



Sing out for COPD!

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Singing for Lung Health may serve as an activity that can help engage individuals in conventional exercise training. It may have a role as an activity during pulmonary rehabilitation itself, or as a continuation activity afterwards. <https://bit.ly/3ycwOvB>

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The popular Spanish saying “*Quién canta, sus males espanta*”, that is “Singing drives your worries away”, frames a positive attitude that people facing misfortune can hope to cultivate. Although in popular culture singing and music can sometimes be connected with poor or even lethal outcomes, including the legend of Orpheus, The Odyssey’s Sirens, and many Christian Dutch and Flemish genre paintings [1], in other areas, such as opera, a changing perception of the roles of doctors, patients and disease has been reported [2].

Activities that involve the simultaneous engagement of multiple individuals, for example group participation in activities such as crafts, theatre and singing, are particularly effective at fostering cooperation, self-confidence and a sense of social inclusion for children, adults, families and communities across cultures. The World Health Organization has synthesised the global, vast evidence on the role of the Arts in improving health and maintaining well-being [3], and there are Cochrane and other reviews on the growing evidence around singing as an approach to improve health outcomes in COPD [4, 5]. However there remains a need for well-conducted randomised trials to clarify its value and help to position it within clinical guidelines.

In this issue of the *European Respiratory Journal*, KAASGAARD *et al.* [6] report a trial comparing Singing for Lung Health (SLH) against physical exercise training, with one or other delivered as the training component of pulmonary rehabilitation in people with severe COPD. SLH is not simply humming along listening to your favourite group or singing in the shower. Rather, SLH is a quality controlled, accredited and protocolised programme including physical and vocal warmups, rhythm and pitch games, sung repertoire and cool down/relaxation exercises led by trained and certified experts (figure 1) [4, 5, 7]. In this trial, groups of 10 COPD patients were block randomised to twice weekly sessions of either SLH or standard pulmonary rehabilitation exercises for 10 weeks. The primary study outcome was change in exercise capacity from baseline to follow-up, assessed using the 6-min walk distance (6MWD). Secondary outcomes included changes in quality of life, anxiety and depression, lung function and dyspnoea, as well as adherence. The authors found that SLH was non-inferior to pulmonary rehabilitation training in terms both of 6MWD and most of the secondary end-points assessed. The finding of a positive dose–response relationship, linking clinical response to adherence, is also supportive of an effect.

No trial is perfect. Block randomisation produced some differences in lung function, sex, age and home oxygen use between groups, but if anything, all were against the SLH group. There was a higher than expected drop-out rate. Most importantly, however, the improvement in exercise capacity seen in the group allocated to standard pulmonary rehabilitation was disappointing, with only a quarter achieving the 6MWD clinically minimal important difference of 30 m. There is no clear explanation for this, but it raises serious concerns about the generalisability of the findings. Given the task-specific nature of training, it remains improbable that SLH would have more impact on walking ability than a programme involving supervised and supported incremental increase in walking tasks through an appropriately delivered pulmonary rehabilitation programme.



FIGURE 1 Group practice of Singing for Lung Health.

The authors suggest that SLH, rather than being a substitute for standard pulmonary rehabilitation, might complement it where the implementation of pulmonary rehabilitation is difficult. In practice, the barriers to pulmonary rehabilitation completion for any individual may include poor provision of services, a lack of referral, or referrals that fail to enthuse the patient about the importance of participation, as well as logistical difficulties with attendance and scepticism about the likely benefit or the plausibility of exercise, given how breathless the person feels. Of note, given singing's positive effect on mood, depression is also associated with reduced daily activity in people with COPD [7], and patients who complete pulmonary rehabilitation tend to have lower anxiety and depression scores at baseline than those who do not [8].

