

High Blood Pressure in Pregnancy



Blood pressure readings are checked with either manual or electronic devices.

Hypertension is also known as high blood pressure. Blood pressure is the force the pumping heart places against the walls of the blood vessels. During pregnancy, hypertension has an adverse effect on both the mother and her baby. The goal is for your pregnancy to continue to its full term without serious complications from high blood pressure.

CIRCULATORY SYSTEM

Your circulatory system is made up of the heart and blood vessels. Each time your heart beats (contracts) it pumps oxygen-rich blood out into the arteries. These

arteries supply blood to all parts of your body, including your major organs. Blood returns to your heart through vessels called veins. This circulatory system works because of blood pressure. Pressure is needed to push blood through the arteries. Your heart makes some of the pressure when it beats and forces blood into the arteries. The arterioles (smallest branch of the arteries) also supply pressure. Arterioles are lined with a layer of muscle. When this muscle layer is relaxed, blood pressure is normal and blood flows easily through the arterioles. At times, this muscle layer constricts (tightens) and the arterioles close. As a result, blood pressure in the arteries is increased.

BLOOD PRESSURE

Blood pressure readings are checked with either manual devices (stethoscope and sphygmomanometer) or with an electronic device. Readings are shown using two numbers. The first number is called the *systolic pressure*. This is the pressure in the arteries when the heart is contracting. The second number refers to the pressure in the arteries when the heart is relaxed, or *diastolic pressure*.

Blood pressure normally has “ups and downs” and it varies with a person’s age and weight. A blood pressure reading of 120/80 for an adult is considered normal. High blood pressure is usually defined as 140/90 or above. Your blood

pressure may rise if you are excited or if you exercise strenuously. It is lower if you are resting and could vary with position changes during pregnancy. These changes are temporary and are normal. If your blood pressure is high for some length of time, you might have hypertension.

HYPERTENSION

Blood pressure usually goes up and down during pregnancy. During the middle part of pregnancy, blood pressure tends to be low. For this reason, it is important that your doctor know what your pre-pregnancy or early pregnancy blood pressure readings were. In general, a blood pressure reading of 140/90 or higher is a sign of hypertension in pregnancy and can indicate a problem.

The risk of developing hypertension in pregnancy is high for women who:

- Have a history of chronic hypertension
- Have a history of high blood pressure with a previous pregnancy
- Are pregnant for the first time
- Are over age 30 or a teenager
- Are carrying more than one baby
- Have certain medical conditions such as diabetes or kidney disease
- Have a family history of hypertension

There are two types of hypertension. The first, *chronic hypertension*, affects both men and women, is long lasting, and could require treatment with medicine. The second is a group of conditions defined as hypertension that can occur in pregnancy. You might only have high blood pressure, which is called *gestational hypertension*, or you could have *preeclampsia*, which is high blood pressure and protein in your urine. You might also have puffiness or swelling of the hands, face, and feet.

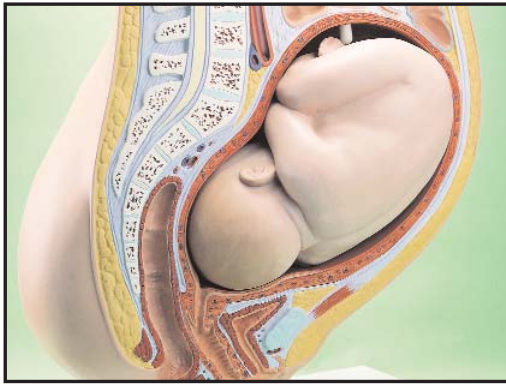
Preeclampsia is also called *pregnancy-induced hypertension* (PIH). Women with chronic hypertension who become pregnant *and* women with “normal” blood pressure can develop preeclampsia.

Preeclampsia affects about seven out of every 100 women. It occurs most often with a first pregnancy but can occur in later pregnancies, especially if the woman is carrying more than one baby, or if she has diabetes. Women over age 30, and teenagers, have a higher risk of developing preeclampsia. Other risk

factors include women whose mothers have had high blood pressure, and women with kidney disease or other medical conditions.

