

Immune response to SARS-CoV-2 following organ transplantation

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A research team from the University Hospital at Ruhr-Universität Bochum (RUB) has developed a test that provides information on the immune response to the novel coronavirus in patients who need to take immunosuppressive drugs. This is necessary, for instance, following an organ transplantation. "We were able to show that these patients can achieve a good immune response to SARS-CoV-2 despite immunosuppression," says Professor Nina Babel, Head of the Center for Translational Medicine at Marien Hospital Herne. Immunosuppressive therapy can be adapted individually during a COVID-19 infection using the test. The researchers report in the *American Journal of Transplantation* on 10 August 2020.

Risk for organ transplant patients twice as high

Chronically ill patients with impaired immune defenses have an increased risk of suffering from a severe COVID-19 infection. Transplant patients are affected in several ways: in addition to the [chronic illness](#) that led to organ failure and subsequent transplantation, [transplant patients](#) need to take medications that suppress the defenses of their own [immune system](#).

"These immunosuppressants are necessary to prevent the body from rejecting transplanted organs. However, they can lead to an abundance of viral infections," explains Nina Babel, who, together with Professor Timm Westhoff, Director of Medical Clinic I at Marien Hospital Herne, led the team, including researchers from the Department of Molecular and Medical Virology at RUB and the Surgical Clinic at Knappschaftskrankenhauses Langendreer.

"Until now, it has not been known whether our transplant patients are capable of forming a sufficient [immune response](#) to the new coronavirus," emphasizes Timm Westhoff.

Immune response despite suppressing drugs

With the help of the test established in the Marien Hospital's immunodiagnostics laboratory, the team demonstrated that transplant patients are very capable of achieving a good immune response despite immunosuppression. In addition to high antibody titres, large quantities of T lymphocytes, which are responsible for killing infected cells, were found in the current case study.

The test is of great clinical relevance for transplant patients: the information provided by this goes far beyond a pure antibody test. "The data obtained help us to deal with immunosuppression during the current pandemic," emphasizes Timm Westhoff. "The test allows us to individually adjust immunosuppression when a patient is suffering from COVID-19."

More information: Nina Babel et al. Immune monitoring facilitates the clinical decision in multifocal COVID-19 of a pancreas/kidney transplant patient, *American Journal of Transplantation* (2020). DOI: [10.1111/ajt.16252](https://doi.org/10.1111/ajt.16252)

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