

## HYPERTENSION: SEVERE

*Hypertension* is defined by the 1992 Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure as pressure greater than 140/90 mm Hg and is classified according to the degree of severity. Stage I (mild) is 140/90–159/99. Stage II (moderate) is 160/100–179/108. Stage III (severe) is present when systolic pressure is greater than 180 and diastolic pressure is greater than 110. Stage IV (very severe) occurs when systolic pressure is 210 or greater with diastolic pressure greater than 120. Hypertension is categorized as *primary/essential* (approximately 90% of all cases) or *secondary*, which occurs as a result of an identifiable, sometimes correctable pathological condition, such as renal disease or primary aldosteronism. The goal of treatment is to prevent the long-term sequelae of the disease (i.e., target organ disease [TOD]). African-Americans and the elderly are most prone to this disorder and its sequelae.

### CARE SETTING

Although hypertension is usually treated in a community setting, management of stages III and IV with symptoms of complications/compromise may require inpatient care, especially when TOD is present. The majority of interventions included here can be used in either setting.

### RELATED CONCERNS

Cerebrovascular accident/stroke

Myocardial infarction

Psychosocial aspects of care

Renal failure: acute

Renal failure: chronic

## Patient Assessment Database

### ACTIVITY/REST

**May report:** Weakness, fatigue, shortness of breath, sedentary lifestyle

**May exhibit:** Elevated heart rate  
Change in heart rhythm  
Tachypnea; shortness of breath with exertion

### CIRCULATION

**May report:** History of intermittent or sustained elevation of diastolic or systolic blood pressure; presence of atherosclerotic, valvular, or coronary artery heart disease (including myocardial infarction [MI], angina, heart failure [HF]) and cerebrovascular disease (reflecting TOD)

Episodes of palpitations, diaphoresis  
**May exhibit:** Elevated blood pressure (BP) (serial elevated measurements are necessary to confirm diagnosis)  
*Note:* Postural hypotension, when present, may be related to drug regimen or reflect dehydration or reduced ventricular function.

**Pulse:** Bounding carotid, jugular, radial pulsations; pulse disparities, e.g., femoral delay as compared with radial or brachial pulsation; absence of/diminished popliteal, posterior tibial, pedal pulses

**Apical pulse:** Point of maximal impulse (PMI) possibly displaced and/or forceful

**Rate/rhythm:** Tachycardia, various dysrhythmias

**Heart sounds:** Accentuated S<sub>2</sub> at base; S<sub>3</sub> (early HF); S<sub>4</sub> (rigid left ventricle/left ventricular hypertrophy)  
Murmurs of valvular stenosis  
Vascular bruits audible over carotid, femoral, or epigastrium (artery stenosis); jugular venous distension (JVD) (venous congestion)  
Extremities: Discoloration of skin; cool temperature (peripheral vasoconstriction); capillary refill possibly slow/delayed (vasoconstriction)

**Skin:** Pallor, cyanosis, and diaphoresis (congestion, hypoxemia); flushing (pheochromocytoma)

## EGO INTEGRITY

**May report:** History of personality changes, anxiety, depression, euphoria, or chronic anger (may cerebral impairment)

Multiple stress factors (relationship, financial, job-related)

**May exhibit:** Mood swings, restlessness, irritability, narrowed attention span, outbursts of crying  
Emphatic hand gestures, tense facial muscles (particularly around the eyes), quick physical movement, expiratory sighs, accelerated speech pattern

## ELIMINATION

**May report:** Past or present renal insult (e.g., infection/obstruction or past history of kidney disease)

## FOOD/FLUID

**May report:** Food preferences, which include high-salt, high-fat, high-cholesterol foods (e.g., fried foods, cheese, eggs); licorice; high caloric content; low dietary intake of potassium, calcium, and magnesium

Nausea, vomiting

Recent weight changes (gain/loss)

Current/history of diuretic use

**May exhibit:** Normal weight or obesity  
Presence of edema (may be generalized or dependent); venous congestion, JVD  
Glycosuria (almost 10% of hypertensive patients are diabetic, reflecting TOD)

## NEUROSENSORY

**May report:** Fainting spells/dizziness  
Throbbing, suboccipital headaches (present on awakening and disappearing spontaneously after several hours)

Episodes of numbness and/or weakness on one side of the body, brief periods of confusion or difficulty with speech (transient ischemic attack [TIA]); or history of cerebrovascular accident (CVA)

Visual disturbances (diplopia, blurred vision)

Episodes of epistaxis

**May exhibit:** Mental status: changes in alertness, orientation, speech pattern/content, affect, thought process, or memory  
Motor responses: decreased strength, hand grip, and/or deep tendon reflexes  
Optic retinal changes: from mild sclerosis/arterial narrowing to marked retinal and sclerotic changes with edema or papilledema, exudates, hemorrhages, and arterial nicking, dependent on severity/duration of hypertension (TOD)

