

Study assesses asthma treatment options in African American children and adults

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A new study of African Americans with poorly controlled asthma, found differences in patients' responses to commonly used treatments. Contrary to what researchers had expected, almost half of young children in the study responded differently than older children and adults, and than white children in prior studies.

"We shouldn't assume that current treatment strategies for asthma are ideal for all African Americans since for many years that population was not adequately represented in research," said Elliot Israel, M.D., senior study author and director of clinical research in the Pulmonary and Critical Care Medicine Division at Brigham and Women's Hospital. "We found that almost half of the African American [children](#) studied responded better to increasing the dose of inhaled corticosteroids than adding a long-acting bronchodilator. Thus, adding a long-acting bronchodilator may not be the right answer for nearly half of African American children."

The National Heart, Lung, and Blood Institute (NHLBI), part of the National Institutes of Health, funded this research to assess the [best approach](#) to [asthma management](#) in African Americans, who suffer much higher rates of serious asthma attacks, hospitalizations, and asthma-related deaths than whites. The findings appear today in the *New England Journal of Medicine*.

The researchers examined how to escalate or "step-up" asthma treatments for African Americans whose asthma had not been treated adequately with low doses of inhaled corticosteroids, the standard starting treatment. The treatment choices in the trial included increasing the dose of inhaled steroid, adding a long-lasting bronchodilator (used to help open airways), or both.

Based on prior studies, investigators expected that increasing the inhaled corticosteroid dose would lead to improvement in most African American children needing treatment for asthma.

The researchers found that in children under 12 years of age, either approach was effective: nearly half (46%) responded better to increasing the inhaled corticosteroid dose alone and just as many (46%) responded better to increasing the inhaled corticosteroid dose and adding a long-lasting bronchodilator.

"This study suggests that we cannot look at results from one population and extrapolate the findings to African Americans or any other group," said Michael Wechsler, M.D., principal investigator for the NHLBI-funded Best African American Response to Asthma Drugs (BARD) study and professor of medicine at National Jewish Health in Denver. "If children do not respond to one treatment, parents and providers could consider another option because there is almost a 50% chance of having a better response."

The multicenter study included 574 participants—about half of whom were ages 5-11 and half 12 years and older. All participants in this study had at least one self-identified African American grandparent, with an average of approximately 80% African ancestry, based on [genetic testing](#).

Of the adolescents over 11 years old and adults, most (49%) responded better to adding a long-lasting bronchodilator than to increasing the inhaled corticosteroid dose, though 20-25% in this group showed no difference in their responses to these approaches.

Investigators also examined whether patient characteristics, including genetic ancestry, could be used to predict the response to the "step-up" treatments in the study participants. But they were unable to use genes

indicative of African ancestry, or any of the other patient characteristics they measured in this group of patients, to predict treatment response.

"Although we cannot attribute the study's findings to genetic markers of African ancestry, there could be as-yet unknown genetic variants specific to people of African descent that affect how severe a patient's asthma is," said Wechsler. Before the trial began, the researchers did not expect the participants to have a better response to treatment regimens that included long-lasting bronchodilators, despite the inclusion of these agents in treatment recommendations. They said they were surprised that many (46% of the young children and 49% of the [older children](#) and adults) improved with long-lasting bronchodilators.

"These results provide new data about the management of asthma patients who self-identify as African American regardless of genetic ancestry," said James Kiley, Ph.D., director of the Division of Lung Diseases at NHLBI. "Every person and their provider should explore all of their management choices to achieve maximum [asthma](#) control, based on their response to specific medications."

More information: Wechsler, M.E. et al. Step-Up Therapy in Blacks with Inadequately Controlled Asthma. [DOI: 10.1056/NEJMoa1905560](https://doi.org/10.1056/NEJMoa1905560)

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