

First results of the CON-VINCE study

CON-VINCE, a national research project aiming to evaluate the prevalence and dynamics of the spread of the COVID-19 disease within the Luxembourgish population, was launched at the beginning of April under the umbrella of the Research Luxembourg COVID-19 Task Force. Following the successful recruitment and first testing effort of more than 1800 participants over the age of 18, a first publication has now been uploaded on the preprint server medRxiv (Reference number: MEDRXIV/2020/092916) and will be soon submitted for peer-reviewed scientific publication.

Low rate of infection but with potential for unnoticed virus spread

All participants already underwent a nasal and oropharyngeal swab followed by PCR-based virus test. The PCR analysis aims to detect the presence of the SARS-CoV-2 virus. Currently, 5 participants (0.3%) out of the whole panel tested positive for the virus, with individuals being asymptomatic or presenting only mild symptoms. “Based on these very first numbers, we estimate that 1449 people in Luxembourg alone and without taking into account cross-border workers could be currently infected and show no or only mild signs of the disease”, explains Prof. Rejko Krüger, principal investigator of the CON-VINCE study. “Therefore, they could infect others without even knowing it.” This highlights why there is a need for a large-scale testing strategy. Asymptomatic carriers need to be identified and isolated, ideally before people return to their workplace.

Almost 2% of the population has been in contact with the virus

In addition, participants underwent a serological test which aims to detect the presence of antibodies in the blood. These tests showed 35 participants (1,9%) have IgG antibodies against SARS-CoV-2, indicating that these people may have had contact with the virus during the last weeks. “It is important to highlight that the presence of antibodies in the blood is not a proof that people are immune,” details Prof. Rejko Krüger. “It is yet unknown how long the antibodies stay in the blood and how effective they are against the virus. A positive serological test is therefore not a guarantee of protective immunity.”

Communication of positive test results to participants

In case of a positive result of either the PCR analysis or the serological test, a medical doctor of the CON-VINCE study will inform the participants as well as their treating physician. To ensure the anonymity of the participants and protection of personal data, the research study was designed so that only the medical doctors of the study team are able to track the participants' identity and inform participant about test results in the specific and previously defined case that the result is positive. Hence, if the participants are not contacted by a medical doctor belonging to the CON-VINCE team within two working days or 2 weeks after the visit to the laboratory, it means their PCR analysis or serology test, respectively, were negative. Following up all participants regularly for two months and then after a year will help understand better the prevalence and transmission of the disease as well as the infection rate in Luxembourg's population.

Screening a statistically representative panel

Volunteers for the CON-VINCE study were recruited within the pool of 18.000 panel members of TNS Ilres which is as representative as possible of the whole population of the Grand Duchy. The study was carefully designed to both meet highest scientific standards and be feasible within the current constraints due to the emergency situation. In order to do that, CON-VINCE focuses on three criteria to select participants: age, gender, and residency.

“In every study design, researchers have to make choices and take them into consideration when interpreting results,” explains Prof. Ulf Nehrbass, spokesperson of the Research Luxembourg COVID-19 Task Force. “Taking further criteria into account would require a significantly larger number of participants. Therefore, other factors such as household composition, social status or lifestyle could not be considered given the time, organisational, and financial framework of the study.” The exact methodology will be published in scientific journals, and potential limitations will be taken into accounts when analysing the data.

Successful start thanks to a collaborative effort

Setting up and executing such a comprehensive study in such a short time requires a huge team effort and important input from all the parties involved. This would not have been possible without the contribution of more than 1800 volunteers who agreed to participate in the study, the expertise of the Luxembourgish research institutions – the Luxembourg Institute of Health (LIH), the University of Luxembourg and the Laboratoire National de Santé (LNS) - and the input of several partners: Centre Hospitalier de Luxembourg, TNS-ILRES, Ketterthill, Laboratoires Réunis, and BioneXt Lab. The CON-VINCE study has been funded by the Luxembourg National Research Fund (FNR) and the André Losch Foundation.

“The Research Luxembourg COVID-19 task force wishes to express their greatest thanks to all these people who are key in making CON-VINCE a success for their invaluable commitment to the project,” concludes Rejko Krüger. “We are particularly thankful to the more than 1800 volunteers for their effort and continuing support of this longitudinal research study until 2021. Their repeated participation is crucial in understanding how the prevalence and spread of the virus evolves in Luxembourg over time.”

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Info for journalists

About Research Luxembourg

Research Luxembourg is a joint initiative of the main players in Luxembourg public research, namely Luxembourg Institute of Health (LIH); Luxembourg Institute of Socio-Economic Research (LISER); Luxembourg Institute of Science and Technology (LIST); Laboratoire national de santé (LNS); Luxinnovation; University of Luxembourg; Fonds National de la Recherche (FNR), under the coordination of the Ministry of Higher Education and Research.



The main aim of the initiative is to promote scientific cooperation in Luxembourg and to communicate the activities of the sector as a whole.