



**Ontario Health**  
Cancer Care Ontario

# Symptom Management Algorithm

# DYSPNEA

# (SHORTNESS OF

# BREATH)

## in Adults with Cancer

## Screening

### Screen for dyspnea (shortness of breath) using a validated measure (ESAS-r\*)

Review symptom report(s) with the patient and their caregiver and address any other distressing symptoms that the patient identifies

<b>MILD</b> ESAS-r (1-3)	<b>MODERATE</b> ESAS-r (4-6)	<b>SEVERE</b> ESAS-r (7-10)
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## Assessment

### Assessment acronym O,P,Q,R,S,T,U,V

Ask the patient directly, whenever possible. Involve family and caregivers as appropriate and desired by the patient

Category	Assessment Questions
<b>Onset</b>	<ul style="list-style-type: none"><li>When did it begin? How long does it last? How often does it occur? Have you had this symptom before?</li></ul>
<b>Provoking/Palliating</b>	<ul style="list-style-type: none"><li>What brings it on? What makes it better? What makes it worse?</li></ul>
<b>Quality</b>	<ul style="list-style-type: none"><li>What does it feel like? Can you describe it?</li></ul>
<b>Related Symptoms</b>	<ul style="list-style-type: none"><li>Are there any other associated symptoms?</li></ul>
<b>Severity</b>	<ul style="list-style-type: none"><li>What is the intensity of this symptom (On a scale of 0 to 10 with 0 being none and 10 being worst possible)? Right Now? At Best? At Worst? On Average? How bothered are you by this symptom? Are there any other symptom(s) that accompany this symptom?</li></ul>
<b>Treatment</b>	<ul style="list-style-type: none"><li>What medications and treatments are you currently using? Do you have any side effects from the medications and treatments? What have you tried in the past? Do you have concerns about side effects or cost of treatments?</li></ul>
<b>Understanding</b>	<ul style="list-style-type: none"><li>What do you believe is causing this symptom? How is it affecting you and/or your family or caregivers? How is this impacting your quality of life?</li></ul>
<b>Values</b>	<ul style="list-style-type: none"><li>What overall goals do we need to keep in mind as we manage this symptom? What is your acceptable level for this symptom scale of 0-10 (0 being none and 10 being the worst possible)? Are there any beliefs, views or feelings about this symptom that are important to you and your family or caregivers?</li></ul>

### Assess pertinent health history (risk factors)

### Conduct a physical assessment and evaluate for acute changes and reversible causes of dyspnea.

Determine most likely cause of dyspnea If reversible, or caused by something other than disease progression, manage appropriately (e.g. treat infection, pulmonary embolism).

- ± cyanosis
- ± onset of confusion
- Orthopnea
- Decreased air entry, wheeze, crackles
- Staccato (pausing while talking)
- +-Reduced oxygen saturation (O2sat)

- Dullness noted on percussion
- Increased oxygen demands: Use of accessory muscles
- Oncological Emergency: Audible stridor, dilated anterior chest wall veins, upper extremity swelling, facial and periorbital swelling

MILD	MODERATE	SEVERE
<ul style="list-style-type: none"> <li>• Patient can sit and lie quietly</li> <li>• Dyspnea is intermittent or persistent</li> <li>• Worsens with exertion, resolves with rest</li> <li>• Patient experiences no anxiety or mild anxiety during shortness of breath</li> <li>• Breathing not observed as laboured</li> </ul>	<ul style="list-style-type: none"> <li>• Dyspnea is usually persistent</li> <li>• Dyspnea is new or chronic</li> <li>• Shortness of breath worsens if walking or with exertion; settles partially with rest</li> <li>• Sentence dyspnea (pauses while talking every 30 seconds)</li> <li>• Breathing mildly laboured</li> <li>• ± cyanosis</li> <li>• ± onset of confusion</li> <li>• ± reduced O2sat</li> <li>• Orthopnea</li> </ul>	<ul style="list-style-type: none"> <li>• Dyspnea is often acute or chronic</li> <li>• Dyspnea worsens over days/weeks</li> <li>• Experiencing anxiety</li> <li>• Wakes suddenly with shortness of breath</li> <li>• Laboured breathing when awake and asleep</li> <li>• Word dyspnea (pauses while talking every 5-15 seconds)</li> <li>• ± cyanosis</li> <li>• ± onset of confusion</li> <li>• ± reduced O2sat</li> <li>• Orthopnea</li> </ul>

## Intervention

### Proceed with non-pharmacological interventions for all patients

#### If refractory and not acutely reversible

- Provide oxygen if hypoxic (low O2sat)
- Provide ambient air flow on face & cool facial temperatures (use window, fan, or nasal prongs)

#### Patient Education

- Provide Ontario Health (CCO) Patient Symptom Management Guide: Shortness of Breath <https://www.cancercareontario.ca/en/symptom-management/3126>
- Provide information and support for management of breathlessness (instructions for breath control, rescue breathing, relaxation, distraction techniques and breathing exercises)
- Provide goal setting to enhance breathing and relaxation techniques, enable participation in social activities, and develop coping skills
- Suggest positions that maximize respiratory function while reducing physical effort

#### Referral and Community Support

- Consider referral to a respiratory therapist, occupational therapist, physiotherapist, or nurse with expertise in dyspnea management
- Consider referral to a specialist dictated by issue and/or pain and symptom management team/palliative care team to assist with dyspnea management
- Consider referral to spiritual care provider for resources for breathlessness (i.e., support groups)
- If anxiety is present, consider a referral to psychosocial support services

