

Artificial intelligence can improve how chest images are used in care of COVID-19 patients

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According to a recent report by Johns Hopkins Medicine researchers, artificial intelligence (AI) should be used to expand the role of chest X-

ray imaging—using computed tomography, or CT—in diagnosing and assessing coronavirus infection so that it can be more than just a means of screening for signs of COVID-19 in a patient's lungs.

Within the study, published in the May 6 issue of *Radiology: Artificial Intelligence*, the researchers say that "AI's power to generate models from large volumes of information—fusing molecular, clinical, epidemiological and imaging data—may accelerate solutions to detect, contain and treat COVID-19."

Although CT chest imaging is not currently a routine method for diagnosing COVID-19 in patients, it has been helpful in excluding other possible causes for COVID-like symptoms, confirming a diagnosis made by another means or providing critical data for monitoring a patient's progress in severe cases of the disease. The Johns Hopkins Medicine researchers believe this isn't enough, making the case that there is "an untapped potential" for AI-enhanced imaging to improve. They suggest the technology can be used for:

- Risk stratification, the process of categorizing patients for the type of care they receive based on the predicted course of their COVID-19 infection.
- Treatment monitoring to define the effectiveness of agents used to combat the disease.
- Modeling how COVID-19 behaves, so that novel, customized therapies can be developed, tested and deployed.

For example, the researchers propose that "AI may help identify the immunological markers most associated with poor clinical course, which may yield new targets" for drugs that will direct the [immune system](#) against the SARS-CoV-2 virus that causes COVID-19.

More information: Shinjini Kundu et al, How Might AI and Chest

Imaging Help Unravel COVID-19's Mysteries?, *Radiology: Artificial Intelligence* (2020). [DOI: 10.1148/ryai.2020200053](https://doi.org/10.1148/ryai.2020200053)

Provided by Johns Hopkins University School of Medicine

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