

Key Action Statement 25. Children and adolescents with CKD, HTN, and proteinuria should be treated with an ACE inhibitor or ARB (grade B, strong recommendation).

Aggregate Evidence Quality	Grade B
Benefits	ACE inhibitor and ARB therapy has been shown in the short-term to be effective in reducing urine proteinuria
Risks, harm, cost	Positive effect on urine protein concentrations after the receipt of an ACE inhibitor may not be sustained over time
Benefit–harm assessment	Treatment with an ACE inhibitor or ARB may lower the rate of progression of renal disease even if the effect is not sustained in the long-term
Intentional vagueness	Whether to aggressively treat the BP so that it is <90th percentile
Role of patient preferences	Patients may have concerns about the choice of medication, which should be addressed
Exclusions	Children without CKD
Strength	Strong recommendation
Key references	173,464,465,485,487,488

Key Action Statement 26. Children and adolescents with T1DM or T2DM should be evaluated for HTN at each medical encounter and treated if BP is ≥95th percentile or >130/80 mm Hg in adolescents ≥13 years of age (grade C, moderate recommendation).

Aggregate Evidence Quality	Grade C
Benefits	Early detection and treatment of HTN in children with T1DM and T2DM may reduce future CV and kidney disease
Risks, harm, cost	Risk of drug adverse effects and polypharmacy
Benefit–harm assessment	Preponderance of benefit
Intentional vagueness	None
Role of patient preferences	Family concerns about additional testing and/or medication may need to be addressed
Exclusions	None
Strength	Weak to moderate recommendation
Key references	14,110,111,494

10. SEX, RACIAL, AND ETHNIC DIFFERENCES IN BP AND MEDICATION CHOICE

BP differences between various ethnic groups are well described in the adult population.^{216,516} Large, cross-sectional studies have demonstrated that, per capita, minority ethnic groups have both a higher prevalence of HTN and more significant end organ damage and outcomes.^{517,518} Although a growing body of evidence indicates that racial and ethnic differences in BP appear during adolescence,^{519–521} the cause of these differences and when they develop in childhood are yet to be fully determined. The risk of HTN correlates more with obesity status than with ethnicity or race, although there may be some interaction.²¹⁶ At this time, although limited data suggest that there may be a racial difference

in response to ACE inhibitors in the pediatric age group,⁴⁷¹ the strength of available evidence is insufficient to recommend using racial, sex, or ethnic factors to inform the evaluation or management of HTN in children.

11. SPECIAL POPULATIONS AND SITUATIONS

11.1 Acute Severe HTN

There is a lack of robust evidence to guide the evaluation and management of children and adolescents with acute presentations of severe HTN. Thus, much of what is known is derived from studies conducted in adults, including medication choice.⁵²² The evidence base has been enhanced somewhat

over the past decade by the publication of several pediatric clinical trials and case series of antihypertensive agents that can be used to treat such patients.^{465,523–530}

Although children and adolescents can become symptomatic from HTN at lesser degrees of BP elevation, in general, patients who present with acute severe HTN will have BP elevation well above the stage 2 HTN threshold. In a study of 55 children presenting to a pediatric ED in Taiwan with hypertensive crisis, 96% had SBP greater than that of stage 2 HTN, and 76% had DBP greater than that of stage 2 HTN.⁵³¹ The major clinical issue in such children is that this level of BP elevation may produce acute target organ effects, including encephalopathy, acute kidney injury, and congestive heart failure. Clinicians should be concerned about the development of these complications when a child's BP increases 30 mm Hg or more above the 95th percentile.

Although a few children with primary HTN may present with features of acute severe HTN,⁵³² the vast majority will have an underlying secondary cause of HTN.^{532,533} Thus, for patients who present with acute severe HTN, an evaluation for secondary causes is appropriate and should be conducted expediently. Additionally, target organ effects should be assessed with renal function, echocardiography, and central nervous system imaging, among others.

Given the potential for the development of potentially life-threatening complications, expert opinion holds that children and adolescents who present with acute severe HTN require immediate treatment with short-acting antihypertensive medications that may abort such sequelae.^{533,534} Treatment may be initiated with oral agents if the patient is able to tolerate oral therapy and if