Cardiovascular Disease

OBJECTIVE

The objective of this Clinical Practice Guideline (CPG) is to provide evidence-based practice recommendations for the treatment of Cardiovascular Disease, Cerebrovascular Disease, Peripheral Artery and Aortic Atherosclerosis. The CPG discusses the progression of disease including symptomology, modifiable risks, co-morbid conditions (e.g., hypertension, obesity, diabetes mellitus), cholesterol management, the role of diet and physical activity. In addition, the CPG outlines the organizations that WellCare aligns with regarding CAD, and Heart Disease as well as relevant Measureable Health Outcomes.

OVERVIEW

Heart and blood vessel disease (or cardiovascular disease) includes numerous problems, many of which are related to atherosclerosis (plaque build-up along artery walls). The narrowing of the arteries makes it harder for blood to flow through. If a blood clot forms, it can stop the blood flow. The reduction in blood flow can lead to damage of the heart muscle and in the case of complete blockage, death of heart muscles leading to heart stoppage. As hypertension (HTN) continues, the arteries thicken and become less flexible. Cholesterol deposits in the arteries further narrow the ability of blood flow easily. To compensate for the additional force needed to pump blood, the heart gets thicker and enlarges. Risk factors that can lead to cardiovascular disease include:

- Smoking
- Diabetes
- Genetics
- Hypertension
- Congenital heart conditions
- Arterial stiffness and/or calcification
- Coronary artery calcification
- Abnormal electrocardiography (ECG) such as a finding of ST segment depression (a common sign of ischemia)
- Left ventricular hypertrophy (LVH)*
- Atherosclerotic vessels due to high lipids in the blood
- Collagen vascular disease (e.g., Lupus, Scleroderma)

* The heart uses electrical impulses to generate a heartbeat. This electrical activity can be measured using an electrocardiogram (ECG). When the heart is enlarged due to ventricular hypertrophy, the path that the electrical impulse takes is affected. This effect can be seen on an ECG.

For screening information related to CAD, visit the United States Preventive Services Task Force (USPSTF) website at https://www.uspreventiveservicestaskforce.org. In addition, refer to the following preventive CPGs: *Adult Preventive Health: HS-1019, Pediatric Preventive Health: HS-1019, Adolescent Preventive Health: HS-1051,* and *Preventive Health for Older Adults: HS-1063.*

Hierarchy of Support

GUIDELINE HIERARCHY

CPGs are updated annually or as necessary due to updates made to the American College of Cardiology (ACC), the American Heart Association (AHA), the American College of Cardiology Foundation (ACCF), and the Institute for Clinical Systems Improvement (ICSI) guidelines.

When there are differing opinions noted by national organizations, WellCare will default to the member's benefit structure as deemed by state contracts and Medicaid / Medicare regulations. If there is no specific language pertaining to coronary artery and heart disease, WellCare will default (in order) to the following:

Original Effective Date: 3/1/2010 Revised: 12/1/2011, 12/5/2013, 2/5/2015, 12/11/2015, 8/19/2016, 12/8/2016, 4/6/2017, 10/5/2017, 12/7/2017

- National Committee for Quality Assurance (NCQA);
- USPSTF, National Quality Strategy (NQS), Agency for Healthcare Research and Quality (AHRQ);
- Specialty associations, colleges, societies, etc. (e.g., American Academy of Family Physicians, American Congress of Obstetricians and Gynecologists, American Cancer Society, etc.).

Links to websites within the CPGs are provided for the convenience of Providers. Listings do not imply endorsement by WellCare of the information contained on these websites. NOTE: All links are current and accessible at the time of MPC approval.

WellCare aligns with the ACC, AHA, ACCF, and ICSI on the topic of Coronary Artery and Heart Disease. The following are highlights from their recommendations and guidelines.

