ineffective airway clearance and impaired swallowing; other nursing diagnoses that commonly apply, such as that related to fatigue, are addressed in other sections of this chapter.

**Ineffective Airway Clearance**
The underlying causes for ineffective airway clearance for the person with myasthenia gravis include poor cough mechanism, decreased rib cage expansion, diminished diaphragm movement, and decreased expiratory effort. The following interventions require particular attention if the client undergoes a thymectomy.

- Assist with turning, deep breathing, and coughing at least every 2 hours. Teach proper coughing techniques; use an incentive spirometer every 2 hours while the client is awake. *Position changes promote lung expansion; coughing helps clear secretions from the tracheobronchial tree.*
- Place in a semi-Fowler’s position. *This position expands the lungs and alleviates pressure from the diaphragm, especially important considerations if the client is obese.*
- Maintain hydration status and monitor for dehydration; use a humidifier as needed. If needed, teach family how to perform percussion, postural drainage, and suction. *Interventions to liquefy secretions, such as ensuring a daily fluid intake of up to 2500 mL (perhaps via feeding tube or parenteral route), help the client mobilize and expectorate sputum.*
- Assess lung sounds, the rate and character of respirations, and pulse oximetry readings at least every 4 hours or as indicated by client’s condition. *Monitoring for hypoxia and worsening of client’s ability to move air alerts the nurse to early signs of arteriovenous shunting.*

**Impaired Swallowing**
Clients with myasthenia gravis have weakness of the laryngeal and pharyngeal muscles involved with swallowing. Alterations in swallowing place the client at risk for poor nutrition as well as for possible aspiration. Family members need to be included in teaching, particularly the person who prepares and assists with meals.

- Assess the ability to safely manage various consistencies of foods; consult with a speech pathologist for evaluation. *Dysphagic clients are at risk for aspiration; matching food consistency to the client’s ability to swallow enhances safety.*
- Plan meals to promote medication effectiveness. *Pyridostigmine should be given 30 minutes before the meal to provide optimal muscle strength for swallowing and chewing.*
- Have the client eat slowly, using small bites of food. Schedule meals during periods when the client is adequately rested; develop a daily schedule incorporating rest periods. *Fatigue may add to dysphagia, putting the client at greater risk for aspiration.*
- If necessary, give cues while eating, such as: “Chew your food thoroughly; swallow.” *Keeping client focused may enhance swallowing.*
- Teach caregivers the Heimlich maneuver and how to suction. *Knowing specific measures to take in case of aspiration decreases both the client’s and family’s anxiety and promotes confidence in managing potential problems.*

**Home Care**
Teaching for the client and family with myasthenia gravis focuses on prevention and recognition of crisis situations, understanding the disorder, and methods for coping with both physical and psychosocial problems. Setting realistic goals with the client and family provides opportunities for self-assessment and promotes active participation in rehabilitation. Address the following topics.

- The importance of maintaining consistency in medication dosage and management
- Realistic expectations
- Methods to avoid fatigue and undue stress; specific measures for avoiding upper respiratory infections and exposure to extreme heat or cold
- Birth control measures or referral for counseling (Pregnancy can exacerbate symptoms; also, medications used to control myasthenia gravis, such as neostigmine bromide (Prostigmin), cross the placenta.)
- Referral to support groups
- Helpful resources such as the Myasthenia Foundation

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**A Client with Myasthenia Gravis**

Kirsten Avis, a 44-year-old homemaker and mother of two teenage sons, was diagnosed with myasthenia gravis 2 years ago. She takes an anticholinesterase medication, pyridostigmine (Mestinon), four times a day. Over the past month she has been experimenting with decreasing the dose of her pyridostigmine because she has “felt so good.” She was prescribed 60 mg of pyridostigmine three times a day before meals and one-half of a long-acting 180 mg pyridostigmine tablet at night.

Three days ago, she began having chills and fever and her myasthenic symptoms became markedly worse. Mrs. Avis is easily fatigued and has been experiencing increasing weakness, bilateral ptosis, and mild dysphagia in the late afternoon and evenings.

