



FOR YOUR HEALTH

# The Heart of the Matter High Blood Pressure

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## Introduction

It is estimated that nearly 1 out of 2 adults in the United States have hypertension. That works out to roughly 108 million Americans. High blood pressure or "hypertension," as it is also known, is one of the most dangerous diseases in our country. You could have high blood pressure and not even know it—that's why it's often called the "silent killer." Approximately 32% of people with high blood pressure don't know they have it. There are usually no warning signs for high blood pressure.

If left untreated, hypertension can increase the risk

of heart attacks, strokes and heart failure. High blood pressure was a primary or contributing cause of death for more than 494,873 people in the United States in 2018. High blood pressure costs the United States about \$131 billion each year, averaged over 12 years from 2003 to 2014.

In most cases, we don't know what causes high blood pressure. But the good news is that it can be treated, and there are things that you can do to reduce your chances of getting high blood pressure.

## What is blood pressure and why is it harmful?

Arteries carry blood from the heart to all parts of the body. The force of blood pushing against the walls of the arteries is Blood Pressure. Each time the heart beats, it pumps blood into the arteries. Blood pressure is highest when the heart contracts and is pumping blood; this is called your systolic pressure. Between beats, when the heart is at rest, the blood pressure falls; this is called your diastolic pressure.

High blood pressure causes the blood vessels to get stiff and narrow. This makes the heart have to work harder to get the blood through your vessels. High blood pressure can also weaken the lining of the arteries and veins so that it is more susceptible to cholesterol deposits. This narrowing of the blood vessels throughout the body can lead to problems with the heart, kidneys, brain and the eyes.

## Measuring Your Blood Pressure

A blood pressure measurement is given as two numbers. When written, for example, the numbers might be 120/80; this blood pressure, when spoken, is "120 over 80." The higher (top) number (120) is the systolic pressure, while the lower (bottom) number (80) is the diastolic pressure. These numbers are measurements of millimeters (mm) of mercury (Hg).

A blood pressure reading of less than 130/80 for adults is considered normal (including high normal); a reading below 120/80 is even better (see chart below). The goal or target blood pressure for African Americans is 120/80 mmHg. High blood pressure is grouped by stages, and the higher the number, the more serious the problem. Persons with diabetes require the lowest levels of blood pressure in order to achieve protection from heart attacks and stroke. It is most important that blood pressure is aggressively treated in people with diabetes.

Blood Pressure Readings

Blood Pressure Category	Systolic mm Hg (upper number)	Diastolic mm Hg (lower number)	What Your Blood Pressure Readings Mean
Normal	Less than 120	and Less than 80	Keep checking your blood pressure and making healthy lifestyle choices. This will help make sure your blood pressure stays at a normal level.
Elevated	120 to 129	and Less than 80	You may be at risk for hypertension. Healthy lifestyle changes can help get your blood pressure back to normal and keep it there.
High Blood Pressure (Hypertension Stage 1)	130 to 139	or 80 to 89	Healthy lifestyle changes may be enough to get your blood pressure back to normal. You may need blood pressure medicine if lifestyle changes alone are not enough.
High Blood Pressure (Hypertension Stage 2)	140 or higher	or 90 or higher	You may need both blood pressure medicines and healthy lifestyle changes to get your blood pressure to normal.
Hypertensive Crisis	Higher than 180	and/or Higher than 120	Check your blood pressure again after 5 minutes. If it is still at least 180/120, contact your healthcare provider. If you also have chest pain, trouble breathing, or vision problems, seek care immediately. This is a medical emergency.

## Are there certain ethnic groups at increased risk?

African Americans in the United States have the highest rate of hypertension in the WORLD. There are many theories why that is true. Many experts feel it is due to unhealthy lifestyles, eating TOO MUCH SALT and the lack of coping strategies for the STRESS and STRAIN of "BLACK LIFE".

As of 2016, nearly 58% of black men and about 53% of black women in the U.S. had high blood pressure. Thirty percent (30%) of all deaths in African American men and twenty percent (20%) of all deaths in African American women are due to high blood pressure. African Americans are four times more likely to have hypertension than Caucasians. Hypertension runs in families. If you have a family history of hypertension, make sure that everyone in your immediate and extended family gets his or her blood pressure checked regularly. The hypertension that you see in African Americans is more severe and occurs at an earlier age.

High blood pressure causes damage to the heart and blood vessels that can lead to heart disease and stroke. African Americans die 50% times more frequently from heart disease and 80% more frequently from

strokes. Twenty- six percent (26%) of all new cases of kidney failure each year is due to high blood pressure.

