studies)
- Children age ≥ 10 years old:
 - » Prevalence of weekly GERD symptoms: 10.1% (8 pooled studies)
- Two studies with no age stratification applied:
 - » Children age 7-16.9: Overall prevalence of weekly GER symptoms of 32% (regurgitation 7.8% and heartburn 8.5%)
 - » Children age 2-18: Overall prevalence of weekly GERD symptoms of 2% (regurgitation 4% and heartburn 3%)

Methods

Retrospective analysis of literature through 2023. Search engine strategy, MESH terms (heartburn in children, GER/GOR, GERD, and dental erosion), EMBASE, PubMed, Cochrane Library, OVID.

Results

Systemic symptoms of GER are either esophageal or extra-esophageal such as dental pain/sensitivity to hot, cold or sweet substances, and in extreme cases, pulpal abscess. Parental complaints include yellow discoloration of teeth and poor aesthetics. Signs of acid-related dental erosion are manifested on the palatal aspects of maxillary teeth and occlusal surfaces of mandibular molars, flattened occlusal contours, cupping of cusp tips and maxillary buccal cervical erosion. Studies suggest acid exposure due to GER may contribute to bruxism. Dental erosion may be the only clinical sign in silent reflux. If tooth wear and its causative factors in primary dentition are not addressed, it may negatively affect the permanent teeth.

