# Respiratory viruses over a one-year-period in 0-3-year old children with cystic fibrosis

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## Abstract

**Background**: Viral respiratory infections are associated with disease exacerbation in patients with cystic fibrosis. However, their role and impact in young children are only poorly understood.  
**Methods**: From 2019 to 2020 we performed a single center, prospective longitudinal study, testing additional viral PCR detection to the monthly sputum sampling in 0-3-year old children with cystic fibrosis. A respiratory tract symptom score questionnaire was sent to the parents every month. Patients had SF6-MBW every third month as part of the routine monitoring of lung disease involvement.  
**Results:** A total of 193 sputum samples from 19 patients were analyzed. At least one respiratory virus was detected in 86 sputum samples (44.5%) and in 18 patients (95%). Rhinovirus/enterovirus was the most frequent virus detected (88.4% of the virus-positive samples) followed by adenovirus (9.3%), parainfluenza 1-3 (5.8%) and respiratory syncytial virus (4.7%). A virus-positive sample did not significantly increase the risk of bacterial detection or respiratory tract symptoms and nor did it cause any significant decline in pulmonary function. Patients had a median of 4 positive samples [range 0-9] per year, and 11 patients had two or more consecutive samples positive for rhinovirus/enterovirus. There was a positive association between the detection of virus and bacteria in sputum samples

**Conclusions**: Respiratory viruses are common in 0-3-year old children with cystic fibrosis. Despite a high frequency, respiratory viruses did not seem to impact bacterial colonization, respiratory symptoms, or pulmonary function in these patients.