The Changing Nasal Microbiome: A Possible Contributor to Childhood Asthma
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Increasingly, researchers are looking at the intestinal microbiome and its association with diseases. What has not been as well looked at in children is the nasal microbiome and airway pathology. Toivonen et al (10.1542/peds.2020-0421) evaluated this in a study being released this month in our journal. The investigators studied changes in the organisms in the nasal microbiome between 2 and 24 months of life to see if there were patterns associated asthma at age 7. 704 children participated in this study and had 16S rRNA gene sequencing of their nasal microbiota at 2, 13, and 24 months. Using machine learning, different nasal microbiota profiles were identified. Of the 57 (8%) of children diagnosed as having asthma at age 7 in this cohort, four distinct microbiota profiles were identified. Children without asthma had a persistent dominant Moraxella profile and those with asthma had a much more sparse presence of.

Why might this change in the nasal microbiome be occurring and how does a decrease in the prevalence of Moraxella contribute to asthma occurring in children at age 7? The discussion section of this study does a great job of suggesting several hypotheses for the rationale behind the findings as well as potential limitations that are worth keeping in mind as well. In addition, the implications of what we might do differently if we had clinical information regarding the nasal microbiome of someone at risk for asthma is also worth reading about in this study. You'll certainly be in the nose, we mean in the know, if you link to this interesting study and learn more.