

Process used to select lung transplant patients may need to be changed: study

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With a limited number of lungs available, deciding who gets a transplant can be a matter of life or death. New research from the University of Maryland School of Medicine (UMSOM) suggests that the system for choosing transplant recipients in chronic obstructive pulmonary disease (COPD) may underestimate how long a person might survive without a lung transplant and therefore, may mislead clinicians.

The [score](#), introduced in 2004, is widely used to predict how long a person will live with COPD. Known as the BODE score, it combines Body mass index, airflow Obstruction, Dyspnea (shortness of breath) and Exercise capacity.

Researchers who developed the BODE score observed survival for [patients](#) with the most severe disease that was clearly worse than survival after a lung [transplant](#). In time, the BODE score became a quick way to predict survival without transplant and thus to identify those patients suffering from COPD who might live longer with a transplant. "While the BODE score was and remains to be a valuable prognostication tool in COPD, it has not been validated for this particular purpose," says lead investigator Robert M. Reed, MD, UMSOM associate professor of medicine and a pulmonary and critical care specialist at the University of Maryland Medical Center. The originator of the BODE score, Bartolome R. Celli, MD, of the Brigham and Women's Hospital in Boston, is senior author of the current paper.

This study, published online in the journal *Chest*, compared survival data

in the original group of 625 patients (93 percent male) who formed the basis for the BODE score to 4,300 lung transplant patients (49 percent male) who had COPD. Results suggest that the BODE score overestimates mortality risk in lung transplant candidates with COPD. This is likely due to the fact that these patients have a lower burden of other ailments such as cancer and heart disease, and are not active smokers. Patients selected as candidates for [lung transplantation](#) survive considerably longer than would be predicted by prognostic estimates extrapolated from the original BODE group.

"Our research shows that we are often transplanting people who may not actually derive a survival advantage at all, and we may be shortening the lives of some people with transplant," says Dr. Reed. COPD accounts for about a third of all lung transplants, but the disease progresses so slowly that patients with very severe COPD can survive without a transplant at levels comparable to those who've had a transplant.

"Statistically, a lung transplant is a risky thing. About half of people are dead 5-6 years after a lung transplant, due to transplant complications, so, obviously, you don't want to transplant people who are likely to live longer if left alone," says Dr. Reed.

The study notes that just as cardiovascular disease and cancer are major killers in the general population, they also play a major role in the deaths of COPD patients. Further, modern lung transplant screening for COPD typically determines that patients with heart disease or cancer, as well as those who have not stopped smoking, are not eligible for transplant.

The paper does not point to a newer, more accurate way to predict transplant survival in COPD patients, but Dr. Reed says the transplant community may want to look at new kinds of measurement. However, he points out that survival is only one factor, albeit a major one, in the very personal decision facing both physician and patient contemplating [lung](#)

transplantation.

"Dr. Reed and his team are to be commended for shedding light on some of the issues that attend when the BODE score is used to project the survival of [lung transplant](#) candidates with COPD," says E. Albert Reece, MD, PhD, MBA, vice president for medical affairs at the University of Maryland, the John Z. and Akiko K. Bowers Distinguished Professor and dean of UMSOM. "This study suggests it may be worthwhile to weigh the value of new standards that take into account current transplant center screening practices."

More information: Robert M. Reed et al, Survival of Lung Transplant Candidates with COPD: BODE Reconsidered, *Chest* (2017). [DOI: 10.1016/j.chest.2017.10.008](#)

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