## PAIN/DISCOMFORT

**May report:** Angina (coronary artery disease/cardiac involvement)  
Intermittent pain in legs/ Claudication (indicative of arteriosclerosis of lower extremity arteries)  
Severe occipital headaches as previously noted  
Abdominal pain/masses (pheochromocytoma)

## RESPIRATION

(Generally associated with advanced cardiopulmonary effects of sustained/severe hypertension)

**May report:** Dyspnea associated with activity/exertion  
Tachypnea, orthopnea, paroxysmal nocturnal dyspnea  
Cough with/without sputum production  
Smoking history (major risk factor)

**May exhibit:** Respiratory distress/use of accessory muscles  
Adventitious breath sounds (crackles/wheezes)  
Pallor or cyanosis

## SAFETY

**May report/exhibit:** Impaired coordination/gait  
Transient episodes of numbness, unilateral paresthesias  
Light-headedness with position changes

## SEXUALITY

**May report:** Postmenopausal (major risk factor)  
Erectile dysfunction (medication related)

## TEACHING/LEARNING

**May report:** Familial risk factors: hypertension, atherosclerosis, heart disease, diabetes mellitus, cerebrovascular/kidney disease  
Ethnic/racial risk factors, e.g., more prevalent in African-American and Southeast Asian populations  
Use of birth control pills or other hormones; drug/alcohol use

**Discharge plan considerations:** DRG projected mean length of inpatient stay: 3.5 days  
Assistance with self-monitoring of BP  
Periodic evaluation of and alterations in medication therapy  
**Refer to section at end of plan for postdischarge considerations.**

## DIAGNOSTIC STUDIES

**Hemoglobin/hematocrit:** Not diagnostic but assesses relationship of cells to fluid volume (viscosity) and may indicate risk factors such as hypercoagulability, anemia.

**Blood urea nitrogen (BUN)/creatinine:** Provides information about renal perfusion/function.

**Glucose:** Hyperglycemia (diabetes mellitus is a precipitator of hypertension) may result from elevated catecholamine levels (increases hypertension).

**Serum potassium:** Hypokalemia may indicate the presence of primary aldosteronism (cause) or be a side effect of diuretic therapy.

**Serum calcium:** Imbalance may contribute to hypertension.

**Lipid panel (total lipids, high-density lipoprotein [HDL], low-density lipoprotein [LDL], cholesterol, triglycerides, phospholipids):** Elevated level may indicate predisposition for/presence of atheromatous plaquing.

**Thyroid studies:** Hyperthyroidism may lead or contribute to vasoconstriction and hypertension.

**Serum/urine aldosterone level:** May be done to assess for primary aldosteronism (cause).

**Urinalysis:** May show blood, protein, or white blood cells; or glucose suggests renal dysfunction and/or presence of diabetes.

**Creatinine clearance:** May be reduced, reflecting renal damage.

**Urine vanillylmandelic acid (VMA) (catecholamine metabolite):** Elevation may indicate presence of pheochromocytoma (cause); 24-hour urine VMA may be done for assessment of pheochromocytoma if hypertension is intermittent.

**Uric acid:** Hyperuricemia has been implicated as a risk factor for the development of hypertension.

**Renin:** Elevated in renovascular and malignant hypertension, salt-wasting disorders.

**Urine steroids:** Elevation may indicate hyperadrenalism, pheochromocytoma, pituitary dysfunction, Cushing's syndrome.

**Intravenous pyelogram (IVP):** May identify cause of secondary hypertension, e.g., renal parenchymal disease, renal/ureteral calculi.

**Kidney and renography nuclear scan:** Evaluates renal status (TOD).

**Excretory urography:** May reveal renal atrophy, indicating chronic renal disease.

**Chest x-ray:** May demonstrate obstructing calcification in valve areas; deposits in and/or notching of aorta; cardiac enlargement.

**Computed tomography (CT) scan:** Assesses for cerebral tumor, CVA, or encephalopathy or to rule out pheochromocytoma.

**Electrocardiogram (ECG):** May demonstrate enlarged heart, strain patterns, conduction disturbances. *Note:* Broad, notched P wave is one of the earliest signs of hypertensive heart disease.

## NURSING PRIORITIES

1. Maintain/enhance cardiovascular functioning.
2. Prevent complications.

3. Provide information about disease process/prognosis and treatment regimen.
4. Support active patient control of condition.

### DISCHARGE GOALS

1. BP within acceptable limits for individual.
2. Cardiovascular and systemic complications prevented/minimized.
3. Disease process/prognosis and therapeutic regimen understood.
4. Necessary lifestyle/behavioral changes initiated.
5. Plan in place to meet needs after discharge.

**NURSING DIAGNOSIS: Cardiac Output, risk for decreased**

**Risk factors may include**

Increased vascular resistance, vasoconstriction

Myocardial ischemia

Ventricular hypertrophy/rigidity

**Possibly evidenced by**

[Not applicable; presence of signs and symptoms establishes an *actual* diagnosis.]

**DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:**

**Circulation Status (NOC)**

Participate in activities that reduce BP/cardiac workload.

Maintain BP within individually acceptable range.

Demonstrate stable cardiac rhythm and rate within patient's normal range.

| ACTIONS/INTERVENTIONS  | RATIONALE  |
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| <p><b>Hemodynamic Regulation (NIC)</b></p> <p><b>Independent</b></p> <p>Monitor BP. Measure in both arms/thighs three times, 3–5 min apart while patient is at rest, then sitting, then standing for initial evaluation. Use correct cuff size and accurate technique.</p> <p>Note presence, quality of central and peripheral pulses.</p> <p>Auscultate heart tones and breath sounds.</p> <p>Observe skin color, moisture, temperature, and capillary refill time.</p> <p>Note dependent/general edema.</p> <p>Provide calm, restful surroundings, minimize environmental activity/noise. Limit the number of visitors and length of stay.</p> <p>Maintain activity restrictions, e.g., bedrest/chair rest; schedule periods of uninterrupted rest; assist patient with self-care activities as needed.</p> <p>Provide comfort measures, e.g., back and neck massage, elevation of head.</p> <p>Instruct in relaxation techniques, guided imagery, distractions.</p> | <p>Comparison of pressures provides a more complete picture of vascular involvement/scope of problem. Severe hypertension is classified in the adult as a diastolic pressure elevation to 110 mm Hg; progressive diastolic readings above 120 mm Hg are considered first accelerated, then malignant (very severe). Systolic hypertension also is an established risk factor for cerebrovascular disease and ischemic heart disease, when diastolic pressure is elevated.</p> <p>Bounding carotid, jugular, radial, and femoral pulses may be observed/palpated. Pulses in the legs/feet may be diminished, reflecting effects of vasoconstriction (increased systemic vascular resistance [SVR]) and venous congestion.</p> <p>S<sub>4</sub> heart sound is common in severely hypertensive patients because of the presence of atrial hypertrophy (increased atrial volume/pressure). Development of S<sub>3</sub> indicates ventricular hypertrophy and impaired functioning. Presence of crackles, wheezes may indicate pulmonary congestion secondary to developing or chronic heart failure.</p> <p>Presence of pallor; cool, moist skin; and delayed capillary refill time may be due to peripheral vasoconstriction or reflect cardiac decompensation/decreased output.</p> <p>May indicate heart failure, renal or vascular impairment.</p> <p>Helps reduce sympathetic stimulation; promotes relaxation.</p> <p>Reduces physical stress and tension that affect blood pressure and the course of hypertension.</p> <p>Decreases discomfort and may reduce sympathetic stimulation.</p> <p>Can reduce stressful stimuli, produce calming effect, thereby reducing BP.</p> |

| ACTIONS/INTERVENTIONS                      | RATIONALE |
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| <p><b>Hemodynamic Regulation (NIC)</b></p> |           |