Different symptoms expressed by children²

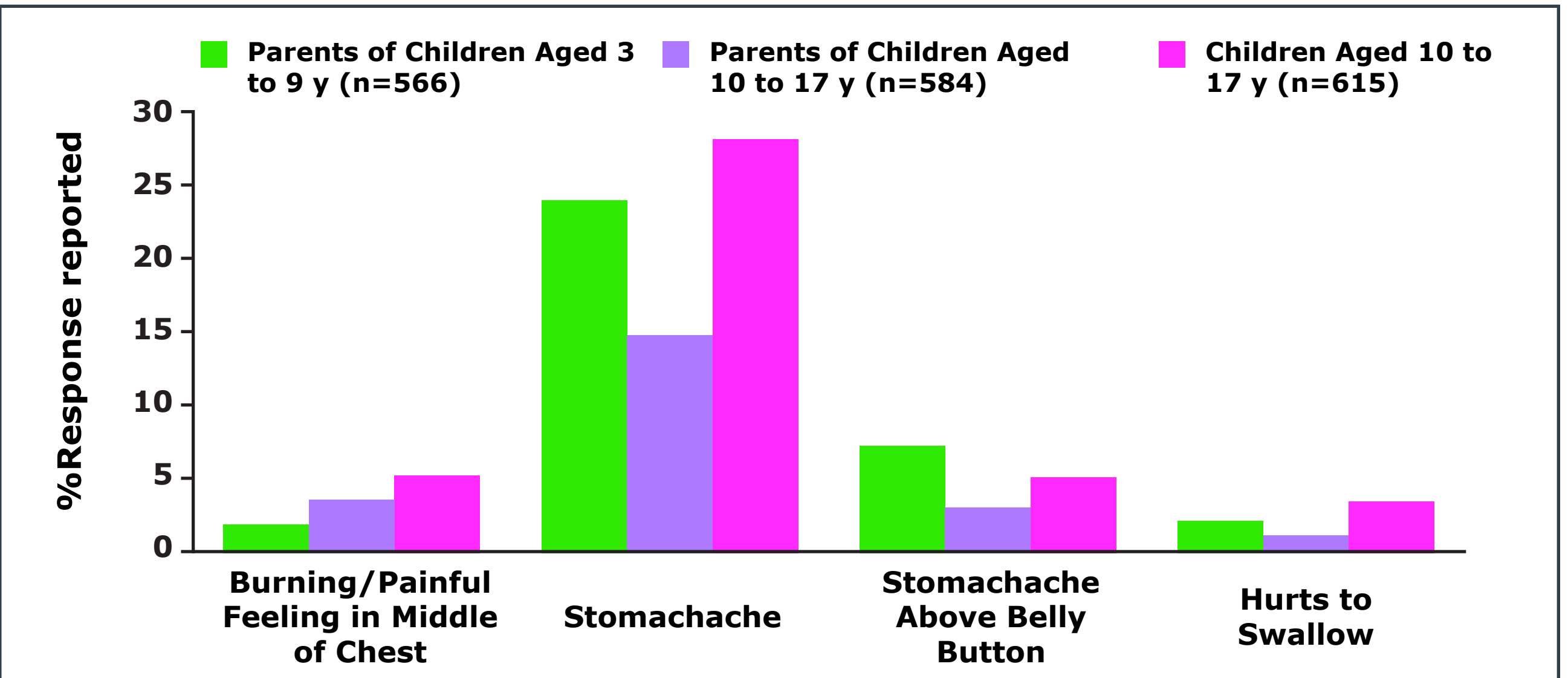


Figure 1: Percentage of reported gastroesophageal reflux