



## Symptom Management Guidelines: CANCER – RELATED FATIGUE AND ANEMIA

Definition	
<b>Cancer – Related Fatigue (CRF):</b> A subjective feeling of physical, emotional and/or cognitive tiredness; is often not relieved by rest.	
Contributing Factors	
<b>Cancer Related &amp; Cancer Treatment Related</b>	<ul style="list-style-type: none"> <li>*Extent of disease may affect level of fatigue</li> <li>• Chemotherapy (especially high dose chemotherapy followed by a blood or marrow transplant)</li> <li>• Radiation therapy</li> <li>• Surgery</li> <li>• Biotherapy (especially high dose interferon)</li> <li>• Inflammatory cytokines</li> </ul>
<b>Relevant Medical History</b>	<ul style="list-style-type: none"> <li>• Fever and/or infection</li> <li>• Anemia</li> <li>• Hypothyroidism</li> <li>• Diabetes mellitus</li> <li>• Electrolyte disturbances (Sodium, Potassium, Calcium, Magnesium)</li> <li>• Cardiopulmonary, hepatic or renal dysfunction</li> </ul>
<b>Medications</b>	<ul style="list-style-type: none"> <li>• Opioids</li> <li>• Antidepressants</li> <li>• Antihistamines</li> <li>• Beta blockers</li> <li>• Phenytoin and other anticonvulsants</li> <li>• Benzodiazepines</li> </ul>
<b>Other</b>	<ul style="list-style-type: none"> <li>• Advanced age</li> <li>• Life stressors, depression &amp; anxiety</li> <li>• Sleep/wake disturbance</li> <li>• Pain</li> <li>• Decreased activity, bed rest, deconditioning</li> <li>• Nutritional deficits, malnutrition and dehydration</li> <li>• Alcohol/substance abuse</li> </ul>
Consequences	
<ul style="list-style-type: none"> <li>• Chemotherapy dose delays, reductions, discontinuation of treatment</li> <li>• Quality of life – distress, compromised role function and cognition, decreased functional status, exacerbation of other symptoms</li> </ul>	

## Focused Health Assessment

GENERAL ASSESSMENT	SYMPTOM ASSESSMENT	PHYSICAL ASSESSMENT
<p><b>Contact and General Information</b></p> <ul style="list-style-type: none"> <li>Physician name - oncologist, family physician</li> <li>Pharmacy</li> <li>Home health care</li> <li>Other healthcare providers</li> <li>Allergies</li> </ul> <p><b>Consider Contributing Factors</b></p> <ul style="list-style-type: none"> <li>Cancer diagnosis</li> <li>Cancer treatment(s) – note type and date of last treatment(s), concurrent treatments</li> <li>Medical history</li> <li>Medication profile</li> <li>Recent lab or diagnostic reports (e.g. CBC, electrolyte)</li> <li>Nutritional deficits or dehydration</li> <li>Decreased activity, bed rest and deconditioning</li> <li>Depression and anxiety</li> <li>Pain</li> <li>Anemia</li> <li>Fever and/or infection</li> <li>Sleep / wake disturbance</li> </ul>	<p><b>Normal</b></p> <ul style="list-style-type: none"> <li>What is your normal energy/activity level/exercise?</li> </ul> <p><b>Onset</b></p> <ul style="list-style-type: none"> <li>When did the fatigue begin? Is it related to a change in cancer treatment?</li> </ul> <p><b>Provoking / Palliating</b></p> <ul style="list-style-type: none"> <li>What brings on the fatigue?</li> <li>Is there anything that makes the fatigue better? Worse?</li> <li>When do you feel the most tired?</li> </ul> <p><b>Quality</b></p> <ul style="list-style-type: none"> <li>What does it feel like?</li> <li>Explore whether symptoms reflect drowsiness versus physical fatigue or mental versus physical fatigue</li> </ul> <p><b>Region/ Radiation-N/A</b></p> <p><b>Severity / Other Symptoms</b></p> <ul style="list-style-type: none"> <li>Since your last visit, how would you rate your fatigue between 0-10? What is it now? At worst? At best? On average?</li> <li>Do you have any other accompanying symptoms such as shortness of breath at rest or with activity, rapid heart rate, chest pain or leg heaviness?</li> </ul> <p><b>Treatment</b></p> <ul style="list-style-type: none"> <li>What medications or treatments are you using or have you used in the past? How effective are they? Any side effects?</li> <li>Have you had a blood transfusion? When?</li> <li>When was your last cancer treatment?</li> </ul> <p><b>Understanding / Impact on You</b></p> <ul style="list-style-type: none"> <li>Is fatigue affecting your mood? Anxiety, sadness, feeling stressed?</li> <li>How much are you able to do in a day?</li> <li>How is your fatigue impacting your activities of daily living (ADL)?</li> <li>How many hours do you sleep at night? In the day?</li> </ul> <p><b>Value</b></p> <ul style="list-style-type: none"> <li>What do you believe is causing this symptom? Is this impacting you and/or your family?</li> <li>What is your comfort goal or acceptable level for this symptom? (0-10)</li> </ul>	<p><b>Vital Signs</b></p> <ul style="list-style-type: none"> <li>Frequency – as clinically indicated</li> </ul> <p><b>Observe for:</b></p> <ul style="list-style-type: none"> <li>Pallor</li> <li>Blood loss</li> <li>Labored breathing</li> <li>Poor capillary refill</li> <li>Poor posture</li> <li>Cachexia</li> <li>Altered mobility, gait</li> <li>Peripheral edema</li> <li>Cognitive impairment</li> <li>Chest pain</li> </ul> <p><b>Weight</b></p> <ul style="list-style-type: none"> <li>Take current weight and compare to pre – treatment or last recorded weight</li> </ul>

