

HYPERTHYROIDISM (THYROTOXICOSIS, GRAVES' DISEASE)

Hyperthyroidism is a metabolic imbalance that results from overproduction of the thyroid hormones triiodothyronine (T₃) and thyroxine (T₄). The most common form is Graves' disease, but other forms of hyperthyroidism include toxic adenoma, TSH-secreting pituitary tumor, subacute or silent thyroiditis, and some forms of thyroid cancer.

Thyroid storm is a rarely encountered manifestation of hyperthyroidism that can be precipitated by such events as thyroid ablation (surgical or radioiodine), medication overdosage, and trauma. This condition constitutes a medical emergency.

CARE SETTING

Most people with classic hyperthyroidism rarely need hospitalization. Critically ill patients, those with extreme manifestations of thyrotoxicosis plus a significant concurrent illness, require inpatient acute care on a medical unit.

RELATED CONCERNS

Heart failure: chronic

Psychosocial aspects of care

Thyroidectomy

Patient Assessment Database

Data depend on the severity/duration of hormone imbalance and involvement of other organs.

ACTIVITY/REST

May report: Nervousness, increased irritability, insomnia
Muscle weakness, incoordination
Extreme fatigue

May exhibit: Muscle atrophy

CIRCULATION

May report: Palpitations
Chest pain (angina)

May exhibit: Dysrhythmias (atrial fibrillation); gallop rhythm, murmurs
Elevated BP with widened pulse pressure
Tachycardia at rest
Circulatory collapse, shock (thyrotoxic crisis)

ELIMINATION

May report: Urinating in large amounts
Stool changes; diarrhea

EGO INTEGRITY

May report: Recent stressful experience, e.g., emotional/physical

May exhibit: Emotional lability (mild euphoria to delirium); anxiety/depression

FOOD/FLUID

May report: Recent/sudden weight loss
Increased appetite; large meals, frequent meals; thirst
Nausea/vomiting

May exhibit: Enlarged thyroid; goiter
Nonpitting edema, especially in pretibial area

NEUROSENSORY

May exhibit: Rapid and hoarse speech

Mental status and behavior alterations, e.g., confusion, disorientation, nervousness, irritability, delirium, frank psychosis, stupor, coma
Fine tremor in hands; purposeless, quick, jerky movements of body parts
Hyperactive DTRs
Paralysis (thyrotoxic hypokalemia)

PAIN/DISCOMFORT

May report: Orbital pain, photophobia (eye movement)

RESPIRATION

May report: Difficulty breathing

May exhibit: Increased respiratory rate, tachypnea
Breath sounds: Crackles, wheezes (pulmonary edema associated with thyrotoxic crisis)

SAFETY

May report: Heat intolerance, excessive sweating
Allergy to iodine (may be used in testing)

May exhibit: Elevated temperature (above 100°F), diaphoresis
Skin smooth, warm, and flushed; hair fine, silky, straight
Exophthalmos, lid retraction; conjunctival irritation, tearing
Pruritic, erythematous lesions (often in pretibial area) that become brawny

SEXUALITY

May report: Decreased libido
Hypomenorrhea, amenorrhea
Impotence

TEACHING/LEARNING

May report: Family history of thyroid problems
History of hypothyroidism, thyroid hormone replacement therapy or antithyroid therapy, premature withdrawal of antithyroid drugs, recent partial thyroidectomy
History of insulin-induced hypoglycemia, cardiac disorders or surgery, recent illness (pneumonia), trauma; x-ray contrast studies

Discharge plan considerations: **DRG projected mean length of inpatient stay: 4.3 days**
May require assistance with treatment regimen, self-care activities, homemaker/maintenance tasks
Refer to section at end of plan for postdischarge considerations.

DIAGNOSTIC STUDIES

Radioactive iodine (RAI) uptake test: High in Graves' disease and toxic nodular goiter; low in thyroiditis.

Serum T₄ and T₃: Increased in hyperthyroidism. Normal T₄ with elevated T₃ indicates thyrotoxicosis.

Thyroid-stimulating hormone (TSH): Suppressed (except when etiology is a TSH-secreting pituitary tumor or pituitary resistant to thyroid hormone). Does not respond to thyrotropin-releasing hormone (TRH).