There are several factors that contribute to the high blood pressure seen in African Americans:

- Eat a diet high in salt
- Do not eat or drink enough potassium and calcium in their diet
- Overweight, obese and sedentary lifestyle
- Fewer physician visits
- Do not take their medications as prescribed
- Genetic factors

### **What are the signs and symptoms of high blood pressure?**

- Dizziness
- Headaches
- Blurred Vision
- Rapid Heartbeat

### **Treatment of High Blood Pressure**

When you find out that you have high blood pressure, it is important that you understand that it can be controlled but not cured. You must make the decision to take control of your condition and make the changes in your lifestyle that will be necessary to control your blood pressure. It is not going to be easy, but there are a few simple steps that you can take.

**Stop smoking** - Even 1-3 cigarettes per day can increase your risk for heart attacks and stroke, so you must QUIT altogether.

**Limit your alcohol intake** - No more than one glass of alcohol per day ( 1 glass = 4 oz. of wine, 12 oz. of beer, or 1 oz. of 80 proof spirits).

**Cut down on salt** - The average American diet contains 25 grams of sodium. If you have high blood

pressure, you should eat no more than 2 grams (2000 mg) of sodium per day. Avoid foods that are high in salt (potato chips, deli meats, canned soups). Use herbs and spices to season your food instead of seasoning salt. Read the nutrition labels of the foods that you eat and count every mg.

**Lose weight** - 160 million Americans are either overweight or obese. Currently 60% of the US population is overweight and 33% are obese. African Americans have more obesity than Caucasians. We are now seeing an epidemic of obesity in our children, especially teenagers. Being overweight can place an increased burden on the heart and can make your hypertension worse. It is important that we begin taking off the excess weight by combining regular exercise with a well-balanced, low-fat diet.

### **Medication Compliance**

Two-thirds of all Americans fail to take any or all of their prescription medications. Almost 29% of Americans stop taking their medications before they run out. Twelve percent (12%) of Americans do not take their medications after they buy the prescription. Here are some helpful hints to improve your compliance with your medication regimen.

1. Always get your medication filled on time and from the same pharmacy so that they can have a complete record of your medication history.
2. Don't stop taking a prescribed medication because your symptoms have gone away, or you feel better. High blood pressure is a chronic condition that will require long-term treatment.
3. Always check with your doctor before you stop taking a medication

4. If you are experiencing side effects from your medications, mention it to your doctor so that they can change or modify your medication regimen

5. If you miss taking a medication DO NOT DOUBLE UP

6. If you are seeing multiple physicians make sure they ALL know what medications you are taking.

7. Keep a written record of the medications that you are taking. There are a number of FREE apps that you can download to your phone that can help you keep track of your medications

8. Do not share or borrow medications for other people.

9. Store your medications in a cool, dry place. Always check the expiration date to make sure your medications have not expired. Taking expired medications can lead to complications.

10. If you have high blood pressure, check with your pharmacist before you buy over the counter (OTC) medications. Some of these medications, cold and cough syrups for example can increase your blood pressure.

### **New Advances in the Management of High Blood pressure – Remote Patient Monitoring**

Have you ever heard of “White coat hypertension”, or “White Coat Syndrome”? This is a condition that occurs commonly in patients with high blood pressure. When some patients go to the doctor their blood pressure is higher than normal due to the tension or stress from being in a doctor’s office. There is also “Masked hypertension” which produces

the opposite effect – normal readings in the doctor’s office, but higher readings away from the office. In both cases, providers aren’t able to get an accurate analysis of a patient’s blood pressure and are thus unable to determine whether that patient needs further treatment.

Now we have technology enabled care that allows patients to take their blood pressure at home with Bluetooth enabled (wireless) blood pressure cuffs. The blood pressure readings go up into the Cloud (internet) and the readings are available for your healthcare team (physician, health educator, case manager or pharmacist). These platforms can also alert your physician if your systolic or diastolic pressure get into the DANGER ZONE.

This new technology finally provides patients the comfort of knowing that someone on their healthcare TEAM is constantly monitoring their blood pressure readings and therefore intervening immediately through telehealth e-visit or a telephone call. For more information regarding Remote Patient Monitoring Contact Healing Our Village at 800 788 0941.

