

AAP Guideline Updates Practice for Pediatric Hypertension

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August 21, 2017

New normative blood pressure (BP) tables, revised screening protocols, and recommendations for initiating antihypertensive medication are among the central points of an updated clinical practice guideline developed by the American Academy of Pediatrics (AAP) for the diagnosis and management of high blood pressure in children.

The new document, which replaces the 2004 pediatric hypertension (HTN) guideline issued by the National Heart, Lung, and Blood Institute, also includes more limited recommendations on when to screen for abnormal blood pressures in children, an expanded role for ambulatory BP monitoring, and a decreased role for cardiac echocardiogram, according to David Kaelber, MD, PhD, from the department of pediatrics, Case Western Reserve University School of Medicine and MetroHealth System, in Cleveland, Ohio, and cochair of the panel convened to develop the guideline. The guideline is [published online](#) today and in the September 2017 issue of *Pediatrics*.

The updated BP tables are based on normal-weight children only, which is a departure from previous tables that included BP measurements in overweight and obese children and adolescents.

"By not including measurements of children with weight problems, the abnormal blood pressure cut-off for most blood pressures is lowered by several mmHg," Dr Kaelber said in an interview with *Medscape Medical News*. "The practical effect of this is that more blood pressures will be abnormal with the new tables."

With respect to screening for hypertension in children and adolescents, the new guideline recommends screening only at well child/preventative health visits rather than all visits in a healthcare setting, Dr Kaelber noted. "And any potential diagnosis of hypertension based on multiple office blood pressure measurements should be confirmed by 24-hour ambulatory blood pressure monitoring."

While the former guideline calls for cardiac echocardiogram in all children with hypertension, "the revised document recommends the test only for children and adolescents who will be taking medication for abnormal blood pressure, prior to starting the medication," Dr Kaelber noted.

Additional important points for practicing pediatricians, according to Dr Kaelber, include:

- A simplified table for initial BP screening is based on the 90th percentile blood pressure for age and sex for children at the 5th percentile for height, which gives the table a very high negative predictive value. The simplified table "is designed as a screening tool only for the identification of children and adolescents who need further evaluation of their BP starting with repeat BP measurements," the authors write. "A typical-use case for this simplified table is for nursing staff to quickly identify BP that may need further evaluation."
- For children aged 13 years or older, the table is designed to align with the cut-offs for adult abnormal blood pressure developed by the American Heart Association (AHA) and American College of Cardiology (ACC) to "facilitate the management of older adolescents with high BP," the authors write.

- A change in the term of "prehypertension" to "elevated blood pressure." This revision reflects the desire to be consistent with the AHA and ACC guideline, according to the authors, and to "convey the importance of lifestyle measures to prevent the development of [hypertension]."
- Initiating antihypertensive medication when lifestyle changes alone don't sufficiently lower blood pressure. "Children who remain hypertensive despite a trial of lifestyle modifications or who have symptomatic HTN, stage 2 HTN without a clearly modifiable factor (eg, obesity), or any stage of HTN associated with [chronic kidney disease] or diabetes mellitus therapy should be initiated with a single medication at the low," the guideline states.

In total, the *Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents* includes 30 key action statements and 27 additional recommendations based on a literature review of approximately 15,000 published articles from January 2004 through July 2016, the authors write.

As per current AAP recommendations that call for the review of guidelines every 5 years, "these 2017 guidelines should be reviewed again in 2022 to see if evidence indicates that they should be updated," Dr Kaelber said.

The guideline authors point to important evidence gaps in the pediatric hypertension literature that should inform future research.

"In general, the pediatric HTN literature is not as robust as the adult HTN literature. The reasons for this are many, but the 2 most important are as follows: (1) the lower prevalence of HTN in childhood compared with adults, and (2) the lack of adverse CV events (myocardial infarction, stroke, and death) attributable to HTN in young patients," they write. "These factors make it difficult to conduct the types of clinical trials that are needed to produce high-quality evidence."

The unanswered questions that are most relevant to clinical practice include whether diagnosing elevated BP and HTN in children and adolescents has long-term health consequences and whether antihypertensive medications (and which medications preferentially) should be used in a child or adolescent with elevated blood pressure, the authors write. Studies that are currently under way will address some of these questions, they note, while additional research, "including more rigorous validation studies of automated BP devices in the pediatric population, expanded trials of lifestyle interventions, further comparative trials of antihypertensive medications, and studies of the clinical applicability of hypertensive target organ assessments," is warranted to answer these and other, more specific, screening, diagnosis, and outcomes questions.

The authors have disclosed no relevant financial relationships.

Pediatrics. Published online August 21, 2017. [Full text](#)

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Cite this article: AAP Guideline Updates Practice for Pediatric Hypertension - *Medscape* - Aug 21, 2017.

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