

PRESS RELEASE

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COVID-19 IN GENEVA, LESS THAN 11% HAVE BEEN INFECTED

A study carried out among 2'766 people by the University Hospitals of Geneva (HUG), the Geneva Centre for Emerging Viral Diseases, and the University of Geneva (UNIGE), Switzerland, reveals that, at the time of the decline of the Coronavirus pandemic, only 10.8% of the Geneva population had been infected with Covid-19. Moreover, compared to adults between 20 and 50 years of age, children between 5 and 9 years of age are three times less likely to be infected and those over 65 years of age half as likely. These results were published in [The Lancet](#).

Over the five weeks of the study - from 6 April to 9 May – the overall seroprevalence increased from about 5% to about 11% of the population. Taking into account the time for antibodies to be produced after symptoms (with a median of 10.4 days), the researchers estimated that for every confirmed case, there were approximately 12 actual infections in the community.

These results suggest that only a minority of the Geneva population has been infected during this pandemic wave, despite the high rate of COVID-19 cases identified during the acute phase of infection (1% of the population in less than 2 months).

Children and elderly less affected

Young children (5-9 years) and the elderly appear to have a much lower seroprevalence than other age groups. Indeed, only 1 in 123 children in this age group tested positive. However, further studies will be needed to better understand the dynamics of infection and of antibodies in children under 5 years of age, and to determine whether children, in addition to being generally less susceptible to Cov2-SARS, are also less severely affected.

The study also reveals a high concentration of infections within households. For example, despite the low seroprevalence of children, 17.1% of children had at least one household member who tested positive, which may suggest that children are infected by adults. On the other hand, only 3.0% of participants over 65 years of age had a household member that tested positive.

Furthermore, lower seroprevalence estimates among the elderly tend to confirm the effectiveness of partial containment measures. However, their ability to produce antibodies may be reduced due to age-related weakening of the immune system..

Protective measures have certainly contributed to the decline of the pandemic.

The preliminary results of this study provide an important benchmark for assessing the outbreak status. At the time when Switzerland appears to be reaching the end of its first wave of the COVID-19 pandemic, only 1 in 10 people have developed antibodies to SARS CoV-2, despite the fact that Switzerland is one of the most affected countries in Europe. The results of this study - the largest population-based seroprevalence study to date - are consistent with preliminary reports from other teams around the world.

These results therefore underline that the decline of the epidemic may have taken place despite the fact that the vast majority of the population is not immune, which implies that other factors are at play.

The value of seroprevalence studies

Seroprevalence surveys based on the detection of specific immunoglobulin type G (IgG) are used to measure the proportion of the population that has ever been exposed to coronavirus. However, they do not provide any indication of full or partial immunity to coronavirus or of the duration of such immunity.

Seroprevalence surveys are nevertheless crucial for estimating the dynamics of the epidemic and for preparing the appropriate public health response. They are also more accurate than studies based on nasopharyngeal smears and RT-PCR tests, which are largely dependent on screening policies and miss people with mild or no symptoms, or who do not come for testing.

This general population seroprevalence study is ongoing and will be refined to take into account symptomatology and socio-demographic factors.

2'766 participants

The study was conducted among a representative sample of the Geneva population drawn from the participants of the Bus Santé study, an annual survey that examines the health of the population of the Canton of Geneva. From 6 April to 9 May 2020, sampled people were invited, together with their family members, for a blood test and a questionnaire. This sample consisted of 52.6% women and 47.2% men, and included 4.4% children between 5 and 9 years of age and 13.3% people over 65 years of age. A total of 2,766 people from 1,339 households took part.

The study was carried out by a team from the HUG and UNIGE under the direction of Professor Idris Guessous, Head of the HUG Primary Care Division and professor

at the Department of Community Health and Medicine of the Faculty of Medicine, of Dr. Silvia Stringhini, epidemiologist in charge of the Population Epidemiology Unit at the HUG and Privat-Doctent at the Faculty of Medicine, and of Professor Antoine Flahault, Director of the Institute of Global Health of the Faculty of Medicine. The study received support from Professor Laurent Kaiser's Virology Laboratory and from the Geneva Centre for Emerging Viral Diseases, and was funded by the Swiss Federal Office of Public Health, the Swiss School of Public Health (Corona Immunitas programme), the Pictet Group's Charity Foundation, the Fondation Ancrage, the Fondation Privée des HUG and the Geneva Centre for Emerging Viral Diseases.

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The HUG: Care, Teaching, and leading-edge research

The Geneva University Hospitals (HUG) comprise eight public hospitals and two health clinics. Their missions include providing health care to the community in all medical specialties, contributing to training physicians and health professionals, and conducting medical research as well as finding treatments. The HUG operate as a national reference centre for influenza and emerging viral infections, as well as for liver disease in children and paediatric liver transplant. They are a WHO Collaborating Centre in five areas. In 2019, with their 11'945 staff, the HUG treated 64'134 hospital cases, 130'747 emergency admissions, and 1'109'781 outpatients, and performed 28'689 surgeries and 4'248 birth deliveries. The HUG ensure the training of 1'030 physicians, 2,159 interns and 193 apprentices. They collaborate closely with the Faculty of Medicine of the University of Geneva, the WHO, CHUV, EPFL, CERN and other actors in the Lemanic Health Valley on a number of training and research projects. The HUG have an annual budget of 1.94 billion Swiss francs.

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About the University of Geneva

The University of Geneva (UNIGE) ranks among the 100 best universities in the world. Founded in 1559 by Jean Calvin and Théodore de Bèze, it welcomes nearly 18,000 students within its nine faculties and thirteen inter-faculty centres. Internationally recognised for the quality of its research, UNIGE is also a member of the European League of Research Universities (LERU). Furthermore, It is constantly strengthening its links with international and non-governmental organisations present in Geneva, one of the world capitals of multilateralism. The UNIGE pursues three missions: teaching, research and service to the city. www.unige.ch