

# Chronic breathlessness

**Dr Umbreen Qazi**  
**Palliative Medicine Specialist**

**AlfredHealth**





# Overview

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- Case Studies
- Prevalence of breathlessness
- Why Palliative Care?
- Chronic breathlessness syndrome
- Management of breathlessness and opioids
- Summary

# Rick

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- 82-year-old married male, home with wife and two sons
- Day 7 COVID-19 , unvaccinated
- On Antivirals and steroids
- On BIPAP FI02 70% , Variable oxygen saturation
- Met Call, GCS 11/15, Lactate was 11
- Reviewed by ICU (not a candidate for intubation)
- Nursing referral for breathlessness management and end-of-life-care

# Gordon

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- 68-year-old male, home with wife
- BSLTx in 2015 for COPD, relisted for re transplant for CLAD
- Depressed
- QOL impaired secondary to breathlessness , demoralized
- Referred to palliative care for introduction, breathlessness management and future planning

# Melissa

- 69-year-old divorced female, COPD for past 20 years, Ex-smoker, on triple inhaler therapy
- Exertional Retired Nurse
- Estranged from two daughters
- Socially isolated
- Dyspnea for past 2 years and walks with 4WF  
Waking up at night with panic episodes described "as if drowning"
- 6 admissions with non-infective exacerbation of COPD
- FEV1 26% pred, FVC 68% DLCo20%
- Long-term oxygen therapy
- Completed pulmonary rehab 3 years ago and not interested to do it again, delisted from lung transplant list due to lack of engagement



# Prevalence of chronic breathlessness

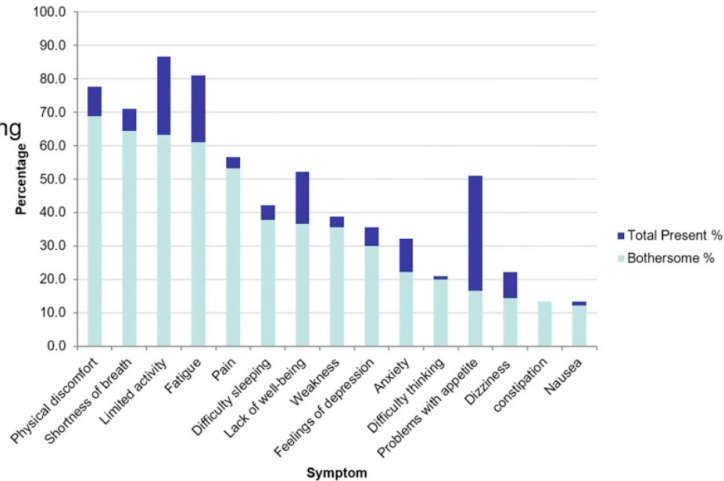
## Symptom Burden of Community Dwelling Older Adults with Serious Illness

N= 90; 47% F;  
73y.o. (SD 7)

Community-dwelling  
42% COPD  
37% CHF  
21% Cancer

10 symptoms  
from Edmonton  
Symptom  
Assessment  
Scale (ESAS)

5 additional  
domains





## Prevalence of Chronic breathlessness

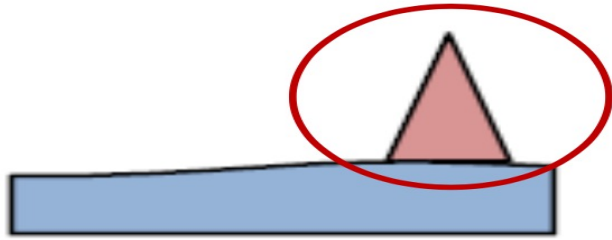
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- The prevalence of breathlessness in cancer varies with the primary tumour site; breathlessness occurs as a symptom most frequently in lung cancer, where it might affect 75% of people with primary disease of the lung, bronchus and trachea (Muers & Round 1993).
- Refractory breathlessness develops late in the course of the disease in patients with COPD, or advanced lung and heart conditions gradually increasing in severity over a period of years in most people.

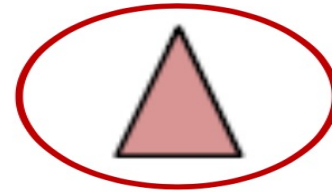
# Breathlessness

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- Common symptom in advanced disease ( cancer, COPD, lung fibrosis, MND)
- Continuous and episodic breathlessness



continuous



## episodic breathlessness

- short (75% < 10 min)
- several times a day
- mostly self-limiting

## Symptoms at end of life

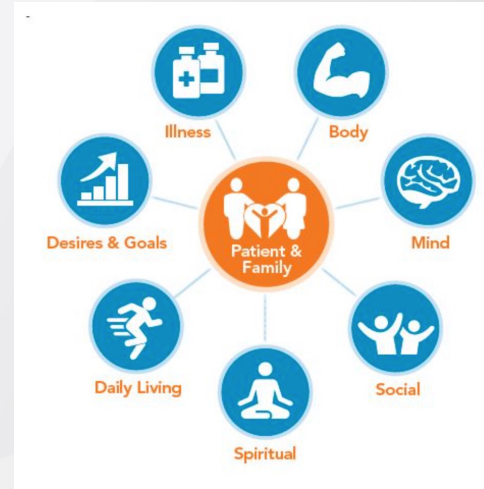
**Table 3** Symptoms in the final week of life (percentages\* in parentheses)