Thyroglobulin: Increased.

TRH stimulation: Hyperthyroidism is indicated if TSH fails to rise after administration of TRH.

Thyroid T₃ uptake: Normal to high.

Protein-bound iodine: Increased.

Serum glucose: Elevated (related to adrenal involvement).

Plasma cortisol: Low levels (less adrenal reserve).

Alkaline phosphatase and serum calcium: Increased.

Liver function tests: Abnormal.

Electrolytes: Hyponatremia may reflect adrenal response or dilutional effect in fluid replacement therapy. Hypokalemia occurs because of GI losses and diuresis.

Serum catecholamines: Decreased.

Urine creatinine: Increased.

ECG: Atrial fibrillations; shorter systole time; cardiomegaly, heart enlarged with fibrosis and necrosis (late signs or in elderly with masked hyperthyroidism).

Needle or open biopsy: May be done to determine cause of hyperthyroidism, differentiate cysts or tumors, diagnose enlargement of thyroid gland.

Thyroid scan: Differentiates between Graves' disease and Plummer's disease, both of which result in hyperthyroidism.

NURSING PRIORITIES

1. Reduce metabolic demands and support cardiovascular function.
2. Provide psychological support.
3. Prevent complications.
4. Provide information about disease process/prognosis and therapy needs.

DISCHARGE GOALS

1. Homeostasis achieved.
2. Patient effectively dealing with current situation.
3. Complications prevented/minimized.
4. Disease process/prognosis and therapeutic regimen understood.
5. Plan in place to meet needs after discharge.

NURSING DIAGNOSIS: Cardiac Output, risk for decreased

Risk factors may include
 Uncontrolled hyperthyroidism, hypermetabolic state
 Increasing cardiac workload
 Changes in venous return and systemic vascular resistance
 Alterations in rate, rhythm, conduction

