BC Cancer Agency
CARE & RESEARCH
An agency of the Provincial Health Services Authority

Nutritional Guidelines For Symptom Management

DYSPHAGIA

DEFINITION: The difficult passage of food from the mouth to the stomach during one or more of the three phases of normal swallowing, i.e. oral, pharyngeal, esophageal.

The inability to eat safely and effectively for extended periods of time generates frustration, anxiety and depression, in addition to dehydration and malnutrition.

POSSIBLE CAUSES

Tumor: Oral, pharyngeal, esophageal, intrathoracic disease and some brain tumors can cause an obstruction or impairment in the ability to swallow.

HIGH RISK DIAGNOSIS:
cancer of the:

-lip	-tongue	-base of tongue	-soft palate
-nasopharynx	-pharynx	-larynx	-epiglottis
-vallecula	-esophagus		

-medulla (swallowing centre in the brain)

Note: The more extensive the disease, the greater the impact of the tumor and treatment on dysphagia.

Radiation:
Radiation therapy to the oral cavity, neck and esophagus can cause edema (acute) and damage to nerves and tissues involved in swallowing (chronic). Chronic dysphagia can result in delayed swallowing reflex (aspiration before swallow), reduced pharyngeal peristalsis (aspiration after swallow), cricopharyngeal or esophageal dysfunction (possible aspiration after swallow).

Surgery:
Surgical resection of oral, pharyngeal or esophageal structures that are essential for mastication and swallowing reflexes can lead to swallowing disorders.

Anterior floor of mouth composite resection

- reduced lip closure
- reduced tongue control
- temporary delayed swallowing reflex

Tonsil/base of tongue composite resection

- reduced tongue control
- delayed swallowing reflex
- reduced pharyngeal peristalsis

Note: if soft palate included in resection, there may be nasal regurgitation

Hemilaryngectomy

- usually no problems

Supraglottic laryngectomy

- reduced laryngeal closure
- reduced pharyngeal peristalsis

Total laryngectomy

- scar tissue at base of tongue
- stricture in pharyngoesophagus

Pharyngeal resection

- reduced peristalsis

Neck Dissections

- usually no problems with swallowing unless the neck has been exposed to high dose radiation in addition to surgery (greater chance of tissue and nerve damage).

Esophagectomy

- dumping syndrome
- regurgitation

SIGNS AND SYMPTOMS AND STRATEGIES FOR NUTRITIONAL MANAGEMENT

Problem	Effect	Nutritional Considerations
Oral		
Poor lip closure	Food or liquid leaks from mouth	Thicken thin liquids to decrease transit time in the mouth
Reduced cheek tension	Food pockets in the cheeks	Maintain semi solid consistencies that form a cohesive bolus; use lighter density foods; to prevent mouthsores and to avoid swallowing unchewed food that remains in the mouth, recommend rinsing after eating
Reduced oral sensation	Food lodges or pockets in areas of reduced sensitivity; particles may fall over base of tongue and into pharynx before swallow is initiated	Position food in the most sensitive area or in the middle of the mouth; avoid foods with more than one texture; very cold, very ward and strongly seasoned foods (eg. Clamato Juice®) can heighten the sensitivity to swallow but will not be well tolerated if mucositis is present; try dense foods to provide stimulation
Reduced tongue mobility	Limited ability to form bolus and propel food to back of throat results in separation of food particles and increased risk for aspiration before swallow is initiated	Maintain semi solid consistencies that form a cohesive bolus; use butter/margarine, sauces or salad dressings to moisten and lubricate foods
Dental problems: poor oral hygiene, poor fitting dentures, edentulous, stomatitis, dental extractions	Pain with mastication difficulties masticating	Soft, mashed, ground or pureed foods as tolerated. Avoic acidic, temperature extremes, rough, spicy and salty foods
Trismus	Limited ability to open jaw results in difficulties eating (forks, spoons, sandwiches)	Semi solid to liquid diet as tolerated; straw or sippy cup. OT consult
Xerostomia	Lack of saliva results in poor bolus formation and decreased lubrication for swallowing	See Nutrition Care Guidelines for Dry Mouth

Problem	Effect	Nutritional Considerations
Pharyngeal		
Soft palate does not move up and close off nasal passage	Food enters the nasal cavity; nasal regurgitation	Use cohesive semi solid foods and thicken liquids; avoid dry, crumbly foods. SLP consult for positioning advice
Flacid soft palate or reduced pharyngeal peristalsis prevents bolus from getting by the base of tongue	Food bolus remains high in throat at the base of tongue results in: possible aspiration after swallow if food particles fall into airway; food sticks or regurgitates; throat clearing; wet gurgly voice	SLP consult. Use moist, well lubricated foods that maintain a cohesive bolus if SLP advises to alternate liquid swallows and solid swallows, recommend high energy liquids (vs. water) to wash solids down to maximize energy intake
Delayed or absent swallowing reflex (neuromuscular problems caused by tumour or treatment)	Swallow is not triggered when bolus hits pharyngeal muscles results in: possible aspiration before swallow; low grade temperatures; recurrent pneumonia; wet gurgly voice; coughing with liquids	SLP consult. Use cohesive foods; temperature extremes and highly seasoned foods may help "excite" nerves; use thickened liquids to help decrease transit time and trigger a second swallowing reflex in the voice box
Reduced coordination during preparation swallow	Food bolus remains in SLP valleculae and pyriform forsinus results in: possible aspiration after swallow; coughing, choking; sensation of food stuck in throat	Consult to assess ability to control liquids use highly textured foods (diced, cooked vegetables and fruit); try dense, cohesive foods; use highly seasoned foods served at very warm or very cold temperatures; avoid sticky, dry or bulky foods
Dysfunctional epiglottis	Epiglottis does not close airway off and pyriform sinuses fill up and food spills into airway resulting in: silent aspiration after swallow (no cough), low grade temperature; fatigue with eating	SLP consult
Poor laryngeal closure	Airway not protected during swallow results in: possible aspiration during swallow	SLP consult. Use cohesive foods that do not fall apart and thickened liquids
Poor laryngeal elevation	Food remains on top of larynx, may result in: aspiration after swallow, when larynx opens to restore breathing; wet gurgly voice	SLP consult. Use soft solids and thickened liquids; avoid sticky and bulky foods that tend to fall apart
Dysfunctional crycopharyngeal opening a) stricture b) weakened or lazy muscle	Food cannot pass easily from pharynx to esophagus results in: food collecting in pyriform sinuses and spilling into airway; possible aspiration after swallow	SLP consult a) thickened liquids and pureed foods b) semisolid, moist foods that maintain a cohesive bolus

