

New hope for patients with severe lung disease

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Patients suffering from severe lung disease could see their lives transformed thanks to a 'game-changing' clinical trial carried out by UK experts and led by the team from the Lane Fox Respiratory Service based at Guy's and St Thomas' in London.

The HOT-HMV trial (Home Oxygen Therapy-Home Mechanical Ventilation), which involved giving selected [patients](#) a breathing machine to be used in their home in addition to [oxygen](#) therapy, was found to reduce readmissions to hospital following an acute infection.

The results of the trial, which have been published in the *Journal of the American Medical Association (JAMA)*, were announced today at the American Thoracic Society's prestigious annual conference in Washington, DC.

In the UK alone, approximately 30,000 people die from Chronic Obstructive Pulmonary Disease (COPD) every year. The World Health Organisation (WHO) estimates that COPD will be the world's third largest killer disease by 2020.

Chronic Obstructive Pulmonary Disease (COPD) is an umbrella term used to describe progressive lung diseases including emphysema, chronic bronchitis, refractory (non-reversible) asthma, and some forms of bronchiectasis. This disease is characterized by increasing breathlessness.

Respiratory experts Professor Nicholas Hart and Dr Patrick Murphy, who co-ordinated the UK-wide trial from St Thomas' Hospital, said the trial results could pave the way for a complete change in the way that the most severely affected COPD patients across the world are treated.

Professor Hart explains: "The only current treatment we have to give these patients is oxygen therapy, but now we can give them oxygen as well as a ventilator in their home. We have managed to reduce the likelihood of readmission to hospital by almost 50%.

"In the trial we used a home ventilator that co-ordinates itself with the individual patient's breathing. The mask ventilator machine works by blowing in air and oxygen to keep oxygen levels high and carbon dioxide, the waste gas, low."

The trial was carried out thanks to funding and equipment from manufacturers Philips Respironics and ResMed, and Guy's and St Thomas' Charity.

COPD, or Chronic Obstructive Pulmonary Disease, is one of the world's biggest killers, but the addition of a home ventilator to oxygen treatment reduces admissions to hospital as well as maintaining quality of life.

Ronnie Ward, 74, from Brighton, has suffered from COPD for five years and uses his home ventilator every night, to support his breathing. Since being recruited for the trial, he and his wife Julie, 55, have had to make far fewer trips to hospital.

"Ronnie was in and out of hospital, sometimes spending weeks and months on the wards. Coming back and forth and spending so much time in hospital was stressful and very demoralising," she says.

"We were finding that just weeks after he'd been discharged from

hospital, Ronnie would need to be readmitted because he was struggling to breathe again. Using the [breathing machine](#) every night has taken a lot of pressure off us."

Meanwhile, the trial follow up will continue, as patients are monitored for survival rates over the next three and five years.

"These results are extremely promising but the work will continue. So far we have found that patients using home oxygen with a home ventilator device are two-thirds less likely to be readmitted within 28 days," says Professor Hart.

"This is very important because not only does it maintain a patient's quality of life but also it has the potential to significantly increase our ability to care for these patients without the need for a [hospital](#) stay. At Guy's and St Thomas' around 1,000 patients are admitted each year with COPD. If we can keep them comfortable at home for longer, this will have a big impact."

Provided by NIHR Biomedical Research Centre at Guy's and St Thomas' and King's College London

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