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## cancer-related dyspnea

## Dyspnée chez le patient cancéreux : évaluation de l'acupuncture

## 1. Systematic Reviews and Meta-Analysis

***	Evidence for effectiveness and a specific effect of acupuncture
☆☆	Evidence for effectiveness of acupuncture
☆	Limited evidence for effectiveness of acupuncture
Ø	No evidence or insufficient evidence

#### 1.1. Kako 2023

Kako J, Morikawa M, Kobayashi M, Kanno Y, Kajiwara K, Nakano K, Matsuda Y, Shimizu Y, Hori M, Niino M, Suzuki M, Shimazu T. Nursing support for breathlessness in patients with cancer: a scoping review. BMJ Open. 2023 Oct 12;13(10):e075024. https://doi.org/10.1136/bmjopen-2023-075024

Objective	To identify nursing support provided for the relief of breathlessness in patients with cancer.
Methods	Design: A scoping review following a standard framework proposed by Arksey and O'Malley. Study selection: Electronic databases (PubMed, CINAHL, CENTRAL and Ichushi-Web of the Japan Medical Abstract Society Databases) were searched from inception to 31 January 2022. Studies reporting on patients with cancer (aged ≥18 years), intervention for relief from breathlessness, nursing support and quantitatively assessed breathlessness using a scale were included.
Results	Overall, 2629 articles were screened, and 27 were finally included. Results of the qualitative thematic analysis were categorised into 12 nursing support components: fan therapy, nurse-led intervention, multidisciplinary intervention, psychoeducational programme, breathing technique, walking therapy, inspiratory muscle training, respiratory rehabilitation, yoga, <b>acupuncture</b> , guided imagery and abdominal massage.
Conclusions	We identified 12 components of nursing support for breathlessness in patients with cancer. The study results may be useful to understand the actual state of nursing support provided for breathlessness in patients with terminal cancer and to consider possible support that can be implemented.

## **1.2. Dy 2020** ☆

Dy SM, Gupta A, Waldfogel JM, Sharma R, Zhang A, Feliciano JL, Sedhom R, Day J, Gersten RA, Davidson PM, Bass EB. Interventions for Breathlessness in Patients With Advanced Cancer [Internet]. Rockville (MD): Agency for Healthcare Research and Quality (US). 2020. [213519]. URL

Objectives	To assess benefits and harms of nonpharmacological and pharmacological
Objectives	interventions for breathlessness in adults with advanced cancer.

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Methods	Data sources: We searched PubMed®, Embase®, CINAHL®, ISI Web of Science, and the Cochrane Central Register of Controlled Trials through early May 2020. Review methods: We included randomized controlled trials (RCTs) and observational studies with a comparison group evaluating benefits and/or harms, and cohort studies reporting harms. Two reviewers independently screened search results, serially abstracted data, assessed risk of bias, and graded strength of evidence (SOE) for key outcomes: breathlessness, anxiety, health-related quality of life, and exercise capacity. We performed meta-analyses when possible and calculated standardized mean differences (SMDs).
Results	We included 48 RCTs and 2 retrospective cohort studies (4,029 patients). The most commonly reported cancer types were lung cancer and mesothelioma. The baseline level of breathlessness varied in severity. Several nonpharmacological interventions were effective for breathlessness, including fans (SMD $-2.09$ [95% confidence interval (CI) $-3.81$ to $-0.37$ ]) (SOE: moderate), bilevel ventilation (estimated slope difference $-0.58$ [95% CI $-0.92$ to $-0.23$ ]), acupressure/reflexology, and multicomponent nonpharmacological interventions (behavioral/psychoeducational combined with activity/rehabilitation and integrative medicine). For pharmacological interventions, opioids were not more effective than placebo (SOE: moderate) for improving breathlessness (SMD $-0.14$ [95% CI $-0.47$ to $0.18$ ]) or exercise capacity (SOE: moderate); most studies were of exertional breathlessness. Different doses or routes of administration of opioids did not differ in effectiveness for breathlessness (SOE: low). Anxiolytics were not more effective than placebo for breathlessness (SOE: low). Evidence for other pharmacological interventions was limited. Opioids, bilevel ventilation, and activity/rehabilitation interventions had some harms compared to usual care.
Conclusions	Some nonpharmacological interventions, including fans, <b>acupressure/reflexology</b> , multicomponent interventions, and bilevel ventilation, were effective for breathlessness in advanced cancer. Evidence did not support opioids or other pharmacological interventions within the limits of the identified studies. More research is needed on when the benefits of opioids may exceed harms for broader, longer term outcomes related to breathlessness in this population.

