

Are Young Children Really Sick All The Time?

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You've probably heard it before, "My child's sick all of the time!" A quick review of your patient's medical record confirms quite a few visits over the last 12 months for nasal congestion, cough, and the occasional fever. But at what frequency should a pediatric provider expect a child to be sick? And what puts a child at risk for more of the common pediatric infections? Previous studies investigating the frequency of uncomplicated infections suggest we should expect children to be sick on average a few months of

the year. But these studies have lacked reproducibility and focused on only a few risk factors. In this month's *Pediatrics*, Nadja *et. al.* ([10.1542/peds.2017-0933](#)) studied the infection burden among a longitudinal birth cohort of 334 children in the Copenhagen Prospective Study on Asthma in Childhood 2000 (COPSAC2000) from birth until 3 years of age. Study authors focused on simple infections of the upper respiratory tract (e.g. common cold and tonsillitis), lower respiratory tract (i.e. pneumonia and bronchiolitis), gastrointestinal tract, and isolated fever. Information regarding 84 environmental and constitutional risk factors were then used to calculate Incidence Rate Ratios (IRR) for these simple infections.

Approximately 5,000 infections were reported among the children in this cohort with respiratory tract infections accounting for 71% of the cases. This equated to a median incidence of 14 infections per child (IQR 10-18) with each infection lasting approximately 6 days (IQR 3-8). Put differently, study authors reported a median of 94 days with infection (IQR 64-132) during the first three years of life. With numbers like these, it very well may feel as though children are sick all of the time! The good news: both the number and duration of illnesses decrease as children get older, and may be the glimpse of hope a parent needs! However, providing guidance on how to best reduce a child's risk for infection is not as straightforward. Among the 84 risk factors assessed in this study, only eight factors were found to be significant. The number of children in day care (adjusted IRR 1.09) was associated with a modest increase in risk for any simple infection whereas daycares with less crowding (i.e. fewer children per square meter) were somewhat

protective against any simple infection (aIRR 0.96). The remaining six factors were associated with the risk for lower respiratory tract infections alone and included Caesarean delivery (aIRR 1.49), maternal smoking during pregnancy (aIRR 1.66), and the presence of other children in the house (aIRR 1.54). Nadja *et. al.* concluded that, while the few factors identified among the 84 studied likely contribute to a child's risk for simple infections, individual host factors are likely bigger contributors to a child's susceptibility to infection in early childhood. Check out this month's *Pediatrics* for the full list of factors studied in this article and bolster your ability to counsel families experiencing frequent infections!

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