Effects of Hypertension

Hypertension during pregnancy can affect the development of your baby. To understand these effects, it is important to understand how blood flows to your uterus and the fetus (or unborn baby). The baby grows in your uterus. On the



inside wall of the uterus is an organ called the placenta, which provides the blood supply to the fetus. The blood vessels in a pregnant uterus are enlarged so that blood flow to the placenta is increased. Nutrients and oxygen for the fetus enter the placenta from maternal arteries and pass to the fetus through the umbilical cord.

Hypertension affects the fetus because of its influence on the placenta. Hypertension causes decreased blood flow to the placenta because of the constriction of the maternal arteries. Because less nutrients and oxygen reach the fetus, growth may be slowed.

Depending on how serious your hypertension is, the baby may have to be delivered early (preterm) and could have problems eating, staying warm, and breathing. Continued severe hypertension in the pregnant woman can result in injuries to the baby's major organs such as the kidneys, liver, eyes, and brain. The heart can also be weakened from the stress of trying to pump blood through constricted arterioles.

A serious situation caused by hypertension is *abruptio placenta*, which can occur if the blood vessels between the placenta and uterus break open (because of high blood pressure) and begin to leak blood. The build-up of blood behind the placenta pushes it away from the uterine wall, leaving no blood flow to the baby. Continued extreme hypertension can lead to a condition known as *eclampsia*, which causes seizures and can be very dangerous.

Diagnosis

The only way to tell if you have high blood pressure is by measuring it. This is why it is so very important to have regular prenatal care.

At the doctor's office, you

will have your blood pressure measured at every visit. It is a good idea to get into the habit of asking what your blood pressure is. The doctor will also be looking for other signs and symptoms associated with PIH. Anytime you experience symptoms such as blurred vision, severe headache, pain in your upper abdomen, sweaty hands, feet or face, call your doctor right away so you can be checked.

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Sudden weight gain can be a result of your body retaining fluid because of the effects of high blood pressure on the kidneys. This weight gain is usually seen along with swelling which is called edema. It is most often seen in the fingers, face, and above the ankles. As a result of poor kidney function, protein may spill into the urine (proteinuria). Severe headaches, blurred vision, and pain in the upper abdomen are also signs that the disease is getting worse. These signs are a signal of potential problems and should be checked often. Any changes should be reported to your doctor right away.

There are several steps that you can take to be aware if this problem is getting worse:

1. See your doctor as scheduled. Regular visits are vital.
2. Eat a balanced diet as ordered by your doctor.
3. It is very important to follow your doctor's orders such as limiting your activity level.
4. Learn to notice the signs of complications that could result from increasing high blood pressure. If you have any of the following signs, you should call your doctor:

EDEMA

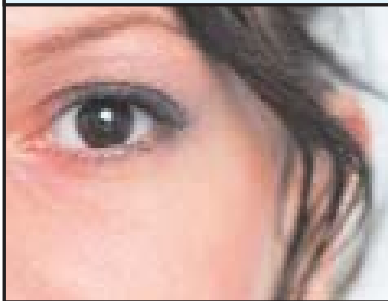
Most women have some swelling in their feet during pregnancy. However, you should tell your doctor about any swelling of the face, hands, or feet that is present early in the morning. Each morning, be sure to do a self-assessment by checking these items:

- Look in the mirror at your face, especially around your eyes and nose. Are you more puffy than normal?
- Do your shoes and rings fit today?
- Put your finger on the front part of your ankle and push down for a few seconds. Remove your finger to see if a dent was left. If there is a dent, how long did it take to go back to normal?
- After you have looked at yourself, try to recall if you ate any food in the past 24 hours that could have made you retain fluid. Fast foods and many convenience or pre-packaged foods such as potato chips, processed meats, Chinese food, and popcorn have a lot of salt and might have made you more puffy than normal.

HEADACHE

Most headaches are not a sign of worsening hypertension. Headaches can be caused by stress, too much reading, close-up work, or not eating. A headache that is not relieved by simple doctor-ordered pain relievers (e.g., Tylenol®) is a cause for concern. Severe headaches can be a result of fluid build up (edema) in and around your brain. These headaches are most often described as mostly around the forehead area but can also be felt toward the back of your head. You should tell your doctor if you have a headache that sounds like this.

A sudden onset of blurry vision or seeing spots or silver waterfalls could signal a problem.



VISUAL DISTURBANCE

Problems with your eyesight can also be a sign of a serious complication. A sudden onset of blurry vision or seeing spots or silver waterfalls could signal a problem and your doctor should be called right away. Visual disturbances can be a result of arteriole spasms in your brain or retina (part of the eye).