## 1.3. von Trott 2020 (Advanced Diseases)

von Trott P, Oei SL, Ramsenthaler C. Acupuncture for Breathlessness in Advanced Diseases: A Systematic Review and Meta-analysis. J Pain Symptom Manage. 2020;59(2):327-338. [220054]. doi

Context	Nonpharmacological approaches are effective strategies for difficult to palliate breathlessness. Although acupuncture is effective for dyspnea in early-stage chronic obstructive pulmonary disease (COPD), little is known about its effects in patients with advanced (non)malignant diseases.
Objectives	The objective of this study was to identify and examine the evidence of acupuncture on breathlessness in advanced malignant and nonmalignant diseases.
Methods	Systematic literature review of randomized controlled trials of acupuncture and acupressure searched in five databases. Included were adult participants with at least 25% having advanced diseases such as cancer or COPD with severe breathlessness. Primary outcome was severity of dyspnea on Visual Analogue Scale or Borg Scale. Secondary outcomes included quality of life, function, and acceptability. Data were pooled using a random effects model of standardized mean differences.

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Results	<b>Twelve studies with 597 patients</b> (347 COPD, 190 advanced cancer) were included. For breathlessness severity, significant differences were obtained in a meta-analysis (10 studies with 480 patients; standardized mean difference (SMD) = $-1.77$ [95% CI $-3.05$ , $-0.49$ ; P = $0.007$ ; I2 = $90\%$ ]) and in a subgroup analysis of using sham acupuncture control groups and a treatment duration of at least three weeks (6 studies with 302 patients; SMD = $-2.53$ [95% CI $-4.07$ , $-0.99$ ; P = $0.001$ ; I2 = $91\%$ ]). Exercise tolerance (6-minute walk test) improved significantly in the acupuncture group (6 studies with 287 patients; SMD = $0.93$ [95% CI $0.27$ , $1.59$ ; P = $0.006$ ; I2 = $85\%$ ]). In four of six studies, quality of life improved in the acupuncture group.
Conclusion	Acupuncture improved breathlessness severity in patients with advanced diseases. The methodological heterogeneity, low power, and potential morphine-sparing effects of acupuncture as add-on should be further addressed in future trials.

#### 1.4. Ben-Aharon 2008 Ø

Ben-Aharon I, Gafter-Gvili A, Paul M, Leibovici L, Stemmer Sm. Interventions for alleviating cancer-related dyspnea: a systematic review. J Clin Oncol. 2008. 26(14):2396-404. [148964].

Purpose	Dyspnea is one of the most distressing symptoms experienced by terminally ill cancer patients. This study aimed to evaluate the role of interventions for the palliation of dyspnea.
Methods	We conducted a systematic review of randomized controlled trials assessing all pharmacologic and nonpharmacologic interventions for dyspnea palliation in cancer patients, and searched the Cochrane Library, MEDLINE, conference proceedings, and references. Two reviewers independently appraised the quality of trials and extracted data.
Results	Our search yielded 18 trials. Fourteen evaluated pharmacologic interventions: seven assessing opioids (a total of 256 patients), five assessing oxygen (137 patients), one assessing helium-enriched air, and one assessing furosemide. Four trials evaluated nonpharmacologic interventions (403 patients). The administration of subcutaneous morphine resulted in a significant reduction in dyspnea Visual Analog Scale (VAS) compared with placebo. No difference was observed in dyspnea VAS score when nebulized morphine was compared with subcutaneous morphine, although patients preferred the nebulized route. The addition of benzodiazepines to morphine was significantly more effective than morphine alone, without additional adverse effects. Oxygen was not superior to air for alleviating dyspnea, except for patients with hypoxemia. Nursing-led interventions improved breathlessness. <b>Acupuncture was not beneficial</b> .
Conclusion	Our review supports the use of opioids for dyspnea relief in cancer patients. The use of supplemental oxygen to alleviate dyspnea can be recommended only in patients with hypoxemia. Nursing-led nonpharmacologic interventions seem valuable. Only a few studies addressing this question were performed. Thus, further studies evaluating interventions for alleviating dyspnea are warranted.

#### 1.5. Bausewein 2008 Ø

Bausewein C, Booth S, Gysels M, Higginson I. Non-Pharmacological interventions for breathlessness in advanced stages of malignant and non-malignant diseases. Cochrane Database Syst Rev. 2008. [149250].