### **Medications for High Blood Pressure**

Currently, there are multiple medications that can be used to treat high blood pressure. In order to achieve a goal blood pressure of 120/80 mmHg, many African American patients may require 2-3 different medications taken at the same time. The different classes of medications have specific mechanisms of action. Most African Americans will require a diuretic (water pill) to reach their goal blood pressure. Table I (Chart from helio.com) provides the information regarding some of the common medications used in the treatment of high blood pressure. It is important that you take your medications as prescribed.

# DRUGS TO TREAT HYPERTENSION

Generic (Brand) Name	Frequent or Severe Adverse Effects
<b>ALPHA-ADRENERGIC RECEPTOR BLOCKING DRUGS</b>	
<b>Doxazosin</b> (Cardura <sup>®</sup> ), <b>prazosin</b> (Minipress <sup>®</sup> ), <b>terazosin</b> (Hytrin <sup>®</sup> )	Syncope, dizziness, vertigo, headache, palpitations, fluid retention, priapism
<b>CENTRAL ALPHA-ADRENERGIC AGONIST DRUGS</b>	
<b>Clonidine</b> (Catapres <sup>®</sup> ), <b>guanabenz</b> (Wytensin <sup>®</sup> ), <b>guanfacine</b> (Tenex <sup>®</sup> ), <b>methyldopa</b> (Aldomet <sup>®</sup> )	Fatigue, sedation, dry mouth, depression, orthostatic hypotension, bradycardia, heart block, rebound hypertension (with acute discontinuation). With methyldopa: hepatitis, hemolytic anemia, thrombocytopenia, lupus-like syndrome.
<b>BETA-ADRENERGIC RECEPTOR BLOCKING DRUGS</b>	
<b>Atenolol</b> (Tenormin <sup>®</sup> ), <b>betaxolol</b> (Kerlone <sup>®</sup> ), <b>bisoprolol</b> (Zebeta <sup>®</sup> ), <b>metoprolol</b> (Lopressor <sup>®</sup> , Toprol <sup>®</sup> ), <b>nadolol</b> (Corgard <sup>®</sup> ), <b>nebivolol</b> (Bystolic <sup>®</sup> ), <b>propranolol</b> (Inderal <sup>®</sup> ), <b>timolol</b> (Blocadren <sup>®</sup> )	Fatigue, depression, bradycardia, impotence, bronchospasm, decreased exercise tolerance, orthostatic hypotension, increased blood lipids, rebound hypertension or angina (with acute discontinuation)
<b>BETA-BLOCKING DRUGS WITH INTRINSIC SYMPATHOMIMETIC ACTIVITY</b>	
<b>Acebutolol</b> (Sectral <sup>®</sup> ), <b>carteolol</b> (Cartrol <sup>®</sup> ), <b>penbutolol</b> (LevatoI <sup>®</sup> ), <b>pindolol</b> (Visken <sup>®</sup> )	Similar to beta-blocking drugs (but less resting bradycardia and blood lipid changes), lupus-like syndrome (acebutolol)
<b>BETA-BLOCKING DRUGS WITH ALPHA-1 BLOCKING ACTIVITY</b>	
<b>Carvedilol</b> (Coreg <sup>®</sup> ), <b>labetolol</b> (Normodyne <sup>®</sup> )	Similar to beta-blocking drugs (but more orthostatic hypotension), hepatotoxicity (labetolol)
<b>ANGIOTENSIN CONVERTING ENZYME (ACE) INHIBITING DRUGS</b>	
<b>Benazepril</b> (Lotensin <sup>®</sup> ), <b>captopril</b> (Capoten <sup>®</sup> ), <b>enalapril</b> (Vasotec <sup>®</sup> ), <b>fosinopril</b> (Monopril <sup>®</sup> ), <b>lisinopril</b> (Prinivil <sup>®</sup> , Zestril <sup>®</sup> ), <b>moexipril</b> (Univasc <sup>®</sup> ), <b>perindopril</b> (Aceon <sup>®</sup> ), <b>quinapril</b> (Accupril <sup>®</sup> ), <b>ramipril</b> (Altace <sup>®</sup> ), <b>trandolapril</b> (Mavik <sup>®</sup> )	Cough, hypotension, rash, acute renal failure, angioedema, hyperkalemia, loss of taste, hepatotoxicity, pancreatitis, decreased lithium excretion
