Breakthrough COVID-19 Risk

People living with HIV appear more likely to get breakthrough COVID-19 and severe illness after vaccination.

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People living with HIV appear more likely to get breakthrough COVID-19 and severe illness after vaccination, suggesting they might benefit from extra vaccine doses— even if they're not considered to be moderately or severely immunocompromised.

While most people with well-controlled HIV have a good response to COVID vaccines, those who are not on antiretroviral therapy or who have a low CD4 T-cell count may not fare as well.

Researchers with the NA-ACCORD cohort study used electronic health records to compare breakthrough COVID-19 rates among 33,029 HIV-positive and 80,965 HIV-negative people who were fully vaccinated, mostly with the Pfizer-BioNTech or Moderna vaccines. (This was defined as completion of the standard initial vaccine regimen, but nearly half had also received additional doses.)

The overall risk of COVID breakthrough nine months after full vaccination was low (3.8%), but people with HIV had a 28% higher breakthrough rate than their HIV-negative peers (4.4% versus 3.5%). People who received additional doses and those with a high CD4 count experienced fewer breakthroughs. A follow-up analysis that included 1,241 HIV-positive and 2,408 HIV-negative people with breakthrough COVID found that rates of severe illness were comparable in the two groups (6.7% versus 7.3%), but the risk was 59% higher for HIV-positive people with a CD4 count below 350.

"These findings should alert all people with HIV to their greater risk of COVID-19 breakthrough and can inform official recommendations about COVID-19 vaccination for people with HIV," says senior study author Keri Althoff, PhD, MPH, of Johns Hopkins Bloomberg School of Public Health.

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