New Pediatric Blood Pressure Guidelines Identify More Kids at Higher Risk of Premature Heart Disease

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Children play as Tulane student volunteers help them with an exercise program. In a heart research study by the epidemiology department at the Tulane School of Public Health and Tropical Medicine it was found that for most children with high blood pressure that lifestyle changes are the cornerstone of treatment.

Based on a heart research study completed within the department of epidemiology, at the Tulane School of Public Health and Tropical Medicine in New Orleans, there are now new guidelines that classify more children as having elevated blood pressure. These new guidelines are better at predicting which kids are likely to develop heart disease when they reach adulthood, according to the American Heart Association's journal *Hypertension*. The guidelines were issued by the American Academy of Pediatrics (AAP) in 2017 and endorsed by the American Heart Association.

Compared with the 2004 guidelines from the AAP, the 2017 guidelines increased the number of children classified as being in higher blood pressure categories, but it was not clear if the new criteria effectively identified children who were at higher risk of premature heart disease.

"After reviewing years of information from the Bogalusa Heart Study, we concluded that compared with children with normal blood pressure, those reclassified as having elevated or high blood pressure were more likely to develop adult high blood pressure, thickening of the heart muscle wall and the metabolic syndrome – all risk

factors for heart disease," said Lydia A. Bazzano, M.D., Ph.D., senior author of the study and associate professor of epidemiology at the Tulane School of Public Health and Tropical Medicine in New Orleans.

The Bogalusa Heart Study enrolled participants in childhood and has followed them for 36 years. Childhood test results on 3,940 children (47 percent male, ages 3-18 years and 35 percent African-American) and adult follow-up revealed that:

- 11 percent of the participants would be identified as having high blood pressure using 2017 guidelines, compared with 7 percent using 2004 guidelines; and
- 19 percent of those with high blood pressure under 2017 guidelines developed thickening of the heart muscle during the follow-up period, compared with 12 percent of those considered to have high blood pressure under 2004 guidelines.

Not all children identified with high blood pressure under the new guidelines will require medication for the condition.

"For most children with high blood pressure that is not caused by a separate medical condition or a medication, lifestyle changes are the cornerstone of treatment. It's important to maintain a normal weight, avoid excess salt, get regular physical activity and eat a healthy diet that is high in fruit, vegetables, legumes, nuts, whole grains, lean protein and limited in salt, added sugars, saturated - and trans- fats to reduce blood pressure," said Bazzano.

Bazzano stressed that lifestyle changes can improve the health of the entire family as well as the child who has been found to have high blood pressure.

The study is limited by the lack of data on actual heart attacks and strokes during adulthood. That data is currently being collected, according to the researchers. Results on participants in the Bogalusa Heart Study, who are from one community in Louisiana, may not be generalizable to the nation as a whole.

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