

Study links adverse childhood experiences to pediatric asthma

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Robyn Wing, M.D., an emergency medicine physician at Hasbro Children's Hospital, recently led a study that found children who were exposed to an adverse childhood experience (ACE) were 28 percent more likely to develop asthma. The rate of asthma occurrence further increased in children with each additional ACE exposure. The study, recently published in the *Annals of Allergy, Asthma & Immunology*, suggests that psychosocial factors may contribute to pediatric asthma.

"Asthma is one of the most common chronic childhood conditions, currently affecting 7 million, or 9.5 percent, of children in the U.S.," said Wing. "The biological risk factors for [asthma](#) onset and severity, such as genetics, allergens, tobacco smoke, air pollution and respiratory infections, have been well established by previous studies. But, psychosocial factors, such as stress, which we know can be physically harmful, are now being examined as a risk factor for asthma in children."

Wing's team analyzed data from nearly 100,000 children and teens in the 2011-2012 National Survey of Children's Health and compared parent or guardian reports of a child having asthma to whether a child had experienced an ACE at home. An ACE is classified as whether a child has ever:

- Lived with a parent or guardian who got divorced or separated while child was present.
- Lived with a parent or guardian who died.

- Lived with a parent or guardian who served time in jail or prison while child was present.
- Lived with anyone who was mentally ill or suicidal, or severely depressed for more than a couple of weeks.
- Lived with anyone who had a problem with alcohol or drugs.
- Saw or heard parents, guardians or any other adults in the home slap, hit, kick, punch or beat each other up.

Children exposed to one ACE had a 28 percent increase in reported asthma compared to those with no ACEs. These rates increase with each additional ACE, with children exposed to four ACEs having a 73 percent increase in reported asthma.

Most prior asthma studies have focused on neighborhood and urban-related issues, such as family poverty, poor quality housing and access to community resources. But, disruptive family relationships within the home can be a significant source of psychosocial stress for children.

"Psychosocial stressors activate the sympathetic nervous system, which controls our 'fight or flight' responses when we experience stressful situations," said Wing. "Increased activity of this system releases cortisol, a stress hormone, which has been shown to affect the activity of immune cells. Occasional increases in these hormones are protective, but excessively high or prolonged exposures, such as those experienced by children exposed to ACEs, can be harmful."

Wing hopes this study, and others like it, will underscore the complex causes of asthma, enabling clinicians to better target preventative medications and other interventions. "Physicians taking care of children with asthma should take the time to ask about the child's home situation," said Wing. "For [children](#) experiencing stressors at home, encouraging efforts to increase the child's capability of handling stressors, using methods such as individual or family therapy, may help

target [pediatric asthma](#)."

Wing continued, "Stress should be viewed as a risk factor for asthma development and asthma exacerbations, much like tobacco smoke and dust mites. At the very least, clinicians can share with parents the impacts of ACEs on their child's asthma, perhaps acting as a motivating factor for parents to remove or shield a child from a stressful home situation."

Provided by Lifespan

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