**Abstract**

Effectively evaluating, controlling and predicting the course of the COVID-19 pandemic requires knowledge of the true number of infections in the population. This number, however, generally differs substantially from the number of confirmed cases due to a large fraction of asymptomatic infections as well as geographically and temporally variable testing effort and strategies. Here I use age-stratified death count statistics, published age-dependent infection fatality risks and stochastic modeling to estimate the true prevalence and growth of COVID-19 infections among adults (age *≥* 20 years) in 161 countries, from early 2020 until November 1, 2020. My predictions are largely consistent with data from multiple previous nationwide seroprevalence surveys. As of November 1, 2020, the nationwide cumulative COVID-19 prevalence (past and current infections relative to the population size) is estimated at 31% (95%-CI 22-50) for Peru, 27% (17–41) for Mexico, 22% (14–34) for Brazil, 12% (7.2-20) for the US, 11% (6.4–18) for the United Kingdom, 8.2% (5.2–15) for France, 7.4% (4.9–13) for Sweden, 4.2% (2.5–6.8) for Canada, 1.8% (1.2–3) for Germany and 0.12% (0.074–0.26) for Japan. These time-resolved estimates expand the possibilities to evaluate the factors influencing the pandemic’s progression and to assess vaccination needs around the world.

