

Criteria for selecting COVID-19 patients for lung transplantation

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In May 2020, a team led by thoracic surgeon Konrad Hoetzenecker of the Department of Surgery of MedUni Vienna and Vienna General Hospital performed a lung transplant on a 44-year-old patient who had

been seriously ill with COVID-19, making her the first patient in Europe to receive a lung transplant for this indication. The Vienna lung transplantation program now plays a leading role in an international consortium comprising experts from the U.S., Europe and Asia. Based on the expertise from Vienna, approximately 40 transplants have now been carried out on COVID-19 patients throughout the world. In a study published in the leading journal *The Lancet Respiratory Medicine*, the consortium has now proposed the first general selection criteria for lung transplantation in COVID-19 patients.

"We have collated the first experiences in the world of performing lung transplants on COVID-19 patients. It is clear that such a complex intervention should only be considered for patients who, by virtue of their age and good general health, have a good chance of recovery with new lungs," explains Konrad Hoetzenecker, Head of the [lung transplantation](#) program at MedUni Vienna and Vienna General Hospital. The Vienna team performs around 100 lung transplants a year, making it one of the largest programs in the world, alongside Toronto, Cleveland and Hanover.

The following factors were established as criteria for potential transplantation: exhaustion of all conservative treatment options, no recovery of the COVID-19-damaged lungs despite at least four weeks of ventilation/ECMO, evidence of advanced and irreversible lung damage in several consecutive CT scans, age below 65 and no relevant comorbidities. In addition to this, candidates for a [lung transplant](#) must be in good physical condition and have a good chance of complete physical rehabilitation following the transplant. "These guidelines can be applied worldwide for making a sound selection of patients who are suitable for a lung transplant following a COVID-19 infection."

The [surgical team](#) at MedUni Vienna and Vienna General Hospital has meanwhile carried out twelve lung transplantations on COVID-19

patients, demonstrating that even the most seriously ill patients, who would otherwise die, can survive with a [lung](#) transplant.

In March 2020, patient number one suffered total pulmonary failure as a result of COVID-19, so that artificial ventilation was no longer possible. She could only be kept alive by the circulation pump. At the time of the transplant, the PCR test showed that virus particles were still present but were no longer infectious. The MedUni Vienna/Vienna General Hospital thoracic surgeons and surgical team managed to replace the patient's completely destroyed lungs with new donor lungs.

More information: Ankit Bharat et al, Early outcomes after lung transplantation for severe COVID-19: a series of the first consecutive cases from four countries, *The Lancet Respiratory Medicine* (2021). [DOI: 10.1016/S2213-2600\(21\)00077-1](https://doi.org/10.1016/S2213-2600(21)00077-1)

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