**Symptom Management Guidelines: ANOREXIA and CACHEXIA**

**Definition(s)**
- **Anorexia**: is the involuntary loss of appetite or desire to eat that result in reduced caloric intake and is often associated with weight loss.
- **Cachexia**: is a complex metabolic syndrome associated with underlying illness and characterized by loss of muscle with or without loss of fat mass.
- **Anorexia-Cachexia Syndrome**: is a complex syndrome which is often defined in terms of its primary or secondary causes. Primary causes are related to metabolic and neuroendocrine changes directly associated with underlying disease and an ongoing inflammatory state. Secondary causes are aggravating factors (e.g. fatigue, pain, dyspnea, infection, etc) that contribute to weight loss.

**Contributing Factors**

**Cancer Related**
- Tumors of the head and neck, gastrointestinal system, lung, liver or pancreas
- Lymphoma
- Metastatic disease
- Metabolic abnormalities (increased muscle catabolism, increased lypolisis) - caused by:
  - Tumour products
  - Endocrine alterations
  - Host systemic inflammatory response
- Hypercalcemia

**Cancer Treatment Related**
- Cancer Treatment can directly or indirectly lead to the following symptoms that can contribute to experiencing anorexia and cachexia **NOTE**: Severity of side effects depends on the area irradiated and treatment schedule
  - Constipation
  - Diarrhea
  - Early feeling of fullness
  - Fatigue
  - Oral mucositis
  - Esophagitis
  - Nausea or vomiting
  - Taste/smell changes
  - Dysphagia
  - Strictures
  - Pain
  - Xerostomia
- Surgery:
  - Can cause mechanical or physiologic barriers to adequate nutrition (e.g. short gut)
  - Imposes an immediate metabolic response that increases energy needs and changes nutrient requirements necessary for wound healing and recovery.

**Other**
- Alcohol/substance abuse
- End-stage diseases (e.g. AIDS, renal or hepatic failure)
- Medications (e.g. some opioids, antibiotics, antifungals)
- Neurological diseases (e.g. delirium, dementia, Parkinson's disease)
- Underlying chronic conditions (e.g. COPD, ulcers, rheumatoid arthritis)
- Conditions that may require use of warfarin (e.g. venous thrombosis, cardiac surgeries)
- Depression, anxiety or distress
- Socioeconomic factors (e.g. lack of emotional, social, financial supports)
- Belief(s) that eating certain foods will make cancer progress/worsen

**Consequences**
- Increased risk of cancer treatment dosage reductions, delays or discontinuation of treatment
- Alteration in immune status
- Weight loss, malnutrition and cachexia, dehydration, muscle mass changes
- Quality of life – psychological distress, fatigue, nausea, compromised role function, decreased functional status, altered

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### Focused Health Assessment

<table>
<thead>
<tr>
<th>GENERAL ASSESSMENT</th>
<th>SYMPTOM ASSESSMENT</th>
<th>PHYSICAL ASSESSMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contact and General Information</strong></td>
<td><strong>Normal</strong></td>
<td><strong>Vital Signs</strong></td>
</tr>
<tr>
<td>• Physician name – oncologist, family physician</td>
<td>• How would you describe your appetite normally/before your diagnosis?</td>
<td>• Frequency as clinically indicated</td>
</tr>
<tr>
<td>• Pharmacy</td>
<td>• How would you describe your diet before your diagnosis?</td>
<td>• Orthostatic BP measurements</td>
</tr>
<tr>
<td>• Home health care</td>
<td>• Are you aware of any medications that you are taking that could cause loss of appetite (e.g. warfarin, antibiotics)</td>
<td><strong>Height and Weight</strong></td>
</tr>
<tr>
<td>• Other health care providers</td>
<td></td>
<td>• Take current weight and compare to pre – treatment or last recorded weight</td>
</tr>
<tr>
<td>• Allergies</td>
<td><strong>Onset</strong></td>
<td>• Height</td>
</tr>
</tbody>
</table>

**Consider Contributing Factors**

- Cancer diagnosis and treatment(s) – note type, date of last treatment
- Medical history, including history of prior weight loss
- Medication profile (e.g. warfarin, antibiotics)
- Recent lab or diagnostic reports (if patient is on warfarin consider increasing frequency of INR monitoring)
- Note patient score from the BCCA Nutrition Screening Tool on the Patient Reported Information and Symptom Measurement Form (PRISM)

**Symptom Assessment**

**Region/ Radiation**

**Severity / Other Symptoms**

- How bothersome is this symptom to you? (0-10 scale, with 0 not at all – 10 being worst imaginable)
- Have you been experiencing any other symptoms? (Note presence and severity of any symptoms that may influence nutritional intake such as: diarrhea, constipation, dysphagia, depression, early satiety, fatigue, oral mucositis, nausea or vomiting, pain, taste changes, xerostomia)

**Treatment**

- Using any medications to promote appetite? If so, what type? Effective?
- Using any nutritional supports? If so, what type? Effective?
- Any other medications or treatments? (e.g. analgesics, steroids, antidiarrheal agents, antiemetics) Effective?