CARDIOLOGY BASED ORGANIZATIONS

In addition, WellCare adopts the following guidelines from cardiology based organizations:

- American College of Cardiology (ACC) and the American Heart Association (AHA)[4]
  ACC/AHA Prevention Guideline on the Assessment of Cardiovascular Risk – A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (2013)
  Available at http://circ.ahajournals.org/content/129/25_suppl_2/S49.short?rss=1&ssource=mfr

- AHA and ACC Task Force on Practice Guidelines[5]
  AHA/ACC Guideline for the Management of Patients With Valvular Heart Disease: Executive Summary (2014)
  Available at http://circ.ahajournals.org/content/129/23/2440.full

- AHA and the American College of Cardiology Foundation (ACCF)[6]
  Secondary Prevention and Risk Reduction Therapy for Patients With Coronary and Other Atherosclerotic Vascular Disease (AVD) (2011)
  Available at http://content.onlinejacc.org/article.aspx?articleid=1147807

INSTITUTE FOR CLINICAL SYSTEMS IMPROVEMENT (ICSI)

WellCare also adheres to the 2013 health care guideline set forth by the Institute for Clinical Systems Improvement (ICSI). The guideline addresses adults (age 18 or older) with stable coronary artery disease presenting with:[7]

- Previously diagnosed coronary artery disease without angina, or symptom complex that has remained stable for at least 60 days;
- No change in frequency, duration, precipitating causes or ease of relief of angina for at least 60 days;
- No evidence of recent myocardial damage.

The full guideline can be accessed at https://www.icsi.org/_asset/t6bh6a/SCAD.pdf

Evidence Based Practice

MEASUREMENT OF COMPLIANCE

WellCare is committed to adhering to the measures and standards published by the Centers for Medicare and Medicaid Services (CMS) and the National Committee for Quality Assurance (NCQA). Please reference WellCare's Clinical Policy Guiding Document titled *Measures of Compliance.*

NOTE: To access Clinical Policy Guiding Documents visit www.wellcare.com – select the Provider tab, then "Tools" and "Clinical Guidelines".

Care Management

For Members with Cardiovascular Disease, the goals for Care Management are to support the member's ability to self-manage their disease, minimize risks of coronary artery disease, and remove barriers preventing the member from achieving those goals. Primary symptoms to educate member to seek emergency medical care for include:[5]

- Pain in chest
- Pain that radiates to jaw, neck, arms, left shoulder, back, or stomach

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- Shortness of breath
- Sweating
- Nausea/vomiting
- Feelings of pressure, squeezing, fullness, indigestion, or choking feeling
- Lightheadedness, dizziness, or general weakness
- Sleep problems, fatigue (tiredness), or lack of energy
- Rapid, irregular heart beat

Additional emergency symptoms related to cerebrovascular issues:[6]

- Change in alertness (including sleepiness or unconsciousness)
- Changes in the senses (such as hearing, vision, taste, and touch)
- Mental changes (confusion, memory loss, difficulty writing or reading, speaking or understanding others)
- Muscle weakness, trouble swallowing, trouble walking
- Loss of balance and coordination
- Lack of control over the bladder or bowels
- Nerve problems (such as numbness or tingling on one side of the body)

Additional symptoms related to peripheral vascular issues to report to your doctor same day:[7]

- Weak or absent pulses in the legs or feet
- Sores or wounds on the toes, feet, or legs that heal slowly, poorly, or not at all
- A pale or bluish color to the skin
- A lower temperature in one leg compared to the other leg
- Poor nail growth on the toes and decreased hair growth on the legs
- Erectile dysfunction, especially among men who have diabetes

Integrated care management of cardiovascular disease involves:

- Coaching related to stress management skills
- Ensuring adherence to medications, refilling timely.
- Supporting the member's tobacco cessation efforts
- Assess for risk of depression and share with appropriate provider(s) if risks identified

MEASURABLE HEALTH OUTCOMES

Targeted Health Outcomes (Extended Program Goals) result from successful member self-management (see Case Management Objectives).

