Table S4. Association between microbial composition and participant characteristics using PERMANOVA (adonis) and random forest models.

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|  | **PERMANOVA** |  | **Random forest** |
| **Parameter** | **F value** | **R2** | **p-value** |  | **Model OOB Error (%)** | **p-value** |
| Ethnicity of the child | *5.456* | *0.04* | *<0.001* |  | *33* | *<0.001* |
| Symptoms of an URTI (any) | *3.465* | *0.026* | *0.003* |  | *29* | *0.012* |
| runny nose | *4.091* | *0.031* | *0.002* |  | *20* | *0.004* |
| cough | *2.515* | *0.019* | *0.026* |  | 20 | 0.058 |
| Season of swab collection1 | 1.638 | 0.012 | 0.106 |  | 32 | 0.480 |
| Exposure to cigarette smoking | 1.205 | 0.009 | 0.271 |  | 45 | 0.238 |
| Year of swab collection | 1.095 | 0.017 | 0.329 |  | 60 | 0.504 |
| Breastfeeding | 1.015 | 0.008 | 0.383 |  | 45 | 0.570 |
| Prior antimicrobial use2 | 0.723 | 0.006 | 0.667 |  | 11 | 0.358 |
| Vaccination status | 0.702 | 0.005 | 0.668 |  | 58 | 0.836 |
| Sex of the child | 0.533 | 0.004 | 0.838 |  | 55 | 0.886 |

URTI, upper respiratory tract infection; OOB, out-of-bag. Statistically significant differences (p<0.05) are shown in italics. 1Wet season = November – April, Dry season = May – October; 2Antimicrobial use in the prior two weeks as reported by parent/guardian.