## FATIGUE GRADING SCALE

Adapted NCI CTCAE (Version 4.03)

Normal	GRADE 1 (Mild)	GRADE 2 (Moderate)	GRADE 3 (Severe)	GRADE 4
Asymptomatic	Fatigue relieved by rest	Fatigue not relieved by rest, limiting instrumental ADL (e.g. preparing meals, shopping, managing money)	Fatigue not relieved by rest, limiting self care ADL (e.g. bathing, dressing, feeding self, using the toilet, taking medications)	—

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

### NORMAL– GRADE 1



### NON – URGENT

**Support, teaching, & follow-up as clinically indicated**

<b>Patient Care and Assessment</b>	<ul style="list-style-type: none"> <li>Collaborate with physician to rule out other causes or concomitant causes of fatigue (e.g. Anemia) and to determine need for further investigation</li> </ul> <p><b>Appendix A: Cancer and Treatment-related Anemia below</b></p>
<b>Patient Education</b>	<ul style="list-style-type: none"> <li>Reinforce that Cancer Related Fatigue is:                             <ul style="list-style-type: none"> <li>Normal, often treatable, and needs to be reported</li> <li>Different than 'normal' fatigue and may not be relieved by rest</li> <li>Not necessarily a sign of cancer progression or that treatment is not working</li> </ul> </li> </ul>
<b>Exercise</b>	<ul style="list-style-type: none"> <li>If recommending exercise, assess for facilitating/inhibiting factors, co-morbidities such as bone metastases, thrombocytopenia, anemia, fever, or active infection</li> <li>Set goals that are specific, achievable and realistic based on current health status</li> <li>Exercise during and after cancer treatment can result in more physical energy, improved appetite and increased ability to perform ADLs</li> <li>Start with light activity for short periods of time and encourage patient to gradually increase activity level to include 20 minutes (+) of endurance activities (e.g. walking, jogging, swimming) and muscle and bone strengthening activities 2x/week (e.g. light weights)</li> </ul>
<b>Energy Conservation</b>	<ul style="list-style-type: none"> <li>Pacing                             <ul style="list-style-type: none"> <li>Balance activities with rest</li> <li>Slow and steady pace uses less energy</li> </ul> </li> <li>Planning                             <ul style="list-style-type: none"> <li>Organize your time, methods, and space</li> <li>Encourage activities which are most enjoyed on days when feeling best</li> <li>Develop a routine for rest and activity</li> </ul> </li> <li>Priority setting                             <ul style="list-style-type: none"> <li>Eliminate unnecessary tasks, delegate responsibilities and ask for help</li> </ul> </li> <li>Posture                             <ul style="list-style-type: none"> <li>Change positions frequently</li> <li>Keep activities/work within easy range using correct body alignment</li> <li>Avoid bending and lifting</li> </ul> </li> <li>Proficiency                             <ul style="list-style-type: none"> <li>Use labour saving devices (e.g. elevator) to maximize efficiency and minimize workload</li> </ul> </li> <li>Encourage self-monitoring of fatigue levels and patterns and times of peak energy</li> </ul>

