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**Title:** Clinical impact of rhinovirus infections in infancy

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**Body:** Background: In infancy, acute respiratory illnesses are a major cause of morbidity and mortality. Community-based studies have found Rhinoviruses (RV) to be the most frequent viruses associated with acute respiratory infections. Despite the large body of evidence showing an important role of RV on respiratory morbidity in infancy, the clinical burden of disease caused by RV in unselected healthy infants is unknown. Objectives: To assess the clinical impact of RV infections in non-selected, healthy infants during the first year of life. Methods: Nested in a prospective population-based birth cohort of 486 healthy term born infants, we collected weekly nasal swabs and assessed respiratory symptoms by weekly phone calls during the first year of life of 40 infants. Presence of RV in nasal swabs was assessed by RT-PCR and related to demographic and clinical parameters. Results: We analysed a total of 1298 nasal swabs (median of 38 samples per child). RV was found in 354 (27%) samples. RV prevalence increased with age ( $p=0.027$ ) and was highest during autumn months ( $p=0.001$ ). 79% of RV infections were asymptomatic or presented with only slight upper respiratory tract signs, i.e. without cough, wheezing or breathing difficulties. RV infections were more likely to be symptomatic in autumn/winter compared to spring/summer ( $p=0.003$ ). Most (95%) infections were of short duration ( $\leq 3$  weeks). Conclusions: RV infections in otherwise healthy infants are frequent, of short duration and often asymptomatic. Prevalence of RV infections increases with age, likely because of higher exposure. RV infections occurring in autumn/winter are more likely to be symptomatic than in other seasons, possibly due to concomitant viral or bacterial infections.