	Chronic lung disease ( <i>n</i> = 87)	Lung cancer ( <i>n</i> = 449)
Mean number of symptoms	6 (SD 3)	5.6 (SD 3.1)
Pain	47 (63)	255 (64)
Breathlessness	76 (91)	296 (69)
Cough	43 (52)	168 (40)
Vomiting	23 (29)	101 (25)
Anorexia	55 (64)	291 (70)
Constipation	17 (25)	148 (42)
Mouth problems	36 (48)	175 (46)
Insomnia	40 (51)	153 (40)
Confusion	22 (26)	145 (33)
Low mood	42 (55)	194 (49)


# Unmet Palliative care needs

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- High symptom burden
- Patient and carer needs
- Psychological support
- Spiritual needs
- Social isolation
- Carer support
- Quality of Life



1: Moens et al 2014, *J Pain symptom management*. 2: Disler et al 2014, *J Pain symptom management*



"Aging and dying you  
can't fix those"

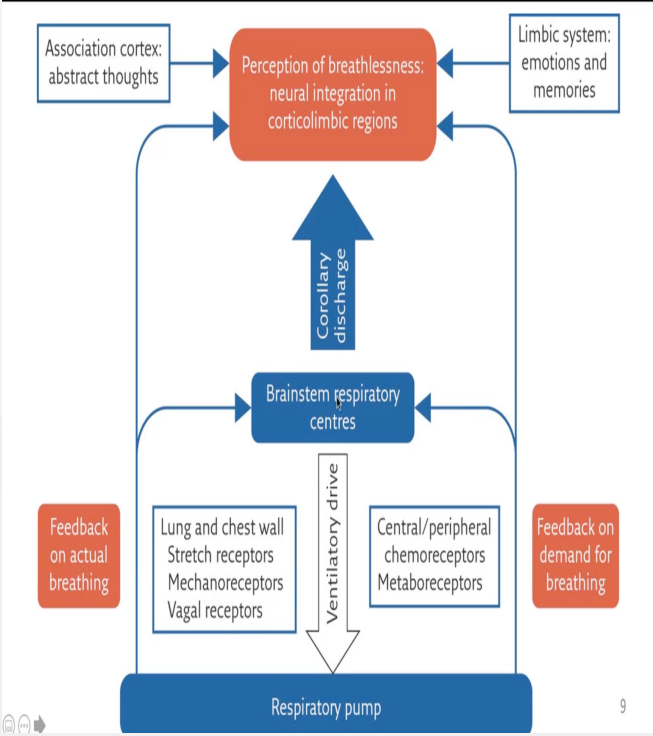
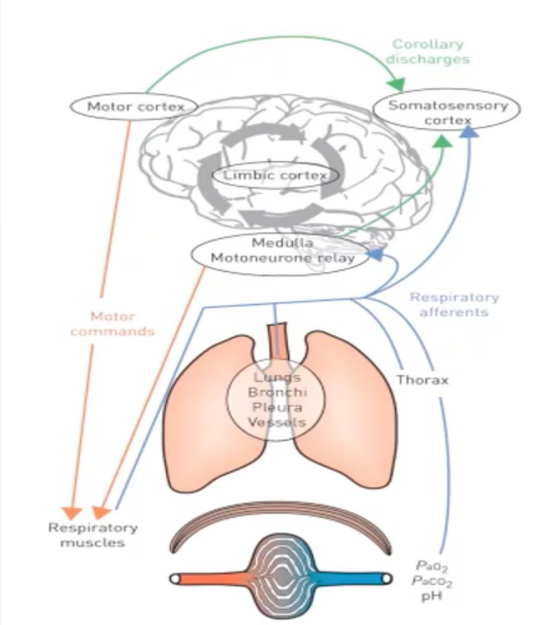
DR ATUL GAWANDE

# Chronic breathlessness syndrome

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- Chronic breathlessness is "patient's experience"
- Breathlessness which persists despite optimal management of the underlying pathology and leads to disability
- Chronic breathlessness may be the end-result of several differing pathologies, including:
  - respiratory conditions such as chronic obstructive pulmonary disease, interstitial lung disease, inflammatory lung disease and lung carcinoma
  - cardiovascular conditions such as chronic heart failure and pulmonary hypertension
  - neuromuscular disorders such as motor neuron disease, amyotrophic lateral sclerosis

# Total Dyspnea



# Chronic Breathlessness assessment

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- Dyspnea severity is a stronger predictor of 5-year mortality than FEV1 in COPD
- Various assessment scales
  - Functional dyspnea assessment scale
  - Modified Borg scale
  - Visual analogue scale
  - Modified Medical Research Council breathlessness scale(MMRC)