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| <p><b>Independent</b></p> <p>Monitor response to medications to control blood pressure.</p> <p><b>Collaborative</b></p> <p>Administer medications as indicated:</p> <p>Thiazide diuretics, e.g., chlorothiazide (Diuril); hydrochlorothiazide (Esidrix/HydroDIURIL); bendroflumethiazide (Naturetin); indapamide (Lozol); metolazone (Diulo); quinethazone (Hydromox);</p> <p>Loop diuretics, e.g., furosemide (Lasix); ethacrynic acid (Edecrin); bumetanide (Bumex), torsemide (Demadex);</p> <p>Potassium-sparing diuretics, e.g., spironolactone (Aldactone); triamterene (Dyrenium); amiloride (Midamor);</p> <p>Alpha, beta, or centrally acting adrenergic antagonists, e.g., doxazosin (Cardura); propranolol (Inderal); acebutolol (Sectral); metoprolol (Lopressor), labetalol (Normodyne); atenolol (Tenormin); nadolol (Corgard), carvedilol (Coreg); methyldopa (Aldomet); clonidine (Catapres); prazosin (Minipress); terazosin (Hytrin); pindolol (Visken);</p> <p>Calcium channel antagonists, e.g., nifedipine (Procardia); verapamil (Calan); diltiazem (Cardizem); amlodipine (Norvasc); isradipine (DynaCirc); nicardipine (Cardene);</p> <p>Adrenergic neuron blockers: guanadrel (Hylorel); guanethidine (Ismelin); reserpine (Serpalan);</p> | <p>Response to drug therapy (usually consisting of several drugs, including diuretics, angiotensin-converting enzyme [ACE] inhibitors, vascular smooth muscle relaxants, beta and calcium channel blockers) is dependent on both the individual as well as the synergistic effects of the drugs. Because of side effects, drug interactions, and patient's motivation for taking antihypertensive medication, it is important to use the smallest number and lowest dosage of medications.</p> <p>Diuretics are considered first-line medications for uncomplicated stage I or II hypertension and may be used alone or in association with other drugs (such as beta-blockers) to reduce BP in patients with relatively normal renal function. These diuretics potentiate the effects of other antihypertensive agents as well, by limiting fluid retention, and may reduce the incidence of strokes and heart failure.</p> <p>These drugs produce marked diuresis by inhibiting resorption of sodium and chloride and are effective antihypertensives, especially in patients who are resistant to thiazides or have renal impairment.</p> <p>May be given in combination with a thiazide diuretic to minimize potassium loss.</p> <p>Beta-Blockers may be ordered instead of diuretics for patients with ischemic heart disease; obese patients with cardiogenic hypertension; and patients with concurrent supraventricular arrhythmias, angina, or hypertensive cardiomyopathy. Specific actions of these drugs vary, but they generally reduce BP through the combined effect of decreased total peripheral resistance, reduced cardiac output, inhibited sympathetic activity, and suppression of renin release. <i>Note:</i> Patients with diabetes should use Corgard and Visken with caution because they can prolong and mask the hypoglycemic effects of insulin. The elderly may require smaller doses because of the potential for bradycardia and hypotension. African-American patients tend to be less responsive to beta-blockers in general and may require increased dosage or use of another drug, e.g., monotherapy with a diuretic.</p> <p>May be necessary to treat severe hypertension when a combination of a diuretic and a sympathetic inhibitor does not sufficiently control BP. Vasodilation of healthy cardiac vasculature and increased coronary blood flow are secondary benefits of vasodilator therapy.</p> <p>Reduce arterial and venous constriction activity at the sympathetic nerve endings.</p> |
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| <p>Direct-acting oral vasodilators: hydralazine (Apresoline); minoxidil (Loniten);</p>  | <p>Action is to relax vascular smooth muscle, thereby reducing vascular resistance.</p>  |
| <p>Direct-acting parenteral vasodilators: diazoxide (Hyperstat), nitroprusside (Nitropress); labetalol (Normodyne);</p>   | <p>These are given intravenously for management of hypertensive emergencies.</p>   |
| <p>Angiotensin-converting enzyme (ACE) inhibitors, e.g., captopril (Capoten); enalapril (Vasotec); lisinopril (Zestril); fosinopril (Monopril); ramipril (Altace).<br/>Angiotensin II blockers, e.g., valsartan (Diovan), guanethidine (Ismelin).</p> | <p>The use of an additional sympathetic inhibitor may be required for its cumulative effect when other measures have failed to control BP or when congestive heart failure (CHF) or diabetes is present.</p> |
| <p>Implement dietary sodium, fat, and cholesterol restrictions as indicated.</p>  | <p>These restrictions can help manage fluid retention and, with associated hypertensive response, decrease myocardial workload.</p>  |
| <p>Prepare for surgery when indicated.</p>  | <p>When hypertension is due to pheochromocytoma, removal of the tumor will correct condition.</p>  |

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| <p><b>NURSING DIAGNOSIS: Activity intolerance</b><br/> <b>May be related to</b><br/> Generalized weakness<br/> Imbalance between oxygen supply and demand<br/> <b>Possibly evidenced by</b><br/> Verbal report of fatigue or weakness<br/> Abnormal heart rate or BP response to activity<br/> Exertional discomfort or dyspnea<br/> Electrocardiogram (ECG) changes reflecting ischemia; dysrhythmias<br/> <b>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</b><br/> <b>Endurance (NOC)</b><br/> Participate in necessary/desired activities.<br/> Report a measurable increase in activity tolerance.<br/> Demonstrate a decrease in physiological signs of intolerance.</p> |
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| ACTIONS/INTERVENTIONS  | RATIONALE   |
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| <p><b>Energy Management (NIC)</b></p> <p><b>INDEPENDENT</b></p> <p>Assess the patient's response to activity, noting pulse rate more than 20 beats/min faster than resting rate; marked increase in BP during/after activity (systolic pressure increase of 40 mm Hg or diastolic pressure increase of 20 mm Hg); dyspnea or chest pain; excessive fatigue and weakness; diaphoresis; dizziness or syncope. Instruct patient in energy-conserving techniques, e.g., using chair when showering, sitting to brush teeth or comb hair, carrying out activities at a slower pace.</p> <p>Encourage progressive activity/self-care when tolerated. Provide assistance as needed.</p> | <p>The stated parameters are helpful in assessing physiological responses to the stress of activity and, if present, are indicators of overexertion. Energy-saving techniques reduce the energy expenditure, thereby assisting in equalization of oxygen supply and demand.</p> <p>Gradual activity progression prevents a sudden increase in cardiac workload. Providing assistance only as needed encourages independence in performing activities.</p> |