**Understanding / Impact on You**

- Is this affecting your ability to carry out your normal daily activities (ADLs)?
- How else is this symptom affecting you or your family?

**Observe General Appearance**

- Note strength, mobility, and wasting of skeletal muscle, presence of peripheral edema
- Assess skin tone, colour, and integrity

**Hydration Status**

- Assess urine output
- Assess daily intake and output
- Assess skin turgor, capillary refill, mucous membranes

**Signs and Symptoms of Dehydration**

- Increased thirst
- Dry mouth
- Decreased urine output
- Decreased skin turgor
- Weakness, dizziness, confusion
- Increased pulse, decreased blood pressure, postural hypotension

**Other**

- Assess other systems or symptoms as per patient complaints (e.g. oral assessment if mucositis or xerostomia, abdominal assessment if diarrhea or constipation)
**ANOREXIA GRADING SCALE**

NCI Common Terminology Criteria for Adverse Events (Version 4.03)

<table>
<thead>
<tr>
<th>GRADE 1</th>
<th>GRADE 2</th>
<th>GRADE 3</th>
<th>GRADE 4</th>
<th>GRADE 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Mild)</td>
<td>(Moderate)</td>
<td>(Severe)</td>
<td>(Life threatening; disabling)</td>
<td>Death</td>
</tr>
<tr>
<td>Loss of appetite without alteration in eating habits</td>
<td>Oral intake altered without significant weight loss or malnutrition; oral nutritional supplements indicated</td>
<td>Associated with significant weight loss or malnutrition (e.g. inadequate oral caloric and/or fluid intake); tube feedings or TPN indicated</td>
<td>Life threatening consequences; urgent intervention indicated</td>
<td></td>
</tr>
</tbody>
</table>

*A semi-colon indicates ‘or’ within the description of the grade and a single dash (–) indicates a grade is not available

*Step-Up Approach to Symptom Management: Interventions Should Be Based On Current Grade Level and Include Lower Level Grade Interventions As Appropriate

**Management of Anorexia and Cachexia**

**Special Considerations**

**Assessment Tools**
- The Nutrition Screening Tool (NST) is used by oncology nutrition to help identify patients who are at risk for malnutrition in ambulatory or hospitalized oncology patients. The NST is located in the PRISM form. See Oncology Nutrition Services in Resource Section

**BC Cancer Agency - Oncology Nutrition Referral Criteria**
- **Automatic Referrals**
  - Head and neck cancer receiving active treatment.
  - NOTE: CNS, Thyroid and Lymphoma patients are not included in automatic referral criteria
  - Esophageal and stomach cancer receiving active treatment
- **At Risk Referrals**
  - New patients with a score of 2 or greater on the Nutrition Screening Tool (PRISM form)
  - Patients with impaired intake or absorption due to one or more of the following:
    - Anorexia and weight loss
    - Difficulty chewing or swallowing
    - Vomiting
    - Diarrhea
  - Patients:
    - At risk for or have partial bowel obstruction
    - On tube feeding or TPN
    - With a colostomy or ileostomy
### Patient Care and Assessment

- Identify factors contributing to loss of appetite or weight when possible, minimize or eliminate these factors.
- Lab tests that may be ordered:
  - CBC, electrolytes, glucose, calcium, total protein, albumin and pre-albumin, LDH.

**NOTE:** Albumin and pre-albumin are often better interpreted in the context of a marker of inflammation such as ESR, or ferritin.
- Assess social supports (e.g. caregiver availability, home environment, finances)
- Explore beliefs around food:
  - Cultural issues (e.g. Chinese "hot" and "cold" foods)
  - Family or care giver pressuring intake
  - Clarify food misconceptions (i.e. foods that promote cancer)
  - Consider pre-existing diets (i.e. Diabetes, HTN. Discuss liberalization of recommendations to promote intake)
- Promote exercise as tolerated to maintain lean body mass, strength and physical functioning
- Recommend relaxation exercises 30-60 minutes before meals to decrease tension and promote appetite

