



# Prevalence of Pediatric Functional Gastrointestinal Disorders Utilizing the Rome IV Criteria

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## Introduction

Functional gastrointestinal disorders (FGIDs) are common in children of all ages worldwide. FGIDs are currently best understood as bio-psychosocial disorders lacking an identifiable organic etiology, but affecting the complex interactions between the brain and gut. Prevalence rates of pediatric FGIDs have been reported to be between 9.9% and 27.5% in children/adolescents and between 27% and 40.5% in infants and toddlers.

In 2016, the Rome IV criteria for FGIDs was published, replacing the Rome III criteria established in 2006. The goal of the Rome IV process was to update the diagnostic tools based on new findings in the literature including new information on gut-brain interactions and microenvironments. These new criteria include two new diagnoses for children ages 4 and older (functional nausea and functional vomiting), and several modifications to diagnostic criteria for existing diagnoses.

No study to date has examined the prevalence of FGIDs in pediatric populations according to the new Rome IV criteria. The goal of this study was to evaluate the prevalence of GI symptoms suggestive of FGIDs among infants and toddlers ages 0-3 years old and children and adolescents ages 4-18 years old according to the new Rome IV criteria.

## Methods

Mothers (n=1255) of children aged 0-18 years old in the US were recruited to complete an online survey about their child's gastrointestinal symptoms, quality of life, and other health conditions.

- Rome IV Pediatric Diagnostic Questionnaire
- Functional Bowel Module of the Rome IV Diagnostic Questionnaire for Adults (for the mothers about their own GI symptoms)
- PedsQL4.0 Generic Core Scale (Quality of Life)
- Demographic questions
- Health questions

## Results

Based on the Rome IV criteria, 24.7% of infants and toddlers aged 0-3 years and 25.0% of children and adolescents aged 4-18 years fulfilled symptom-based criteria for an FGIDs. The most common FGIDs were infant regurgitation among infants (24.1%), and functional constipation among both toddlers (18.5%) and children and adolescents (14.1%). Quality of life was diminished in pediatric patients with FGIDs. Children were more likely to qualify for an FGIDs if their parent qualified for an FGIDs.

Table 1. Rome III Criteria vs. Rome IV Criteria

	Rome III Criteria	Rome IV Criteria
Overall prevalence of FGIDs in infants and toddlers	27.1%	24.7%
Prevalence of FGIDs in children ages 4-18 years old	23.1%	25.0%
Functional constipation in infants and toddlers	14.1%	17.2%
Functional diarrhea in infants and toddlers	8.8%	0%
Abdominal migraine in children ages 4+ years old	9.2%	1.1%
Irritable Bowel Syndrome	2.8%	5.1%
Functional vomiting and functional nausea	-	~1%
Postprandial distress syndrome (a subtype of functional dyspepsia)	-	94.5%

## Discussion

The prevalence rates of pediatric FGIDs according to Rome IV criteria in this study can be compared to Rome III prevalence rates with nearly identical methods (See Table 1.).

## Conclusions

- This is the first study to report the prevalence of pediatric FGIDs based on Rome IV criteria such as functional nausea and functional vomiting.
- Prevalence figures are comparable for most conditions between the validated Rome III and Rome IV criteria although some significant changes were found such as in the prevalence rates of abdominal migraine.
- FGIDs are common in pediatric populations of all ages and are associated with decreased quality of life.
- Longitudinal studies are needed to assess diagnostic stability and impact of FGIDs throughout childhood and into adulthood.
- These data are of importance to treatment and research of FGIDs.