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| <p><b>NURSING DIAGNOSIS: Pain, acute, headache</b></p> <p><b>May be related to</b><br/>Increased cerebral vascular pressure</p> <p><b>Possibly evidenced by</b><br/>Reports of throbbing pain located in suboccipital region, present on awakening and disappearing spontaneously after being up and about<br/>Reluctance to move head, rubbing head, avoidance of bright lights and noise, wrinkled brow, clenched fists<br/>Reports of stiffness of neck, dizziness, blurred vision, nausea, and vomiting</p> <p><b>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</b></p> <p><b>Pain Control Behavior (NOC)</b><br/>Report pain/discomfort is relieved/controlled.<br/>Verbalize methods that provide relief.<br/>Follow prescribed pharmacological regimen.</p> |
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| <p><b>Pain Management (NIC)</b></p> <p><b>Independent</b></p> <p>Determine specifics of pain, e.g., location, characteristics, intensity (0–10 scale), onset/duration. Note nonverbal cues.</p> <p>Encourage/maintain bedrest during acute phase.</p> | <p>Facilitates diagnosis of problem and initiation of appropriate therapy. Helpful in evaluating effectiveness of therapy.</p> <p>Minimizes stimulation/promotes relaxation.</p> |

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| <p>Provide/recommend nonpharmacological measures for relief of headache, e.g., cool cloth to forehead; back and neck rubs; quiet, dimly lit room; relaxation techniques (guided imagery, distraction); and diversional activities.</p> <p>Eliminate/minimize vasoconstricting activities that may aggravate headache, e.g., straining at stool, prolonged coughing, bending over.</p> <p>Assist patient with ambulation as needed.</p> <p>Provide liquids, soft foods, frequent mouth care if nosebleeds occur or nasal packing has been done to stop bleeding.</p> <p><b>Collaborative</b></p> <p>Administer medications as indicated:<br/>Analgesics;</p> <p>Antianxiety agents, e.g., lorazepam (Ativan), alprazolam (Xanax), diazepam (Valium).</p> | <p>Measures that reduce cerebral vascular pressure and that slow/block sympathetic response are effective in relieving headache and associated complications.</p> <p>Activities that increase vasoconstriction accentuate the headache in the presence of increased cerebral vascular pressure.</p> <p>Dizziness and blurred vision frequently are associated with vascular headache. Patient may also experience episodes of postural hypotension, causing weakness when ambulating.</p> <p>Promotes general comfort. Nasal packing may interfere with swallowing or require mouth breathing, leading to stagnation of oral secretions and drying of mucous membranes.</p> <p>Reduce/control pain and decrease stimulation of the sympathetic nervous system.</p> <p>May aid in the reduction of tension and discomfort that is intensified by stress.</p> |
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| <p><b>NURSING DIAGNOSIS: Nutrition: imbalanced, more than body requirements</b></p> <p><b>May be related to</b></p> <ul style="list-style-type: none"> <li>Excessive intake in relation to metabolic need</li> <li>Sedentary lifestyle</li> <li>Cultural preferences</li> </ul> <p><b>Possibly evidenced by</b></p> <ul style="list-style-type: none"> <li>Weight 10%–20% more than ideal for height and frame</li> <li>Triceps skinfold more than 15 mm in men and 25 mm in women (maximum for age and sex)</li> <li>Reported or observed dysfunctional eating patterns</li> </ul> <p><b>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</b></p> <p><b>Knowledge: Treatment Regimen (NOC)</b><br/>Identify correlation between hypertension and obesity.</p> <p><b>Nutritional Status: Nutrient Intake (NOC)</b><br/>Demonstrate change in eating patterns (e.g., food choices, quantity) to attain desirable body weight with optimal maintenance of health.</p> <p>Initiate/maintain individually appropriate exercise program.</p> |
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| ACTIONS/INTERVENTIONS  | RATIONALE   |
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| <p><b>Weight Reduction Assistance (NIC)</b></p> <p><b>Independent</b></p> <p>Assess patient understanding of direct relationship between hypertension and obesity.</p> <p>Discuss necessity for decreased caloric intake and limited intake of fats, salt, and sugar as indicated.</p> <p>Determine patient's desire to lose weight.</p> <p>Review usual daily caloric intake and dietary choices.</p> <p>Establish a realistic weight reduction plan with the patient, e.g., 1 lb weight loss/wk.</p> <p>Encourage patient to maintain a diary of food intake, including when and where eating takes place and the circumstances and feelings around which the food was eaten.</p> <p>Instruct and assist in appropriate food selections, such as a diet rich in fruits, vegetables, and low-fat dairy foods referred to as the DASH Dietary Approaches to Stop Hypertension) diet and avoiding foods high in saturated fat (butter, cheese, eggs, ice cream, meat) and cholesterol (fatty meat, egg yolks, whole dairy products, shrimp, organ meats).</p> <p><b>Collaborative</b></p> <p>Refer to dietitian as indicated.</p> | <p>Obesity is an added risk with high blood pressure because of the disproportion between fixed aortic capacity and increased cardiac output associated with increased body mass. Reduction in weight may obviate the need for drug therapy or decrease the amount of medication needed for control of BP. <i>Note:</i> Recent research suggests that bringing weight within 15% of ideal weight can result in a drop of 10 mm Hg in both systolic and diastolic BP.</p> <p>Faulty eating habits contribute to atherosclerosis and obesity, which predispose to hypertension and subsequent complications, e.g., stroke, kidney disease, heart failure. Excessive salt intake expands the intravascular fluid volume and may damage kidneys, which can further aggravate hypertension. <i>Note:</i> One study showed that sodium reduction reduced the need for medication by 31%. Weight loss lowered the need for medication by 36% and the combination of the two by 53%.</p> <p>Motivation for weight reduction is internal. The individual must want to lose weight, or the program most likely will not succeed.</p> <p>Identifies current strengths/weaknesses in dietary program. Aids in determining individual need for adjustment/teaching.</p> <p>Reducing caloric intake by 500 calories daily theoretically yields a weight loss of 1 lb/wk. Slow reduction in weight is therefore indicative of fat loss with muscle sparing and generally reflects a change in eating habits.</p> <p>Provides a database for both the adequacy of nutrients eaten and the emotional conditions of eating. Helps focus attention on factors that patient has control over/can change.</p> <p>Avoiding foods high in saturated fat and cholesterol is important in preventing progressing atherogenesis. Moderation and use of low-fat products in place of total abstinence from certain food items may prevent sense of deprivation and enhance cooperation with dietary regimen. The DASH diet, in conjunction with exercise, weight loss, and limits on salt intake, may reduce or even eliminate the need for drug therapy.</p> <p>Can provide additional counseling and assistance with</p> |

