

# How many COVID-19 cases are going undetected?

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**What's the news:** Reported U.S. case figures of COVID-19 infection are likely underestimating the disease's spread—potentially by a large magnitude—a study published this week in *JAMA Internal Medicine* found. The study also found that most of the inhabitants of areas from which data was collected had not been infected by the virus during the period analyzed.

The study examined the prevalence of virus antibodies, using serologic testing figures from 10 U.S. regions—the San Francisco Bay area; Connecticut; South Florida; Louisiana; the Minneapolis-St. Paul-St. Cloud metro area; Missouri; the New York City metro area; the Philadelphia metro area; Utah; and western Washington.

Utilizing more than 16,000 samples compiled from late March through mid-May 2020, the data indicated that “the number of infections was much greater than the number of reported cases throughout the study period.” The prevalence of antibodies among studied sample varied widely by region, with New York reporting a 6.9% figure in late March and the Bay Area reporting around 1% in late April.

From comparing the number of estimated cases to reported case figures on the last day of sample collection, the study's authors estimated that there were six times as many COVID-19 infections in Connecticut, the lowest figure, and potentially 24 times the number of infections in Missouri than were reported.

In examining potential causes of the disparity between reported cases and actual cases, the study's authors offered two explanations: mild or asymptomatic cases or symptomatic cases in which infected people did not seek care or were not tested.

**Why it's important:** In concluding remarks, the study's authors shed some light on what the uncertainty surrounding COVID-19 case figures means for the public.

“Because persons often do not know if they are infected with [the virus], the public should continue to

take steps to help prevent the spread of COVID-19, such as wearing cloth face coverings when outside the home, remaining six feet apart from other people, washing hands frequently, and staying home when sick,” they said.

An editorial published based on the study looked at how the figures discredit the concept of so-called “herd immunity.” That theory is based on the significant prevalence of antibodies in the general population—somewhere around 70%.

“Increasing evidence suggests that acquired immunity may be short-lived in some persons with [COVID-19] infection, particularly those with mild or asymptomatic infections,” the editorial’s authors contend. “Importantly, whatever protection population-level seropositivity might confer may be less durable than initially anticipated.”

Coming after months of national discussion about the importance of thorough and effective data collection, the editorial touches on the vitality of wide-reaching and labor-intensive study of the virus and its spread—for a number of reasons including gaining a greater understanding of occupational, household, and demographic risk factors related to COVID-19.

“Structured, rather than convenient, strategies for obtaining samples or recruiting participants can help enumerate important and still poorly understood biases,” the editorial states. “Focused studies, stratified across potential determinants of exposure risk, can help delineate and quantitate the likely multiple drivers behind observed heterogeneity in cumulative incidence.”

**Learn more:** Stay current on the AMA’s COVID-19 advocacy efforts and track the pandemic with the AMA’s COVID-19 resource center, which offers resources from JAMA Network™, the Centers for Disease Control and Prevention, and the World Health Organization.