**SUPPLEMENTAL DIGITAL CONTENT**

**SDC Discussion**

**Clinical Implications**

In the present study, we found a correlation between metabolic limitations (increased metabolic demand) and ventilatory limitations (dyspnea and increased ventilatory demand) during selected activities of daily living (ADL), as assessed by the London Chest Activity of Daily Living (LCADL) scale and the quality of life through the St George’s Respiratory Questionnaire (SGRQ). The total score of the SGRQ reflected 67% of the real limitations during ADL such as increased metabolic demand and dyspnea. And when we applied the LCADL, it can reflect in 34% the real limitations during ADL.

In clinical practice, we strongly recommend the use of the SGRQ and LCADL because, as we can see in the present study, the findings from these questionnaires reflect some functional limitations during “real life” situations. We should consider that these 2 tools are not expensive, valid, reliable and responsive.

Concerning our study, we cannot recommend a cut-off point for SGRQ and LCADL scores because it was not an aim of our study. As a clinical implication of the present study, if some limitations are found by the LCADL and SGRQ, it is important to give attention to this. As we know, patients usually present with limitations at the very early stage of effort.1

Based on this, we recommend that energy conservation techniques (ECT) be taught to these patients, mainly for ADL which involves trunk flexion and rotation and unsupported upper limb movements. The greater the ability to perform ADL, the lower the symptoms and limitations and the more physically active the patient will be. As we know, ECT are recommended in pulmonary rehabilitation programs and these techniques are able to decrease tiredness and make patients more independent when performing ADL, as described by Velloso et al.1

The therapist should instruct the patient to adapt their home to do all ADL in the easiest and most efficient way. For example, during a shower, the patient could use a chair to sit on instead of a bench to wash the lower limbs, the patient can be instructed to flex the hip and knee, crossing 1 leg over the other, without bending forward during the entire activity. The same position can be used to put shoes on and take them off.1

During personal hygiene activities, the adaptation could be sit in front of the sink and rest their arms on its edge and also put the mirror in a lower position.1 When the activities involve unsupported upper limbs movements, the patient could adapt the shelves to a lower position, avoiding movements above the shoulders. The same adaptation could be done to activities that involve bending and trunk rotation, changing the positions of shelves and, instead of bending forward, squatting.

Furthermore, the inclusion of exercises with more functional characteristics, in which the goal is to improve the performance in ADL, should be considered in pulmonary rehabilitation programs. The use of upper limbs exercises to increase muscle endurance and strength is very relevant, which would be improve the performance in ADL with unsupported upper limbs.2

Thus, the results of this study has great clinical relevance demonstrating that SGRQ and LCADL, which are widely used assessments in patients with COPD, are feasible for assessing real ADL limitations. Therefore, it is possible to assess these patients with focus on ADL limitations, which can lead to teaching patients how to be more efficient when performing these activities and also adds functional exercises to the pulmonary rehabilitation program.

**SDC Discussion References**

1. Velloso M, Jardim JR. Study of energy expenditure during activities of daily living using and not using body position recommended by energy conservation techniques in patients with COPD. *Chest.* 2006;130(1):126-132.

2. Spruit MA, Singh SJ, Garvey C, et al. An 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.