<b>Sleep Hygiene</b>	<ul style="list-style-type: none"> <li>• <b>Encourage:</b> <ul style="list-style-type: none"> <li>- Comfortable sleep surroundings</li> <li>- Soothing activities at bed time</li> <li>- Limiting naps to less than 1hr</li> </ul> </li> <li>• <b>Avoid:</b> <ul style="list-style-type: none"> <li>- Lying in bed at times other than sleep</li> <li>- Distracting noise (e.g. television, radio) during sleep</li> <li>- Caffeine and exercise near bedtime</li> </ul> </li> </ul>
<b>Dietary Management</b>	<ul style="list-style-type: none"> <li>• Encourage adequate hydration (e.g. 8 – 12 cups of fluid throughout the day). Caution in patients with co- morbidities that affect fluid balance (e.g. Congestive heart failure)</li> <li>• Encourage adequate nutrition (e.g. high-protein diet)</li> </ul>
<b>Pharmacological Management</b>	<ul style="list-style-type: none"> <li>• Avoid/discontinue any medications that may cause or exacerbate fatigue in collaboration with physician and pharmacist</li> <li>• Medications may be prescribed to correct causative factors (e.g. iron supplement)</li> </ul>
<b>Distraction and Relaxation</b>	<ul style="list-style-type: none"> <li>• Consider stress management, relaxation, distraction (e.g. music, games, reading, socializing)</li> </ul>
<b>Follow-Up</b>	<ul style="list-style-type: none"> <li>• Re-assess at each visit and modify strategies as necessary</li> <li>• Advise patient to contact healthcare providers if fatigue level increases or does not improve</li> </ul>

### GRADE 2 – GRADE 3



<b>URGENT:</b> <b>Requires medical attention within 24 hours</b>	
<b>Patient Care and Assessment</b>	<ul style="list-style-type: none"> <li>• Collaborate with physician: <ul style="list-style-type: none"> <li>- To rule out other causes or concomitant causes of fatigue</li> <li>- Need for further patient assessment at cancer centre or with GP</li> </ul> </li> <li>• Monitor vital signs as clinically indicated</li> <li>• Lab tests that may be ordered: <ul style="list-style-type: none"> <li>- Complete blood count (CBC), electrolyte profile, transferrin, total iron-binding capacity, ferritin, iron levels, folic acid, B12 level, thyroid function tests</li> </ul> </li> </ul>
<b>Pharmacological Management</b>	<ul style="list-style-type: none"> <li>• Avoid/discontinue/reduce any medications that may cause or exacerbate fatigue in collaboration with physician and pharmacist</li> <li>• Medications that may be prescribed: <ul style="list-style-type: none"> <li>- Iron supplement</li> <li>- Psychostimulants (e.g. methylphenidate {Ritalin®} )</li> <li>- Sleep-enhancing medications (e.g. Benzodiazapines)</li> <li>- Blood transfusion or Erythropoiesis- Stimulating Agents (ESAs) such as Epoetin alfa or Darbepoetin alfa <b>See Appendix A: Cancer and Treatment-related Anemia below</b></li> </ul> </li> </ul>