# Modified medical research council scale

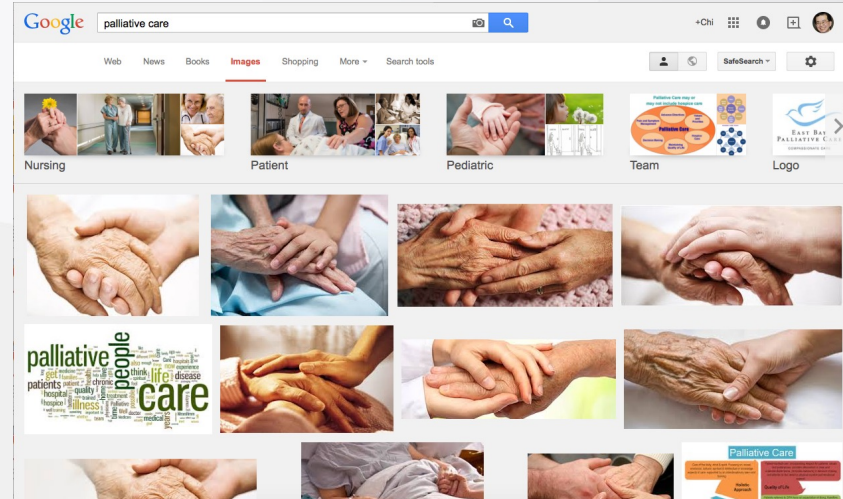
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The Modified Medical Research Council (MMRC) Dyspnoea Scale

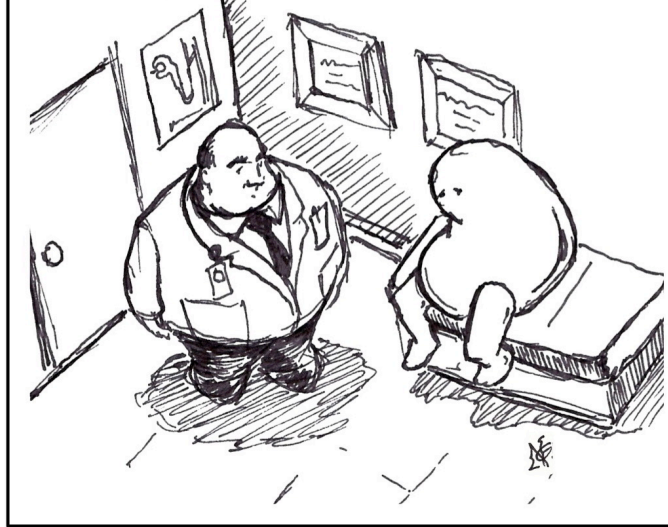
Grade of dyspnoea	Description
0	Not troubled by breathlessness except on strenuous exercise
1	Shortness of breath when hurrying on the level <i>or</i> walking up a slight hill
2	Walks slower than people of the same age on the level because of breathlessness <i>or</i> has to stop for breath when walking at own pace on the level
3	Stops for breath after walking about 100 m <i>or</i> after a few minutes on the level
4	Too breathless to leave the house <i>or</i> breathless when dressing or undressing

# What can palliative care offer?

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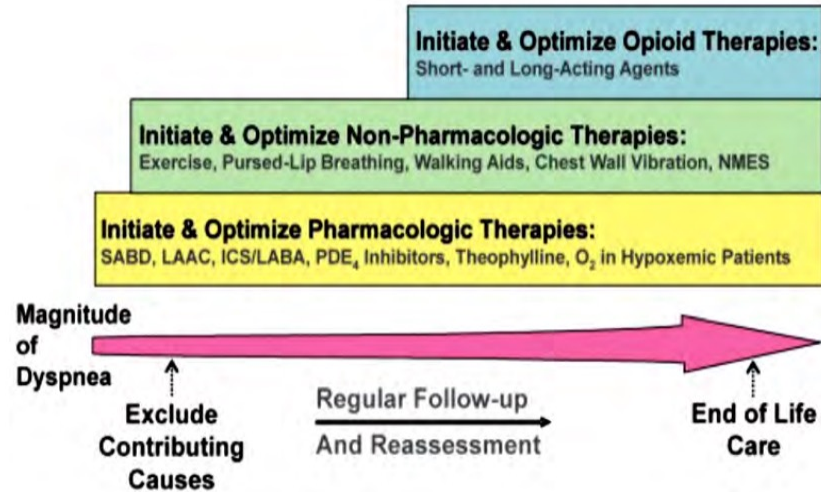
## DAILY MEDICAL EXAMINER



