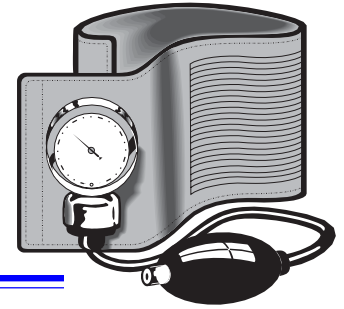


# Diet\High Blood Pressure Connection



High blood pressure (hypertension) is a serious health problem. In North Carolina, an estimated one million people are affected. Each year thousands die prematurely from this disease and its related illnesses (heart disease, stroke, and kidney disease).

Unlike a headache or toothache, high blood pressure doesn't usually produce any symptoms. To see if you have a problem, have your blood pressure checked once or twice a year. If you do have high blood pressure, a doctor can monitor and treat it.

## WHAT IS BLOOD PRESSURE?

With each beat, your heart pumps blood through your blood vessels. The force or pressure against artery walls that this pumping action causes is called blood pressure. Without this pressure, blood will not circulate throughout the body.

When your blood pressure is measured, you are given two numbers. The first one — the *systolic pressure* — measures the pressure in the blood vessel when the heart pumps. The second number — the *diastolic pressure* — measures the pressure in the blood vessel when the heart is resting between beats.

A blood pressure reading of 120 over 80, which you may see written as 120/80 mm Hg, was once considered normal for an adult 18 to 45 years old. However, now 120/80 is considered pre-hypertensive.

Should you worry if your blood pressure is 120/80 or higher? An occasional high reading may not be anything to cause concern. If your blood pressure goes up and stays high, then you need to do something about it.

## WHO GETS THIS DISEASE?

You are more likely to develop high blood pressure if you have:

- a family history of the disease
- heavy alcohol consumption
- excess body weight
- a high fat diet
- high sodium consumption

High blood pressure affects men and women of all temperaments, races, ages, life styles, sizes, and shapes. You do not have to be high-strung, tense, nervous, or jumpy to develop elevated blood pressure. You can be calm, easy-going, and live a stress-free life and still have high blood pressure.

A few cases of high blood pressure, described medically as secondary hypertension, are related to kidney disease, diabetes and the use of certain drugs, including birth-control (contraceptive) pills. Most of the time, the doctor cannot tell why your blood pressure is high. When there are no obvious medical reasons for hypertension, it is called "essential" or "primary" hypertension.

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## HOW CAN HYPERTENSION BE PREVENTED?

Blood pressure is influenced by heredity, race, body weight, level of exercise, cigarette smoking, psychological stress, and diet. You can't change your heredity or race, but you can change the rest. Your choices can make a difference!

Health professionals recommend the following:

### 1. Maintain Ideal Weight.

Hypertension is twice as common among overweight persons. Generally, if you lose extra weight, your blood pressure will drop. While the reason(s) behind this are not well understood, several possibilities exist. One is that extra weight (obesity) places an added burden on the heart because the volume of blood increases as your size increases. Another is that overweight people may develop problems with the body's ability to use glucose. When this happens, excess glucose and insulin are found in the bloodstream. Excess glucose and insulin are thought to raise blood pressure.

A healthy weight loss program includes cutting back on calories while eating a balanced diet. Adjust calories to lose weight gradually — no more than 1 to 2 pounds a week. If you also exercise you will lose weight more effectively.

### 2. Control Salt Intake.

The relationship between salt consumption and blood pressure is direct and progressive, so people should reduce their salt intake as much as possible. While sodium and chloride are found naturally in many foods, salt is the main source of both. Salt is 40 percent sodium and 60 percent chloride. Therefore, cutting back on salt consumption will reduce sodium and chloride intake.

Both sodium and chloride are essential nutrients but you need very little of each every day. You can consume enough naturally from fresh foods (without added salt) to meet your needs.

Health professionals suggest that a “safe and adequate” range of daily sodium intake is between 1,500 and 2,300 milligrams (mgs). This is equal to the amount of sodium in 1/4 to about 1 1/8 teaspoons of salt. The most common source of sodium is processed foods, which accounts for 75 percent of the average person's total sodium intake. The rest comes from sodium that occurs naturally in food (about 10 percent), sodium added during cooking (about 5 percent), and sodium added at the table (about 6 percent).

Most people excrete sodium in the urine. Problems arise in the 5 to 10 percent of people who cannot do this. The extra sodium in the blood stream causes more water to be drawn into the blood from the body tissues. This increases the blood volume, causing the heart to work harder to pump the extra volume. The result is high blood pressure. People who have this problem are “sodium-sensitive.” About half of the cases of hypertension are related to excessive sodium consumption.

If you want to lower your salt (sodium and chloride) intake, there are several changes that can be made. The following are recommended.

