

# If you treat a parent's depression, will their child's asthma improve?

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Credit: George Hodan/Public Domain

Studies have shown that children with asthma are at higher risk for depression. Research also has shown an association between a parent or caregiver's depression and worsening symptoms in an asthmatic child.

Now researchers at the University at Buffalo and the University of Texas, Dallas are exploring this connection further: They are beginning a

National Institutes of Health (NIH) study to determine whether treating a depressed caregiver will improve the [child's asthma](#).

The findings could have major implications for the way children with asthma are treated. The researchers say the findings also eventually may reduce [health disparities](#) in child asthma because there is a higher percentage of depressed caregivers among children with asthma from minority and socio-economically disadvantaged groups.

The researchers are recruiting 200 families for the study through Women & Children's Hospital of Buffalo (WCHOB) and UT Southwestern Medical Center in Dallas. The study will involve screening caregivers of children with asthma for depression and offering treatment for those who are depressed. It builds on a previous pilot study that suggested a connection between caregiver depression and worsening asthma in children.

"We are hypothesizing that an improvement in the caregiver's depression will lead to a subsequent improvement in the child's asthma," said Bruce Miller, MD and Beatrice Wood, PhD, both professors of psychiatry and pediatrics in the Jacobs School of Medicine and Biomedical Sciences at UB, co-founders and directors of the Center for Child and Family Asthma Studies at WCHOB, and principal investigators on the grant. Miller sees patients through UBMD Psychiatry.

Heather K. Lehman, MD, associate professor in the Department of Pediatrics in the Jacobs School of Medicine and Biomedical Sciences at UB, is a co-investigator. She has been working with Miller and Wood for several years and is developing a collaborative research program to continue studies examining the interplay between depression and child asthma. She sees patients through UBMD Pediatrics. E. Sherwood Brown, MD PhD, professor of psychiatry at UT Southwestern Medical Center, is also principal investigator on this study.

## Family stress and asthma

Miller and Wood have been working together on factors that affect asthma in children for more than 20 years. "We have continuously found associations between emotional stress and worsening asthma, and that family relational stress plays a key role," said Wood.

Early in his career, Miller developed a model for how depression affects the autonomic nervous system, which is responsible for involuntary neural processes affecting the airways. He found that depression in asthmatic children alters their autonomic nervous system function, causing their already reactive airways to become even more dysregulated, resulting in worse airway function under stressful conditions. These seminal findings were published in the *Journal of Allergy and Clinical Immunology* in 2009.

Wood's research has demonstrated how family relationship patterns impact physical and emotional illness in children. A 2011 research paper co-authored by Wood and Miller showed that depression among parents of children with asthma was associated with negative parenting and also predicted child depression and worsening asthma.

Studies also have shown that in stressed families, children's asthma gets worse. "We have specifically shown that a negative family emotional climate predicts worse asthma disease activity," said Wood.

The current study will involve screening caregivers of children with asthma for depression. Those who meet criteria for clinical depression will be offered antidepressant medication. The child's asthma treatment plan will not be altered in order to determine the effect of treating caregiver depression to benefit the child's asthma.

Both caregiver and child will be followed monthly for a year to see if

improvements in the caregiver's depression are followed by improvement in the child's asthma.

## Treating the caregiver

A previous pilot study conducted by Brown at UT Southwestern Medical Center saw encouraging results. In that study, children who had been hospitalized with asthma improved when their parents, who screened positive for depression, were treated with antidepressants, even though the child's asthma treatment was not changed.

"When the parents' depression got better, the [children's](#) asthma got better," said Miller.

The purpose of the current study is to confirm these findings and better understand the mechanisms underlying the effect. "If a caregiver is depressed he or she may be less able to carry out the care of a child, especially a fragile child who is vulnerable with illness," Miller explained. "They may not be able to manage the child's medications or get the child to the doctor when necessary."

"At the same time," said Wood, "our previous studies have shown that depression in the parent cascades into negative parent-child relationships, child depression and worse asthma." She noted that Miller's 2009 study showed that [depression](#) in the child has a direct physiological effect on the child's asthma.

Provided by University at Buffalo

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