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

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Circulatory Status (NOC)
 Maintain adequate cardiac output for tissue needs as evidenced by stable vital signs, palpable peripheral pulses, good capillary refill, usual mentation, and absence of dysrhythmias.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Hemodynamic Regulation (NIC)</p> <p>Independent</p> <p>Monitor BP lying, sitting, and standing, if able. Note widened pulse pressure.</p>	<p>General/orthostatic hypotension may occur as a result of excessive peripheral vasodilation and decreased circulating volume. Widened pulse pressure reflects compensatory increase in stroke volume and decreased systemic vascular resistance (SVR).</p>
<p>Monitor central venous pressure (CVP), if available.</p>	<p>Provides more direct measure of circulating volume and cardiac function.</p>
<p>Investigate reports of chest pain/angina.</p>	<p>May reflect increased myocardial oxygen demands/ischemia.</p>
<p>Assess pulse/heart rate while patient is sleeping.</p>	<p>Provides a more accurate assessment of tachycardia.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Hemodynamic Regulation (NIC)</p> <p>Independent</p> <p>Auscultate heart sounds, noting extra heart sounds, development of gallops and systolic murmurs.</p> <p>Monitor ECG, noting rate/rhythm. Document dysrhythmias.</p> <p>Auscultate breath sounds, noting adventitious sounds (e.g., crackles).</p> <p>Monitor temperature; provide cool environment, limit bed linens/clothes, administer tepid sponge baths.</p> <p>Observe signs/symptoms of severe thirst, dry mucous membranes, weak/thready pulse, poor capillary refill, decreased urinary output, and hypotension.</p> <p>Record I&O. Note urine specific gravity.</p> <p>Weigh daily. Encourage chair rest/bedrest; limit nonessential activity.</p> <p>Note history of asthma/bronchoconstrictive disease, sinus bradycardia/heart blocks, advanced HF, or current pregnancy.</p> <p>Observe for adverse side effects of adrenergic antagonists, e.g., severe decrease in pulse, BP; signs of vascular congestion/HF; cardiac arrest.</p>	<p>Prominent S₁ and murmurs are associated with forceful cardiac output of hypermetabolic state; development of S₃ may warn of impending cardiac failure.</p> <p>Tachycardia (greater than normally expected with fever/increased circulatory demand) may reflect direct myocardial stimulation by thyroid hormone. Dysrhythmias often occur and may compromise cardiac function/output.</p> <p>Early sign of pulmonary congestion, reflecting developing cardiac failure.</p> <p>Fever (may exceed 104°F) may occur as a result of excessive hormone levels and can aggravate diuresis/dehydration and cause increased peripheral vasodilation, venous pooling, and hypotension.</p> <p>Rapid dehydration can occur, which reduces circulating volume and compromises cardiac output.</p> <p>Significant fluid losses (through vomiting, diarrhea, diuresis, diaphoresis) can lead to profound dehydration, concentrated urine, and weight loss.</p> <p>Activity increases metabolic/circulatory demands, which may potentiate cardiac failure.</p> <p>Presence/potential recurrence of these conditions affects choice of therapy; e.g., use of [beta]-adrenergic blocking agents is contraindicated.</p> <p>Indicates need for reduction/discontinuation of therapy.</p>
<p>Collaborative</p> <p>Administer IV fluids as indicated.</p> <p>Administer medications as indicated: [beta]-blockers, e.g., propranolol (Inderal), atenolol (Tenormin), nadolol (Corgard), pindolol (Visken);</p>	<p>Rapid fluid replacement may be necessary to improve circulating volume but must be balanced against signs of cardiac failure/need for inotropic support.</p> <p>Given to control thyrotoxic effects of tachycardia, tremors, and nervousness and is first drug of choice for acute storm. Decreases heart rate/cardiac work by blocking [beta]-adrenergic receptor sites and blocking conversion of T₄ to T₃. <i>Note:</i> If severe bradycardia develops, atropine may be required.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Hemodynamic Regulation (NIC)</p>	
<p>Collaborative</p>	
<p>Thyroid hormone antagonists, e.g., propylthiouracil(PTU), methimazole (Tapazole);</p>	<p>Blocks thyroid hormone synthesis and inhibits peripheral conversion of T₄ to T₃. May be definitive treatment or used to prepare patient for surgery; but effect is slow and so may not relieve thyroid storm. <i>Note:</i> Once PTU therapy is begun, abrupt withdrawal may precipitate thyroid crisis.</p>
<p>Strong iodine solution (Lugol's solution) or supersaturated potassium iodide (SSKI) PO;</p>	<p>Acts to prevent release of thyroid hormone into circulation by increasing the amount of thyroid hormone stored within the gland. May interfere with RAI treatment and may exacerbate the disease in some people. May be used as surgical preparation to decrease size and vascularity of the gland or to treat thyroid storm. <i>Note:</i> Should be started 1–3 hr after initiation of antithyroid drug therapy to minimize hormone formation from the iodine.</p>
<p>RAI (Na¹³¹I or Na¹²⁵I) following NRC regulations for radiopharmaceutical;</p>	<p>Radioactive iodine therapy is the treatment of choice for almost all patients with Graves' disease because it destroys abnormally functioning gland tissue. Peak results take 6–12 wk (several treatments may be necessary); however, a single dose controls hyperthyroidism in about 90% of patients. <i>Note:</i> This therapy is contraindicated during pregnancy. Also people preparing or administering the dose must have their own thyroid burden measured, and contaminated supplies and equipment must be monitored and stored until decayed.</p>
<p>Corticosteroids, e.g., dexamethasone (Decadron);</p>	<p>Provides glucocorticoid support. Decreases hyperthermia; relieves relative adrenal insufficiency; inhibits calcium absorption; and reduces peripheral conversion of T₃ from T₄. <i>Note:</i> May be given before thyroidectomy and discontinued after surgery.</p>
<p>Digoxin (Lanoxin);</p>	<p>Digitalization may be required in patients with HF before [beta]-adrenergic blocking therapy can be considered/safely initiated.</p>
<p>Furosemide (Lasix);</p>	<p>Diuresis may be necessary if HF occurs. <i>Note:</i> It also may be effective in reducing calcium level if neuromuscular function is impaired.</p>
<p>Potassium (KCl, K-Lyte);</p>	<p>Increased losses of K⁺ through intestinal/renal routes may result in dysrhythmias if not corrected.</p>
<p>Acetaminophen (Tylenol);</p>	<p>Drug of choice to reduce temperature and associated metabolic demands. Aspirin is contraindicated because it actually increases level of circulating thyroid hormones by blocking binding of T₃ and T₄ with thyroid-binding proteins.</p>