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Objectives	The primary objective was to determine the effectiveness of non-pharmacological and non-invasive interventions to relieve breathlessness in participants suffering from the five most common conditions causing breathlessness in advanced disease.
Methods	Search strategy: We searched the following databases: The Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, CINAHL, British Nursing Index, PsycINFO, Science Citation Index Expanded, AMED, The Cochrane Pain, Palliative and Supportive Care Trials Register, The Cochrane Database of Systematic Reviews, and Database of Abstracts of Reviews of Effectiveness in June 2007. We also searched various websites and reference lists of relevant articles and textbooks. Selection criteria: We included randomised controlled and controlled clinical trials assessing the effects of non-pharmacological and non-invasive interventions to relieve breathlessness in participants described as suffering from breathlessness due to advanced stages of cancer, chronic obstructive pulmonary disease (COPD), interstitial lung disease, chronic heart failure or motor neurone disease. Data collection and analysis: two review authors independently assessed relevant studies for inclusion. data extraction and quality assessment was performed by three review authors and checked by two other review authors. Meta-analysis was not attempted due to heterogeneity of studies.
Main results	Forty-seven studies were included (2532 participants) and categorised as follows: single component interventions with subcategories of walking aids (n = 7), distractive auditory stimuli (music) (n = 6), chest wall vibration (CWV, n = 5), acupuncture/acupressure (n = 5), relaxation (n = 4), neuro-electrical muscle stimulation (NMES, n = 3) and fan (n = 2). Multi-component interventions were categorised in to counselling and support (n = 5), breathing training (n = 3), counselling and support with breathing-relaxation training (n = 2), case management (n = 2) and psychotherapy (n = 2). There was a high strength of evidence that NMES and CWV could relieve breathlessness and moderate strength for the use of walking aids and breathing training. There is a low strength of evidence that acupuncture/acupressure is helpful. There is not enough data to judge the evidence for distractive auditory stimuli (music), relaxation, fan, counselling and support, counselling and support with breathing-relaxation training, case management and psychotherapy. Most studies have been conducted in COPD patients, only a few studies included participants with other conditions.
Authors' conclusions	Breathing training, walking aids, NMES and CWV appear to be effective non- pharmacological interventions for relieving breathlessness in advanced stages of disease.

## 2. Clinical Practice Guidelines

positive recommendation (regardless of the level of evidence reported)Ø negative recommendation (or lack of evidence)

## 2.1. American Society of Clinical Oncology (ASCO, USA) 2021 ⊕

Hui D, Bohlke K, Bao T, Campbell TC, Coyne PJ, Currow DC, Gupta A, Leiser AL, Mori M, Nava S, Reinke LF, Roeland EJ, Seigel C, Walsh D, Campbell ML. Management of Dyspnea in Advanced Cancer: ASCO Guideline. J Clin Oncol. 2021:JCO200346. [213524]. URL

4.7. **Acupressure or reflexology**, if available, may be offered (type: evidence-based; evidence quality: low; strength of recommendation: weak)

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#### 2.2. European Society for Medical Oncology (ESMO) 2020 ⊕

Hui D, Maddocks M, Johnson MJ, Ekström M, Simon ST, Ogliari AC, Booth S, Ripamonti CI; ESMO Guidelines Committee. Management of breathlessness in patients with cancer: ESMO Clinical Practice Guidelines. ESMO Open. 2020;5(6):e001038. [212180]. doi

Consider a therapeutic trial of acupressure or acupuncture according to patient preference (II, C)

#### 2.3. Pallaborative North West (PNW, UK) 2017 ⊕

Clinical Practice Summary For Palliative Care Symptoms North West Coast Strategic Clinical Network Cheshire & Merseyside Audit and Clinical Guidelines Group June 2017. National Health Service (NHS), North West Coast Strategic Clinical Network. 2017. [219424].

https://www.england.nhs.uk/north/wp-content/uploads/sites/5/2019/02/cm-clinical-practice-summary-palliative-care-symptoms.pdf

Breathlessness: Non-Pharmacological options: **Acupuncture**, aromatherapy and reflexology

# 2.4. Association Francophone des Soins Oncologiques de Support (AFSOS) 2014 ⊕

Association Francophone des Soins Oncologiques de Support (AFSOS). Fiches Réferentiels : L'acupuncture en onco-hématologie MAJ 2014 (online)

Dyspnée. Acupuncture (Niveau de preuve HAS : C

## 2.5. American College of Chest Physicians (ACCP, USA) 2010 Ø

Mahler DA, Selecky PA, Harrod CG, Benditt JO, Carrieri-Kohlman V, Curtis JR, Manning HL, Mularski RA, Varkey B, Campbell M, Carter ER, Chiong JR, Ely EW, Hansen-Flaschen J, O'Donnell DE, Waller A. American College of Chest Physicians consensus statement on the management of dyspnea in patients with advanced lung or heart disease. Chest. 2010;137(3):674-91. [198360].

The literature review also considered studies of anxiolytic medications, antidepressants, phenothiazines, inhaled furosemide, inhaled lidocaine, music therapy, and **acupuncture** for relief of dyspnea. As there are only a few reports on these interventions in the target patient population, the information was considered insufficient to be included in this consensus statement.

## 2.6. American College of Chest Physicians (ACCP, USA) 2007 ⊕

Cassileth BR, Deng GE, Gomez JE, Johnstone PA, Kumar N, Vickers AJ; American College of Chest Physicians. Complementary therapies and integrative oncology in lung cancer: Accp Evidence-Based Clinical Practice Guidelines (2nd Edition). Chest. 2007;132(3sup:340s-54s. [146961]

Recommendation 11. In patients with lung cancer with symptoms such as dyspnea, fatigue, chemotherapyinduced neuropathy, or postthoracotomy pain, a trial of acupuncture is recommended. Grade of recommendation, 2C

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