

Pulmonary rehabilitation effective for both obese and slim COPD patients

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Obese patients with chronic obstructive pulmonary disease (COPD) stand to gain as much from pulmonary rehabilitation as their slimmer counterparts, even though as a group they have a lower exercise capacity, according to new research from the University Hospitals of Leicester in the UK.

"Like the healthy population, the prevalence of obesity is increasing in those with COPD," said Neil Greening, M.B.B.S, M.R.C.P., who led the study. "There is evidence that obesity may lower [exercise capacity](#) but at the same time appears to confer a survival advantage, which is known as the obesity paradox. Pulmonary rehabilitation is effective in improving exercise capacity and health status in COPD but it is unclear whether these benefits accrue in patients with extreme obesity. We wanted to compare the outcomes of a pulmonary rehabilitation program in patients with obesity of varying severity and normal weight subjects."

The results of their study will be reported at the ATS 2010 International Conference in New Orleans.

To compare the effects of pulmonary rehabilitation between obese and non-obese patients, Dr. Greening and colleagues recruited patients with clinical and spirometric COPD and classified them according to their level of obesity, from normal weight (BMI 21-25kg/m²) to extreme obesity (BMI >40 kg/m²). The patients underwent pulmonary rehabilitation at a single center in the UK. The improvements in their exercise performance and [endurance](#), as well as their health status

(chronic respiratory questionnaire) and baseline characteristics were assessed.

"We found that obese people with COPD are more disabled in terms of exercise capacity, despite having less severe airflow obstruction (the measure used to quantify severity of COPD). However, they do just as well with rehab including those with extreme obesity," said Dr. Greening. "There is no difference between obesity subgroups in the proportion of patients achieving a clinically significant improvement in the incremental shuttle walk test."

This is the first study to look at PR in extreme obesity. While the researchers expected to find that some improvement would be seen after the pulmonary rehabilitation program, they were surprised to see no difference in training effects between normal weight and extremely [obese patients](#).

"Patients with COPD, irrespective of body mass, improve following a pulmonary rehabilitation program. Therefore extremely obese patients with COPD should still be considered for enrolment," said Dr. Greening, adding that although there are no weight limits for pulmonary rehabilitation programs, there is likely some discrimination by medical staff who may emphasize weight loss over exercise.

There remain questions about the disparity in obese patients with COPD. Obese patients do not have the same improvements in health status following [pulmonary rehabilitation](#). In particular, fatigue does not improve, possibly due to co-existing medical problems, such as obstructive sleep apnea or obesity hypoventilation, according to Dr. Greening. However, the most puzzling question remains the survival benefit conferred by obesity. "As medical professionals, we know that obesity is linked with medical complications such as diabetes and heart disease, so how it can lead to a survival advantage in other diseases such

as COPD or chronic kidney disease is puzzling. The reasons for this are currently unknown and further research is needed."

A larger study is planned to examine some of these issues. "We are planning a study to look at the underlying mechanisms of skeletal muscle dysfunction and obesity in COPD," said Dr. Greening. "Rather than a larger multi-centre study looking at epidemiology, we are trying to understand why obesity affects patients with [COPD](#) in the way it does."

Provided by American Thoracic Society

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