symptoms (chest pain, abdominal pain, and odynophagia)

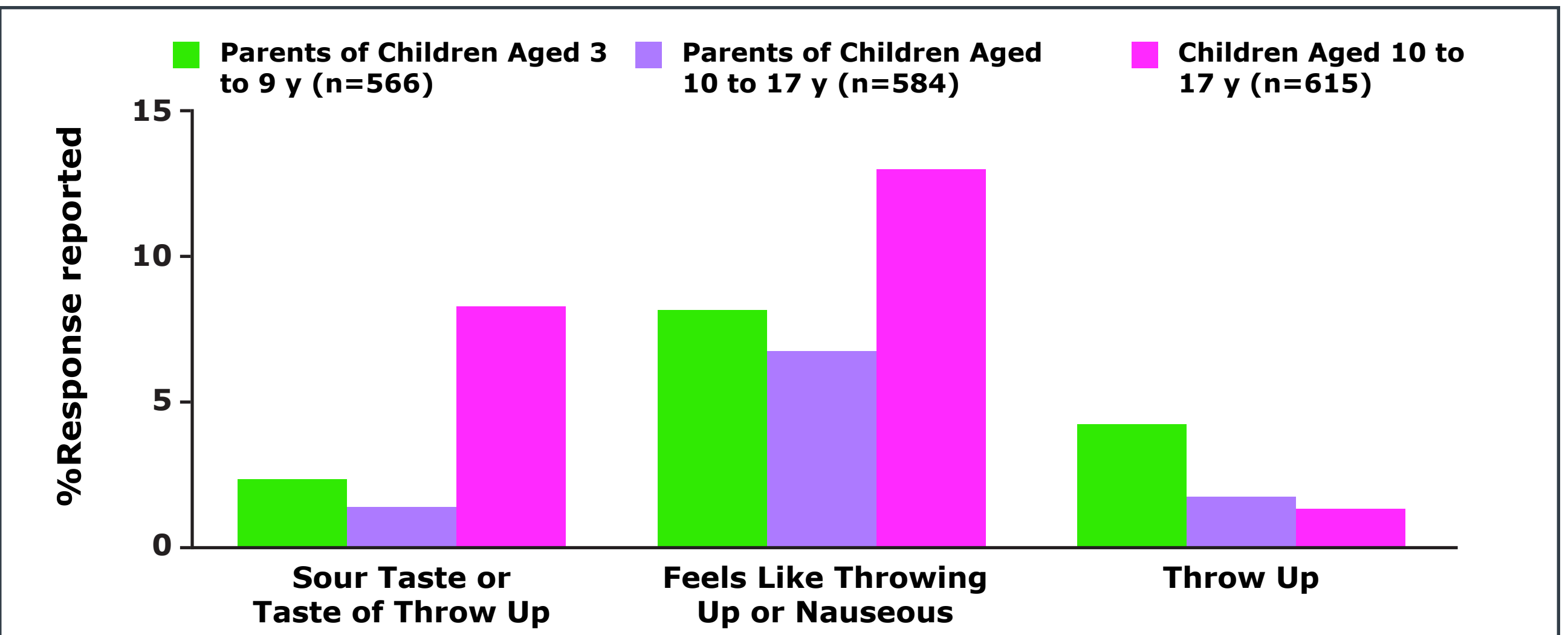
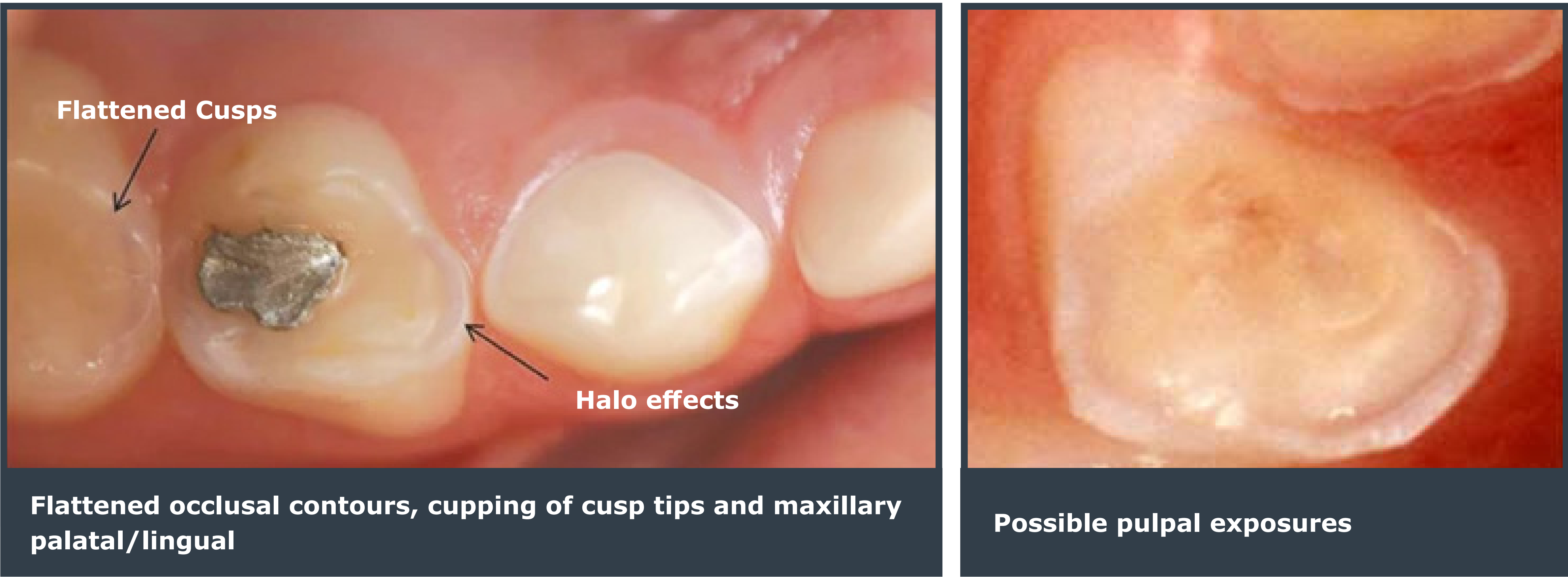