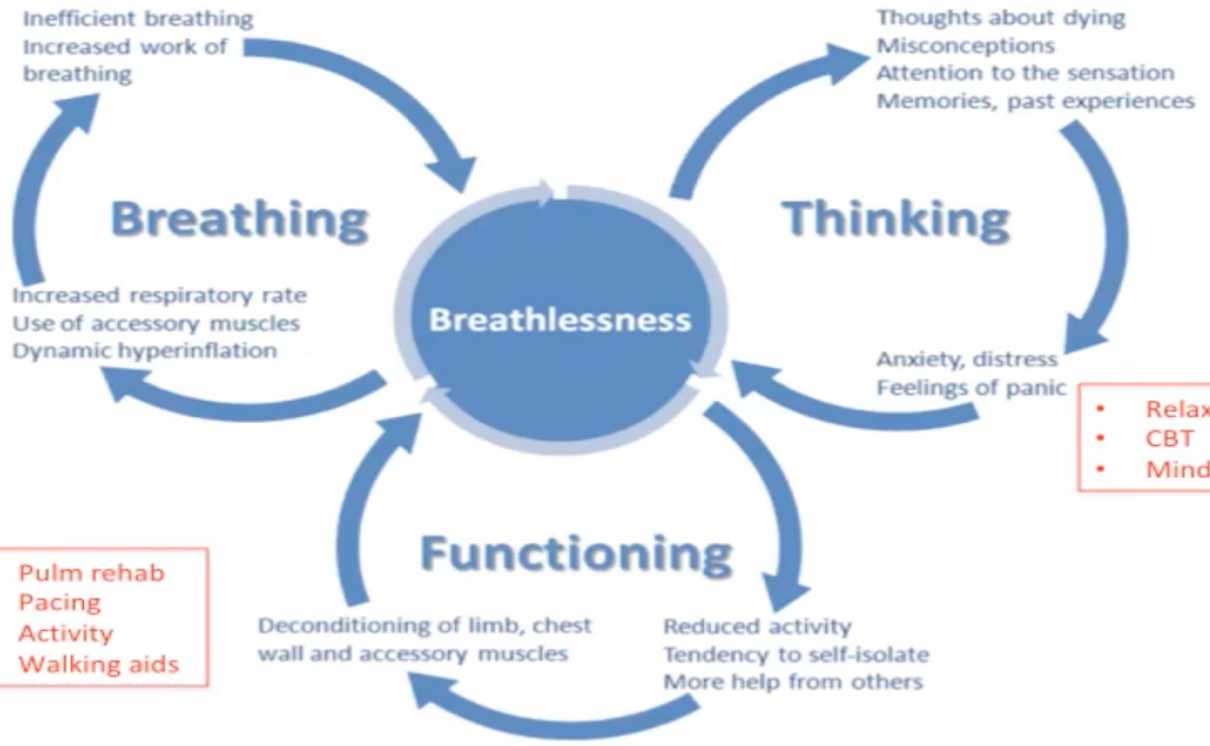
*The awkward moment when Mr. Kang realized that his nephrologist didn't think of him as a whole person...*

“ I just can't get enough air into my lungs. Every breath I take is such an effort, it's as if I'm wearing a lead jacket. I'm so frightened that the next breath will be my last. I just don't want to be treated like another transplant number. “

## Clinical Overview



- Breathing techniques
- Fan
- Postures
- Chest wall vibration
- Insp muscle training
- NIV



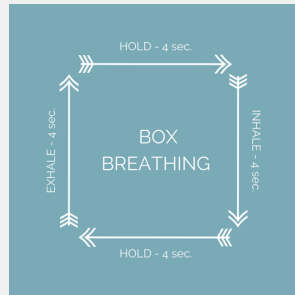
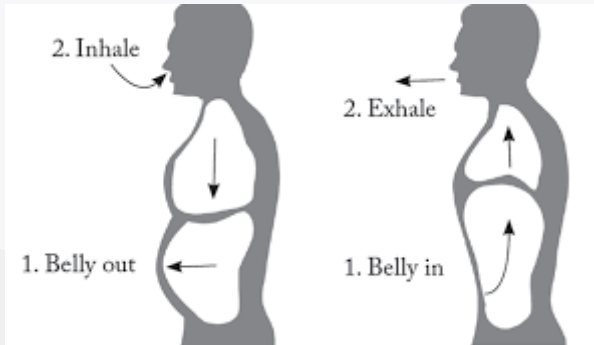
- Relaxation
- CBT
- Mindfulness

- Pulm rehab
- Pacing
- Activity
- Walking aids

The Breathing, Thinking, Functioning clinical model

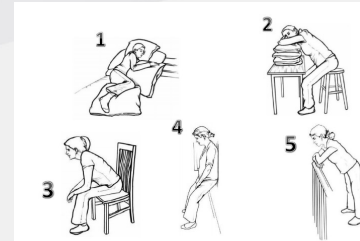
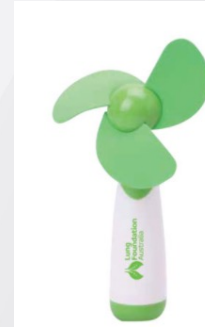
Booth et al  
2016

# Non-pharmacological approaches



**TABLE 5.2 The steps of teaching Breathing Control**

Step	Description	Aim
1	Position & Posture	Adjust position and posture to encourage correct breathing muscle use and to promote comfort and relaxation.
	Relax body and mind	Relax the body, especially breathing accessory muscles of inspiration (neck, shoulders and upper chest) and exhalation (abdominal muscles). Reduce accessory muscle use as much as able. Nose breathe, if able and comfortable.
2	Feel the breath	'Tune into' how breathing feels without trying to change anything.
	Notice the tummy rise as you breathe in Notice the tummy fall as you breathe out	Noticing and recognise the action of the diaphragm on the tummy as you breathe.
3	Float the air in, relax the breath out	Achieve normal tidal volume. Take in just the air you need. Make exhalation as passive as possible. Expiration may lengthen and respiratory rate may slow. Expiration should be longer than inspiration.
	Quiet, gentle breaths	Slow inspiratory flow, promote smooth, laminar flow within the airways to reduce turbulence and resistance. Respiratory rate may slow and tidal volume may reduce.
4	Notice the natural pause after the breath out	Notice the pause but do not try to change it. Be comfortable with it.
	Rest in this pause, wait for the next breath to come, do not rush into the next breath	Allow the expiratory pause to lengthen, if comfortable to do so, to further slow respiratory rate and promote relaxation.