**ASSESSMENT**
Lela Silva, RN, is caring for Mrs. Avis. Physical examination of Mrs. Avis reveals severe muscle weakness bilaterally in her hands, arms, and thorax. Her voice is nasal, and she speaks slowly; the longer she speaks, the more difficult it becomes to understand her. She is anxious and dyspneic. Her complaints of weakness, dysphagia, dysarthria, problems with mobility, and ptosis are more
**Nursing Care Plan**

### A Client with Myasthenia Gravis (continued)

Mrs. Avis's manifestations improve following administration of edrophonium chloride (Tensilon) to verify myasthenic crisis. She is placed on oxygen by mask and suctioned as needed; equipment for possible intubation and ventilation is made readily available. She is placed in a semi-Fowler’s position, and vital signs are assessed every 5 minutes during the acute exacerbation. The nurses in the intensive care unit remain in constant attendance throughout the crisis period and provide explanations to Mrs. Avis in an effort to decrease her stress and to avoid further severity of manifestations.

Three days after the crisis period, Mrs. Avis is moved to a progressive nursing care unit. Nurses follow up on teaching her the manifestations of both myasthenic and cholinergic crises. They discuss the need to wear MedicAlert identification and review medication administration techniques with Mrs. Avis. The nurses emphasize in particular that Mrs. Avis must not split time-released medications.

Within 5 days, Mrs. Avis’s condition stabilizes, and her weakness decreases sufficiently to allow discharge home. Although her temperature has returned to normal and her respiratory status has improved, she still has a productive cough. Oral antibiotics are prescribed for 2 weeks, after which she will have a follow-up visit with her primary care provider. She is instructed to seek treatment promptly if respiratory symptoms or temperature indicate recurrence of infection.

### Critical Thinking in the Nursing Process

1. What is the rationale for administering Tensilon to evaluate a myasthenic crisis?
2. Develop a plan to teach Mrs. Avis how to avoid fatigue when preparing and eating meals.
3. Develop a nursing care plan for Mrs. Avis for the nursing diagnosis, Ineffective role performance.

See Evaluating Your Response in Appendix C.

### Diagnoses

- **Impaired gas exchange**, related to ineffective breathing pattern and muscle weakness.
- **Risk for aspiration**, related to difficulty swallowing.
- **Fatigue**, related to increased energy needs from muscular involvement.

### Expected Outcomes

- Pulse oximetry readings will be maintained at 92% or above.
- No aspiration will occur.
- Will verbalize decreasing fatigue when performing ADLs.
- Will state the correct method of medication dosing and demonstrate how she will maintain schedule.

### Planning and Implementation

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### Evaluation

Mrs. Avis is discharged without developing aspiration pneumonia or any symptoms of aspiration. Her airway was maintained throughout the myasthenic crisis, and her pulse oximetry readings remained above 92% once oxygen therapy was initiated. On discharge, pulse oximetry is above 95% without oxygen therapy. Mrs. Avis states that her fatigue and weakness have significantly improved.

Both Mrs. Avis and her husband are able to explain the difference between myasthenic and cholinergic crises and to identify methods to avoid both problems. Mrs. Avis correctly relates her proper medication regimen and makes an appointment for a follow-up visit with her physician.

### The Client with Guillain-Barré Syndrome

**Guillain-Barré syndrome** (GBS) is an acute inflammatory demyelinating disorder of the peripheral nervous system characterized by an acute onset of motor paralysis (usually ascending). The classification of Guillain-Barré subtypes includes acute inflammatory demyelinating polyradiculoneuropathy, acute axonal motor neuropathy, acute motor and sensory axonal neuropathy, and Miller-Fisher syndrome.

Guillain-Barré syndrome is one of the most common peripheral nervous system disorders. The cause is unknown, but precipitating events include a respiratory or gastrointestinal viral or bacterial infection 1 to 3 weeks prior to the onset of manifestations, surgery, viral immunizations, and other viral illnesses. In 60% of cases, *Campylobacter jejuni* is identified as the cause of the preceding infection. Approximately 80% to 90% of clients with GBS have a spontaneous recovery with little or no residual disabilities. However, the disease has a 4% to 6% mortality rate, and up to 10% of cases have permanent disabling weakness, imbalance, and sensory loss (McCance & Huether, 2002).

The disease is characterized by progressive ascending flaccid paralysis of the extremities, accompanied by paresthesias and numbness. About 20% of clients have respiratory involvement to the point that ventilatory assistance is required. GBS is often a medical emergency.