- At the table add salt sparingly or not at all.
- Cook with less salt or no salt. Learn to use spices, herbs, and other seasonings to flavor food. (Buy and use a low-sodium cookbook.)
- Read labels to determine the amount of sodium per serving in the product. Two out of every three teaspoons of salt in the typical diet comes from packaged foods. Select low-salt items or plan to balance your daily intake to an amount equal to or less than the limit set by your doctor.

<b>If the Label States:</b>	<b>It Means:</b>
Low sodium	Less than 140 mg/serving
Very low sodium	Less than 35 mg/serving
Sodium-free	Less than 5 mg/serving
Reduced sodium	At least 25% less sodium
Unsalted	No salt added ( <i>does not mean sodium-free</i> )

- Be aware of any products that have salt, brine, soda or sodium as part of an ingredient name — baking soda (*sodium* bicarbonate), mono-sodium glutamate, garlic *salt*, *sodium* benzoate, and *sodium* citrate. These words tell you that there's sodium in the product even though the exact amount is not given.
- Limit foods that typically have a high salt content as shown in the chart below.

#### Some Foods with a High Salt or Sodium Content\*

Potato chips	Bouillon
Pretzels	Ham
Salted crackers	Sausages
Biscuits	Frankfurters
Pancakes	Smoked meats or fish
Tomato juice-canned	Catsup
Pickles	Frozen vegetables
Sauerkraut	Canned vegetables
Soy Sauce	Many kinds of cheese
Olives	“Fast Foods”
Commercially prepared soups or stews	
Pastries or cakes made from self-rising flour mixes	

\*Read labels to see the amount of sodium per serving.

- Salt substitutes may be useful, but ask a doctor first. Substitutes may be harmful if you have certain medical conditions.
- Drinking water may be a hidden source of sodium. A water softener can add as much as 100 mgs of sodium per liter of water. Health professionals suggest that drinking water not contain more than 20 mgs of sodium per liter. Check with your local health department to find out about your water supply.

### 3. Eat Foods That Contain Plenty of Potassium.

A proper sodium-to-potassium balance is important in controlling blood pressure. There is evidence that increased potassium intake lowers blood pressure. Studies also show that potassium blunts the blood-pressure raising effects of salt.

Potassium is abundant in the food supply and a balanced diet supplies enough for general needs. Excessive amounts such as are found in potassium supplements and salt substitutes should be avoided because of potential harmful effects. Do not prescribe these for yourself.

If your doctor tells you to increase your *dietary* intake of potassium:

- Eat more fruits and vegetables (especially bananas, cantaloupes, oranges, tomatoes, dried beans, and peas).
- Choose unprocessed or lightly processed foods. Food processing often decreases the levels of potassium. For example, a medium-sized potato (100 g) contains about 503 mgs of potassium, but that same amount of potato made into chips contains only 364 mgs.
- Read labels and choose the brand that is higher in potassium.
- Use a potassium-based salt substitute in cooking or at the table, *only if your doctor tells you to do so*.

Some diuretics (“water pills”) cause potassium to be excreted from your body. If you are taking a diuretic, your doctor may prescribe a potassium supplement.

### 4. Don't Drink Too Much Alcohol.

One of the most common causes of hypertension in the United States is *excessive alcohol consumption*. This hypertension is completely reversible. Stop heavy drinking and blood pressure goes down.

### 5. Moderate Caffeine Consumption.

Caffeine can cause short-term rises in blood pressure which should not be a problem unless you are hypertensive. The most common sources of caffeine are coffee, tea, chocolate, cola beverages, and a variety of over-the-counter and prescription drugs (such as stimulants, pain relievers, diuretics, cold remedies, and weight-control aids).

## 6. Control Other Dietary Factors.

Some studies suggest that eating too little *calcium* and/or *magnesium* may result in high blood pressure. The evidence though is not consistent and requires further study. However, increasing the intake of these minerals naturally through a well-balanced diet is recommended. The best sources of these nutrients are low-fat dairy products, broccoli and beans, not supplements.

Dietary fat does not directly affect blood pressure. However, foods high in fat are also high in calories, which need to be reduced if you need to lose weight.

Research has shown that following a healthy meal plan can help prevent the incidence of high blood pressure and lower an already elevated blood pressure. One example of a healthy meal plan is "Dietary Approaches to Stop Hypertension," the "DASH" plan. This plan includes fruits and vegetables, dairy products, whole grains, poultry, and fish and nuts, and has reduced amounts of fats, sodium, red meats, sweets, and sugared beverages. You can find more information about the DASH diet at the following Web site: <http://www.nhlbi.nih.gov/health/public/heart/hbp/dash/index.htm>.

Or you can order a free single copy of the plan by calling 1-301-592-8573 or writing to:

NHLBI Health Information Center  
P.O. Box 30105  
Bethesda, MD 20824-0105

*We can't promise that making the dietary changes described here will either prevent or lower high blood pressure. However, high blood pressure is a serious condition that must be controlled. A personal program of a balanced diet, exercise and weight control can oftentimes improve the situation for most people.*

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