# Pharmacological approaches

- Oxygen (Abernety et al,2020, *Lancet*)
  - Beneficial only in patients with hypoxemia
  - Humidified High flow nasal oxygen (AlIRVO)
- Opioids (Currow et al 2011, *Journal pain Symptom management*)
  - Kapanol( Slow-release morphine) PBS listed
- Benzodiazepines (Ekstrom et al,2014,*BMJ*)
- Lorazepam, clonazepam drops, midazolam
- Antidepressants
- Via treating anxiety or other direct 5HT mechanism?
- Mirtazapine
- Alpha 2 ag; at lower dose greater anticholinergic effect, higher doses more NA (but still sedating)
- awaiting RCT evidence; use if sleep/weight/depression  
Sertraline/Escitalopram, other GAD treatments



# OPIOIDS!!

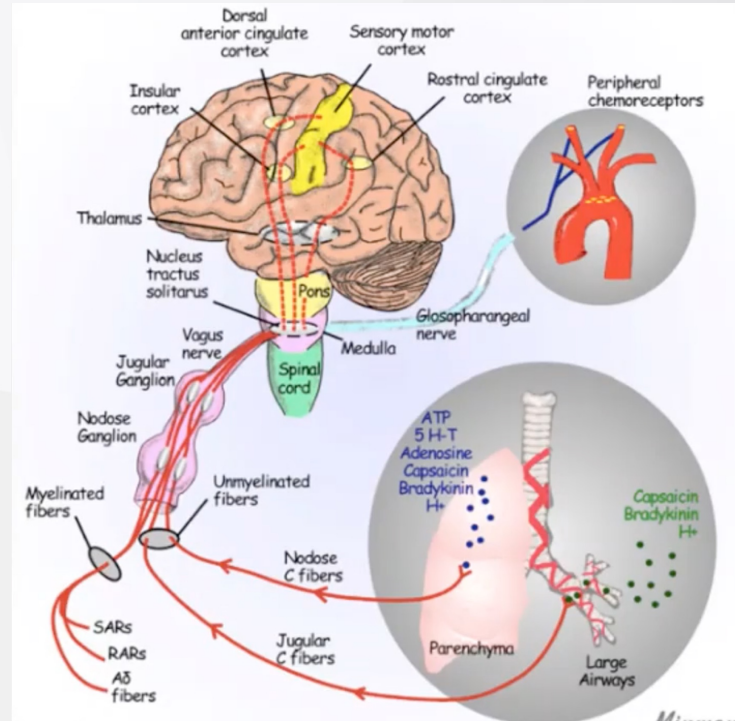
Opioids and  
palliative care!!!



# Opioids

- Opioid receptors are found throughout the respiratory nuclei, lung and brain stem
- Clinical studies have shown that relief of dyspnea can occur without increase in CO<sub>2</sub> and excess respiratory depression

Clemens J Pain  
Sympt Manage 2007  
Jennings Thorax  
2002



## Opioids

**Multiple systematic reviews show small- moderate benefit**

**Cochrane review 2016 (Barnes H et al. 2016)**

- 12 RCTs opioids vs placebo for dyspnea : n=526 (most COPD)
- Compared to placebo opioids decreases breathlessness intensity (mean 0.8 pints)
- No side-effects like sedation if used in low-doses
- No impact on QOL and more research is needed
- No role of nebulized opioids

**Abernethy et al 2003 (BMJ)**

- RCT (n=48) 20mg /d morphine for 4 days and 4 days placebo : morphine improved dyspnea

# Opioid-naïve patients

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## **Currow et al (2020)**

Multicentre parallel group RCT (20% cancer pts)

MOPS :Morphine 2019 (n=284), oxycodone trial 2021 (n=155, COPD)

- Neither 20mg/day SR morphine nor 5mg every 8 hourly of SR oxycodone improved primary outcome of intensity of breathlessness compared to placebo over 7 days. However, limitations to the studies.
- Randomized ,parallel-arm trial of oral morphine vs placebo for 7 days
- Randomized ,parallel-arm trial of oral CR oxycodone 5mg TDS vs placebo for 7 days
- As needed IR morphine (2.5mg /dose upto 6x/day) both grps
- No effect on breathlessness ,but less PRN opioid use

## **Immediate Release morphine vs Placebo (Abdallah etal 2017)**

- RCT (crossver) of 20 COPD patients with chronic breathlessness syndrome
- Weight dependent dose (max morphine10mg/day) helped with breathlessness and sleep

## Opioid tolerant patients

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- Few RCT's are available
- Cross-over, placebo control trial found single dose of sub/cut morphine given at 50% higher than schedules 4-hourly dose resulted in reduction of breathlessness to placebo (Bruera et al 1993)
- Second dose-comparison study patients were given opioids 25-50% more than 4 hourly prn dose and nil improvement in breathlessness (Allard et al)
- Fentanyl found to useful in prophylactic use prior to exertion. However very small number of RCTs