ACTIONS/INTERVENTIONS	RATIONALE
Hemodynamic Regulation (NIC)	
Collaborative	
Sedative, barbiturates;	Promotes rest, thereby reducing metabolic demands/cardiac workload.
Muscle relaxants.	Reduces shivering associated with hyperthermia, which can further increase metabolic demands.
Monitor laboratory/diagnostic studies, as indicated, e.g.: Serum potassium;	Hypokalemia resulting from intestinal losses, altered intake, or diuretic therapy may cause dysrhythmias and compromise cardiac function/output. <i>Note:</i> In the presence of thyrotoxic paralysis (primarily occurring in Asian men), close monitoring and cautious replacement are indicated because rebound hyperkalemia can occur as condition abates releasing potassium from the cells.
Serum calcium;	Elevation may alter cardiac contractility.
Sputum culture;	Pulmonary infection is most frequent precipitating factor of crisis.
Serial ECGs;	May demonstrate effects of electrolyte imbalance or ischemic changes reflecting inadequate myocardial oxygen supply in presence of increased metabolic demands.
Chest x-rays.	Cardiac enlargement may occur in response to increased circulatory demands. Pulmonary congestion may be noted with cardiac decompensation.
Provide supplemental O ₂ as indicated.	May be necessary to support increased metabolic demands/O ₂ consumption.
Provide hypothermia blanket as indicated.	Occasionally used to lower uncontrolled hyperthermia (104°F and higher) to reduce metabolic demands/O ₂ consumption and cardiac workload.
Administer transfusions; assist with plasmapheresis, hemoperfusion, dialysis.	May be done to achieve rapid depletion of extrathyroidal hormone pool in desperately ill/comatose patient.
Prepare for surgery.	Subtotal thyroidectomy (removal of five-sixths of the gland) may be treatment of choice for hyperthyroidism once euthyroid state is achieved.

NURSING DIAGNOSIS: Fatigue

May be related to

Hypermetabolic state with increased energy requirements
Irritability of central nervous system (CNS); altered body chemistry

Possibly evidenced by

Verbalization of overwhelming lack of energy to maintain usual routine, decreased performance
Emotional lability/irritability; nervousness, tension
Jittery behavior
Impaired ability to concentrate

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Endurance (NOC)

Verbalize increase in level of energy.
Display improved ability to participate in desired activities.

ACTIONS/INTERVENTIONS	RATIONALE
Energy Management (NIC)	
Independent	
Monitor vital signs, noting pulse rate at rest and when active.	Pulse is typically elevated and, even at rest, tachycardia (up to 160 beats/min) may be noted.
Note development of tachypnea, dyspnea, pallor, and cyanosis.	O ₂ demand and consumption are increased in hypermetabolic state, potentiating risk of hypoxia with activity.
Provide for quiet environment; cool room, decreased sensory stimuli, soothing colors, quiet music.	Reduces stimuli that may aggravate agitation, hyperactivity, and insomnia.
Encourage patient to restrict activity and rest in bed as much as possible.	Helps counteract effects of increased metabolism.
Provide comfort measures, e.g., judicious touch/massage, cool showers.	May decrease nervous energy, promoting relaxation.
Provide for diversional activities that are calming, e.g., reading, radio, television.	Allows for use of nervous energy in a constructive manner and may reduce anxiety.
Avoid topics that irritate or upset patient. Discuss ways to respond to these feelings.	Increased irritability of the CNS may cause patient to be easily excited, agitated, and prone to emotional outbursts.
Discuss with SO reasons for fatigue and emotional lability.	Understanding that the behavior is physically based may enhance coping with current situation and encourage SO to respond positively and provide support for patient.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Energy Management (NIC)</p> <p>Collaborative</p> <p>Administer medications as indicated: Sedatives, e.g., phenobarbital (Luminal); antianxiety agents, e.g., chlordiazepoxide (Librium).</p>	<p>Combats nervousness, hyperactivity, and insomnia.</p>

