

# Study of the spread of COVID-19 in St Petersburg, Russia

|                                        |                                                          |                                                                                                   |
|----------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Submission date</b><br>26/05/2020   | <b>Recruitment status</b><br>No longer recruiting        | <input type="checkbox"/> Prospectively registered<br><input checked="" type="checkbox"/> Protocol |
| <b>Registration date</b><br>28/05/2020 | <b>Overall study status</b><br>Completed                 | <input type="checkbox"/> Statistical analysis plan<br><input checked="" type="checkbox"/> Results |
| <b>Last Edited</b><br>14/06/2023       | <b>Condition category</b><br>Infections and Infestations | <input checked="" type="checkbox"/> Individual participant data                                   |

## Plain English summary of protocol

### Background and study aims

COVID-19 is a condition caused by the coronavirus (called SARS-CoV-2) that was first identified in late 2019. This virus can infect the respiratory (breathing) system. Some people do not have symptoms but can carry the virus and pass it on to others. People who have developed the condition may develop a fever and/or a continuous cough among other symptoms. This can develop into pneumonia. Pneumonia is a chest infection where the small air pockets of the lungs, called alveoli, fill with liquid and make it more difficult to breathe.

In 2020, the virus has spread to many countries around the world and neither a vaccine against the virus or specific treatment for COVID-19 has yet been developed. As of April 2020, it is advised that people minimize travel and social contact, and regularly wash their hands to reduce the spread of the virus.

Groups who are at a higher risk from infection with the virus, and therefore of developing COVID-19, include people aged over 70 years, people who have long-term health conditions (such as asthma or diabetes), people who have a weakened immune system and people who are pregnant. People in these groups, and people who might come into contact with them, can reduce this risk by following the up-to-date advice to reduce the spread of the virus.

As of late May 2020, Russia is one of the countries with the highest number of registered COVID-19 cases. Surveillance of specific antibodies (immunity) present in the blood will enable researchers to infer the extent of infection and its prevalence in the study population. The aim of this study is to estimate the prevalence of COVID-19 using blood tests for immunity, that will determine if the person was infected or not. This study also aims to determine the time period when this immunity lasts.

### Who can participate?

At least 1000 individuals, 18 years old and older, both genders, will be invited at random. In this study, volunteers are not recruited, but are invited randomly from the population of St Petersburg. Random sampling is performed by a survey company on the list of mobile phone numbers with designated geography prefixes of St Petersburg.

### What does the study involve?

This study involves an individual invitation to the clinic by mobile phone, one phone-based survey (takes about 10 minutes to complete), one paper-based survey (takes about 15-20

minutes to complete). The questionnaire for the computer-assisted telephone interview includes travel history, medical history, and socioeconomic status of the respondents. Sampled individuals are then invited to the clinic for blood sampling, their refusal to participate is recorded. Participants complete additional questionnaires in the clinic providing information on their medical history, history of allergies, chronic disease, smoking, and medication taken regularly. Contact tracing data and environmental conditions of the household are recorded. The study involves blood samples collected from the vein and then testing for SARS-CoV-2-specific antibodies.

What are the possible benefits and risks of participating?

There are no clear benefits for the participants of the study. No clinical decision is made based on the test result. The knowledge of prior COVID-19 is acquired but it cannot be interpreted as immunity against future SARS-CoV-2 infection. In general, participants will contribute to the knowledge of disease spread and immune response dynamics. Blood sampling is a procedure that involves skin puncture and may be uncomfortable, it can cause mild bruising, and in rare cases infections. However, serious adverse events associated with this procedure are extremely rare.

Where is the study run from?

Clinic "Scandinavia" (LLC Ava-Peter) (Russia)

When is the study starting and how long is it expected to run for?

April 2020 to October 2020

Who is funding the study?

1. European University at Saint Petersburg (Russia)
2. Clinic "Scandinavia" (LLC Ava-Peter) (Russia)

Who is the main contact?

Dr Dmitriy Skougarevskiy  
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## Contact information

### Type(s)

Scientific

### Contact name

Dr Dmitriy Skougarevskiy

### ORCID ID

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# Additional identifiers

## ClinicalTrials.gov (NCT)

NCT04406038

## Protocol serial number

CDRU-001

# Study information

## Scientific Title

A population-based seroprevalence of SARS-CoV-2-specific antibodies among adults in St Petersburg, Russia: a longitudinal cohort study

## Study objectives

This is an observational epidemiological study seeking to evaluate the spread and dissemination of SARS-CoV-2 in a major Russian city with alleviated sample selection problems arising out of volunteer bias in the midst of the pandemic.

## Ethics approval required

Old ethics approval format

## Ethics approval(s)

1. Approved 20/05/2020, Commission on Academic Planning of the European University at St Petersburg (6/1A Gagarinskaya ul., 191187 St Petersburg, Russia; no tel; knp@eu.spb.ru), no ref
2. Approved 26/05/2020, Local Ethics Committee of Scandinavia clinic (LLC AVA-PETER, 4 korp. 1 Ilushina ul., 197372 St Petersburg, Russia; +7 (0)8126007870; Udina-NM@avaclinic.ru), no ref

## Primary study design

Observational

## Study design

Observational longitudinal cohort study

## Study type(s)

Screening

## Health condition(s) or problem(s) studied

COVID-19 (SARS-CoV-2 infection)

## Interventions

Clinically asymptomatic adults are sampled from the population using random digit dialing and tested for the presence of SARS-CoV-2-specific antibodies in the blood serum. Additional data is collected on travel history, medical history, and socio-economic status of participants.