**Table 1** Morphine regimens to treat refractory breathlessness

	Regimen 1	Regimen 2
Starting dose	<ul style="list-style-type: none"><li>• Morphine (immediate release) liquid 2.5 mg orally 4–6 hourly as needed</li></ul>	<ul style="list-style-type: none"><li>• Morphine (sustained release) 10 mg once daily</li></ul>
Adjusting dosing	<ul style="list-style-type: none"><li>• Encourage use</li><li>• Monitor response (ideally using VAS) and side-effects</li><li>• Increase to morphine 5 mg orally 4–6 hourly as needed</li><li>• Once stable with no dose change over 2 weeks, consider conversion to a daily, sustained release formulation</li><li>• Stop treatment if no reported improvement in dyspnoea</li></ul>	<ul style="list-style-type: none"><li>• Monitor response (ideally using VAS) and side-effects</li><li>• Increase as needed at weekly intervals by 10 mg/day to maximum dose of 30 mg once daily.</li><li>• Stop treatment if no reported improvement in dyspnoea on maximum dose</li></ul>
Advantages	<ul style="list-style-type: none"><li>• Patient/carer is in control of dosing, so allowing time for acceptance and familiarisation with using morphine</li><li>• Side-effects minimised</li></ul>	<ul style="list-style-type: none"><li>• Initiation dose may be therapeutic thus improving compliance</li><li>• Initiation dose is relatively low, therefore usually few side-effects</li><li>• Evidence-based regimen</li></ul>
Disadvantages	<ul style="list-style-type: none"><li>• Compliance may be poor</li><li>• Patient may discontinue treatment prematurely due to perceived lack of efficacy while taking sub-therapeutic doses</li></ul>	<ul style="list-style-type: none"><li>• Patient/carer may be reluctant to use regular morphine if unfamiliar with or apprehensive about opioids</li></ul>

VAS, visual analogue scale.

Smallwood et al. Int Med J 2015; 45 (9): 898-904

2019-11

**Original Investigation**

FREE

November 22/29, 2022

# Effect of Regular, Low-Dose, Extended-release Morphine on Chronic Breathlessness in Chronic Obstructive Pulmonary Disease

## The BEAMS Randomized Clinical Trial

Magnus Ekström, MD, PhD<sup>1,2</sup>; Diana Ferreira, MD, PhD<sup>3</sup>; Sungwon Chang, PhD<sup>2</sup>; [et al](#)

» [Author Affiliations](#) | [Article Information](#)

*JAMA*. 2022;328(20):2022-2032. doi:10.1001/jama.2022.20206

ORIGINAL ARTICLE

## Individualized breathlessness interventions may improve outcomes in patients with advanced COPD

MARY Y.Y. QIAN,<sup>1</sup> JOHN POLITIS,<sup>1</sup> MICHELLE THOMPSON,<sup>1</sup> DARREN WONG,<sup>2</sup> BRIAN LE,<sup>3</sup> LOUIS IRVING<sup>1</sup>  
AND NATASHA SMALLWOOD<sup>1</sup>

<sup>1</sup>Department of Respiratory and Sleep Medicine, Royal Melbourne Hospital, Melbourne, VIC, Australia; <sup>2</sup>Department of Medicine, University of Melbourne, Melbourne, VIC, Australia; <sup>3</sup>Department of Palliative Care, Royal Melbourne Hospital, Melbourne, VIC, Australia

### ABSTRACT

*Background and objective:* Many patients with advanced COPD experience refractory breathlessness and individualized breathlessness interventions may improve management of this complex symptom. The aims of this study were to develop, implement and assess the efficacy of a breathlessness intervention for patients with COPD and refractory breathlessness and to evaluate patient acceptability.

*Methods:* An individualized breathlessness plan, informa-

### SUMMARY AT A GLANCE

Refractory breathlessness in patients with advanced COPD is a complex and difficult symptom to manage. In this feasibility study, we demonstrate that implementation of an individualized breathlessness intervention, involving a written plan, information leaflets and breathlessness education, is associated with an improvement in breathlessness scores and high patient acceptability.



# TGA guidelines (Treatment of Chronic Breathlessness )

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## Kapanol (morphine sulfate pentahydrate )

- Can be safely commenced in patients who are opioid naïve with a starting dose of 10 mg/day.
- If a satisfactory clinical response (a one-point reduction in worst breathlessness in the previous 24 h on a 0-10 numerical rating scale (NRS)) has not been achieved after 7 days, and the initial starting dose is well tolerated, an increase of the daily dose by 10 mg with evaluation over the coming 7 days is suggested. Dosing can be once or twice daily, but the maximum evaluated daily dose is 30 mg/day

## Palliative Care Early in the Care Continuum among Patients with Serious Respiratory Illness: An Official American Thoracic Society Policy Statement

Donald R. Sullivan, Anand S. Iyer, Susan Enguidanos, Christopher E. Cox, Morag Farquhar, Daisy J.A. Janssen, Kathleen O. Lindell, Richard A. Mularski, Natasha Smallwood, Alison E. Turnbull, Anne M. Wilkinson, Katherine R. Courtright, Matthew Maddocks, Mary Lynn McPherson, J. Daryl Thornton, Margaret L. Campbell, Tracy K. Fasolino, Patricia M. Fogelman, Larry Gershon#, Thayer Gershon#, Christiane Hartog, Judy Luther#, Diane E. Meier, Judith E. Nelson, Elliot Rabinowitz, Cynda H. Rushton, Danetta H. Sloan, Erin K. Kross\*, Lynn F. Reinke\*

