

Supplementary Table 1. Search strategy used in each database

Database (Platform)	Search Terms (Full Syntax)	Filters/ Limits Applied
PubMed (NCBI)	("pediatric gastroenteritis" OR "viral diarrhea in children") AND ("antibiotic use" OR "antibiotic exposure") AND ("gut microbiome" OR "intestinal microbiota" OR "dysbiosis")	2000–2025, Humans, English
Embase (Elsevier)	('pediatric gastroenteritis'/exp OR 'viral diarrhea'/exp) AND ('antibiotics'/exp OR 'antibiotic resistance'/exp) AND ('gut microbiome'/exp OR 'intestinal flora'/exp)	2000–2025, Humans, English
Scopus (Elsevier)	TITLE-ABS-KEY (("pediatric" OR "children") AND ("gastroenteritis" OR "viral diarrhea") AND ("antibiotic*" OR "antimicrobial")) AND ("gut microbiome" OR "intestinal microbiota" OR "dysbiosis"))	2000–2025, Humans, English
Cochrane Library (Wiley)	(pediatric OR child*) AND (gastroenteritis OR viral diarrhea) AND (antibiotics OR antimicrobials) AND (microbiome OR microbiota)	2000–2025 Humans, English
Google Scholar	"Pediatric gastroenteritis and antibiotics and gut microbiome"	2000–2025 Humans, English
Web of Science Core Collection (Clarivate)	(gastroenteritis OR diarrhea) AND (antibiotic* OR antimicrob*) AND (microbiome OR microbiota OR dysbiosis) AND (pediatric OR child* OR infant)	2000-2025; Humans, English

Additional Sources and Methods:

- **Google Scholar:** Searched using iterative key phrases (e.g., "*antibiotic pediatric gastroenteritis microbiome*"). The first 100 relevant results were screened for title and abstract.
- **Reference Lists (Manual Search):** The reference lists of all included studies and relevant review articles were screened to identify potentially eligible studies not captured by electronic searches.
- **Clinical Trial Registries ([ClinicalTrials.gov](https://clinicaltrials.gov), WHO ICTRP):** Scanned for ongoing or completed but unpublished trials using the terms: "gastroenteritis" AND "antibiotic" AND "child".