<p>NURSING DIAGNOSIS: Nutrition imbalanced, risk for less than body requirements</p> <p>Risk factors may include Increased metabolism (increased appetite/intake with loss of weight) Nausea/vomiting, diarrhea Relative insulin insufficiency; hyperglycemia</p> <p>Possibly evidenced by [Not applicable; presence of signs and symptoms establishes an <i>actual</i> diagnosis.]</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Nutritional Status (NOC) Demonstrate stable weight with normal laboratory values and be free of signs of malnutrition.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Energy Management (NIC)</p> <p>Independent</p> <p>Monitor daily food intake. Weigh daily and report losses.</p> <p>Encourage patient to eat and increase number of meals and snacks, using high-calorie foods that are easily digested.</p> <p>Avoid foods that increase peristalsis (e.g., tea, coffee, fibrous and highly seasoned foods) and fluids that cause diarrhea (e.g., apple/prune juice).</p> <p>Collaborative</p> <p>Consult with dietitian to provide diet high in calories, protein, carbohydrates, and vitamins.</p> <p>Administer medications as indicated: Glucose, vitamin B complex;</p> <p>Insulin (small doses).</p>	<p>Continued weight loss in face of adequate caloric intake may indicate failure of antithyroid therapy.</p> <p>Aids in keeping caloric intake high enough to keep up with rapid expenditure of calories caused by hypermetabolic state.</p> <p>Increased motility of GI tract may result in diarrhea and impair absorption of needed nutrients.</p> <p>May need assistance to ensure adequate intake of nutrients, identify appropriate supplements.</p> <p>Given to meet energy requirements and prevent or correct hypoglycemia.</p> <p>Aids in controlling serum glucose if elevated.</p>

NURSING DIAGNOSIS: Anxiety [specify level]

May be related to

Physiological factors: hypermetabolic state (CNS stimulation), pseudocatecholamine effect of thyroid hormones

Possibly evidenced by

Increased feelings of apprehension, shakiness, loss of control, panic

Changes in cognition, distortion of environmental stimuli

Extraneous movements, restlessness, tremors

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Anxiety Control (NOC)

Appear relaxed.

Report anxiety reduced to a manageable level.

Identify healthy ways to deal with feelings.

ACTIONS/INTERVENTIONS	RATIONALE
Anxiety Reduction (NIC)	
Independent	
Observe behavior indicative of level of anxiety.	Mild anxiety may be displayed by irritability and insomnia. Severe anxiety progressing to panic state may produce feelings of impending doom, terror, inability to speak or move, shouting/swearing.
Monitor physical responses, noting palpitations, repetitive movements, hyperventilation, insomnia.	Increased number of [beta]-adrenergic receptor sites, coupled with effects of excess thyroid hormones, produces clinical manifestations of catecholamine excess even when normal levels of norepinephrine/epinephrine exist.
Stay with patient, maintaining calm manner. Acknowledge fear and allow patient's behavior to belong to patient.	Affirms to patient/SO that although patient feels out of control, environment is safe. Avoiding personal responses to inappropriate remarks or actions prevents conflicts/overreaction to stressful situation.
Describe/explain procedures, surrounding environment, or sounds that may be heard by patient.	Provides accurate information, which reduces distortions/misinterpretations that can contribute to anxiety/fear reactions.
Speak in brief statements, using simple words.	Attention span may be shortened, concentration reduced, limiting ability to assimilate information.
Reduce external stimuli: Place in quiet room; provide soft, soothing music; reduce bright lights; reduce number of persons contacting patient.	Creates a therapeutic environment; shows recognition that unit activity/personnel may increase patient's anxiety.
Discuss with patient/SO reasons for emotional lability/psychotic reaction. (Refer to ND: Thought Processes, risk for disturbed, following.)	Understanding that behavior is physically based enhances acceptance of situation and encourages different responses/approaches.
Reinforce expectation that emotional control should return as drug therapy progresses.	Provides information and reassures patient that the situation is temporary and will improve with treatment.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Anxiety Reduction (NIC)</p> <p>Collaborative</p> <p>Administer antianxiety agents or sedatives and monitor effects.</p> <p>Refer to support systems as needed, e.g., counseling, social services, pastoral care.</p>	<p>May be used in conjunction with medical regimen to reduce effects of hyperthyroid secretion.</p> <p>Ongoing therapy support may be desired/required by patient/SO if crisis precipitates lifestyle alterations.</p>