<b>ANGIOTENSIN II RECEPTOR BLOCKING (ARB) DRUGS</b>	
<b>Azilsartan medoxomil</b> (Edarbi <sup>®</sup> ), <b>candesartan</b> (Atacand <sup>®</sup> ), <b>eprosartan</b> (Teveten <sup>®</sup> ), <b>irbesartan</b> (Avapro <sup>®</sup> ), <b>losartan</b> (Cozaar <sup>®</sup> ), <b>olmesartan</b> (Benicar <sup>®</sup> ), <b>telmisartan</b> (Micardis <sup>®</sup> ), <b>valsartan</b> (Diovan <sup>®</sup> )	Similar to ACE inhibiting drugs (but less likely to cause cough, angioedema, or hepatotoxicity)
<b>CALCIUM CHANNEL BLOCKING (CCB) DRUGS</b>	
<b>Diltiazem</b> (Cardizem <sup>®</sup> , Tiazac <sup>®</sup> ), <b>verapamil</b> (Calan <sup>®</sup> , Covera <sup>®</sup> , Isoptin <sup>®</sup> , Verelan PM <sup>®</sup> )	Dizziness, headache, edema, constipation, bradycardia, cardiac conduction abnormalities, heart failure, lupus-like syndrome (diltiazem)
<b>DIHYDROPYRIDINE CCB DRUGS</b>	
<b>Amlodipine</b> (Norvasc <sup>®</sup> ), <b>clevidipine</b> (Cleviprex <sup>®</sup> ), <b>felodipine</b> (Plendil <sup>®</sup> ), <b>isradipine</b> (DynaCirc <sup>®</sup> ), <b>nicardipine</b> (Cardene <sup>®</sup> ), <b>nifedipine</b> (Adalat <sup>®</sup> , Procardia <sup>®</sup> ), <b>nisoldipine</b> (Sular <sup>®</sup> )	Dizziness, headache, edema, flushing, tachycardia, rash, gingival hyperplasia
<b>THIAZIDE DIURETIC DRUGS</b>	
<b>Bendroflumethiazide</b> (Naturetin <sup>®</sup> ), <b>chlorothiazide</b> (Diuril <sup>®</sup> ), <b>chlorthalidone</b> (Thalitone <sup>®</sup> ), <b>diazoxide</b> (Hyperstat <sup>®</sup> ), hydrochlorothiazide (Microzide <sup>®</sup> ), <b>indapamide</b> (Lozol <sup>®</sup> ), <b>methyclothiazide</b> (Aquatensin <sup>®</sup> , Enduron <sup>®</sup> ), <b>metolazone</b> (Zaroxolyn <sup>®</sup> ), <b>polythiazide</b> (Renese <sup>®</sup> )	Dehydration, hyperuricemia, hypokalemia, hypomagnesemia, hyperglycemia, hyponatremia, hypercalcemia, increased blood lipids, pancreatitis, rashes, sexual dysfunction, photosensitivity, decreased lithium excretion
<b>LOOP DIURETIC DRUGS</b>	
<b>Bumetanide</b> (Bumex <sup>®</sup> ), <b>ethacrynic acid</b> (Edecrin <sup>®</sup> ), <b>furosemide</b> (Lasix <sup>®</sup> ), <b>torsemide</b> (Demadex <sup>®</sup> )	Dehydration, hyperuricemia, hypokalemia, hypomagnesemia, hyperglycemia, hyponatremia, metabolic alkalosis, rashes, increased blood lipids, increased lithium excretion
<b>POTASSIUM SPARING DIURETIC DRUGS</b>	
<b>Amiloride</b> (Midamor <sup>®</sup> ), <b>eplerenone</b> (Inspra <sup>®</sup> ), <b>spironolactone</b> (Aldactone <sup>®</sup> ), <b>triamterene</b> (Dyrenium <sup>®</sup> )	Hyperkalemia, hyponatremia, rashes, gastrointestinal disturbances, headache. With spironolactone: mastodynia, gynecomastia, menstrual irregularities
<b>CENTRAL VASODILATOR DRUGS</b>	
<b>Hydralazine</b> (Apresoline <sup>®</sup> ), <b>minoxidil</b> (Loniten <sup>®</sup> )	Orthostatic hypotension, tachycardia, headache, dizziness, fluid retention, nasal congestion, lupus-like syndrome (hydralazine), abnormal hair growth (minoxidil)
<b>PERIPHERAL ADRENERGIC BLOCKING DRUGS</b>	
<b>Guanadrel</b> (Hylorel <sup>®</sup> ), <b>guanethidine</b> (Ismelin <sup>®</sup> )	Orthostatic hypotension, bradycardia, sodium and water retention, retrograde ejaculation