

Study finds daycare linked to increased complications in preterm children with chronic lung disease

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Attending daycare in the first three years of life is linked with an increase in lung complications in children who were born prematurely

and diagnosed with a form of chronic lung disease, according to new research led by Children's Hospital of Philadelphia (CHOP).

The multicenter study, which drew data from nine specialty centers across the United States, found that [preterm children](#) with [bronchopulmonary dysplasia](#) (BPD) who attend daycare were more likely to visit the [emergency department](#), use systemic steroids and have chronic respiratory symptoms compared with children not in daycare. The findings were published in the *The Journal of Pediatrics*.

"Preterm children born with BPD have a short window to improve their lung function trajectory, so we are always looking for ways to minimize exposures in [early childhood](#) to prevent lung function problems in adult life," said lead author Sharon McGrath-Morrow, MD, MBA, Associate Chief of the Division of Pulmonary and Sleep Medicine and leader of the Post-preemie Lung Disease Clinic at Children's Hospital of Philadelphia. "This study shows that daycare is a modifiable risk factor that is linked with poorer outcomes in preterm children with BPD."

Several prior studies have shown an association between daycare attendance and increased risk of respiratory complications in very low birth weight children. However, those studies focused on a single center or location and thus the results weren't generalizable across the population.

To better qualify the impact of daycare exposure on respiratory illnesses in children with BPD, the researchers collected registry data from nine tertiary care centers in the United States who participate in the BPD Collaborative Outpatient Registry. Analyzing 341 former preterm infants with BPD between the ages of 0 and 3, the researchers collected data on daycare attendance, clinical characteristics, acute care use, and chronic respiratory symptoms.

The researchers found that preterm children with BPD who attended daycare were three times as likely to visit the emergency room and four times as likely to use systemic steroids. They also observed a greater risk of chronic respiratory symptoms among preterm children who attended daycare, including breathing problems (coughing or wheezing) and increased use of rescue medication, such as inhalers. There was no difference between children who attended in-home daycares and those who attended center-based daycares.

To determine whether these effects lessened with age, the researchers stratified their data into three age groups: 6-12 months, 12-24 months, and 24-36 months. They found the negative impacts of daycare were highest in the 6-12 months age group, but the data suggested those effects may persist until 36 months of age.

"Many families need childcare outside the home for a variety of reasons, including caregiver employment," McGrath-Morrow said. "Providers should advise families with infants and young [children](#) with BPD about the potential risks of daycare attendance, particularly prior to 1 year of age, while also bearing in mind the financial needs of the family."

More information: Sharon A. McGrath-Morrow et al, Daycare Attendance is linked to Increased Risk of Respiratory Morbidities in Preterm Children with Bronchopulmonary Dysplasia, *The Journal of Pediatrics* (2022). [DOI: 10.1016/j.jpeds.2022.06.037](https://doi.org/10.1016/j.jpeds.2022.06.037)

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