1. Improved LDL (target <70). Based on a Provider's goal for each Member, a Member's individual goal may be set as low as <70. Compare cholesterol lab data pre- and post-engagement at 6-12 months. In absence of lab data, Provider and/or Member narrative and/or HRA data may be used.

2. Improved blood pressure, systolic (target <130) and / or diastolic (target <80). Compare blood pressure documented in provider records, assessments and care plan, and monitoring data sources pre- and post-engagement at 6-12 months. In absence of these data sources, CM may use Provider and/or Member narrative and/or HRA data may be used.

3. For overweight members, a 5% weight loss. Compare weight documented in provider records, assessments and care plan, and monitoring data sources pre- and post-engagement at 12-18 months. In absence of these data sources, CM may use Provider and/or Member narrative and/or HRA data may be used.

CASE MANAGEMENT GOALS

Case Goals should target specific care gaps and/or adherence issues, and measure the member's progress towards self-management and adherence which will lead to the targeted health outcomes above. Examples:

- Member's prescription refills demonstrate at least an 80% adherence rate (verified by claims or member/provider narrative) for [statin, ASA, beta-blocker, other] over last 30 days.
- Member describes a low-salt, low-fat, low-cholesterol diet and exercise regime over the last 30 days that demonstrates improved adherence to guideline and/or physician recommendations.

- Member describes a routine that includes checking and logging blood pressure per physician recommendation over the last 30 days and shares log with physician.
- Specific for Members requiring hospitalization: The Member participates in provider follow-up visit within 7 days of hospital discharge.

CASE MANAGEMENT OBJECTIVES

Case Management Objectives should focus on improving the Member's self-management skills up including:

- Increasing physical activity to ≥ 150 minutes/week or as otherwise prescribed by physician per cardiac rehabilitation program
- Following a low-sodium, low-fat, low-cholesterol diet; low-salt diet should be followed for hypertensive members. In addition, dietary counseling should include specific guidelines for including 5 or more fruits and vegetables per day.
- Maintaining a healthy body weight
- Taking medications as prescribed
- Adhering to Provider visit(s) as scheduled
- Checking blood pressure as directed by Provider
- Keeping a log of pulse and blood pressure readings to share with Provider(s)
- Tobacco cessation
- Avoiding second-hand smoke
- Early identification of oncoming symptoms to report to physician or call for emergency services
- Stress management skills

The care team should also conduct screening for and treatment of anxiety and/or depression, as appropriate.

MEDICAL BEHAVIORAL INTEGRATION

Therapies for CAD include:

- Stenting of affected arteries
- Bypass graft surgery
- Aspirin
- Blood pressure medication
- Exercise during rehabilitation
- Medications to lower cholesterol including beta-blockers and angiotensin-converting enzyme inhibitors
- Lifestyle changes including smoking cessation, stress management, diabetes control, and weight loss

Behavioral Health Aspects of Patients with CAD.[11] Up to 15% of patients with cardiovascular disease and up to 20% of patients who have undergone coronary artery bypass graft (CABG) surgery experience major depression. Unmanaged stress can lead to high blood pressure, arterial damage, irregular heart rhythms and a weakened immune system. Patients with depression have been shown to have increased platelet reactivity, decreased heart variability and increased pro-inflammatory markers (such as C-reactive protein or CRP), which are all risk factors for cardiovascular disease. For people with heart disease, depression can increase the risk of an adverse cardiac event such as a heart attack or blood clots. For people who do not have heart disease, depression can also increase the risk of a heart attack and development of coronary artery disease.