- 1: Palliative care in serious respiratory illness begins with primary palliative care delivered by pulmonary clinicians concomitantly with usual disease-modifying therapies and complimented by secondary palliative care expertise when necessary.
- 2: Comprehensive, individualized assessment of symptoms and needs at every routine clinical encounter.
- 3: Advance care planning should be an iterative and longitudinal process that starts at diagnosis of a serious respiratory illness and evolves with changes in patients' health status, goals, and preferences.
- 4: Informal caregivers should be identified and incorporated as a part of the primary unit of care with patients

- 
- **The Palliation and end-of-life issues section of the COPD-X Plan** states that ‘regular low dose oral morphine may be considered for treating breathlessness in patients with severe COPD that persists despite optimal medical management.’ The same section notes that ‘there is little comprehensive evidence to guide clinicians on the use of opioids in COPD symptom control’.
  - **The European Society of Medical Oncology (ESMO) Clinical Practice Guideline** for Treatment of dyspnea in advanced cancer patients states that
    - ‘ Opioids are the only pharmacological agents with sufficient evidence in the palliation of dyspnea’.
  - **The Canadian Thoracic Society Clinical Practice Guideline (2011)** for managing dyspnea in advance COPD; noted the ‘dearth of adequately powered, clinically relevant RCTs’ and recommended that ‘oral (but not nebulized) opioids be used for the treatment of refractory dyspnea in the individual patient with advanced COPD’.

# MANAGEMENT OF PEOPLE WITH COVID-19 WHO ARE RECEIVING PALLIATIVE CARE



NATIONAL  
CLINICAL  
EVIDENCE  
TASKFORCE

COVID-19

## FORMS OF GUIDANCE

Evidence-Based Recommendation (EBR)  
Consensus Recommendation (CBR)  
Practice Point (PP)

Types  
of  
EBRs

RECOMMENDATION FOR USE

RECOMMENDATION AGAINST USE

CONDITIONAL RECOMMENDATION  
FOR USE

CONDITIONAL RECOMMENDATION  
AGAINST USE

VERSION 4.1

PUBLISHED  
27 OCTOBER 2022

## GENERAL PRINCIPLES

Ensure multidisciplinary collaboration amongst the health and social/community teams including pastoral care, within the decision-making process and care delivery. **PP** [Taskforce/WHO]

Early specialist advice should be considered for people requiring palliative care. **PP** [Taskforce]

Provide opportunities for people to maintain activity, such as placing a chair beside the bed and delivery of rehabilitation interventions via virtual means where possible. **PP** [Taskforce]

## People requiring palliative care and COVID-19

This population includes people with COVID-19 whose prognosis due to co-existing advanced progressive disease is limited or uncertain, or people with critical COVID-19 illness where recovery is not expected.

## Breathlessness

### General Principles of Breathlessness Management:

The general principles of breathlessness management are specified in Figure 1:

- Treat potentially reversible causes and complications of COVID-19 such as pulmonary embolism, cardiac complications and anaemia if deemed appropriate for the patients' goals of care<sup>1</sup>.
- Utilise non-pharmacological approaches.
- Utilise opioids ± benzodiazepines as mainstay pharmacological approaches with oxygen if there is hypoxaemia.
- The sole use of pharmacological therapies is unlikely able to eradicate dyspnoea and need to use in adjunct with other non-pharmacological measures - pharmacological interventions can help "take the edge off".

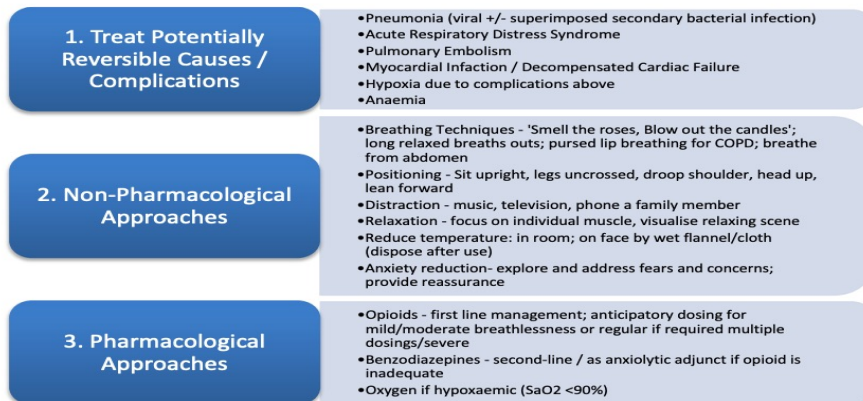


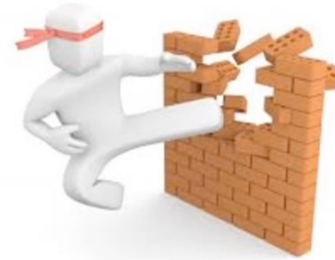
Figure 1. General principles of breathlessness management<sup>1-4</sup>.

