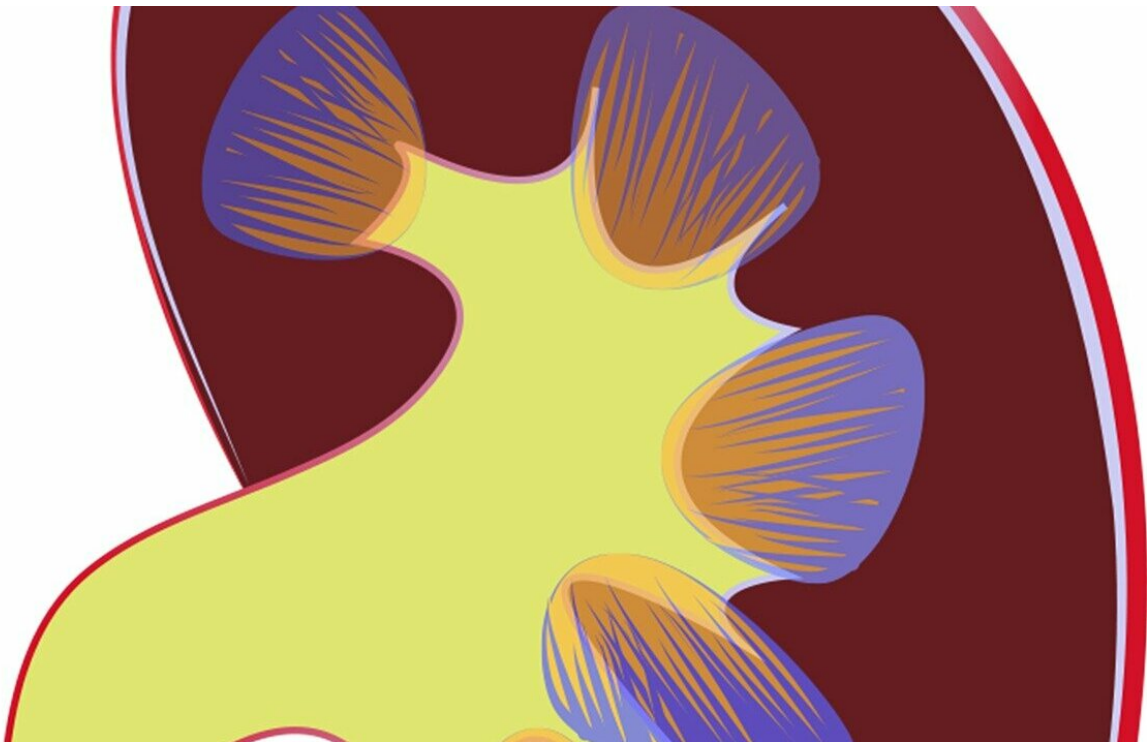


# Study examines the effects of COVID-19 on human kidney cells

June 10 2021

---



Credit: CC0 Public Domain

Researchers have studied human kidney cells in the lab to examine the effects of COVID-19 on kidney health. The findings appear in an upcoming issue of *JASN*.

Many individuals who develop COVID-19 also experience [kidney](#)

damage, but it's unclear if this is a direct result of viral infection or a consequence of another condition or the body's response to the infection. To investigate, a team led by Benjamin Dekel, MD, Ph.D. (Sheba Medical Center, in Israel) cultivated [human kidney cells](#) in lab dishes and infected them with the virus that causes COVID-19.

The researchers found that although the virus that causes COVID-19 could enter, infect, and replicate in human adult kidney [cells](#), this did not typically lead to cell death. Prior to infection, the cells contained high levels of interferon signaling molecules, and the infection stimulated an [inflammatory response](#) that increased these molecules. In contrast, infection of kidney cells deficient in such molecules resulted in cell death, suggesting a protective effect.

The cells in these experiments were grown as a three-dimensional spheroid that imitates the healthy kidney or as a two-dimensional layer that mimics the cells of an acutely injured kidney. Cells that mimicked an acutely injured kidney were more prone to infection and additional injury but not [cell death](#).

"The data indicate that it is unlikely that the virus is a primary cause of acute kidney injury seen in COVID-19 patients. It implies that if such injury takes place in the kidney by any cause, the virus might jump on the wagon to intensify it. Therefore, if we're able to limit the common scenario of acute kidney injury in the first place, then there might be the possibility to minimize potential damage caused by the virus," Dr. Dekel explained.

**More information:** "Human Kidney Spheroids and Monolayers Provide Insights into SARS-CoV-2 Renal Interactions," *JASN*, [DOI: 10.1681/ASN.2020111546](https://doi.org/10.1681/ASN.2020111546)

Provided by American Society of Nephrology

Citation: Study examines the effects of COVID-19 on human kidney cells (2021, June 10)  
retrieved 24 April 2024 from

<https://medicalxpress.com/news/2021-06-effects-covid-human-kidney-cells.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.