

File S1 search strategy

PubMed – up to February 2022

("asthma"[MeSH Terms] AND ("microbiome s"[All Fields] OR "microbiomic"[All Fields] OR "microbiomics"[All Fields] OR "microbiota"[MeSH Terms] OR "microbiota"[All Fields] OR "microbiome"[All Fields] OR "microbiomes"[All Fields] OR ("microbiota"[MeSH Terms] OR "microbiota"[All Fields] OR "microbiotas"[All Fields] OR "microbiota s"[All Fields] OR "microbiota"[All Fields]) OR "dysbiosis"[MeSH Terms])) AND ((English[Filter]) AND (all child[Filter] OR newborn[Filter] OR all infant[Filter] OR infant[Filter] OR preschool child[Filter] OR child[Filter] OR adolescent[Filter])) AND ((English[Filter]) AND (all child[Filter] OR newborn[Filter] OR all infant[Filter] OR infant[Filter] OR preschool child[Filter] OR child[Filter] OR adolescent[Filter]))) NOT (review[Filter])

EBSCO – up to February 2022

1. Asthma (abstract)
2. microbiome OR dysbiosis OR microbiota (abstract)
3. S1 AND S2
4. Limit S3 to language: English
5. Limit S4 to Age: all child (0-18 years)
6. Limit S5 to Source Types: Academic journals
7. review (Title)
8. S6 NOT S7

Web of science – up to February 2022

1. TOPIC: (asthma)

Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years

2. TOPIC: (microbiome)

Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years

3. TOPIC: (microbiota)

Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years

4. TOPIC: (dysbiosis)

Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years

5. #2 OR #3 OR #4

6. #1 AND #5

7. #6 NOT adult

8. #7 NOT review

7. Refined by: English

Science Direct – up to February 2022

1. TOPIC: (asthma)

2. TOPIC: (microbiome)

3. TOPIC: (microbiota)

4. TOPIC: (dysbiosis)

5. #2 OR #3 OR #4

6. #1 AND #5

7. #6 NOT adult

7. Refined by: original research

Table S1: data collection form which was designed to address objectives of the current systematic review. The identified studies were grouped based on their microbiome environment whether upper, lower airway or gut microbiome.

Citation and title of the article	Country	Study design	Sample size	Age	Sample collected	Time of sample collection	Microbiome detection method	Genomic DNA extraction	Sequencing platform	Microbiome diversity assessment	Bioinformatics pipeline	Findings
Upper airway microbiome												
Lower airway microbiome												
Upper and lower airway microbiome												
Upper airway and gut microbiome												
Lower airway and gut microbiome												
Upper, lower airway and gut microbiome												
Gut microbiome												