	RESOURCES & REFERRALS
<b>Referrals</b>	<ul style="list-style-type: none"> <li>• Patient Support Centre or Telephone Care Management</li> <li>• Oncology Nutrition Services (Dietitian)</li> <li>• Pain and Symptom Management/Palliative Care (PSMPC) - if multiple symptoms</li> <li>• Physiotherapist</li> <li>• Occupational therapy</li> <li>• Patient and Family Counseling for stress management, relaxation, support groups</li> <li>• Home Health Nursing</li> </ul>
<b>Patient Education</b>	<ul style="list-style-type: none"> <li>• Coping with Fatigue: <a href="http://www.bccancer.bc.ca/PPI/copingwithcancer/symptoms/fatigue/default.htm">http://www.bccancer.bc.ca/PPI/copingwithcancer/symptoms/fatigue/default.htm</a></li> <li>• Patient Education Materials for Decreased Appetite: <a href="http://www.bccancer.bc.ca/HPI/NutritionalCare/PtEd/Decreased+Appetite.htm">http://www.bccancer.bc.ca/HPI/NutritionalCare/PtEd/Decreased+Appetite.htm</a></li> <li>• Fatigue management video: Tired of Being Tired? <a href="http://phsa.mediasite.com/Mediasite/Play/b5b255ef35384353811bdb150160a18a1d">http://phsa.mediasite.com/Mediasite/Play/b5b255ef35384353811bdb150160a18a1d</a></li> <li>• Cancer related fatigue (online video) <a href="http://learn.phsa.ca/bcca/breasttumour/btg/btg1_flv_loader.html">http://learn.phsa.ca/bcca/breasttumour/btg/btg1_flv_loader.html</a></li> <li>• Resources about sleep, deep breathing, positive thinking, etc <a href="http://www.bccancer.bc.ca/PPI/copingwithcancer/emotional/dealingemotions/factsheets.htm">http://www.bccancer.bc.ca/PPI/copingwithcancer/emotional/dealingemotions/factsheets.htm</a></li> <li>• Library Pathfinder</li> <li>• <a href="http://www.bccancer.bc.ca/NR/rdonlyres/72A278AB-D97F-41A0-9A6E-AC107A3973C4/69251/FatigueGeneral1.pdf">http://www.bccancer.bc.ca/NR/rdonlyres/72A278AB-D97F-41A0-9A6E-AC107A3973C4/69251/FatigueGeneral1.pdf</a></li> <li>• Canadian physical activity guidelines <a href="http://www.csep.ca/CMFiles/Guidelines/CSEP-InfoSheetsComplete-ENG.pdf">http://www.csep.ca/CMFiles/Guidelines/CSEP-InfoSheetsComplete-ENG.pdf</a></li> <li>• Cancer related fatigue patient education video <a href="http://youtu.be/YTFPMYGe86s">http://youtu.be/YTFPMYGe86s</a></li> </ul>
<b>Related Online Resources</b>	<ul style="list-style-type: none"> <li>• E.g. Fair Pharmacare; BC Palliative Benefits <a href="http://www.bccancer.bc.ca/NR/rdonlyres/AA6B9B8C-C771-4F26-8CC8-47C48F6421BB/66566/SymptomManagementGuidelinesRelatedResources.pdf">http://www.bccancer.bc.ca/NR/rdonlyres/AA6B9B8C-C771-4F26-8CC8-47C48F6421BB/66566/SymptomManagementGuidelinesRelatedResources.pdf</a></li> </ul>
<b>Bibliography List</b>	<ul style="list-style-type: none"> <li>• <a href="http://www.bccancer.bc.ca/HPI/Nursing/References/SystemManagementGuidelines/Biblio.htm">http://www.bccancer.bc.ca/HPI/Nursing/References/SystemManagementGuidelines/Biblio.htm</a></li> </ul>

## Appendix A: Cancer and Treatment-Related Anemia

Definitions
<ul style="list-style-type: none"> <li>• <b>Anemia:</b> Reduction in red blood cell mass, leading to a decrease in the hemoglobin concentration in the blood and reduced oxygen carrying capacity of the blood</li> <li>• <b>Erythropoietin:</b> Hormone primarily made by the kidneys which stimulates the bone marrow to produce red blood cells</li> <li>• <b>Epoetin alfa and Darbepoetin alfa:</b> Erythropoiesis-stimulating agents produced by recombinant DNA technology</li> </ul>
Contributing Factors
<ul style="list-style-type: none"> <li>• <b>Cancer – related:</b> <ul style="list-style-type: none"> <li>* Highest for lung and ovarian cancer</li> <li>- Bone marrow infiltration</li> <li>- Hemolysis, blood loss associated with tumor</li> </ul> </li> <li>• <b>Cancer Treatment-related:</b> <ul style="list-style-type: none"> <li>- Radiation therapy targeted at large areas of bone marrow</li> <li>- Myelosuppressive chemotherapy</li> <li>- Nephrotoxic effects of chemotherapy (e.g. platinum containing agents- Cisplatin)</li> </ul> </li> <li>• <b>Other:</b> <ul style="list-style-type: none"> <li>- Blood loss due to surgery, nutritional deficiencies, renal insufficiency, hypersplenism</li> </ul> </li> </ul>
Consequences
<ul style="list-style-type: none"> <li>• Fatigue</li> <li>• Impact on quality of life</li> <li>• Impaired cognitive function</li> <li>• May cause treatment delays and dose modifications</li> </ul>

