



## Hypertension

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You have been diagnosed with hypertension, also known as high blood pressure. Hypertension contributes in a large way to kidney disease, eye damage, blood vessel damage that leads to heart disease and stroke, as well as other multiple medical problems. If you already smoke, have diabetes, heart disease, or previous stroke, you are at increased risk for even more problems if you do not appropriately treat your high blood pressure.

### **Many people wonder where they “get” high blood pressure.**

High blood pressure can happen for a number of reasons: 1. You may be genetically predisposed to have this condition (you inherited the problem from your family genes) 2. Rarely, certain kidney diseases can trigger high blood pressure. 3. Water or salt retention can increase your blood pressure. 4. Obesity, smoking, and other lifestyle choices (such as high salt diets, high fat diets, drug use, alcoholism) can also contribute to high blood pressure. 4. Even having a lot of long-term stress in your life can contribute to development of high blood pressure. Most people with hypertension develop the disease between the ages of 30-55, are non-white, and are overweight.

### **What happens in the body of a hypertensive person?**

When blood vessels are under a high amount of pressure, body systems begin to adapt to those pressures. That sounds good, but actually the adaptation causes damage. Most noteworthy, is the damage that occurs to the cardiovascular system. Cardiovascular is a medical term for “the heart and blood vessels”. When the heart and blood vessels operate under high pressures, the blood vessels become “firm”. This makes sense – the body is protecting its vessels from breaking under the high pressure! But this “firmness” causes other problems...especially in the vessels that send blood to the heart muscle itself. Those vessels begin to narrow; and that narrowing causes tiny blockages to form. Those blockages are what eventually cause heart attacks.

The firmness that causes trouble in the heart also causes trouble in the brain. The vessels that have become firm in the brain also allow tiny blockages which

eventually cause strokes.

Additionally, when the heart itself has to beat against high pressures, the heart has to become “stronger” than it was when it had to beat against lower pressures. The heart adapts to this need by becoming thicker (that’s what muscles do when you work them out! They get thicker and stronger!) But that thickness is actually only helpful for a short amount of time, and eventually, the thickness of the heart actually causes it to take on a shape that is less efficient for the body. Eventually, the heart becomes MUCH LESS efficient. This is what leads to “heart failure”. If you have swelling in your legs, you may be showing some of the first signs of early heart failure!

Last but not least, many of the body’s organs do not like high blood pressure. The eyes and kidneys especially dislike high blood pressures. Body parts that dislike high blood pressures eventually will begin to fail to work properly, and at that point, it is too late to fix the problem.

### **Treatment of hypertension is aimed at lowering the blood pressure.**

Lowering blood pressure is accomplished using a whole system approach. The goal is to lower the blood pressure to less than 120/80 for most people. In order to accomplish goal level blood pressure, the patient themselves should agree to the following lifestyle changes:

1. Following a LOW SALT diet – put down the salt shaker! Limit sodium to LESS than 2000mg a day.
2. Lose weight to achieve a body mass index of 19-24. For most individuals, this means losing a minimum of 10% of the body weight. Your BMI \_\_\_\_\_ Your Target Weight\_\_\_\_\_.
3. Following a diet that is rich in fruits and vegetable and low in fat. An actual diet can be developed especially for you – just ask to be seen for medical weight loss designed for people with hypertension.
4. Taking 1000-2000 mg a day of calcium; but not if you have had kidney stones previously.
5. Engage in physical activity at least 30 minutes a day, most days of the week.
6. Limit alcohol to no greater than 1 ounce of ethanol...this equals 24 oz beer, 10 oz wine or 2 oz whiskey. This does NOT mean you SHOULD drink alcohol if you are not drinking already!!!
7. Adhere to a medical plan of care involving the use of medicines on a regular basis. Commit to taking medicines on a regular basis until lifestyle changes have made a real difference on the blood pressure – a minimum of 9 months to 1 year.
8. Maintaining appropriate cholesterol levels.
9. Fish oil supplementation with omega-3 fatty acid on a daily basis.

Below is a list of the medications that are widely used to treat hypertension. You can see there are many types of medicines and each one has its own way of helping

blood pressure. Standards of care are developed for the use of these medicines, and the medication you are put on may have something to do with your heart rate, your water retention, and your other diseases such as diabetes, heart disease, and kidney disease. Your age may help determine what medicine is used, as well. Even your race may determine which medicines to use, because African Americans tend to respond especially well to one particular medicine known as NORVASC. Diabetics are usually placed on a certain medicine called LISINOPRIL, which helps protect the kidney.

<b>Drug</b>	<b>Special Considerations</b>	<b>Dosage</b>	<b>Caution if used with...</b>
chlorthalid–helps Lower BP by getting rid of extra water	First drug of choice for most hypertensive people. OK if Chronic renal failure	12.5-50 mg daily	Athletes. If Diabetic, watch blood sugars.
chlorthalid–helps Lower BP by getting rid of extra water	First drug of choice for most hypertensive people. OK if Chronic renal failure	12.5-50 mg daily	Athletes. If Diabetic, watch blood sugars.
Toprol XL- Helps to lower BP by lowering the heart rate	Second drug of choice for most hypertensive people. OK with mitral valve prolapse	25-100 mg daily	Asthma Diabetes Reynauds Depression
Lisinopril – Helps prevent our body's chemicals from raising BP	Protective of kidney Good for Diabetics Ok for Heart Failure	15-45 mg daily	Renal Artery Stenosis Asthma Pregnancy
Valsartan – Helps Prevent our body from raising BP	Similar to ACE Inhibitors, Additionally effective.	160-320 mg daily	Asthma Pregnancy
Norvasc – Helps relax the blood vessels	African Americans respond well to treatment	5-10 mg daily	Not good for Heart Failure

There are also certain brands that combine more of one of the above

drugs into one pill if needed.

**No treatment is complete without an evaluation of the effectiveness of the treatment.**

You will be given follow up appointments regularly until your blood pressure is correct. This may be weekly, monthly, or more often, simply based on your response to the medications and plan of care. Once you are responding well to the treatment, you will be seen every three months.

You will be asked to check your blood pressure twice a day until the blood pressure is at a goal level. Write down your blood pressure on the log that we give you, and bring that log back to your appointments. Those numbers will be used to decide if your treatment is working.

You will also be tested for high cholesterol, diabetes, thyroid problems, kidney damage, and heart damage. Your urine will be tested for proteins. You may also be given a stress test and heart ultrasound, depending on your age and other disease processes.

You may be asked to see an eye doctor to check for any eye damage from the blood pressure.