Further research is needed to establish how SLH may be used in relation to pulmonary rehabilitation, as well as to understand the underpinning physiology and mechanisms [9]. SLH may serve as an activity that can help to engage individuals with group activity and encourage them to feel confident taking part in conventional exercise training subsequently. It may have a role as an activity during pulmonary rehabilitation itself. It may serve as a continuation activity after pulmonary rehabilitation. Finally, SLH may be most usefully positioned "as its own thing": one of a range of possible arts and social activities to



FIGURE 2 Singing helps your lungs, your brain and likely your joy. Right panel: ©kongvector, Can Stock Photo Inc., used with permission.

improve the lives of people with lung disease; from walking a dog [10], Tai Chi [11, 12], dancing [13–15] and playing the didgeridoo [16], to a myriad other activities [3, 17, 18].

People with COPD are particularly vulnerable to sedentarism [19], and reduced physical activity levels occur even in early disease [20]. The impact of SLH and other arts and social activities on levels of physical activity, particularly in younger patients and earlier in COPD, measured with appropriate rigour, will be a key patient relevant outcome [21].

Importantly, the COVID-19 pandemic is far from over and group singing indoors must be considered an activity with some risk attached [22–24]. Wearing a face mask and using well-ventilated rooms can mitigate this, together with discipline by participants to ensure that they do not attend if they have any symptoms suggesting respiratory infection [25, 26]. The pandemic has seen a fall in acute exacerbations of COPD and asthma, as the circulation of other viruses that trigger these has also plummeted. There is evidence that longer-term adoption of infection control measures may be welcomed by people with lung disease [27]. Singing groups have been able to move online with some success, though participants with experience of both report that they prefer the experience of meeting in person [28]. Singing has also been proposed as a strategy to improve symptoms in people living with “long COVID” and results from randomised controlled trials are expected soon [29].

All in all, people with COPD, however limited, can be encouraged to sing out in groups or alone, with relatives or carers. A positive attitude can help the glass to seem half full (figure 2). As J.M. Barrie put it in *Peter Pan*: “If you cannot teach me to fly, teach me to sing.”

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References

- 1 Brosch S, Bennett JD, Pirsig W. Singing and evil in visual art. *Folia Phoniatr Logop* 2005; 57: 239–245.
- 2 Soriano JB. On doctors and their operas: a critical (and lyrical) analysis of medicine in opera. *Chest* 2018; 154: 409–415.
- 3 Fancourt D, Finn S. What is the Evidence on the Role of the Arts in Improving Health and Well-being? A Scoping Review (Health Evidence Network (HEN) synthesis report 67). Copenhagen, WHO Regional Office for Europe, 2019.
- 4 McNamara RJ, Epsley C, Coren E, *et al.* Singing for adults with chronic obstructive pulmonary disease (COPD). *Cochrane Database Syst Rev* 2017; 12: CD012296.
- 5 Lewis A, Cave P, Stern M, *et al.* Singing for Lung Health—a systematic review of the literature and consensus statement. *NPJ Prim Care Respir Med* 2016; 26: 16080.
- 6 Kaasgaard M, Rasmussen DB, Andreasson KH, *et al.* Use of Singing for Lung Health as an alternative training modality within pulmonary rehabilitation for COPD: a randomised controlled trial. *Eur Respir J* 2022; 59: 2101142.
- 7 Dueñas-Espín I, Demeyer H, Gimeno-Santos E, *et al.* Depression symptoms reduce physical activity in COPD patients: a prospective multicenter study. *Int J Chron Obstruct Pulmon Dis* 2016; 11: 1287–1295.
- 8 Boutou AK, Tanner RJ, Lord VM, *et al.* An evaluation of factors associated with completion and benefit from pulmonary rehabilitation in COPD. *BMJ Open Respir Res* 2014; 1: e000051.
- 9 Lewis A, Philip KEJ, Lound A, *et al.* The physiology of singing and implications for ‘Singing for Lung Health’ as a therapy for individuals with chronic obstructive pulmonary disease. *BMJ Open Respir Res* 2021; 8: e000996.
- 10 Christian H, Bauman A, Epping JN, *et al.* Encouraging dog walking for health promotion and disease prevention. *Am J Lifestyle Med* 2016; 12: 233–243.
- 11 Lewis A, Hopkinson NS. Tai Chi Movements for Wellbeing — evaluation of a British Lung Foundation pilot. *Perspect Public Health* 2020; 140: 172–180.
- 12 Polkey MI, Qiu ZH, Zhou L, *et al.* Tai Chi and pulmonary rehabilitation compared for treatment-naïve patients with COPD: a randomized controlled trial. *Chest* 2018; 153: 1116–1124.
- 13 Koshland DE Jr. Philosophy of science. The Cha-Cha-Cha Theory of Scientific Discovery. *Science* 2007; 317: 761–762.
- 14 Philip KEJ, Lewis A, Williams S, *et al.* Dance for people with chronic respiratory disease: a qualitative study. *BMJ Open* 2020; 10: e038719.
- 15 Philip K, Lewis A, Hopkinson NS. Music and dance in chronic lung disease. *Breathe* 2019; 15: 116–120.
- 16 Puhon MA, Suarez A, Lo Cascio C, *et al.* Didgeridoo playing as alternative treatment for obstructive sleep apnoea syndrome: randomised controlled trial. *BMJ* 2006; 332: 266–270.