<p>NURSING DIAGNOSIS: Thought Processes, risk for disturbed</p> <p>Risk factors may include</p> <p>Physiological changes: increased CNS stimulation/accelerated mental activity</p> <p>Altered sleep patterns</p> <p>Possibly evidenced by</p> <p>[Not applicable; presence of signs and symptoms establishes an <i>actual</i> diagnosis.]</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Distorted Thought Control (NOC)</p> <p>Maintain usual reality orientation.</p> <p>Recognize changes in thinking/behavior and causative factors.</p>
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Delirium Management (NIC)</p> <p>Independent</p> <p>Assess thinking processes, e.g., memory, attention span, orientation to person/place/time.</p> <p>Note changes in behavior.</p> <p>Assess level of anxiety. (Refer to ND: Anxiety)</p> <p>Provide quiet environment; decreased stimuli, cool room, dim lights. Limit procedures/personnel.</p> <p>Reorient to person/place/time as indicated.</p> <p>Present reality concisely and briefly without challenging illogical thinking.</p>	<p>Determines extent of interference with sensory processing.</p> <p>May be hypervigilant, restless, extremely sensitive, or crying or may develop frank psychosis.</p> <p>Anxiety may alter thought processes.</p> <p>Reduction of external stimuli may decrease hyperactivity/reflexia, CNS irritability, auditory/visual hallucinations.</p> <p>Helps establish and maintain awareness of reality/environment.</p> <p>Limits defensive reaction.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Delirium Management (NIC)</p> <p>Independent</p> <p>Provide clock, calendar, room with outside window; alter level of lighting to simulate day/night.</p> <p>Encourage visits by family/SO. Provide support as needed.</p> <p>Provide safety measures, e.g., padded side rails, close supervision, or soft restraints as last resort as necessary.</p> <p>Collaborative</p> <p>Administer medication as indicated, e.g., sedatives/antianxiety agents/antipsychotic drugs.</p>	<p>Promotes continual orientation cues to assist patient in maintaining sense of normalcy.</p> <p>Aids in maintaining socialization and orientation. <i>Note:</i> Patient's agitation/psychotic behavior may precipitate family quarrels/conflicts.</p> <p>Prevents injury to patient who may be hallucinating/disoriented.</p> <p>Promotes relaxation, reduces CNS hyperactivity/agitation to enhance thinking ability.</p>

<p>NURSING DIAGNOSIS: Tissue Integrity, risk for impaired</p> <p>Risk factors may include Alterations of protective mechanisms of eye: impaired closure of eyelid/exophthalmos</p> <p>Possibly evidenced by [Not applicable; presence of signs and symptoms establishes an <i>actual</i> diagnosis.]</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Tissue Integrity: Skin & Mucous Membranes (NOC) Maintain moist eye membranes, free of ulcerations.</p> <p>Risk Control (NOC) Identify measures to provide protection for eyes and prevent complications.</p>
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Surveillance (NIC)</p> <p>Independent</p> <p>Encourage use of dark glasses when awake and taping the eyelids shut during sleep as needed.</p> <p>Elevate the head of the bed and restrict salt intake if indicated.</p> <p>Instruct patient in extraocular muscle exercises if appropriate.</p>	<p>Protects exposed cornea if patient is unable to close eyelids completely because of edema/fibrosis of fat pads.</p> <p>Decreases tissue edema when appropriate, e.g., HF, which can aggravate existing exophthalmos.</p> <p>Improves circulation and maintains mobility of the eyelids.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Surveillance (NIC)</p> <p>Independent</p> <p>Provide opportunity for patient to discuss feelings about altered appearance and measures to enhance self-image.</p> <p>Collaborative</p> <p>Administer medications as indicated:</p> <ul style="list-style-type: none"> Methylcellulose drops; Adrenocorticotrophic hormone (ACTH), prednisone; Antithyroid drugs; Diuretics. <p>Prepare for surgery as indicated.</p>	<p>Protruding eyes may be viewed as unattractive. Appearance can be enhanced with proper use of makeup, overall grooming, and use of shaded glasses.</p> <p>Lubricates the eyes, reducing risk of lesion formation.</p> <p>Given to decrease rapidly progressive and marked inflammation.</p> <p>May decrease signs/symptoms or prevent worsening of the condition.</p> <p>Can decrease edema in mild involvement.</p> <p>Eyelids may need to be sutured shut temporarily to protect the corneas until edema resolves (rare) or increasing space within sinus cavity and adjusting musculature may return eye to a more normal position.</p>

