Table S1. Characteristics of atopic wheezers at 5 years comparing those included in with those excluded from the analysis. Inclusion in the analysis was based on having a stool sample collected at 3 months of age.

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | Included(n=27) | Excluded(n=32) | P value |
| **Child**SexMaleFemaleBreastfeedingNoYesPeriod breastfeeding (months)Median (range)Type of deliveryVaginalCaesareanBirth order1st2nd -3rd≥4th | 13 (48%)14 (52%)1 (4%)26 (96%)13 (4-20)17 (63%)10 (37%)9 (33%)11 (41%)7 (26%) | 21 (66%)11 (34%)0 (0%)32 (100%)13 (10-18)23 (72%)9 (28%)6 (19%)14 (44%)12 (37%) | 0.1760.2800.9480.4650.230 |
| **Household**Maternal educational statusIlliteratePrimary completeSecondary complete Socioeconomic levelLowMediumHighAgricultural activitiesNoYesPotable waterNoYesBathroomLatrine/FieldWC | 1 (4%)21 (78%)5 (18%)10 (37%)9 (33%)8 (30%)13 (48%)14 (52%)15 (56%)12 (44%)17 (63%)10 (37%) | 4 (12%)16 (50%)12 (38%)9 (28%)9 (28%)14 (44%)15 (47%)17 (53%)21 (66%)11 (34%)23 (72%)9 (28%) | 0.0830.5290.9220.4290.465 |
| **Antibiotics and infections** AntibioticsMaternal antibiotics in pregnancyNoYesPeriod (days)Median (IQR)During first year of life (courses)012-4Infections during first yearAcute respiratory (episodes)0123-5Acute diarrhoeaNoYes | 9 (33%)18 (67%)10 (3-21)14 (52%)11 (41%)2 (7%)0 (0%)3 (26%)11 (41%)9 (33%)13 (48%)14 (52%) | 14 (44%)18 (56%)8 (5-10)18 (56%)9 (28%)5 (16%)2 (6%)9 (28%)12 (38%)9 (28%)12 (38%)20 (62%) | 0.4140.1010.4550.5970.410 |

Table S2. Characteristics of study subjects in reduced cohort for whom fungal sequencing data were analysed

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | Atopic wheezers(n=10) | Controls(n=22) | P value |
| **Child**SexMaleFemaleBreastfeedingNoYesPeriod breastfeeding (months)Median (range)Type of deliveryVaginalCaesareanBirth order1st2nd -3rd≥4th | 7 (70%)3 (30%)0 (0%)10 (100%)14 (9-16)7 (70%)3 (30%)5 (50%)2 (20%)3 (30%) | 11 (50%)11 (50%)0 (0%)22 (100%)13 (12-16)18 (82%)4 (18%)7 (32%)9 (41%)6 (27%) | 0.253-0.9620.3760.412 |
| **Household**Maternal educational statusIlliteratePrimary completeSecondary complete Socioeconomic levelLowMediumHighAgricultural activitiesNoYesPotable waterNoYesBathroomLatrine/FieldWC | 0 (0%)9 (90%)1 (10%)2 (20%)3 (30%)5 (50%)6 (60%)4 (40%)4 (40%)6 (60%)8 (80%)2 (20%) | 1 (5%)14 (64%)7 (32%)10 (45%)7 (32%)5 (23%)10 (45%)12 (55%)13 (59%)9 (41%)16 (73%)6 (27%) | 0.3580.3180.3520.2670.512 |
| **Antibiotics and infections** AntibioticsMaternal antibiotics in pregnancyNoYesPeriod (days)Median (IQR)During first year of life (courses)012-4Infections during first yearAcute respiratory (episodes)0123-5Acute diarrhoeaNoYes | 3 (30%)7 (70%)7 (0-9)7 (70%)3 (30%)0 (0%)0 (0%)3 (30%)4 (40%)3 (30%)5 (50%)5 (50%) | 13 (59%)9 (41%)0 (0-5)12 (55%)8 (36%) 3 (13%)1 (5%)14 (63%)6 (27%)1 (5%)10 (45%)12 (55%) | 0.1260.1090.6310.120.81 |

Table S3. Differentially abundant microbial OTUs (FDR<0.05) between atopic wheezers and controls calculated by DESeq2. P values are corrected for false discovery rate. OTUs shaded in grey remained statistically significant after controlling for confounding (Table S4).



Table S4. Microbial taxa associated with atopic wheezing corrected for major confounding effects known to affect microbiome composition using MaAsLin. Direction of the correlation coefficient is in relation to the control group. P values are corrected for false discovery rate. Gray shading represents the same OTUs identified as significant by DESeq2 analysis (Table S3)

