

## EI-COV20-014 - Covid-19 : Dunkelziffer und Immunitätslage in der Wiener Bevölkerung - Daten aus der Wiener Gesundheitsstudie LEAD

### Abstract

Epidemiological surveillance of laboratory-confirmed COVID-19 cases captures only a fraction of the true extent of the spread or burden of SARS-CoV-2. Therefore, the team of the Ludwig Boltzmann Institute for Lung Health sought to quantify the proportion of the population that had experienced a recognized or unrecognized SARS-CoV-2 infection.

Participants of the LEAD Study, a population-based cohort study, were invited along with their household members from mid-April to mid-May 2020 and they completed a questionnaire on COVID-19 symptoms during their visit. The proportion of the cohort positive for SARS-CoV-2 was determined using an antibody test and two confirmatory assays, including a neutralization assay. The possible risk factors for positivity and COVID-19 severity were then analyzed and the likelihood of transmission in the household was evaluated.

A total of 12,419 individuals participated (5984 LEAD participants, 6435 household members). In total, 163 (1.31%; 59 LEAD cohort members) were SARS-CoV-2 antibody positive. The data projected the number of COVID-19 cases by age and sex for Vienna as 21,504 (1.13%). Cumulative number of positive tested cases in Vienna until May 20th was 3020, 5.5–9.1 times lower than projected. Relative risk of seropositivity by age was highest for children aged 6–9 years and lowest for  $\geq 65$  years. Half of positive subjects developed no or mild symptoms. In a multivariate analysis, taste and smell disturbances were most strongly related to SARS-CoV-2 positivity. Infection probability within households with one confirmed SARS-CoV-2-specific antibody-positive person was 31%, about 30 times higher than the general ambulatory infection risk. SARS-CoV-2 infections are more prevalent than the reported PCR-positive cases in a central European capital city. Seroprevalence of SARS-CoV-2-antibody-positive subjects within Vienna was 1.13% with highest numbers in young children and the lowest in older ( $\geq 65$  years) inhabitants. Half of SARS-CoV-2 antibody-positive subjects had no or only mild symptoms. Taste and smell disturbances are common in COVID-19 infected persons and can guide clinicians in diagnosis and decision making.

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Covid19 Datenerhebung

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Further links to the persons involved and to the project can be found under  
<https://www.wwtf.at/funding/programmes/ei/EI-COV20-014/>