

Pulmonary rehabilitation in Brazil

Pulmonary rehabilitation (PR) was introduced in Brazil by Dr. José Roberto Jardim, around 1990, in a small room with two indoor exercise bicycles and a treadmill without at least inclination. Only in 1993 – that is, less than 25 years –, the Center for Rehabilitation in the Lar Escola São Francisco was funded, which is considered the first of the type in Brazil. There were four ergometric treadmills that steadily increased in number along with the number of attendances. This Center was the disseminator of respiratory physical therapists with training in PR. At the Clinics Hospital, of University of São Paulo, the RP appeared in 1998 due to the large number of patients and by the suggestion of Dr. Alberto Cukier. Nowadays, there are over 150 RP centers, many more than in other South American countries, such as Argentina (32), Colombia (12), Mexico (3), and Uruguay (2). There are South American countries that still rely on only one PR center, such as Paraguay, Bolivia, Venezuela, Costa Rica, Honduras, Peru, and Ecuador.

With the evolution of the studies, it was widely demonstrated that PR reduces dyspnea, increases exercise capacity, and improves the quality of life in individuals with chronic obstructive pulmonary disease (COPD)¹. These benefits became so established in the literature that Cochrane Library decided something quite unusual: they stopped accepting reviews on the subject². This occurred because the conclusions of the latest update of the Cochrane on RP in patients with COPD agreed with previous versions, published in 1996, 2002, and 2006³⁻⁶. The decision followed the Cochrane Handbook: “a review that is no longer being updated is the one that is highly susceptible to maintain its current relevance for a foreseeable future. Situations in which a review may be declared as no longer updated include: 1) the intervention is replaced, keeping in mind that the Cochrane reviews must be internationally relevant and 2) the conclusion is so correct that adding new information will not change it, and there are not

predictable adverse effects of the intervention⁷”. Such reviews are classified in the Cochrane database of systematic reviews as being “stable.”

New approaches to the study of PR in patients with COPD aim to understand how to modify the behavior. In this sense, the most recent definition of RP says that “PR is a comprehensive intervention based on a thorough evaluation, followed by therapies adapted to the patient that include, but are not limited to, physical training, education, and behavior change. It is designed to improve the physical and psychological condition of people with chronic respiratory diseases and to promote long-term adherence to behaviors that improve health⁸”. In this sense, the development of technologies that reduce the level of sedentary lifestyle or increase the level of physical activity is theme of topical interest.

Despite the advances of PR, there are still at least four points to be improved. Firstly, increasing the access of patients to the PR in the whole world, including its effect in patients hospitalized for exacerbations, as well as evaluating its effectiveness in patients with smoother chronic respiratory disease. Secondly, developing alternative PR models, as the use of new technologies and telerehabilitation. Thirdly, putting into practice methods that encourage patients to change their behavior in a significant and sustainable way (self-management). And, finally, understanding the diversity and multisystemic complexity of COPD and other chronic respiratory diseases, including the different phenotypes of the disease and the impact of PR on these phenotypes. Let's wait for new studies to see what is coming...

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REFERENCES

1. Nici L, Donner C, Wouters E, Zuwallack R, Ambrosino N, Bourbeau J, et al. American Thoracic Society/European Respiratory Society Statement on Pulmonary Rehabilitation. *Am J Respir Crit Care Med.* 2006;173(12):1390-413. doi: 10.1164/rccm.200508-1211ST
2. Lacasse Y, Cates CJ, McCarthy B, Welsh EJ. This cochrane review is closed: deciding what constitutes enough research and where next for pulmonary rehabilitation in COPD. *Cochrane Database Syst Rev.* 2015;(11). doi: 10.1002/14651858.CD003793.pub3
3. McCarthy B, Casey D, Devane D, Murphy K, Murphy E, Lacasse Y. Pulmonary rehabilitation for chronic obstructive pulmonary disease. *Cochrane Database Syst Rev.* 2015;23(2). doi: 10.1002/14651858.CD003793.pub2
4. Lacasse Y, Wong E, Guyatt GH, King D, Cook DJ, Goldstein RS. Meta-analysis of respiratory rehabilitation in chronic obstructive pulmonary disease. *Lancet.* 1996;348(9035):1115-9. doi: 10.1016/S0140-6736(96)04201-8
5. Lacasse Y, Brosseau L, Milne S, Martin S, Wong E, Guyatt GH, et al. Pulmonary rehabilitation for chronic obstructive pulmonary disease. *Cochrane Database Syst Rev.* 2002;(2):CD003793. doi: 10.1002/14651858.CD003793
6. Lacasse Y, Goldstein R, Lasserson TJ, Martin S. Pulmonary rehabilitation for chronic obstructive pulmonary disease. *Cochrane Database Syst Rev.* 2006;(2):CD003793. doi: 10.1002/14651858.CD003793.pub2
7. Higgins JPT, Green S, Scholten RJPM. Maintaining reviews: updates, amendments and feedback. In: Higgins JPT, Green S, editors. *Cochrane handbook for systematic reviews of interventions: version 5.1.0 (updated March 2011)*. London: The Cochrane Collaboration; 2011. Available from: handbook.cochrane.org.
8. Spruit MA, Singh SJ, Garvey C, ZuWallack R, Nici L, Rochester C, et al. Official American Thoracic Society/European Respiratory Society statement: key concepts and advances in pulmonary rehabilitation. *Am J Respir Crit Care Med.* 2013;188(8):e13-64. doi: 10.1164/rccm.201309-1634ST