

## Clinical Module 7 – Neurological Disorders and Dementia

### Module 7 Questions:

#### I. Definitions

**TIA** – stands for Transient Ischemic Attacks which are also called mini strokes. TIA occurs when blood flow to the brain is stopped because of a temporary blockage.

**Glasgow coma scale (GCS)** – This is a scoring system used to score the level of consciousness after a traumatic brain injury. The GCS measures the following functions of an injured individual: eye opening, verbal response, and motor response. An individual's score classifies his/her brain injury as mild, moderate, or severe which then determines the method of treatment that the individual requires.

**Aphasia** – loss of ability to understand speech caused by brain damage.

**FEEST** – stands for Flexible Endoscopic Evaluation of Swallowing with Sensory Testing. FEEST is a test used to examine an individual's swallowing ability. This test looks at the following: if an individual aspirates food, what parts of the mouth and throat may not work, what kinds of foods is easiest to swallow, or what positions or techniques help an individual swallow better.

**Modified barium swallow** – Modified barium swallow is a test to look at how an individual swallows liquid and food. A person is given food or drink that contains barium which is visible in an x-ray machine. The test looks at the following: if an individual aspirates food, what parts of the mouth and throat may not work, what kinds of foods is easiest to swallow, or what positions or techniques help an individual swallow better.

**Aspiration** – Aspiration occurs when a person swallows food or saliva and it travels to the lungs or esophagus instead of the stomach.

#### II. Pathophysiology

Disease	Etiology	Clinical Symptoms	Nutritional Management
Multiple sclerosis	Exact cause is unknown, but scientists believe that it is caused by immunologic, environmental, infectious, and genetic factors.	Numbness or weakness on the face, body, arms, and/or legs. Partial or complete loss of vision. Prolonged double visions. Involuntary muscle spasms. Bladder dysfunction. Fatigue, dizziness, or slurred speech.	Low-fat, high-fiber diet.
Parkinson's disease	Exact cause is unknown, but it may be a combination of genetic and environmental factors. Caused by	Tremors, loss of smell, trouble sleeping, trouble moving or walking, constipation, masked face, dizziness or fainting, and	There is no specific diet for Parkinson's. But follow protocols to manage constipation, swallowing difficulties, and other symptoms.

	dopaminergic neurons in the substantia nigra.	stooping or hunching over.	
Huntington's disease	Genetic disease caused by a gene mutation in the protein huntingtin. This gene mutation causes cytosine, adenine, and guanine which make up DNA to keep repeating more than normal.	Chorea (uncontrolled movements), abnormal body postures, changes in behavior, emotions, judgment, and cognition. Impaired coordination, slurred speech, and difficulty feeding and swallowing also occur.	Individuals with HD have higher calorie needs. Diet rich in fruits, vegetables, and whole grains. Increased intake of Vitamin B12, antioxidants, and Omega-3 and healthy fats is also recommended.  Special utensils (spoons and forks with large handles), dishes (soup plates), and modified seating are also important.
Alzheimer's disease	Cause is unknown. Big risk factor is old age and genetics. Thought to also be caused by genetic, lifestyle, and environmental factors.	Memory loss, confusion, changes in ability of planning or solving problems, difficulty completing every day tasks, vision changes, misplacing things, decreased or poor judgment, and changes in mood and personality.	Recommended diets for Alzheimer's are the DASH Diet and Mediterranean Diet. Both diets emphasize consumption of fruits, vegetables, whole grains, and healthy fats.
ALS (Amyotrophic lateral sclerosis)	Cause is unknown. 5-10 percent of ALS is familial. 90 – 95 percent is sporadic. Possible causes are oxidative stress, mitochondrial dysfunction, immune system abnormalities, glutamate toxicity, and exposure to environmental toxins.	Muscle twitches, muscle cramps, tight and stiff muscles, slurred speech, and difficulty chewing or swallowing.	People with ALS have increased energy needs. Consume whole grains, vegetables (greens and orange), variety of fruits, dairy, lean meats, and healthy fats and oils.

### **III. Nutritional Management**

A. How does the pathological state of swallowing (dysphagia) differ from the normal swallowing function? What conditions commonly lead to dysphagia? What are the signs and symptoms of dysphagia? What are some of the nutritional problems associated with dysphagia? Describe the optimal eating conditions for the patient with dysphagia.

Someone with dysphagia may have dry mouth which makes chewing and swallowing difficult. Damage to brain or nerves can also cause someone to have difficulty chewing and swallowing. Head or neck problems may also cause dysphagia.

Some conditions that commonly lead to dysphagia include stroke, brain or spinal injury, Parkinson's, Multiple sclerosis, ALS, Alzheimer's, muscular dystrophy, mouth, throat, or esophageal cancer, head or neck injuries, mouth or neck surgery, or poor dentition.

Signs and symptoms of dysphagia include coughing during or right after eating, wet sounding voice after eating, exerted effort chewing or swallowing, food or liquid leaking from the mouth, food getting stuck in the mouth, difficulty breathing after meals, or weight loss.

Nutritional problems associated with dysphagia include dehydration and poor nutrition, aspiration, and pneumonia or other lung infections.

For someone with dysphagia, texture of foods is extremely important. Have the patient sit up during mealtimes.

B. When would a tube feeding be the selected method of nutrition support for a patient with a neurological deficit? What ethical issues may be involved?

Tube feeding is indicated when an individual with a neurological deficit can no longer feed themselves. However, there are legal and ethical issues associated with placing an incapacitated person on a tube feeding. Most individuals have advanced directives that indicate if a person would like a tube feeding placed. Patients have the right to refuse tube feedings.