### Dietary Management

*(See BCCA Resource Section for links to Patient Education)*

- **Ensure adequate hydration and daily oral intake.**
  - Consider patient status when providing nutritional advice.
  - Quality of life should take precedence over nutritional status with patients who are near end-of-life
- **Encourage or Promote:**
  - Adequate fluid intake
    - Increase fluid intake as tolerated.
    - Promote high calorie/protein fluids with medications and throughout the day (e.g. full-fat milk, homemade smoothies, nutritional supplements).
    - Limit fluid intake to 30 minutes prior to meals to avoid feeling full and 2 hours before normal bedtime so as not to interrupt sleep.
  - Small, frequent meals (5-6) per day.
    - High calorie, high protein foods (e.g. cheese/cottage cheese, eggs, Greek yogurt, nut butters, protein bars, avocados)
    - Eating largest meal when feeling most hungry regardless of time of day
    - Sitting upright for 30 to 60 minutes after eating to facilitate digestion
    - If smell of foods suppresses appetite or contributes to nausea, suggest cold foods, foods with mild odours, or avoiding the kitchen during meal preparation
    - If fatigue or meal preparation a problem, suggest the use of convenience foods (e.g. frozen foods, canned soups), take-out foods, catering service, family or friends preparing meals, or Meals on Wheels®
    - Oral nutritional supplements as needed to augment diet; particularly if patient has symptoms that interfere with nutritional intake or absorption

### Pharmacological Management

- Medications for management of other symptoms (e.g. antiemetics for nausea or vomiting, analgesics for pain)
- Review medications that may be contributing to anorexia or symptoms that may affect nutritional intake.
- If patient is taking Warfarin, in collaboration with physician:
  - Consider alternate anticoagulants such as dalteparin,
  - Consider increasing the frequency of INR monitoring
- Discuss with physician and/or pharmacist as appropriate.
## Patient Education and Follow-Up

- Discuss relationship of nutrition to disease process and treatment
- Discuss cancer diagnosis and treatment side effects that may alter nutritional intake
- Reinforce that appetite may fluctuate depending on where the patient is in their treatment
- Discuss recommendations (as above) to manage symptoms that affect nutritional intake
- Advise patient/family to monitor food, fluid intake and weight carefully
- Provide contact information and instruct patient/family to contact physician or nurse if
  - Continued lack of appetite with little or no food or fluid intake
  - Continued weight loss
  - Signs and symptoms of dehydration
  - Unable to perform ADLs [See Generic Resource Section for ECOG Scale](#)

### Exercise strategies:
- Regular exercise may help to regulate appetite. Suggest patient appropriate exercises
- Resistance exercises decrease muscle wasting.

**NOTE:** Consider advance directives and stage of disease. May be necessary to counsel and educate patient and loved ones around disease process to focus on patient comfort and relieve caregiver anxiety as pressuring intake can worsen symptoms

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### GRADE 2 - GRADE 3

| Moderate to severe decrease in functional or performance status |
| Presence of symptoms which can impact nutritional intake (e.g. diarrhea, constipation, dysphagia, nausea or vomiting, oral mucositis, xerostomia) |

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### URGENT:

 Requires medical attention within 24 hours

#### Patient Care and Assessment

- Collaborate with physician:
  - To rule out other causes or concomitant causes
  - Need for further patient assessment at cancer centre or with GP
  - Consider risk of refeeding syndrome and need for medical evaluation/monitoring of lab work should patient be at risk

**Refeeding syndrome** can occur when high calorie nutrition is introduced in a malnourished patient. The resulting hyperglycemia can cause shifts in phosphorus, magnesium and potassium from the extracellular to intracellular spaces. Side effects are nausea, vomiting, diarrhea and more serious cardiopulmonary effects. [See appendix A for assessment and monitoring](#)

- Lab tests that may be ordered:
  - CBC & diff, electrolytes, glucose, calcium, total protein, albumin, pre-albumin, LDH, creatinine, liver function tests

**NOTE:** Albumin and pre-albumin are often better interpreted in the context of a marker of inflammation such as ESR, or ferritin

#### Dietary Management

- See Dietary Recommendations in Normal - Grade 1 section above
- Referral to Oncology Nutrition (dietitian) for nutrition assessment
- Consider need for hydration and/or enteral or parenteral nutritional support. [See Appendix A](#) for further detail about enteral and parenteral nutrition
- Consider multiple modalities to manage anorexia (e.g. using appetite stimulant with dietary supplementation)
Pharmacological Management

• Medications that are most commonly prescribed:
  − Corticosteroids recommended for short term use to stimulate appetite (e.g. dexamethasone, methylprednisolone, prednisolone).
  − Progestinal agents may also be considered to stimulate appetite (e.g. megestrol acetate, medroxyprogesterone acetate).
  − Metoclopramide does not stimulate appetite, but may be prescribed to decrease nausea and early satiety.