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|  | meeting individual dietary needs. |
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| <p><b>NURSING DIAGNOSIS: Coping, ineffective</b></p> <p><b>May be related to</b></p> <p>Situational/maturational crisis; multiple life changes<br/> Inadequate relaxation; little or no exercise, work overload<br/> Inadequate support systems<br/> Poor nutrition<br/> Unmet expectations; unrealistic perceptions<br/> Inadequate coping methods</p> <p><b>Possibly evidenced by</b></p> <p>Verbalization of inability to cope or ask for help<br/> Inability to meet role expectations/basic needs or problem-solve<br/> Destructive behavior toward self; overeating, lack of appetite; excessive smoking/drinking, proneness to alcohol abuse<br/> Chronic fatigue/insomnia; muscular tension; frequent head/neck aches;<br/> chronic worry, irritability, anxiety, emotional tension, depression</p> <p><b>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</b></p> <p><b>Coping (NOC)</b></p> <p>Identify ineffective coping behaviors and consequences.<br/> Verbalize awareness of own coping abilities/strengths.<br/> Identify potential stressful situations and steps to avoid/modify them.<br/> Demonstrate the use of effective coping skills/methods.</p> |
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| ACTIONS/INTERVENTIONS  | RATIONALE   |
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| <p><b>Coping Enhancement (NIC)</b></p> <p><b>Independent</b></p> <p>Assess effectiveness of coping strategies by observing behaviors, e.g., ability to verbalize feelings and concerns, willingness to participate in the treatment plan.</p> <p>Note reports of sleep disturbances, increasing fatigue, impaired concentration, irritability, decreased tolerance of headache, inability to cope/problem-solve.</p> <p>Assist patient to identify specific stressors and possible strategies for coping with them.</p> <p>Include patient in planning of care, and encourage maximum participation in treatment plan.</p> <p>Encourage patient to evaluate life priorities/goals. Ask questions such as “Is what you are doing getting you what you want?”</p> <p>Assist patient to identify and begin planning for necessary lifestyle changes. Assist to adjust, rather than abandon,</p> | <p>Adaptive mechanisms are necessary to appropriately alter one’s lifestyle, deal with the chronicity of hypertension, and integrate prescribed therapies into daily living.</p> <p>Manifestations of maladaptive coping mechanisms may be indicators of repressed anger and have been found to be major determinants of diastolic BP.</p> <p>Recognition of stressors is the first step in altering one’s response to the stressor.</p> <p>Involvement provides patient with an ongoing sense of control, improves coping skills, and can enhance cooperation with therapeutic regimen.</p> <p>Focuses patient’s attention on reality of present situation relative to patient’s view of what is wanted. Strong work ethic, need for “control,” and outward focus may have led to lack of attention to personal needs.</p> <p>Necessary changes should be realistically prioritized so patient can avoid being overwhelmed and feeling</p> |