- 17 Liu H, Song M, Zhai ZH, *et al.* Group singing improves depression and life quality in patients with stable COPD: a randomized community-based trial in China. *Qual Life Res* 2019; 28: 725–735.
- 18 Philip KE, Cartwright LL, Westlake D, *et al.* Music and dance in respiratory disease management in Uganda: a qualitative study of patient and healthcare professional perspectives. *BMJ Open* 2021; 11: e053189.
- 19 Rennard SI, Calverley P. Rescue! Therapy and the paradox of the Barcalounger. *Eur Respir J* 2003; 21: 916–917.
- 20 Soriano JB, Polverino F, Cosio BG. What is early COPD and why is it important? *Eur Respir J* 2018; 52: 1801448.
- 21 Demeyer H, Mohan D, Burtin C, *et al.* Objectively measured physical activity in patients with COPD: recommendations from an international task force on physical activity. *Chronic Obstr Pulm Dis* 2021; 8: 528–550.
- 22 Hamner L, Dubbel P, Capron I, *et al.* High SARS-CoV-2 attack rate following exposure at a choir practice — Skagit County, Washington, March 2020. *MMWR Morb Mortal Wkly Rep* 2020; 69: 606–610.
- 23 Philip KEJ, Lewis A, Buttery SC, *et al.* Aerosol transmission of SARS-CoV-2: inhalation as well as exhalation matters for COVID-19. *Am J Respir Crit Care Med* 2021; 203: 1041–1042.
- 24 Philip KE, Lewis A, Buttery SC, *et al.* Physiological demands of singing for lung health compared with treadmill walking. *BMJ Open Respir Res* 2021; 8: e000959.
- 25 Kniesburges S, Schlegel P, Peters G, *et al.* Effects of surgical masks on aerosol dispersion in professional singing. *J Expo Sci Environ Epidemiol* 2021; in press [<https://doi.org/10.1038/s41370-021-00385-7>].
- 26 Soriano JB, Anzueto A, Bosnic Anticevich S, *et al.* Face masks, respiratory patients and COVID-19. *Eur Respir J* 2020; 56: 2003325.
- 27 Hurst JR, Cumella A, Niklewicz CN, *et al.* Acceptability of hygiene, face covering and social distancing interventions to prevent exacerbations in people living with airways diseases. *Thorax* 2021; in press [<https://doi.org/10.1136/thoraxjnl-2021-217981>].
- 28 Philip KE, Lewis A, Jeffery E, *et al.* Moving singing for lung health online in response to COVID-19: experience from a randomised controlled trial. *BMJ Open Respir Res* 2020; 7: e000737.
- 29 Clinicaltrials.gov. ENO Breathe vs Usual Care in COVID-19 Recovery (SHIELD ENO). <https://clinicaltrials.gov/ct2/show/NCT04830033> (Date last accessed: 15 November 2021).