## Intervention Type

Other

## Primary outcome(s)

Current primary outcome measure as of 14/08/2020:

Prevalence of the SARS-CoV-2 infection in St Petersburg, Russia measured by SARS-CoV-2-specific antibodies serial testing (Abbott Architect SARS-CoV-2 IgG) and adjusted for volunteer bias and test validity (sensitivity and specificity). The prevalence is measured at the baseline and every 2 weeks from the start of the trial, each measurement spans 4 weeks.

Previous primary outcome measures:

Prevalence of the SARS-CoV-2 infection in St Petersburg, Russia measured by SARS-CoV-2-specific antibodies serial testing (Abbott Architect SARS-CoV-2 IgG) and adjusted for volunteer bias and test validity (sensitivity and specificity). The prevalence is measured at the baseline and every 2 weeks from the start of the trial for 18 weeks.

### **Key secondary outcome(s)**

Current secondary outcome measures as of 14/08/2020:

1. Adjusted prevalence odds ratios by sex and age groups, socioeconomic status measured at the baseline and every 2 weeks from the start of the trial, each measurement spans 4 weeks
2. Cumulative seropositivity, seroreversion and seroconversion measured using Abbott Architect SARS-CoV-2 IgG at the baseline and every 2 weeks from the start of the trial, each measurement spans 4 weeks, and by the end of the study

Previous secondary outcome measures:

1. Adjusted prevalence odds ratios by sex and age groups, socioeconomic status measured at the baseline and every 2 weeks since the start of the trial for 18 weeks
2. Cumulative seropositivity, seroreversion and seroconversion measured using Abbott Architect SARS-CoV-2 IgG at the baseline and every 2 weeks since the start of the trial for 18 weeks and by the end of the study
3. Antibody dynamics: mean geometric titers of antibodies IgG measured using Abbott Architect SARS-CoV-2 IgG at the baseline and every 2 weeks since the start of the trial for 18 weeks and by the end of the study

### **Completion date**

28/10/2020

## **Eligibility**

### **Key inclusion criteria**

1. Individuals sampled from the population of St Petersburg, Russia using random digit dialling
2. Aged 18 and older of both genders
3. Asymptomatic at the time of blood draw
4. Written informed consent for a blood draw, SARS-CoV-2 antibody test, and data collection

### **Participant type(s)**

All

### **Healthy volunteers allowed**

No

### **Age group**

Adult

### **Lower age limit**

18 Years

**Sex**

All

**Key exclusion criteria**

1. Presence of fever or cough or respiratory distress at the time of blood test not attributable to other known chronic disease
2. Age under 18
3. Any health condition that may be a contraindication towards blood sampling in outpatient clinic
4. Residence in Kolpinskiy, Kurortniy, Krasnoselsky, Kronshtadtskiy, Petrodvorcoviy, Pushkinskiy districts of St Petersburg

**Date of first enrolment**

27/05/2020

**Date of final enrolment**

10/06/2020

## **Locations**

**Countries of recruitment**

Russian Federation

**Study participating centre**

Clinic "Scandinavia"

Moskovskiy pr., 73/4

St Petersburg

Russian Federation

196084

## **Sponsor information**

**Organisation**

European University at Saint Petersburg

**ROR**

<https://ror.org/04p2rkp70>

## **Funder(s)**

**Funder type**

University/education

## Funder Name

European University at Saint Petersburg

## Funder Name

Clinic "Scandinavia" (LLC Ava-Peter)

# Results and Publications

## Individual participant data (IPD) sharing plan

Anonymized individual-level phone survey data and paper-based survey data, anonymized test results, and analytic code are available in a designated repository at [https://github.com/eusporg/spb\\_covid\\_study20](https://github.com/eusporg/spb_covid_study20) under Creative Commons License Attribution 4.0 International (CC BY 4.0) license.

## IPD sharing plan summary

Stored in publicly available repository

## Study outputs

| Output type                      | Details                               | Date created | Date added | Peer reviewed? | Patient-facing? |
|----------------------------------|---------------------------------------|--------------|------------|----------------|-----------------|
| <a href="#">Results article</a>  |                                       | 12/06/2021   | 14/06/2023 | Yes            | No              |
| <a href="#">Results article</a>  |                                       | 21/06/2021   | 14/06/2023 | Yes            | No              |
| <a href="#">Results article</a>  |                                       | 15/06/2022   | 14/06/2023 | Yes            | No              |
| <a href="#">Results article</a>  |                                       | 22/09/2022   | 14/06/2023 | Yes            | No              |
| <a href="#">Dataset</a>          |                                       |              | 14/06/2023 | No             | No              |
| <a href="#">Preprint results</a> | non-peer-reviewed results in preprint | 04/11/2020   | 16/03/2021 | No             | No              |
| <a href="#">Protocol file</a>    | version V2                            | 15/07/2020   | 14/08/2020 | No             | No              |