# Barriers to palliative care and use of opioids

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## Barriers to palliative care

- Lack of time
- Lack of training
- Attitudes of health professionals & patients
- Failure to recognise patients'/carers' needs



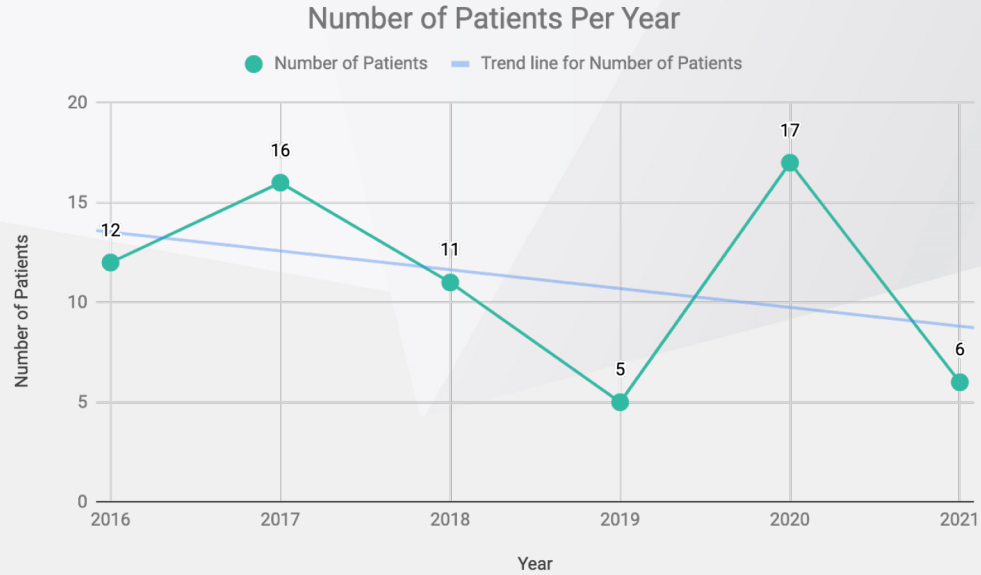
Smallwood et al, 2017 IMJ , Smallwood et al, 2018, COPD, Moran & Smallwood, 2019 Respiratory

# Developing new models of care

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# Lung transplant palliative care clinic







ORIGINAL ARTICLE  
ADVANCED LUNG DISEASE

## Integrated respiratory and palliative care may improve outcomes in advanced lung disease

Natasha Smallwood<sup>1,2</sup>, Michelle Thompson<sup>1</sup>, Matthew Warrender-Sparkes<sup>1</sup>, Peter Eastman<sup>3</sup>, Brian Le<sup>3</sup>, Louis Irving<sup>1</sup> and Jennifer Philip<sup>2,4</sup>

**Affiliations:** <sup>1</sup>Dept of Respiratory and Sleep Medicine, The Royal Melbourne Hospital, Parkville, Australia. <sup>2</sup>Dept of Medicine, University of Melbourne, Melbourne, Australia. <sup>3</sup>Dept of Palliative Care, The Royal Melbourne Hospital, Parkville, Australia. <sup>4</sup>Centre for Palliative Care, St Vincent's Hospital, Fitzroy, Australia.

**Correspondence:** Natasha Smallwood, Dept of Respiratory and Sleep Medicine, The Royal Melbourne Hospital, 300 Grattan Street, Parkville, Victoria 3050, Australia. E-mail: [Natasha.smallwood@mh.edu.au](mailto:Natasha.smallwood@mh.edu.au)

# Breathlessness and advanced respiratory diseases clinic at Alfred

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- Respiratory physician
- Respiratory advanced trainee
- Palliative care physician
- Palliative care and General medicine physician

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Helping people with  
long-term  
breathlessness to live  
well.

# Video and audio to help manage breathlessness

[Print this page](#)

## Videos



Accessibility tools

# Rick

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- 82-year-old married male, home with wife and two sons
- Day 7 COVID-19 , unvaccinated
- On Antivirals and steroids
- Nursing referral for breathlessness management
- On BIPAP FI02 70% , Variable oxygen saturation
- Met Call, GCS 11/15, Lactate was 11
- Reviewed by ICU (not a candidate for intubation)

# Gordon

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- 68-year-old male, home with wife
- BSLTx in 2015 for COPD, relisted for re transplant for CLAD
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- QOL impaired secondary to breathlessness , demoralized
- Referred to palliative care for introduction, breathlessness management and future planning

## Melissa

- 69-year-old divorced female, COPD for past 20 years, Ex-smoker, on triple inhaler therapy
- Exertional Dyspnea for past 2 years and walks with 4WF  
Waking up at night with panic episodes described "as if drowning"  
6 admissions with non-infective exacerbation of COPD
- FEV1 26% pred, FVC 68% DLCo20%
- Long-term oxygen therapy
- Completed pulmonary rehab 3 years ago and not interested to do it again
- Retired Nurse
- Estranged from two daughters
- Socially isolated

# Summary

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- Breathlessness is complex and frightening
- Need new models of integrated care to address needs and symptoms
- A palliative approach can be provided by any health care professional
- Opioids can be used in management of chronic breathlessness , however more research is needed to show QOL benefits