• Medications less commonly prescribed:
  − NSAIDs may mediate the inflammatory response of cytokines
  − Omega 3 fatty acids (e.g. eicosapentaenoic acid, EPA) may help to normalize metabolism and stabilize weight
  − Dronabinol may decrease nausea, stimulate mood and appetite, but does not prevent weight loss
  − Treat depression if appropriate
    − Mirtazapine 7.5-30 mg at hs

Patient Education

Refer to non-urgent patient education and follow-up section

<table>
<thead>
<tr>
<th>GRADE 4 OR</th>
<th>The presence of one of the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>No oral intake for 24 hours</td>
<td></td>
</tr>
<tr>
<td>Signs of dehydration</td>
<td></td>
</tr>
<tr>
<td>Sudden, severe decrease in functional or performance status</td>
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</tbody>
</table>

EMERGENT:
Requires IMMEDIATE medical attention

Patient Assessment and Care

• Admission to hospital may be necessary, notify physician of assessment, and facilitate arrangements as necessary.
• If on active treatment, may require a chemotherapy treatment dosage reduction/delay or discontinuation. For direction see Chemotherapy Protocols in Resource Section
• Lab tests that may be ordered: CBC, electrolyte profile, glucose, calcium, total protein, albumin, pre-albumin, LDH, creatinine, liver function tests. Assess and monitor.
  NOTE: Albumin and pre-albumin are often better interpreted in the context of a marker of inflammation such as ESR, or ferritin.
• Consider multiple modalities to combat anorexia (e.g. using appetite stimulant with dietary supplementation).
• Consider risk of refeeding syndrome and need for medical evaluation/monitoring of lab work should patient be at risk.

Refeeding syndrome can occur when high calorie nutrition is introduced in a malnourished patient. The resulting hyperglycemia can cause shifts in phosphorus, magnesium and potassium from the extracellular to intracellular spaces. Side effects are nausea, vomiting, diarrhea and more serious cardiopulmonary effects. See appendix A for assessment and monitoring.
• Clinical Nursing Support:
  − Vital signs as clinically indicated
  − Accurate monitoring of daily intake and output, including daily weight
  − Ongoing assessment of hydration status
  − Pain and symptom management as appropriate

Dietary Management

• Urgent referral to Oncology Nutrition (dietitian) for nutrition assessment and management
• Requires hydration and/or enteral or parenteral nutritional support if this matches patient’s goals. See Appendix A for further detail about enteral and parenteral nutrition.
  − Encourage increasing fluids as tolerated
  − Provide mouth care
## Pharmacological Management

- **Medications that may be helpful:**
  - Corticosteroids recommended for short term use to stimulate appetite (e.g. dexamethasone, methylprednisolone, prednisolone).
  - Progestinal agents may also be considered to stimulate appetite (e.g. megestrol acetate, medroxyprogesterone acetate).
  - Metoclopramide does not stimulate appetite, but may be prescribed to decrease nausea and early satiety.

- **Medications less likely to be helpful:**
  - NSAIDs may mediate the inflammatory response of cytokines.
  - Dronabinol may decrease nausea, stimulate mood and appetite, but does not prevent weight loss.
  - Cyproheptadine may result in mild appetite increase.

- **Medications not likely to be effective:**
  - Cannabinoids,
  - hydrazine sulfate
  - melatonin
  - Omega 3 fatty acids (e.g. eicosapentaenoic acid, EPA)

## RESOURCES AND REFERRALS

### Referrals
- Patient Support Centre or Telephone Care Management
- Oncology Nutrition Services (Dietitian)
- Pain and Symptom Management/Palliative Care (PSMPC) - if multiple symptoms
- Physiotherapist
- Occupational therapy
- Patient and Family Counseling for stress management, relaxation, support groups
- Home Health Nursing
- Family GP