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| personal/family goals. | powerless. |
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| <p><b>NURSING DIAGNOSIS: Knowledge, deficient [Learning Need] regarding condition, treatment plan, self-care and discharge needs</b></p> <p><b>May be related to</b><br/> Lack of knowledge/recall<br/> Information misinterpretation<br/> Cognitive limitation<br/> Denial of diagnosis</p> <p><b>Possibly evidenced by</b><br/> Verbalization of the problem<br/> Request for information<br/> Statement of misconception<br/> Inaccurate follow-through of instructions; inadequate performance of procedures<br/> Inappropriate or exaggerated behaviors, e.g., hostile, agitated, apathetic</p> <p><b>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</b></p> <p><b>Knowledge: Disease Process (NOC)</b><br/> Verbalize understanding of disease process and treatment regimen.<br/> Identify drug side effects and possible complications that necessitate medical attention.<br/> Maintain BP within individually acceptable parameters.</p> <p><b>Knowledge: Treatment Regimen (NOC)</b><br/> Describe reasons for therapeutic actions/treatment regimen.</p> |
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| ACTIONS/INTERVENTIONS   | RATIONALE  |
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| <p><b>Teaching: Disease Process (NIC)</b></p> <p><b>Independent</b></p> <p>Assess readiness and blocks to learning. Include significant other (SO).</p> <p>Define and state the limits of desired BP. Explain hypertension and its effects on the heart, blood vessels, kidneys, and brain.</p> <p>Avoid saying “normal” BP, and use the term “well-controlled” to describe patient’s BP within desired limits.</p> | <p>Misconceptions and denial of the diagnosis because of long-standing feelings of well-being may interfere with patient/SO willingness to learn about disease, progression, and prognosis. If patient does not accept the reality of a life-threatening condition requiring continuing treatment, lifestyle/behavioral changes will not be initiated/sustained.</p> <p>Provides basis for understanding elevations of BP, and clarifies frequently used medical terminology. Understanding that high BP can exist without symptoms is central to enabling patient to continue treatment, even when feeling well.</p> <p>Because treatment for hypertension is lifelong, conveying the idea of “control” helps patient understand the need for continued treatment/medication.</p> |

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| <p><b>Independent</b></p>   |  |
| <p>Assist patient in identifying modifiable risk factors, e.g., obesity; diet high in sodium, saturated fats, and cholesterol; sedentary lifestyle; smoking; alcohol intake (more than 2 oz/day on a regular basis); stressful lifestyle.</p> | <p>These risk factors have been shown to contribute to hypertension and cardiovascular and renal disease.</p>  |
| <p>Problem-solve with patient to identify ways in which appropriate lifestyle changes can be made to reduce modifiable risk factors.</p>  | <p>Changing “comfortable/usual” behavior patterns can be very difficult and stressful. Support, guidance, and empathy can enhance patient’s success in accomplishing these tasks.</p>  |
| <p>Discuss importance of eliminating smoking, and assist patient in formulating a plan to quit smoking.</p>   | <p>Nicotine increases catecholamine discharge, resulting in increased heart rate, BP, vasoconstriction, and myocardial workload, and reduces tissue oxygenation.</p>   |
| <p>Reinforce the importance of adhering to treatment regimen and keeping follow-up appointments.</p>  | <p>Lack of cooperation is a common reason for failure of antihypertensive therapy. Therefore, ongoing evaluation for patient cooperation is critical to successful treatment. Compliance usually improves when patient understands causative factors and consequences of inadequate intervention and health maintenance.</p> |
| <p>Instruct and demonstrate technique of BP self-monitoring. Evaluate patient’s hearing, visual acuity, manual dexterity, and coordination.</p>   | <p>Monitoring BP at home is reassuring to patient because it provides visual/positive reinforcement for efforts in following the medical regimen and promotes early detection of deleterious changes.</p>  |
| <p>Help patient develop a simple, convenient schedule for taking medications.</p>   | <p>Individualizing medication schedule to fit patient’s personal habits/needs may facilitate cooperation with long-term regimen.</p>   |
| <p>Explain prescribed medications along with their rationale, dosage, expected and adverse side effects, and idiosyncrasies, e.g.:</p>  | <p>Adequate information and understanding that side effects (e.g., mood changes, initial weight gain, dry mouth) are common and often subside with time can enhance cooperation with treatment plan.</p>   |
| <p>Diuretics: Take daily doses (or larger dose) in the early morning;</p>   | <p>Scheduling minimizes nighttime urination.</p>   |
| <p>Weigh self on a regular schedule and record;</p>   | <p>Primary indicator of effectiveness of diuretic therapy.</p>   |
| <p>Avoid/limit alcohol intake;</p>  | <p>The combined vasodilating effect of alcohol and the volume-depleting effect of a diuretic greatly increase the risk of orthostatic hypotension.</p>   |
| <p>Notify physician if unable to tolerate food or fluid;</p>  | <p>Dehydration can develop rapidly if intake is poor and patient continues to take a diuretic.</p>   |