- **Recovery.** During recovery from cardiac surgery, depression can intensify pain, worsen fatigue and sluggishness, or cause a person to withdraw into social isolation. Patients who have had CABG and have untreated depression after surgery also have increased morbidity and mortality.
- **Readmission.** Patients with heart failure and depression have an increased risk of being readmitted to the hospital, and also have an increased mortality risk.
- **Health Status.** Patients with heart disease and depression also perceive a poorer health status according to Quality of Life (QoL) studies. Furthermore, heart disease patients with depression have worse treadmill exercise and medication adherence than that of patients with heart disease who do not have depression.
- **Lifestyle Habits.** Negative habits are associated with depression such as smoking, excessive alcohol consumption, lack of exercise, poor diet and lack of social support. Each may interfere treatment.

Risk Factors That Lead to Death Within Six Months of an Myocardial Infarction (MI)[11]

Certain risk factors increase a patient's risk of death within six months of an MI diagnosis. These include:

- 0.37 times more likely by being socially isolated
- 0.76 times more likely with less than eight years of education
- 2.16 times more likely by smoking daily
- 5.27 times more likely with a previous MI
- 5.47 times more likely if diagnosed with depression (more than twice the risk of continuing to smoke cigarettes)

Depression in Cardiac Patients[11]

The Glassman SADHEART Trial is designed primarily to evaluate the cardiovascular safety of sertraline in patients with major depressive disorder after hospitalization for MI or unstable angina. No evidence of harm was found; sertraline was indistinguishable from placebo across all surrogate measures of cardiovascular safety. Treatment was not associated with any change in LVEF, blood pressure, heart rate, arrhythmias, or SDNN on 24-hour ambulatory ECGs, with QTc prolongation, or with any other ECG parameters. Furthermore, though not statistically significant, the incidence of severe cardiac events, the gold standard for cardiac safety, was numerically lower among patients receiving sertraline than among those receiving placebo. Despite the limited number of these "more severe" patients, sertraline was found to be robustly superior to placebo using rating scales for depression, CGI-I and HAM-D." In short, patients benefited from treatment of their depression with sertraline (Zoloft®).

Anxiety in Cardiac Patients[11]

Approximately 20% of all patients who arrive at the emergency department with chest pain meet criteria for panic disorder. In ambulatory cardiology settings, the rates of panic disorder are even higher. This population has lower rates of panic disorder diagnosis and higher number of medical procedures and costs. Anxiety commonly occurs and may be associated with atypical chest pain and nervousness. Acute and chronic anxiety increases an individual's risk of Sudden Coronary Death (SCD) and Coronary Artery Disease (CAD). About 50% of patients with an acute MI and 40% of those who undergo CABG or Cardiac Stent experience abnormally high anxiety. Anxiety peaks in the first 2 days then drops slowly, but if it does not drop within the first week, it will likely be persistent a year later. About 10%-15% of outpatients with pacemakers and Automatic Implantable Cardiac Defibrillators (AICD) have elevated levels of anxiety, and the rate goes up when the AICD discharges frequently. The GAD – 7 Anxiety Screening Tool is commonly used by Providers to screen members for anxiety. The tool is available on the Substance Abuse and Mental Health Services Administration (SAMHSA) website at http://www.integration.samhsa.gov/clinical-practice/screening-tools.[12]

Post-Traumatic Stress Disorder[13]

Of those with an MI, 8%-16% will develop PTSD. Similar rates of PTSD occur in those patients who undergo a CABG procedure. Although patients admitted for other severely traumatic injuries also develop PTSD, the PTSD rates are even higher in the cardiac patients. Providers can utilize the PC-PTSD as a screening tool for members; the PC-PTSD is a four-item screen designed for use in primary care and other medical settings to screen for PTSD. The tool is available at http://www.integration.samhsa.gov/clinical-practice/screening-tools.[12]

MEMBER EDUCATIONAL RESOURCES

WellCare contracts with Krames/StayWell for Member educational materials utilized by Case Managers. Items are available to review with Members to address knowledge gaps. Case Managers verbally educate Members on the topics below related to CAD. (Titles may also be sent to the member).

NOTE: Links are internal for WellCare Care Management staff.