### Pharmacological interventions (START LOW – GO SLOW) and monitor for effect

MILD	MODERATE	SEVERE
<ul style="list-style-type: none"> <li>• Supplemental oxygen is recommended for hypoxic patients experiencing dyspnea.</li> <li>• Supplemental oxygen is <u>not</u> recommended for non-hypoxic, dyspneic patients.</li> </ul>	<p><b>Non-Opioids</b> May use benzodiazepines for co-existing anxiety There is no evidence for the use of systemic corticosteroids</p> <p><b>Systemic Opioids</b> For opioid-naïve patients:</p> <ul style="list-style-type: none"> <li>• Morphine (or equivalent dose of alternate immediate-release opioid) 2.5-5mg po q4h regularly and 2.5mg po q1h prn for breakthrough dyspnea</li> <li>• If the oral route is not available or reliable, morphine 1-2 mg subcut q4h regularly and</li> </ul>	<p><b>Systemic Opioids</b> <b>For opioid-naïve patients:</b></p> <ul style="list-style-type: none"> <li>• Morphine (or equivalent dose of alternate immediate-release opioid) 2.5-5mg po q4h regularly and 2.5mg po q1h prn for breakthrough dyspnea</li> <li>• If oral is not available give a subcut bolus of morphine 1-2 mg (or an equivalent dose of an alternate opioid). <ul style="list-style-type: none"> <li>○ If tolerated, repeat dose every 30 minutes if needed.</li> <li>○ Consider doubling dose if 2 doses fail to produce an adequate reduction in dyspnea and are tolerated</li> </ul> </li> </ul>

MILD	MODERATE	SEVERE
<ul style="list-style-type: none"> <li>Systemic opioids, by the oral or parenteral routes, can be used to manage dyspnea in advanced illness</li> </ul>	<p>0.5-1 mg subcut q1h prn for breakthrough dyspnea.</p> <p>For patients already taking systemic opioids:</p> <ul style="list-style-type: none"> <li>Increase the patient's regular dose by 25%, guided by the total breakthrough doses used in the previous 24 hours.</li> <li>The breakthrough dose is 10% of the total 24-hour regular opioid dose, using the same opioid by the same route               <ul style="list-style-type: none"> <li>oral breakthrough doses q1 hrs as needed</li> <li>subcutaneous breakthrough doses q1hr as needed, due to more rapid peak effect</li> </ul> </li> <li>Do not use nebulized opioids, nebulized furosemide, nebulized lidocaine or benzodiazepines</li> <li>If patient has or may have COPD, consider a 5-day trial of a corticosteroid.               <ul style="list-style-type: none"> <li>Dexamethasone 8 mg/day po or subcut or IV</li> <li>Prednisone 50 mg/day po</li> <li>Discontinue corticosteroid if there is no obvious benefit after 5 days.</li> </ul> </li> <li>If the patient does not have COPD, but has known or suspected lung involvement by the cancer, weigh the risks before commencing a 5-day trial. Other potential benefits, such as for appetite stimulation or pain management, may justify a 5-day trial of a corticosteroid</li> <li>Do not start prophylactic gastric mucosal protection therapy during a 5-day trial of a corticosteroid, but consider such therapy if the corticosteroid is continued past the trial</li> </ul> <p><b>For Patients with PPS 30% - 10%:</b></p> <ul style="list-style-type: none"> <li>If dyspnea persists despite other therapies and/or anxiety, nausea or agitation are present consider a trial of methotrimeprazine 2.5-10 mg po or subcut q6-8h regularly or as needed</li> </ul>	<ul style="list-style-type: none"> <li>Monitor the patient's respiratory rate closely, since the time to peak effect of a subcut dose of morphine may be longer than 30 minutes.</li> <li>If intravenous access is available, consider giving an IV bolus of morphine 1-2mg (or an equivalent dose of an alternate opioid) to achieve a more rapid effect.               <ul style="list-style-type: none"> <li>If tolerated, repeat dose every 30 minutes if needed.</li> <li>Consider doubling dose if 2 doses fail to produce an adequate reduction in dyspnea and are tolerated</li> <li>Monitor the patient's respiratory rate closely, since IV boluses of morphine result in faster and higher peak effects.</li> </ul> </li> <li>Start a regular dose of an immediate-release opioid, guided by the bolus doses used.               <ul style="list-style-type: none"> <li>For the breakthrough opioid dose, consider using the subcut route initially for severe dyspnea until the symptom comes under control.</li> </ul> </li> </ul> <p><b>For patients already taking systemic opioids:</b> follow the same suggestions as above with the following changes.</p> <ul style="list-style-type: none"> <li>Give a subcut bolus of the patient's current opioid using a dose equal to 10% of the regular, 24-hour, parenteral-dose-equivalent of the patient's current opioid (a parenteral dose is equivalent to half the oral dose).</li> <li>Consider giving an IV bolus of the patient's current opioid, using a dose equal to 10% of the regular, 24-hour, parenteral-dose-equivalent of the patient's current opioid</li> <li>Increase the regular opioid dose by 25%, guided by the bolus doses used</li> </ul> <p><b>Psychoactive medications</b></p> <ul style="list-style-type: none"> <li>Consider a trial of methotrimeprazine 2.5-10 mg po or subcut q6-8h</li> <li>Consider Midazolam in the face of intractable dyspnea (follow the guidelines for palliative sedation)</li> <li>Consider benzodiazepine for co-existing anxiety</li> </ul>

## Acknowledgements

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## Disclaimer

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