Problem	Effect	Nutritional Considerations
Pharyngeal		
Thick mucous/secretions	During and post XRT the consistency and amount of secretions can change to become thick and slimy this often causes nausea; wet gurgly voice, sensation of something stuck in throat	See Nutrition Care Guidelines for Thick Mucous
Esophageal		
a) reduced esophageal peristalsis	Food bolus remains in the esophagus causing: pain; esophageal spasm; regurgitation of food; possible aspiration after swallow	a) avoid sticky or dry foods try dense foods followed by liquids
b) esophageal obstruction caused by tumor or inflammation		c) Use thin liquids and purees. Avoid dry, sticky, bulky foods such as bread, meats, chicken, or "dry" mashed potatoes
Tracheoesophageal fistula	Food flows from esophagus through fistula into trachea resulting in possible aspiration after swallow	SLP consult/barium swallow consider tube feeding until fistula heals
Hiatus hernia	Foods reflux from stomach into esophagus causing pain; heartburn; belching; regurgitation	See BCDNA Diet Manual

NUTRITIONAL GOALS

To ensure adequate hydration and maintain or improve nutritional status. Provide/suggest foods that minimize the risk of choking or aspiration and minimize the discomfort (physical, social and emotional) associated with dysphagia.

GENERAL STRATEGIES FOR NUTRITIONAL MANAGEMENT

- A swallowing assessment (performed in conjunction with a S-LP) can help determine patients at risk of aspiration, location of swallowing problem, which food consistencies are best tolerated, exercises, appropriate head positioning and swallowing techniques. Consider a swallowing assessment if a patient coughs/chokes before, during or after eating or drinking; if the chest or voice is "gurgly"; if patient has low grade temperature, if a history of recurrent pneumonia, if patient is afraid to eat because of choking or if patient is unable to resume oral diet after the acute treatment side effects have settled.
- Recommend small, frequent, high energy, high protein meals of the appropriate consistency.
- Recommend foods be taken in small amounts, 1/2 - 1 teaspoon per swallow.
- Recommend minimal distractions and discourage speaking while eating.
- In general thickened liquids should be slightly thicker than V-8 juice (honey consistency not pudding consistency).
- If thin liquids are to be avoided, ensure fluid needs are met via other sources such as thickened soups or liquids, pureed foods, or through feeding tubes (if available).
- Recommend sitting upright for 30 -60 minutes after eating or drinking.
- Large meals/snacks should be avoided within one to two hours before going to bed.
- Ensure vitamin/mineral needs are met if dietary modifications are to be long term.
- If supplementation is necessary, suggest:
  -crushing a multivitamin mineral tablet and taking it with food
  -a liquid multivitamin with iron
  -a children's chewable multivitamin/mineral supplement
  Provide new recipes and ideas to alleviate boredom.
- **Recommend enteral nutrition support as needed.**

NUTRITION EDUCATION MATERIALS

- **Easy to Chew Easy to Swallow Ideas (BCCA)**

Good as an initial handout for those people who require soft, moist, high calorie, high protein foods prior to or early on during treatment. Mouthcare section may not be appropriate if oral cavity is not included in treatment field.

- **Easy to Chew Easy to Swallow Recipe Ideas (BCCA)**

- **Blenderized Diet (CCS)**

Good for those patients who require blended, soft, high calorie,
high protein foods and for those who require more variety in their blended diet.

Note: - Some of the recipes use raw eggs
- Some recipes may be too spicy through radiation treatment

- **High Protein, High Energy Full Liquid Sample Menu (BCCA) *currently h drive**

Good for those patients who swallow fluids best, but do not want to rely upon nutritional supplements.

Note: -Thin liquids are part of this sample menu
-Some of the juices may not be tolerated through radiation treatment

Thickeners:

Non commercial	**Commercial**
mashed potato flakes	Consist Rite (Liv- N –Well)
	Resource thicken Up® - Instant Food Thickener (Children's)
infant cereals	Quick Thick (Liv-N-Well)
bread crumbs	
skim milk powder	Mira Sperse (Liv-N-Well)
cornstarch	Thick in Thin (Children's)
pureed vegetables	
pureed fruits	Resource Thickened Juices (Children's and Liv-N-Well)
grated hard cheeses	(available in honey or nectar consistency)
mashed/blended cottage cheese	
flavoured/unflavoured gelatin	
	* Products Centre toll free 1 866 727 7759
	* Liv-N-Well toll free 1 877 270 8479

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