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Tai Chi recreational exercise is not rehabilitation / Ambrosino, N; Polastri, M; Vitacca, M; Nava, S; Clini, E..
- In: CHEST. - ISSN 1931-3543. - 154:3(2018), pp. 730-731. [10.1016/j.chest.2018.05.034]

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04/05/2026 02:20

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Journal:	<i>CHEST</i>
Manuscript ID	CHEST-18-1215
Article Type:	Correspondence
Date Submitted by the Author:	18-May-2018
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Keywords:	REHABILITATION PULMONARY, EXERCISE, Tai Chi

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Tai Chi recreational exercise is not rehabilitation

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Conflict of Interest

Authors declare that they have no conflicts with the present manuscript

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To the Editor:

We read with interest the study by Polkey and coworkers [1] showing the effectiveness of Tai Chi recreational exercise in a group of 120 COPD patients screened from a wide population. Two weeks after starting inhaled indacaterol 150 mcg *bid*, naive COPD patients were randomized to receive either a standard pulmonary rehabilitation course (PR) or Tai Chi (TC) for 12 weeks. The primary end point was score change in the disease-specific Saint George Respiratory Questionnaire (SGRQ), with measurements taken from pre-post interventions and also 12 weeks later on. Authors found that TC was equivalent to PR for improving SGRQ in these patients. Moreover, a clinically significant difference in SGRQ emerged favouring TC 12-week after exercise cessation, thus suggesting that "*Tai Chi is an appropriate substitute for PR*".

On the basis of our current insights, the American Thoracic Society (ATS) and the European Respiratory Society (ERS) adopted in recent years a new and more structured definition of PR 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 of health-enhancing behaviours*" [2]. This underlies two most important aspect of PR as a non-pharmacological intervention, namely the team-based work (multidisciplinary) and the individually tailored intervention with multiple activities. This recalls to our attention what is "pulmonary rehabilitation", which is not any form of single physiotherapy intervention or leisure activity (including TC) where patients are asked to exercise irrespective of any physiological principles and (sometimes) outside the ideal setting.

Overall, moderate to high levels of regular physical activity are associated with reduced lung function decline and exacerbation rates in patients with COPD [3] and may lower the risk of developing COPD among adult smokers [4]. The actual debate around the best and preferred form of exercise to be adopted to keep a

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3 patient with COPD as active as possible, should not distract attention from which
4 is the goal of PR as a sophisticated form of therapy. As a matter of fact, the
5 study by Polkey et al. [1] indicates that patients in the PR group performed a mix
6 of exercise training modalities rather than a formal course with multiple goals. For
7 instance, the body mass index of the patients included was around 20-21 which
8 claims for additional and structured forms of intervention (like nutritional
9 support/advice) within a PR programme. Therefore, this study only seems to
10 compare TC with exercise, but not with PR. Finally, no information on whether the
11 exercise sessions in the two groups were attended was included in the paper, so
12 that a potential Hawthorne effect [5] cannot be excluded, especially if referred to
13 those patients performing TC.

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23 The population in the study (as in Table 1) indicates that the COPD included were
24 of medium to high level of functional severity but with an apparently narrow
25 range of dyspnea MRC-score and a good physical activity level (daily step count).
26 This is consistent with the low existing relationship between lung function and
27 physical performance status, which claims the priority to immediate
28 bronchodilation in symptomatic subjects before and over the possible and
29 potential benefit of exercise, which is no alternative but an accessory to
30 medication(s) [6].

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38 Since the COPD population in the study was naïve to medication, the lack of a
39 control arm using indacaterol alone may be criticized. Indeed, it is possible that
40 improvements in SGRQ score were more likely to be induced by drug therapy
41 thus leading to a "ceiling effect" which covered any difference between TC and
42 PR. Rather interestingly introduction of indacaterol to naïve patients did not result
43 in any significant improvement in lung function (e.g. FEV1), which might have
44 been the case in moderate to severe patients [7], even more probable in
45 individuals naïve to bronchodilators and/or unaware of their disease.

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52 With their conclusion ("*Tai Chi is an appropriate substitute for PR*") authors
53 essentially speculate that any recreational activity, like Tai Chi, may have the
54 potential of a low-cost initial therapy among COPD. We entirely catch the point
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3 that every (potentially) useful intervention may be better than nothing, especially
4 in those countries with difficult and inhomogeneous conditions like in China, with
5 a 8.6% prevalence of COPD in an adult population of more than 1400 million
6 people [8]. Clearly there is a role for alternative interventions to help patients
7 with their disability in the long-term. In addition, it is very likely that Tai Chi can
8 be learned easily by Chinese patients thanks to its diffusion in East Asia world
9 region, thus making the technique more appealing both for patients and for
10 clinicians in this geographical area. However, we suggest authors to be cautious
11 when giving messages potentially able to neglect the relevance of medical
12 therapy [6], which otherwise should be delivered to all symptomatic patients.
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