<b>ANEMIA GRADING SCALE (Hgb levels in g/L)</b> Adapted NCI CTCAE (Version 4.03)				
Normal Limits	GRADE 1 (Mild)	GRADE 2 (Moderate)	GRADE 3 (Severe)	GRADE 4
Women: 120-160g/L  Men: 140-180g/L	100g/L-normal	80-100 g/L	<80g/L  Transfusion indicated	Life threatening consequences

ANEMIA ASSESSMENT AND MANAGEMENT	
<b>Patient Care and Assessment</b>	<ul style="list-style-type: none"> <li>Collaborate with physician to rule out other causes or concomitant causes of anemia (e.g. iron deficiency) and to determine need for further investigation</li> <li>Assess for:               <ul style="list-style-type: none"> <li>Fatigue (focused assessment above)</li> <li>Shortness of breath, dyspnea</li> <li>Chest pain, rapid heart rate</li> <li>Visible blood loss (e.g. urine, stool)</li> <li>Previous blood transfusions. If so, note last date.</li> <li>Headaches, dizziness, light headedness</li> <li>Ankle swelling</li> <li>Feeling cold, pale skin</li> <li>Tinnitus</li> <li>Activity level</li> </ul> </li> <li>Monitor vital signs as clinically indicated</li> <li>Lab tests that may be ordered: CBC, peripheral blood smear, vitamin B12 or folate levels, serum iron, transferrin and ferritin levels, reticulocyte count, erythropoietin level, direct and indirect Coombs test, and/or examination of a bone marrow aspirate and biopsy.</li> </ul>
<b>Transfusion Therapy</b>	<ul style="list-style-type: none"> <li>Administer packed red blood cell transfusion as prescribed considering patient factors</li> </ul>
<b>Radiation Therapy</b>	<ul style="list-style-type: none"> <li>May need urgent radiation if bleeding from a tumor</li> </ul>
<b>Pharmacological Management</b>	<ul style="list-style-type: none"> <li>Medications may be prescribed to correct causative factors (e.g. iron supplement)</li> </ul>
<b>Erythropoiesis stimulating agents (ESA)</b> e.g. Epoetin alfa or Darbepoetin alfa	<ul style="list-style-type: none"> <li>Only recommended for anemic patients with cancer, who are receiving myelosuppressive chemotherapy and the intent of treatment is NOT curative</li> <li>Treatment should NOT be started until hemoglobin is LESS than 100 g/L</li> <li>The lowest dose needed to avoid RBC transfusions should be given</li> <li>ESAs should be discontinued at the end of chemotherapy treatment or if there is no response after 8 weeks of ESA therapy</li> <li>Iron supplementation may be considered to improve response to ESA therapy</li> <li>Risks of ESA include: increased mortality, tumor progression, thrombosis, cardiovascular events, hypertension, seizure and pure RBC aplasia</li> <li>Monitor iron levels before and during ESA treatment (majority of patients will eventually require supplemental iron therapy)</li> <li>Review with patient:               <ul style="list-style-type: none"> <li>ESAs take at least 2 weeks to take effect</li> <li>Ensure patient keeps appointment for blood work to monitor hemoglobin</li> <li>Reinforce that BP needs to be measured and monitored</li> <li>Importance of reporting symptoms (e.g. increased BP, headaches, confusion, seizures, weakness, edema, muscle aches, chest pain)</li> </ul> </li> </ul> <p>Protocol for the Use of ESAs:  <a href="http://www.bccancer.bc.ca/NR/rdonlyres/8E898B5D-3F12-4623-8E32-5B3C429C58F7/62154/SCESA_Protocol_1Feb2013.pdf">http://www.bccancer.bc.ca/NR/rdonlyres/8E898B5D-3F12-4623-8E32-5B3C429C58F7/62154/SCESA_Protocol_1Feb2013.pdf</a></p>
<b>Follow up</b>	<ul style="list-style-type: none"> <li>Reassess symptoms and lab values at each visit</li> <li>Ask patient to contact healthcare providers if condition not improved or worsens and/or arrange a nurse-initiated telephone follow up</li> </ul>

**Date of Print:**

Revised: October, 2013

Created: January, 2010

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