

Scientists use ultraviolet light to disinfect CT scanners

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Credit: Jeff Siewerdsen and Mahadevappa Mahesh

The COVID-19 pandemic has sparked heightened awareness of cleaning and disinfecting procedures in many industries. Health care facilities have long been familiar with protocols for disinfecting tools and equipment, and now, scientists are studying methods to improve these procedures, making them safer and more efficient for patients and health care workers.

At Johns Hopkins, biomedical engineer Jeff Siewerdsen and radiologist Mahadevappa Mahesh are investigating the use of UV [light](#) to disinfect the inner bore of CT scanning machines, a cramped space that is exposed to exhaled particles from patients and is difficult to reach by manually wiping it down.

The UV light being studied is not the typical beam of sunshine that falls to the earth. Those rays are mostly UVA rays, which tend to cause skin cancer and other problems. Siewerdsen and Mahesh are studying UVC rays, which can eliminate a high proportion of SARS-CoV-2 virus from hard surfaces.

They attached a UVC lamp to the bed inside the bore of a CT scanner and found that the UV light wiped out 99.9999% of SARS-CoV-2 virus particles in three to five minutes. A summary of the results was published Nov. 18, along with a [video abstract](#), in the *Journal of Applied Clinical Medical Physics*.

The lamp used in the study cost \$105; however, they did not study the longevity of the lamp. The researchers also note that there may be crevices in the CT scanner that are not reachable with the UV light.

If the UVC procedure for CT scanners proves useful, the process could be used in addition to the manual wipe down of CT scanners, improve the safety of personnel and patients, and applicable to many [health care facilities](#) around the globe.

More information: Mahadevappa Mahesh et al. Ultraviolet germicidal irradiation of the inner bore of a CT gantry, *Journal of Applied Clinical Medical Physics* (2020). [DOI: 10.1002/acm2.13067](https://doi.org/10.1002/acm2.13067)

Provided by Johns Hopkins University

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