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Appraisal

Critically Appraised Papers

# Supervised walking training improves health-related quality of life and exercise endurance in people with chronic obstructive pulmonary disease

Summary of: Wootton SL, Ng LWC, McKeough ZJ, Jenkins S, Hill K, Eastwood PR, et al. Ground-based walking training improves quality of life and exercise capacity in COPD. *Eur Respir J.* 2014;44:885-894.

***Question:*** In patients with chronic obstructive pulmonary disease (COPD), does supervised ground-based walking improve health-related quality of life and exercise capacity? ***Design:*** Randomised, controlled trial with concealed allocation and blinding of the outcome assessor. ***Setting:*** Outpatient departments of tertiary hospitals in Sydney and Perth, Australia. ***Participants:*** Adults with stable COPD were included if they had moderate, severe or very severe airflow limitation, and a smoking history greater than 10 pack-years. Exclusion criteria comprised: long-term oxygen therapy, morbid obesity, use of a walking aid, any comorbid condition that limited exercise performance or participation in exercise training in the previous 12 months. Randomisation allocated 95 participants to the intervention group and 48 to the control group. ***Interventions:*** For participants in both groups, general practitioners were sent a letter to encourage optimal medical management. Those in the intervention group completed supervised walking exercise training 3 times a week for 8 weeks. Walking was undertaken on a flat indoor track and commenced at 30 minutes per session at a pace equivalent to 80% of the average speed achieved during the baseline 6-minute walk test. Training duration was increased to a maximum of 45 minutes, after which walking pace was increased as symptoms allowed. Those in the control group did not participate in any exercise training. ***Outcome measures:*** The primary outcome was health-related quality of life, which was measured using the Saint George's Respiratory Questionnaire and Chronic Respiratory Disease Questionnaire. A secondary outcome was exercise endurance, which was measured by the endurance shuttle walk test. ***Results:*** A total of 130 participants completed the study. At the end of the intervention period, the improvement in health-related quality of life, measured as the total score, favoured the intervention group by −6 points (95% CI −10 to −2) and 7 points (95% CI 2 to 11) on the two questionnaires. Gains in favour of the intervention group were also seen in performance on the endurance shuttle walk test (mean difference 208 seconds, 95% CI 104 to 313). ***Conclusion:*** For patients with stable COPD, supervised ground-based walking improves health-related quality of life and exercise endurance, and is therefore an appropriate intervention in locations where specialised exercise equipment is unavailable.

**Provenance:** Invited. Not peer-reviewed.

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## Commentary

Pulmonary rehabilitation is an effective intervention for individuals with chronic obstructive pulmonary disease (COPD), with exercise as the main cornerstone.[1] However, pulmonary rehabilitation is a costly and scarce resource,[2] and there is a need to explore alternative evidence-based approaches. Ground-based walking is a possible alternative to pulmonary rehabilitation that requires no equipment and is less costly; however, its effectiveness has not been established, which was the focus of the study by Wootton et al.

The components of the intervention in the study by Wootton et al are important to highlight: walking occurred three times per week for 8 weeks (at least 20 walking training sessions in 8 to 10 weeks), on an indoor track in a hospital, and was supervised by a physiotherapist. The exercise prescription was individualised, based on the results of a 6-minute walk test. The exercise program was progressed based on time (to a maximum of 45 minutes), and/or speed, and/or with the addition of weights, depending on ability.

The results of this randomised controlled trial show that ground-based walking resulted in improvements in health-related quality of life and endurance walking when compared with the control. Ground-based walking is inexpensive, readily available and requires no equipment. Therefore, physiotherapists should consider this intervention in individuals with COPD who may not have access to pulmonary rehabilitation. However, it is important to consider that this intervention is not free of resources and requires supervision by a physiotherapist, as the exercise program was prescribed based on an exercise test and progressed in a standardised manner. In addition, it was conducted indoors at an institution. Furthermore, the results of the study by Wootton et al cannot be generalised to all patients with COPD. The study mainly included participants with moderate and severe COPD and who were not using long-term oxygen therapy or a walking aid. Future studies are needed to establish its effectiveness in other subgroups of individuals with COPD.

**Provenance:** Invited. Not peer-reviewed.

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## References

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2. Desveaux L, et al. *J COPD.* 2015;12:144–153.

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