Figure 2: Percentage of reported gastroesophageal reflux symptoms (nausea or vomiting)

Children more likely to report nausea and abdominal pain, and acid regurgitation than heartburn due to overt events versus internal experiences.

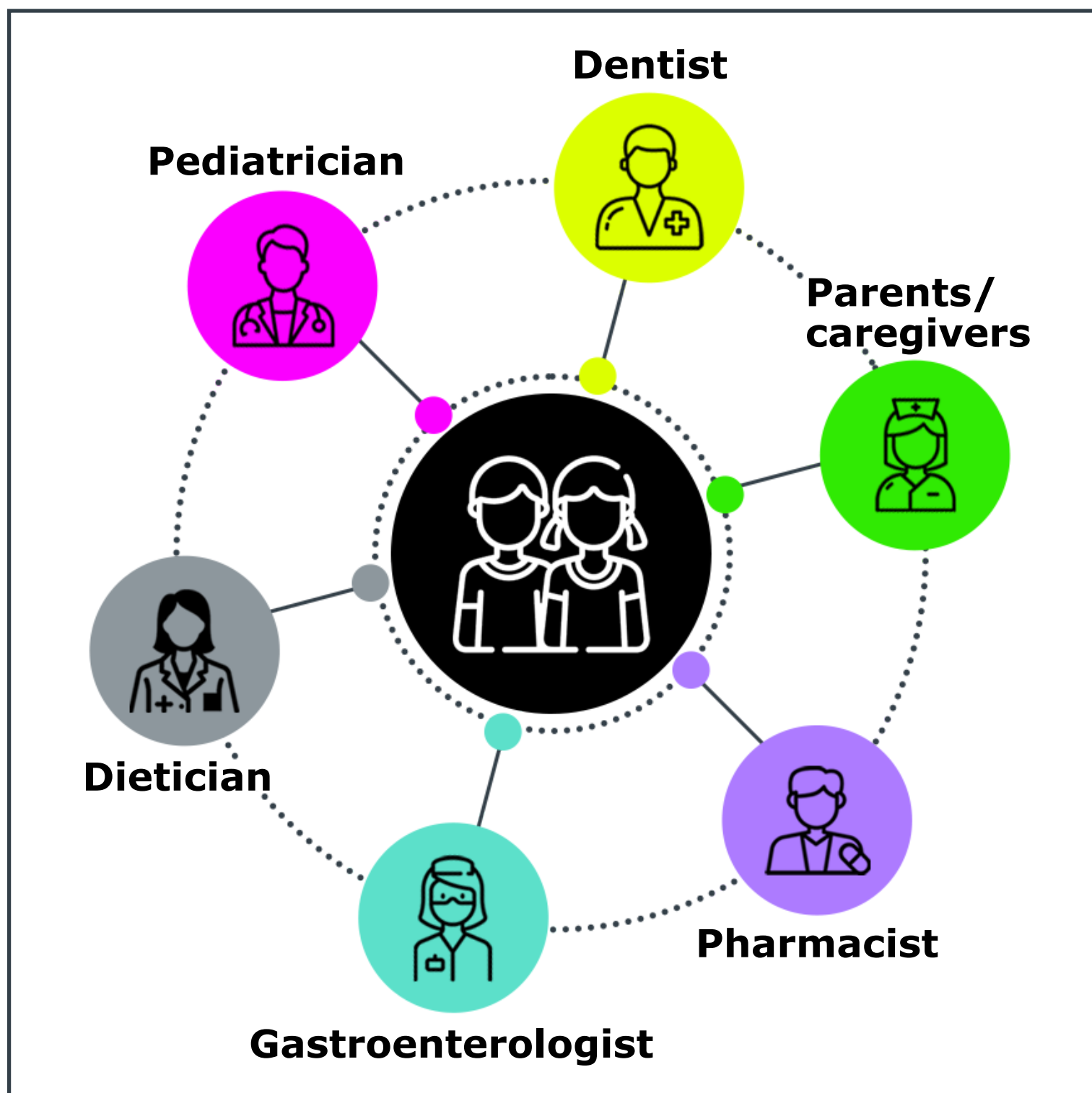
Clinical manifestations of erosive tooth wear



Symptoms of acid reflux in infants and children³

Infant	Older Child/ Adolescent
Feeding refusal	Abdominal pain/ heartburn
Recurrent vomiting	Recurrent vomiting
Poor weight gain	Dysphagia
Irritability	Asthma
Sleep disturbance	Recurrent pneumonia
Respiratory symptoms	Upper airway symptoms (chronic cough, hoarse voice)

Management of dental erosion and GER in children: multidisciplinary approach^{4,5}



- Erosive tooth wear may be the only clinical marker of GER in children
- Early management of GER and ETW can best be handled by an multidisciplinary team
- Early intervention with optimized fluoride may help protect/ strengthen enamel

Role of parents/caregivers

- Active role of parents in diagnosis because children cannot articulate their symptoms
- Parents and caregivers work closely with their child's pediatrician and registered dietician to implement individualized dietary modifications
- Work with their healthcare providers to ensure optimum nutrition to support their growth and development

Food Diary

- Record all foods consumed daily to identify and avoid triggering foods

Conclusion

Educating DHCP on ETW/GER symptoms, early identification of oral manifestations, dietary guidance and multidisciplinary preventative strategies will improve dental outcomes in children.

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