

People living with HIV more likely to get sick with, die from COVID-19

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Dr. Zeina Arnouk takes care of a patient in the COVID-19 unit at Penn State Health St. Joseph Medical Center. Credit: Penn State Health

Over the past year, studies have revealed that certain pre-existing conditions, such as cancer, diabetes and high blood pressure, can

increase a person's risk of dying from COVID-19. New research shows that individuals living with human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS)—an estimated 38 million worldwide, according to the World Health Organization—have an increased risk of SARS-CoV-2 infection and fatal outcomes from COVID-19.

In a new study, [Penn State College of Medicine](#) researchers found that people living with HIV had a 24% higher risk of SARS-CoV-2 infection and a 78% higher risk of death from COVID-19 than people without HIV. They assessed data from 22 previous studies that included nearly 21 million participants in North America, Africa, Europe and Asia to determine to what extent people living with HIV/AIDS are susceptible to SARS-CoV-2 infection and death from COVID-19.

The majority of the participants (66%) were male and the median age was 56. The most common comorbidities among the HIV-positive population were hypertension, diabetes, [chronic obstructive pulmonary disease](#) and chronic kidney disease. The majority of patients living with HIV/AIDS (96%) were on antiretroviral therapy (ART), which helps suppress the amount of HIV detected in the body.

"Previous studies were inconclusive on whether or not HIV is a risk factor for susceptibility to SARS-CoV-2 infection and poor outcomes in populations with COVID-19," said Dr. Paddy Ssentongo, lead researcher and assistant professor at the Penn State Center for Neural Engineering. "This is because a vast majority of people living with HIV/AIDS are on ART, some of which have been used experimentally to treat COVID-19."

According to the researchers, certain pre-existing conditions are common among people living with HIV/AIDS, which may contribute to the severity of their COVID-19 cases. The beneficial effects of antiviral

drugs, such as tenofovir and protease-inhibitors, in reducing the risk of SARS-CoV-2 infection and death from COVID-19 in people with living with HIV/AIDS remain inconclusive.

"As the pandemic has evolved, we've obtained sufficient information to characterize the epidemiology of HIV/SARS-CoV-2 coinfection, which could not be done at the beginning of the pandemic due to scarcity of data," said Vernon Chinchilli, fellow researcher and chair of the Department of Public Health Sciences. "Our findings support the current Centers for Disease Control and Prevention guidance to prioritize persons living with HIV to receive a COVID-19 vaccine."

Emily Heilbrunn, Anna Ssentongo and Jonathan Nunez of Penn State College of Medicine; Ping Du of Takeda Pharmaceuticals and Shailesh Advani of Georgetown University also contributed to this research. The researchers declare no conflicts of interest.

More information: Paddy Ssentongo et al. Epidemiology and outcomes of COVID-19 in HIV-infected individuals: a systematic review and meta-analysis, *Scientific Reports* (2021). [DOI: 10.1038/s41598-021-85359-3](https://doi.org/10.1038/s41598-021-85359-3)

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