



Towards health benefits in chronic respiratory diseases: pulmonary rehabilitation

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A series on pulmonary rehabilitation: how best to implement it <http://ow.ly/mMEzi>

In 1895, Dr Charles Denison, a Professor of Diseases of the Chest and of Climatology at the University of Denver, was the first to state that daily walks, hygiene and dietary are important to acquire mental relaxation, happiness and prosperity in “pulmonary invalids” [1]. Notwithstanding, it took another 74 years before PETTY *et al.* [2] described a “comprehensive care programme” for individuals with “chronic airway obstruction” in a landmark peer-reviewed article [2]. This is still regarded as the first article on the short-term and long-term efficacy of rehabilitation for patients suffering from a chronic pulmonary disease. The first international statement on pulmonary rehabilitation with a strong recommendation for its use in the management of patients with chronic obstructive pulmonary disease (COPD) was first published in 1992, and has been offered to physicians, and other healthcare professionals, by the scientific community [3]. That recommendation is still supported by the latest American Thoracic Society (ATS)/European Respiratory Society (ERS) Statement of Pulmonary Rehabilitation [4], as well as by the Global Initiative for COPD (GOLD) strategy document for the diagnosis and management COPD [5].

To date, pulmonary rehabilitation is defined by the ATS and ERS as a comprehensive intervention based on a thorough patient assessment, followed by patient-tailored therapies, which include, but are not limited to, exercise training, education and behaviour change, designed to improve the physical and psychological condition of people with chronic respiratory disease and to promote the long-term adherence to health-enhancing behaviours [4]. Daily symptoms, lower-limb muscle function, exercise capacity and health status, will improve following pulmonary rehabilitation in individuals with chronic respiratory diseases [6–12]. Moreover, healthcare costs are likely to decrease following a pulmonary rehabilitation course [13, 14]. So, it seems fair to conclude that pulmonary rehabilitation is a cardinal part of COPD management, and a useful intervention in other chronic respiratory diseases [15].

Taking all these facts into account, the Editorial Board of the *European Respiratory Review* (ERR) decided to invite a group of international experts to write a series on pulmonary rehabilitation. In the first article, which appeared in the June edition of the ERR, GLOECKL *et al.* [16] provided practical recommendations for exercise training in patients with COPD, which is still considered as the cornerstone of pulmonary rehabilitation programmes [16]. Indeed, optimisation of the physical condition of individuals with a chronic respiratory disease is an important goal in their rehabilitation course [17–23]. Optimisation of the psychological condition, as well as the promotion of the long-term adherence to health-enhancing

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behaviours have also been identified by the ATS/ERS Task Force on Pulmonary Rehabilitation as additional goals of pulmonary rehabilitation [4]. These goals may be achieved partially following the exercise-training component of pulmonary rehabilitation. The non-exercising parts of rehabilitation, however, seem to add an additional value in achieving these newly identified goals. Therefore, it is important to understand the content and the efficacy of these non-exercising components. In this issue of the *ERR*, HILL *et al.* [24] summarise the content and efficacy of smoking cessation, optimising pharmacotherapy, assisting with early identification and treatment of exacerbations, managing acute dyspnoea, increasing physical activity, improving body composition, promoting mental health, facilitating advance care planning, and establishing social support networks in individuals with COPD. In particular, these approaches should be equally considered and incorporated within rehabilitation programmes to optimise effective self-management of chronic respiratory diseases [4]. However, this implies that at the initial intake and assessment should contain much more than just lung function tests, a dyspnoea score and a field exercise tests. Other outcomes, *e.g.* body composition, comorbidities, physical activity, problematic activities of daily life, mental health, life-sustaining treatment preferences, and the home-environment, also need to be evaluated [25–28]. Based on the results of this comprehensive assessment, a patient-tailored programme can then be compiled by the interdisciplinary rehabilitation team. Indeed, multiple dedicated healthcare professionals are necessary to deal with the multifaceted clinical presentation of individuals with chronic respiratory disease who have been referred for pulmonary rehabilitation [4]. To achieve interdisciplinarity, healthcare professionals need to combine their clinical activities into joint activities for the same patient-oriented treatment goal(s), and create new approaches by thinking across conventional professional boundaries [29].

To complete this thematic series, two other articles will deal on how to adapt the pulmonary rehabilitation programme to patients with chronic respiratory disease other than COPD, and consider the complex comorbidities and their impact in individuals with COPD who are generally referred for rehabilitation. This series should be of interest to members of the ERS, as the topics are very timely, the articles within the series are easy to read and aim at providing practical recommendations. Indeed, it is expected that the reviews will create additional awareness in the health community covering the importance of pulmonary rehabilitation, enabling clinicians to appropriately set up new programmes as well as broadening the scope of existing ones. This seems necessary as, to date, accessibility to pulmonary rehabilitation programmes is often still very poor [30, 31].

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