- Understanding Coronary Artery Disease (CAD)
- Your Heart is at Risk
- Identifying Your Heart Risks
- Coping with Your Chronic Diagnosis
- What Is a TIA
- Unstable Angina
- Fast-Acting Nitroglycerin
- Cholesterol Medications
- Cholesterol Quiz
- Understanding Fat and Cholesterol
- Understanding Food and Cholesterol
- Low-Fat Cooking Tips
- Tips for Using Less Salt
- Eating Healthy

- Recognizing a Heart Attack or Angina
- Medications for Heart Disease
- Taking Aspirin for Atherosclerosis
- Exercise Fitting It into Your Life
- Intimacy and Heart Disease

Providers may wish to research the titles above related to hypertension that Case Managers utilize with Members.

Related WellCare Guidelines

In addition to the information contained in this document, please reference the following CPGs: *Cholesterol Management (HS-1005), Congestive Heart Failure (HS-1003)*, and *Hypertension (HS-1010).*

NOTE: Clinical Policies can be accessed by going to www.wellcare.com – select the Provider tab, then "Tools" and "Clinical Guidelines".

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Disclaimer

Medical Policy Committee Approval History

Date	Medical Policy Committee History and Revisions
12/7/2017	• Approved by MPC. Included updated hypertension definitions.
10/5/2017	• Approved by MPC. Included verbiage re: a healthy diet and Measures of Compliance section updated.
4/6/2017	• Approved by MPC. Changed LDL target to <70 from <100; revised CM objective to include referral to cardiac rehab.
12/8/2016	• Approved by MPC. Enhanced Care Management and Measures of Compliance sections.
8/19/2016	• Approved by MPC. Revisions per Georgia Regulatory.
12/11/2015	• Approved by MPC. Addition of USPSTF and other cardiology related organizations.
2/5/2015	• Approved by MPC. Additions from Heart Disease Care Management training.
12/5/2013	• Approved by MPC. Updated with 2013 ICSI guideline.
12/1/2011	• New template design approved by MPC.
3/2010	• Approved by MPC.

Addendum

High blood pressure is a common condition in which the force of the blood against artery walls is high enough that it may eventually cause health problems, such as heart disease. Heart disease is a broad term used to describe a range of diseases that affect the human heart. One of the most diagnosed is disease of the blood vessels better known as coronary artery disease. Left untreated, this will eventually lead to heart failure. Hypertension (HTN) is a chronic medical condition in which the blood pressure in the arteries is elevated. Blood pressure is summarized by two measurements, systolic and diastolic, which depend on whether the heart muscle is contracting (systole) or relaxed between beats (diastole). This equals the maximum and minimum pressure, respectively. Hypertension puts strain on the heart, leading to heart disease and coronary artery disease if not treated; it is also a major risk factor for heart failure. Dietary and lifestyle changes can improve blood pressure control and decrease the risk of health complications. Drug treatment is still often necessary in people for whom lifestyle changes are not effective.[3]

Several factors can lead to an increase in a person's blood pressure leading to hypertension. Educating patients on the causes, symptoms, and effects of hypertension is usually the simplest treatment. By knowing the effects, the patient is usually motivated to make personal changes on their own. These include:

- **Smoking** leads to decreased oxygen to the heart, increased blood pressure and heart rate, increase in blood clotting, and damage to cells that line coronary arteries and other blood vessels. **Tobacco use** is a common cause of avoidable hypertension. By quitting smoking, one lowers the amount of fatty build up in the arteries.
- **Genetic Factors** have been researched and have shown that there are eight gene variants in over half the population that directly affect blood pressure. Future studies that show exactly how these variants influence blood pressure and whether they can be targeted for treatment are needed.
- **Large salt intake** can damage arteries leading to the heart and increase blood pressure. Over time, the damage caused by the extra blood pressure may become so severe that the arteries burst or become completely clogged causing heart tissue to die. Research shows that people consuming diets of 1,500 mg of sodium had even better blood pressure lowering benefits. **Lower-sodium diets** may keep blood pressure from rising and help blood pressure medicines work better.
- **Additional fat tissue in the body** needs oxygen and nutrients in order to live, which requires the blood vessels to circulate more blood to the fat tissue. This increases the workload of the heart because it must pump more blood through additional blood vessels. More circulating blood also means more pressure on the artery walls. Higher pressure on the artery walls increases the blood pressure. **Losing weight** can cause blood pressure to lower. With less fat to oxygenate as well and less weight being carried by the body as a whole, stress on the heart and circulatory system is lowered leading to lower blood pressure as a whole.
- **Alcohol** causes an increased sympathetic nervous system response, which in turn causes the blood vessels to constrict, raising blood pressure. Alcohol also causes the release of hormones and salts in the blood, hormones such as catecholamines, epinephrine and salts such as magnesium and calcium ions which are all part of heart function. **By limiting alcohol intake,** a patient is not only reducing empty calories that will lead to fat build up, but also reduces the adverse chemical effects of alcohol on the circulatory system.
- **Being physically inactive** causes weakening of muscles, including the heart. Lack of activity also causes weight increase which adds further strain to the heart causing a rise in blood pressure. **Exercise** lowers blood

pressure in two ways. Weight loss from exercise lowers stress on the heart, but it also strengthens muscles, including the heart, making it stronger and causing blood circulation to become more efficient.

- **Hypertensive heart disease** is the No. 1 cause of death associated with HBP; it refers to a group of disorders that includes heart failure, ischemic heart disease, hypertensive heart disease, and left ventricular hypertrophy.
- **Heart failure** does not mean the heart has stopped working. Rather, the heart's pumping power is weaker or the heart has become less elastic. With heart failure, blood moves through the heart's pumping chambers less effectively, and pressure in the heart increases, robbing the body of oxygen and nutrients.
- **Ventricular hypertrophy** is the thickening of the ventricular walls (lower chambers) in the heart. Although left ventricular hypertrophy is more common, enlargement can also occur in the right ventricle, or both ventricles.
- A **stroke** can occur when the blood supply to the part of the brain is interrupted or severely reduced, depriving brain tissue of oxygen and food.
- **Decreased kidney function** that lasts longer than 3 months is called chronic kidney disease (CKD). Diabetes (types 1 and 2) and high blood pressure are the most common causes of CKD. Enter text and bullets.

ASSESSMENT OF RISK FACTORS OR IDENTIFIABLE CAUSES OF HYPERTENSION

Major cardiovascular risk factors include:[5]

- Obesity (body mass index $\geq$ 30 kg/m²)
- Dyslipidemia
- Diabetes mellitus
- Cigarette smoking
- Physical inactivity
- Microalbuminuria, estimated glomerular filtration rate <60 mL/min
- Age (>55 for men, >65 for women)
- Family history of premature cardiovascular disease (men age <55, women age <65)

In addition, evaluation should be conducted for presence of target organ damage:[5]

- Heart (including left ventricular hypertrophy (LVH), angina or prior myocardial infarction, prior coronary revascularization and heart failure)
- Brain (including stroke or transient ischemic attack)
- Chronic kidney disease
- Peripheral arterial disease
- Retinopathy

Other identifiable causes of hypertension include:[5]

- Drug induced or related causes (see Causes of Resistant Hypertension below)
- Chronic kidney disease
- Primary aldosteronism
- Cushing's syndrome or chronic steroid therapy
- Pheochromocytoma
- Sleep apnea
- Renovascular disease
- Coarctation of aorta
- Thyroid or parathyroid disease

Causes of resistant hypertension include:[5]

