

Seroprevalence of SARS-CoV-2-Specific IgG Antibodies Among Adults Living in Connecticut: Post-Infection Prevalence (PIP) Study

Background

- Estimates of the percentage of a population with SARS-CoV-2 antibodies (seroprevalence) are important for guiding public health responses.
- However, many estimates are limited because they are based on specimens collected for a specific reason. Such study designs may produce estimates that represent a sick population instead of the general population.
- SARS-CoV-2 seroprevalence in Connecticut has been previously reported,¹ but the estimate was based on individuals receiving routine wellness checks as well as symptomatic patients seeking care. This may have biased the estimate.²
- **Objective:** In the Post-Infection Prevalence (PIP) study, investigators surveyed and tested a randomly selected representative sample of adults in Connecticut to estimate the prevalence of self-reported COVID-19 symptoms, adherence to risk mitigation measures, and the prevalence of SARS-CoV-2 antibody (IgG) positivity.

Methods

- Investigators conducted a cross-sectional survey of people residing in non-congregate settings (eg, excluding nursing homes) in Connecticut and enrolled a representative sample of 735 adults, between June 4 and June 23, 2020.
- Additionally, from June 23 to July 22, 2020, investigators oversampled non-Hispanic Black and Hispanic individuals to provide more accurate estimates for these subpopulations.
- Sociodemographic information, symptoms, and adherence to COVID-19 risk mitigation measures were collected via phone interview.
- After an interview, serum specimens were collected from respondents (June 10-July 29, 2020). Each specimen was tested at Quest Diagnostics using the Ortho-Clinical Diagnostics Vitros anti-SARS-CoV-2 IgG assay.
- The state-wide seroprevalence was estimated after weighting the random sample. Seroprevalence among non-Hispanic Black and Hispanic subpopulations was also estimated.
- The seroprevalence of this randomly selected study population was compared to that found across all SARS-CoV-2 antibody (IgG) testing completed at Quest Diagnostics in Connecticut during the study period.

Results

- Among the 567 individuals that completed serology testing at the state-level, the mean age was 50 (± 17) years, 53% were women, and 75% were non-Hispanic White individuals.
- Since March 1, 2020, 73% of the study sample reported avoiding public places, 75% reported avoiding small gatherings of family or friends, and 97% reported they wore a mask at least some of the time when they left their residence.
- Based on 23 of 567 individuals testing positive for SARS-CoV-2-specific IgG antibodies, the estimated state-wide weighted seroprevalence was 4.0% (90% CI, 2.0%-6.0%).
 - The estimated weighted seroprevalence was 6.4% (90% CI 0.9-11.9) for the non-Hispanic Black population and 19.9% (90% CI, 13.2-26.6) for the Hispanic population, based on the random state sample and oversamples.
- Seroprevalence was estimated to be 11.3% (90% CI, 5.4-17.2) among individuals who reported ≥ 1 symptom and 0.6% (90% CI, 0.0-1.3) among asymptomatic individuals.
- Based on 25,274 SARS-CoV-2 IgG antibody tests conducted at Quest Diagnostics across Connecticut during the study period, the seroprevalence was 8.4%.

Conclusions

- The PIP study indicates that, for infections through June 2020, the estimated SARS-CoV-2 seropositivity is low (4.0%) in Connecticut, though it varied by race/ethnicity.
- Therefore, it is important to maintain continued adherence to COVID-19 risk mitigation measures to avoid a resurgence of COVID-19 infections in this state.

Article published in the *American Journal of Medicine*

Authors

Shiwani Mahajan,^{1,2} Rajesh Srinivasan,³ Carrie A Redlich,⁴ Sara K. Huston,³ Kelly M Anastasio,⁵ Lisa Cashman,⁶ Dorothy S. Massey,¹ Andrew Dugan,³ Dan Witters,³ Jenny Marlar,³ Shu-Xia Li,¹ Zhenqiu Lin,^{1,2} Domonique Hodges,³ Manas Chattopadhyay,³ Mark D Adams,⁷ Charles Lee,⁷ Lokinendi V Rao,^{6,8} Chris Stewart,³ Karthik Kuppusamy,⁶ Albert I Ko,⁹ Harlan M Krumholz^{1,2,10}

Affiliations

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Citation

Mahajan S, Srinivasan R, Redlich CA, et al. *Am J Med*. Published online October 29, 2020. doi:10.1016/j.amjmed.2020.09.024

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Affiliations

- ¹ Center for Outcomes Research and Evaluation, Yale-New Haven Hospital, New Haven, CT
- ² Section of Cardiovascular Medicine, Department of Internal Medicine, Yale School of Medicine, New Haven, CT
- ³ The Gallup Organization, Washington, DC
- ⁴ Yale Occupational and Environmental Medicine Program, Department of Internal Medicine, Yale School of Medicine, New Haven, CT
- ⁵ Yale Center for Clinical Investigation, Yale School of Medicine, New Haven, CT
- ⁶ Quest Diagnostics, Marlborough, MA
- ⁷ The Jackson Laboratory for Genomic Medicine, Farmington, CT
- ⁸ Department of Pathology, University of Massachusetts Medical School, Worcester, MA
- ⁹ Department of Epidemiology of Microbial Diseases, Yale School of Public Health, New Haven, CT
- ¹⁰ Department of Health Policy and Management, Yale School of Public Health, New Haven, CT