EPIGASTRIC PAIN

Pain in the upper right stomach area can also be a sign of problems. Your liver is located under the lower one-third of your right rib cage and extends across your stomach area. With severe continued hypertension, your liver can become swollen with fluid and might have a small area of hemorrhage (bleeding). Pain in the liver area should be reported to your doctor right away.

ABDOMINAL CRAMPING/BLEEDING

Severe pain with or without bleeding from the vagina could mean part of the placenta has pulled away from the uterine wall. If you have these signs, call your doctor right away.

Treatment

Your doctor will decide on a treatment plan based upon how severe your symptoms are. Several factors will be taken into account, including your individual physical condition. Often restricted activity is ordered. This can mean anything from periodic rest periods during the day to complete bedrest. The purpose of restricted activity is that resting on the left side decreases your blood pressure and a side-lying position also improves the blood flow to the baby. If restricted activity is prescribed for you, take it very seriously.

There are different tests that may be performed to monitor your condition if you are diagnosed with high blood pressure in pregnancy. Urine, blood pressure and weight checks will be done at each doctor's visit. A variety of blood tests will be done to track any problems with your kidneys, or liver and any bleeding disorders that can occur as a result of PIH. Your urine will also be tested and a 24-hour urine sample will be collected.

Since hypertension can affect your baby, your doctor might choose to assess and/or check your baby more often with tests such as *fetal movement counting*, a simple test in which you count your baby's movements for a set time period several times a day. How much and how often your baby moves can be a very good sign of his well-being. Other tests may also be used such as *ultrasound* or *sonogram* which uses sound waves to show "pictures" of your baby, the amniotic fluid, membranes, and placenta; *non-stress test* (NST), which records the baby's heart rate and looks for increases (accelerations) that happen when the baby moves; or *biophysical profile* (BPP), which uses ultrasound and an external fetal heart rate monitoring to establish the health of your baby. An *amniocentesis* may be indicated, in order to see if the baby's lungs are mature, especially if your condition is severe and the baby must be delivered early.

If any of these tests show that the baby is having problems, your doctor might decide to watch you more closely by having you come into the office more often. If you need to be watched more closely than that, you might need to be

monitored at home or admitted to the hospital. If the PIH is more severe, strict bedrest may be advised and medication may be ordered. These include antihypertensives, magnesium sulfate (to control central nervous system irritability and decrease the incidence of seizures), and sometimes sedatives to help you relax and decrease your blood pressure. Corticosteroids (betamethasone) may also be administered in order to help speed up the lung maturity of the preterm baby.

Emotional Aspects

Dealing with hypertension in pregnancy can be hard, especially if your pregnancy has been trouble-free until now. You might have a hard time believing you have a problem since you do not look or feel sick. Feelings of denial, anger, fear, anxiety, and helplessness are common first reactions.

Your doctor might order medicine, bedrest, or other activity limits, to help treat your high blood pressure. Changing your activity level may mean unwanted changes in your lifestyle. Although activity limits and/or bedrest are often needed, it can be very hard to adjust and cope with serious changes such as leaving a job, getting someone for childcare, or living on one less income. Common emotional struggles that you might



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experience are: feelings of loss of control over your life, guilt, irritability, boredom, and depression. These are all normal reactions to a stressful situation. Coping with the emotional ups and downs that hypertension in pregnancy might create can be hard for you and your family. Here are some helpful tips:

1. **Follow your doctor's orders carefully.** Sticking to your plan of care is vital to your on-going good health and your baby's health.
2. **Learn as much as you can about your hypertension.** It will be much easier to follow your doctor's plan of care when you know why it is needed.
3. **Ask for and accept help from others for household and child care duties.** A planned routine and some outside help can ease some of the frustration for you and your family.

4. **Locate friends and family who can offer emotional support.** Volunteer groups of families who have had the same kind of pregnancy problems are available across the country to give emotional support to women and their families. Ask your doctor if there is a support group in your town.
5. **Finally, it is vital for you to know that your feelings and frustrations are normal.**

Ultimately, the only cure for PIH is delivery. With appropriate and prompt medical care, the chances for a healthy mom and baby after delivery are very good. Most women who have not had blood pressure problems before delivery find that their blood pressure returns to normal within a few days of the baby's birth.