

■ High Blood Pressure (Hypertension) ■

There are many possible causes of high blood pressure in children. In young children, high blood pressure is most often caused by other diseases, particularly kidney disease. In adolescents, high blood pressure often occurs without other diseases; this is called essential hypertension. It may be related to other factors such as obesity and family history and occurs most often in obese teens. Treatment to reduce high blood pressure is needed to prevent long-term damage to organs such as the heart, brain, and kidneys.

What is high blood pressure?

Hypertension is the medical term for high blood pressure. You probably know that high blood pressure is a common problem in adults, but it can also occur in children and teens. Hypertension is *not* diagnosed from a single blood pressure measurement (unless it is very high or if other symptoms are present) but after a number of measurements over time.

In younger children, high blood pressure is usually “secondary” or caused by other diseases. The most common causes are diseases of the kidneys and/or blood vessels. Treating the underlying cause usually corrects the high blood pressure.

In adolescents, like adults, high blood pressure can occur on its own. This is called “essential” or “primary” hypertension, and it is most common in obese teens. Treatment is needed. For many teens, high blood pressure can be reduced through diet and exercise.

What does it look like?

High blood pressure usually causes no symptoms. Most of the time, it is detected on routine medical checkups.

- *Essential hypertension* (no underlying disease) is rare in preteen children. Most teens with high blood pressure are overweight or obese, but not all. Many teens with essential hypertension have parents with high blood pressure too.
- *Secondary hypertension* (increased blood pressure caused by other diseases) also usually causes no symptoms. Although symptoms may be present, they are generally caused by whatever disease is causing your child’s hypertension.

Although uncommon, symptoms such as headache, fainting, or seizures may occur if blood pressure is very high.

- Get medical help if your child has any of these symptoms. !

What causes high blood pressure?

- *Essential hypertension.* In teens as in adults, the cause of high blood pressure is usually unknown. The most important cause is genetics—high blood pressure tends to run in families. Other factors, such as weight, diet, and stress, also play a role.
- *Secondary hypertension.* Many causes are possible, including:
 - Kidney disease. This is the most common cause of high blood pressure in children. Specific causes include problems with repeated infection (pyelonephritis) or inflammation caused by an immune system reaction (glomerulonephritis).
 - Drugs and medications. Many substances can cause high blood pressure, including medications, drugs of abuse (especially cocaine), and oral contraceptives (birth control pills).
 - Endocrine diseases, such as hyperthyroidism.

What are some possible complications of high blood pressure?

- High blood pressure is a major contributor to heart disease, stroke, and kidney failure. These complications occur because high blood pressure gradually causes damage to the heart, brain, and kidneys.
- When hypertension develops in the teen years, there is a high risk it will continue into adulthood. Prevention and treatment of high blood pressure in teens and young adults is a key goal of efforts to prevent heart disease and stroke.

What puts your child at risk of high blood pressure?

For *essential hypertension* in teens, the main risk factors are:

- Genetics. If one or both parents have high blood pressure, the child may be at higher risk. Children of parents with hypertension have increased blood pressure and heart rate. This is especially true of African-American children.
- Obesity. Like adults, teens who are overweight or obese are most likely to develop high blood pressure.

For *secondary hypertension*, risk factors depend on the specific disease causing high blood pressure.

Can high blood pressure be prevented?

The most important steps in reducing the risks of high blood pressure in teens (and adults) are:

- Not smoking. If you are already a smoker, our office can give you advice on how to quit.
- Keeping weight under control by exercising regularly and eating a sensible diet.

How is high blood pressure diagnosed and treated?

Most of the time, repeated measurements of blood pressure are needed to diagnose hypertension. Some people get nervous at the doctor's office, causing blood pressure to increase. This is sometimes called "white coat hypertension." In this case, blood pressure may be measured at home by the parents to get an idea of the true blood pressure. For some patients, especially teens with borderline hypertension, we may recommend 24-hour (ambulatory) blood pressure monitoring. This provides a full day's worth of information about your child's blood pressure.

If your child is diagnosed with hypertension, the doctor will perform an examination and tests to determine the cause and appropriate treatment. This may include tests for kidney disease or other conditions that can cause high blood pressure, especially in children under 10.

If your child has even mild hypertension, the doctor will likely recommend treatment in order to lower the blood pressure to normal.

- *Nondrug Treatment.* For many teens with hypertension, exercise, weight loss, and cutting back on salt in the diet are enough to reduce high blood pressure. It's also important to avoid smoking and alcohol use. We may recommend avoiding medications that could contribute

to high blood pressure, such as cold medicines or birth control pills. If these measures do not reduce your child's blood pressure, the doctor will likely recommend medications.

- *Drug Treatment.* There are many types of blood pressure-lowering medications. Your doctor will recommend the best kind for your child's type of blood pressure. Options include diuretics ("water pills," which work by increasing the amount of urine made by the kidneys) or certain types of medications that affect the cardiovascular system, such as beta-blockers, ACE inhibitors, or calcium channel blockers. This part of your child's care may be directed by a kidney specialist (nephrologist) or another specialist.
- Your child will need regular follow-up visits to be sure treatment is effective. Sometimes a few medications have to be tried to get the blood pressure to go down.
- Side effects can occur. These will be checked as part of medical follow-up. Be sure to tell your doctor if you think your child may be having medication side effects.
- It is important that your child follow his or her prescribed treatment. This may be difficult for teens (and adults) with high blood pressure; they usually feel fine and don't want to take medications. You and your child must understand that uncontrolled high blood pressure greatly increases the risk of heart disease, stroke, and other serious diseases later in life.

When should I call your office?

Call our office if your child has:

- Any symptoms that may be related to high blood pressure, like severe or frequent headaches, fainting, or seizures.
- Possible side effects of blood pressure-lowering drugs.