### Patient Education Resources
- Nutrition Screening Tool in PRISM form (page 9):
- Nutrition Handouts and Pamphlets:
  - [http://www.bccancer.bc.ca/health-professionals/professional-resources/nutrition/nutrition-handouts](http://www.bccancer.bc.ca/health-professionals/professional-resources/nutrition/nutrition-handouts)
  - Increasing Fluid Intake
  - Eating Challenges with Advanced Cancer:
  - Coping with Dry Mouth
  - Coping with Taste Changes
  - Food Ideas to Cope with Taste and Smell Changes
  - Food Ideas to Try With a Sore Mouth
  - Easy to Chew Recipes
  - Food Ideas to Help with Decreased Appetite
  - Food Choices to Help Control Nausea
  - Suggestions for Dealing with Constipation
  - Food Ideas to Help Manage Diarrhea
  - Healthy Eating Using High Protein High Energy Foods
  - High Energy, High Protein Menu and Recipes
  - High Calorie High protein Smoothie
  - Nutrition and Lung, Prostate or Breast cancer

### Related Online Resources
- E.g. Fair Pharmacare; BC Palliative Benefits. Can be found in "Other Sources of Drug Funding Section"
  - [http://www.bccancer.bc.ca/health-professionals/professional-resources/pharmacy/drug-funding](http://www.bccancer.bc.ca/health-professionals/professional-resources/pharmacy/drug-funding)

### Bibliography List
- [http://www.bccancer.bc.ca/health-professionals/professional-resources/nursing/symptom-management](http://www.bccancer.bc.ca/health-professionals/professional-resources/nursing/symptom-management)

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## Enteral and Parenteral Nutrition

### Enteral Nutrition

- **Definition:** Enteral Nutrition: Feeding provided through the gastrointestinal tract via a tube, catheter, or stoma that delivers nutrients distal to the oral cavity
- **Types:** Enteral nutrition may be delivered via nasogastric tube for when nutritional support is anticipated for a short duration; whereas, a percutaneous endoscopic inserted gastrostomy or jejunostomy tube may be more appropriate nutritional support of a longer duration. A variety of enteral formulas are available to meet the specific nutritional needs of the patient.
- **Indications:**
  - Individuals with severe malnutrition
  - Diminished ability to ingest or absorb adequate nutrients for a prolonged period of time, and a functioning GI tract (e.g. oral or esophageal cancer).
- **NOTE:** Where possible, enteral feeding is preferred method over parenteral nutrition because it preserves GI function, is associated with a lower rate of infection, and costs significantly less.
- **Possible Complications:**
  - Aspiration of gastric contents
  - Dumping syndrome
  - Hyper/hypoglycemia
  - Dehydration/fluid overload
  - Changes in bowel habits
  - Nausea/vomiting
  - Skin irritation
  - Infections
  - Blocked feeding tube
  - Refeeding Syndrome

### Parenteral Nutrition (PN)

- **Definition:** The intravenous administration of nutrients. Central parenteral nutrition is delivered into a large-diameter vein, usually the superior vena cava adjacent to the right atrium. Peripheral parenteral nutrition delivered into a peripheral vein, usually of the hand or forearm.

The Use of Parenteral Nutrition(PN) Guide in Cancer Patients (available for internal BCCA staff only)

- Parenteral feeding formulas are based on individual needs and daily caloric requirements.
- **Indications:**
  - When the patient cannot eat and enteral route is not feasible.
  - At risk for malnutrition. (Nothing by Mouth greater than 7 days).
  - When the patient and family or designated representative have a clear understanding of the goals of care and where the use of PN can support those goals.
  - Where the benefit of PN outweighs its risks and burdens.
- **Contraindications:**
  - Prognosis or treatment plan that does not warrant aggressive nutrition support or a prognosis less than 3 months.
  - PN should be withheld when severe hyperglycemia, azotemia, encephalopathy, hyperosmolality, severe fluid and/or electrolyte disturbances are present.
- **Possible Complications:**
  - Infection (sepsis)
  - Venous thrombosis
  - Air embolism
  - Myocardial perforation
  - Pneumo/hemothorax
  - Hyper/hypoglycemia
  - Metabolic abnormalities.
  - Re-feeding Syndrome

### Re-feeding Syndrome

- Refeeding syndrome can occur when high calorie nutrition is introduced in a malnourished patient. The resulting hyperglycemia can cause shifts in phosphorus, magnesium and potassium from the extracellular to intracellular spaces.
- **Side effects:**

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- Decreased gastric motility resulting in; nausea/vomiting
- Decreased absorptive surface area and enzyme production; may result in diarrhea
- Rapid fluid volume increases cardiac demands
- Labs to monitor for refeeding syndrome should include:
  - Serum sodium, potassium, phosphorus, magnesium, calcium, albumin, urea, creatinine and blood glucose.
- **NOTE:** lab monitoring should begin one day prior to initiating nutrition support and continue until goal rate achieved and potassium, phosphate and magnesium within normal range for 48 hours.

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