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| <p><b>Teaching: Disease Process (NIC)</b></p> <p><b>Independent</b></p> <p>Antihypertensives: Take prescribed dose on a regular schedule; avoid skipping, altering, or making up doses; and do not discontinue without notifying the healthcare provider. Review potential side effects and/or drug interactions;</p> <p>Rise slowly from a lying to standing position, sitting for a few minutes before standing. Sleep with the head slightly elevated.</p> <p>Suggest frequent position changes, leg exercises when lying down.</p> <p>Recommend avoiding hot baths, steam rooms, and saunas, especially with concomitant use of alcoholic beverages.</p> <p>Instruct patient to consult healthcare provider before taking other prescription or over-the-counter (OTC) medications.</p> <p>Instruct patient about increasing intake of foods/fluids high in potassium, e.g., oranges, bananas, figs, dates, tomatoes, potatoes, raisins, apricots, Gatorade, and fruit juices and foods/fluids high in calcium, e.g., low-fat milk, yogurt, or calcium supplements, as indicated.</p> <p>Review signs/symptoms requiring notification of healthcare provider, e.g., headache present on awakening that does not abate; sudden and continued increase of BP; chest pain/shortness of breath; irregular/increased pulse rate; significant weight gain (2 lb/day or 5 lb/wk) or peripheral/abdominal swelling; visual disturbances; frequent, uncontrollable nosebleeds; depression/emotional lability; severe dizziness or episodes of fainting; muscle weakness/cramping; nausea/vomiting; excessive thirst.</p> <p>Explain rationale for prescribed dietary regimen (usually a diet low in sodium, saturated fat, and cholesterol).</p> | <p>Because patients often cannot feel the difference the medication is making in blood pressure, it is critical that there is understanding about the medications' working and side effects. For example, abruptly discontinuing a drug may cause rebound hypertension leading to severe complications, or medication may need to be altered to reduce adverse effects.</p> <p>Measures reduce severity of orthostatic hypotension associated with the use of vasodilators and diuretics.</p> <p>Decreases peripheral venous pooling that may be potentiated by vasodilators and prolonged sitting/standing.</p> <p>Prevents vasodilation with potential for dangerous side effects of syncope and hypotension.</p> <p>Precaution is important in preventing potentially dangerous drug interactions. Any drug that contains a sympathetic nervous stimulant may increase BP or counteract antihypertensive effects.</p> <p>Diuretics can deplete potassium levels. Dietary replacement is more palatable than drug supplements and may be all that is needed to correct deficit. Some studies show that 400 mg of calcium/day can lower systolic and diastolic BP. Correcting mineral deficiencies can also affect BP.</p> <p>Early detection of developing complications/decreased effectiveness of drug regimen or adverse reactions to it allows for timely intervention.</p> <p>Excess saturated fats, cholesterol, sodium, alcohol, and calories have been defined as nutritional risks in hypertension. A diet low in fat and high in polyunsaturated fat reduces BP, possibly through prostaglandin balance in both normotensive and hypertensive people.</p> |

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| <p><b>Teaching: Disease Process (NIC)</b></p> <p><b>Independent</b></p> <p>Help patient identify sources of sodium intake (e.g., table salt, salty snacks, processed meats and cheeses, sauerkraut, sauces, canned soups and vegetables, baking soda, baking powder, monosodium glutamate). Stress the importance of reading ingredient labels of foods and OTC drugs.</p> <p>Encourage patient to establish an individual exercise program incorporating aerobic exercise (walking, swimming) within patient’s capabilities. Stress the importance of avoiding isometric activity.</p> <p>Demonstrate application of ice pack to the back of the neck and pressure over the distal third of nose, and recommend that patient lean the head forward, if nosebleed occurs.</p> <p>Provide information regarding community resources, and support patient in making lifestyle changes. Initiate referrals as indicated.</p> | <p>Two years on a moderate low-salt diet may be sufficient to control mild hypertension or reduce the amount of medication required.</p> <p>Besides helping to lower BP, aerobic activity aids in toning the cardiovascular system. Isometric exercise can increase serum catecholamine levels, further elevating BP.</p> <p>Nasal capillaries may rupture as a result of excessive vascular pressure. Cold and pressure constrict capillaries to slow or halt bleeding. Leaning forward reduces the amount of blood that is swallowed.</p> <p>Community resources such as the American Heart Association, “coronary clubs,” stop smoking clinics, alcohol (drug) rehabilitation, weight loss programs, stress management classes, and counseling services may be helpful in patient’s efforts to initiate and maintain lifestyle changes.</p> |

**POTENTIAL CONSIDERATIONS following acute hospitalization (dependent on patient’s age, physical condition/presence of complications, personal resources, and life responsibilities)**

- Activity intolerance—frequently occurs as a result of alterations in cardiac output and side effects of medication.
- Nutrition: imbalanced, more than body requirements—obesity is often present and a factor in blood pressure control.
- Therapeutic Regimen: ineffective management—result of the complexity of the therapeutic regimen, required lifestyle changes, side effects of medication, and frequent feelings of general well-being (“I’m not really sick”).
- Sexuality Patterns, ineffective—interference in sexual functioning may occur because of activity intolerance and side effects of medication.
- Family Coping: readiness for enhanced—opportunity exists for family members to support patient while reducing risk factors for themselves and improving quality of life for family as a whole.