- Drug-induced or other causes
  - Non-adherence
  - Inadequate doses
  - Inappropriate combinations
  - Nonsteroidal anti-inflammatory drugs; cyclooxygenase 2 inhibitors
  - Cocaine, amphetamines, other illicit drugs
  - Sympathomimetics (decongestants, anorectics)
  - Oral contraceptives
  - Adrenal steroids
  - Cyclosporine and tacrolimus
- Improper BP measurement
- Volume overload and pseudotolerance
  - Excess sodium intake
  - Volume retention from kidney disease
  - Inadequate diuretic therapy
- Associated Conditions
  - Obesity
  - Excess alcohol intake
- Identifiable causes of hypertension

- Erythropoietin
- Licorice (including some chewing tobacco)
- Selected over-the-counter dietary supplements and medicines (e.g., ephedra, ma haung, bitter orange)

CLASSIFICATIONS USED IN DIAGNOSING AND MEASURING BLOOD PRESSURE

The following classifications are used in the diagnosis and measurement of blood pressure in adults:[5]

Blood Pressure Classification	Systolic Blood Pressure (mmHg)	Diastolic Blood Pressure (mmHg)
Normal	<120	and <80
Elevated BP[10]	120-129	< 80
Stage 1 Hypertension	130 -139	or 80 -89

Method	Notes
In-office	Two readings sitting in chair. Confirm elevated reading in contralateral arm.
Ambulatory BP Monitoring	Indicated for evaluation of "white coat hypertension". Absence of 10-20 percent BP decrease during sleep may indicate increased CVD risk.
Patient self-check	Provides information on response to therapy. May help improve adherence to therapy and is useful for evaluating "white coat hypertension".

Prior to initiating therapy, providers should also assess for:

- Risk factors and co-morbidities
- Identifiable causes of hypertension
- Presence of target organ damage
- Laboratory values including urinalysis, blood glucose and hematocrit, serum potassium, creatinine, calcium, and a lipid profile (after a 9 – 12 hour fast); urinary albumin excretion / creatinine ratio is optional.

The ultimate goal of antihypertensive therapy is to reduce cardiovascular and renal morbidity and mortality. Since most persons with hypertension, especially those >50 years of age, will reach the diastolic blood (DBP) pressure goal once the systolic blood pressure (SBP) goal is achieved, the primary focus should be on attaining the SBP goal. Treating SBP and DBP to targets that are 130/80 mmHg is associated with a decrease in CVD complications. In patients with hypertension and diabetes or renal disease, the blood pressure goal is < 130/80 mmHg.[3]

Principles of hypertension treatment include:

- Treat to a BP <130/80 mmHg or BP <130/80 mmHg in patients with diabetes or chronic kidney disease.
- Majority of patients will require two medications to reach goal.
- Low dose Aspirin therapy should be considered ONLY when BP is controlled due to the risk of hemorrhagic stroke in patients with uncontrolled hypertension.

Lifestyle modifications are also necessary in treating hypertension. The following chart offers recommendations and the expected reduction a patient may see from the corresponding modification:

Modification	Recommendation	SBP Reduction
Weight reduction	Maintain normal body weight (BMI 18.5-24.9-24.9 24.9 kg/m^2)	5-20 mmHg/10kg
Adopt DASH eating plan	Consume a diet rich in fruits, vegetables, and low fat dairy products with reduced content of saturated and total fat.	8-14 mmHg
Dietary sodium reduction	Reduce dietary sodium intake to ≤ 100 mmol per day (2.4 g sodium or 6 g sodium chloride)	2-8 mmHg
Physical activity	Regular aerobic physical activity (e.g., brisk walking) at least 30 minutes per day, most days of the week	4-9 mmHg
Moderation of alcohol intake	Men: limit to ≤ 2 drinks* per day. Women and lighter weight persons: limit to ≤ 1 drink* per day.	2-4 mmHg

* 1 drink = ½ oz. or 15 mil ethanol (e.g., 12 oz beer, 5 oz wine, 1.5 oz 80-proof whiskey)