<p>NURSING DIAGNOSIS: Knowledge, deficient [Learning Need] regarding condition, prognosis, treatment, self-care, and discharge needs</p> <p>May be related to</p> <ul style="list-style-type: none"> Lack of exposure/recall Information misinterpretation Unfamiliarity with information resources <p>Possibly evidenced by</p> <ul style="list-style-type: none"> Questions, request for information, statement of misconception Inaccurate follow-through of instructions/development of preventable complications <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Knowledge: Illness Care (NOC)</p> <ul style="list-style-type: none"> Verbalize understanding of disease process and potential complications. Identify relationship of signs/symptoms to the disease process and correlate symptoms with causative factors. Verbalize understanding of therapeutic needs. Initiate necessary lifestyle changes and participate in treatment regimen.
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Teaching: Disease Process (NIC)</p>	
<p>Independent</p>	
<p>Review disease process and future expectations.</p>	<p>Provides knowledge base from which patient can make informed choices.</p>
<p>Provide information appropriate to individual situation.</p>	<p>Severity of condition, cause, age, and concurrent complications determine course of treatment.</p>
<p>Identify stressors and discuss precipitators to thyroid crises, e.g., personal/social and job concerns, infection, pregnancy.</p>	<p>Psychogenic factors are often of prime importance in the occurrence/exacerbation of this disease.</p>
<p>Provide information about signs/symptoms of hypothyroidism and the need for continuing follow-up care.</p>	<p>Patient who has been treated for hyperthyroidism needs to be aware of possible development of hypothyroidism, which can occur immediately after treatment or as long as 5 yr later.</p>
<p>Discuss drug therapy, including need for adhering to regimen, and expected therapeutic and side effects.</p>	<p>Antithyroid medication (either as primary therapy or in preparation for thyroidectomy) requires adherence to a medical regimen over an extended period to inhibit hormone production. Agranulocytosis is the most serious side effect that can occur, and alternative drugs may be given if problems arise.</p>
<p>Identify signs/symptoms requiring medical evaluation, e.g., fever, sore throat, and skin eruptions.</p>	<p>Early identification of toxic reactions (thiourea therapy) and prompt intervention are important in preventing development of agranulocytosis.</p>
<p>Explain need to check with physician/pharmacist before taking other prescribed or OTC drugs.</p>	<p>Antithyroid medications can affect or be affected by numerous other medications, requiring monitoring of medication levels, side effects, and interactions.</p>
<p>Emphasize importance of planned rest periods.</p>	<p>Prevents undue fatigue; reduces metabolic demands. As euthyroid state is achieved, stamina and activity level will increase.</p>
<p>Review need for nutritious diet and periodic review of nutrient needs; avoid caffeine, red/yellow food dyes, artificial preservatives.</p>	<p>Provides adequate nutrients to support hypermetabolic state. A hormonal imbalance is corrected, diet will need to be readjusted to prevent excessive weight gain. Irritants and stimulants should be limited to avoid cumulative systemic effects.</p>
<p>Stress necessity of continued medical follow-up.</p>	<p>Necessary for monitoring effectiveness of therapy and prevention of potentially fatal complications.</p>

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

Fatigue—hypermetabolic state diminishing body energy reserves, prolonged recovery.

Nutrition: imbalanced, risk for more than body requirements—change in BMR and metabolic needs.