

# The CARTaGENE voice

AIMS TO ACCELERATE HEALTH RESEARCH

[www.cartagene.qc.ca](http://www.cartagene.qc.ca)

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## CARTaGENE wishes you Happy Holidays!



In 2021, CARTaGENE will begin its **12th year** of activity!

We would not have been able to take this important step without your involvement. It has made it possible to generate new data used by researchers in projects contributing to health research.

Thank you for trusting **CARTaGENE** since the beginning of this adventure. Without you, this platform would not exist and we are grateful for your precious contribution.

Your continued commitment is crucial to the future of **CARTaGENE**. You are helping improve the platform and make it more useful for health research (e.g. COVID-19, cancer and chronic diseases).

Follow us on our social networks:



*CARTaGENE for the health of Quebec*

*Source image snowflake: Iconfinder.com*



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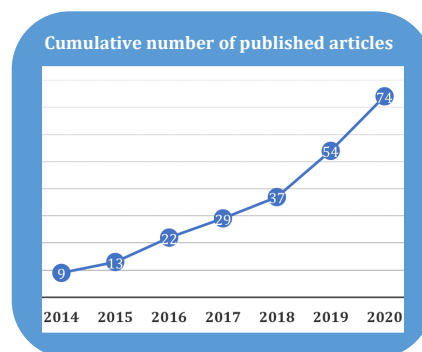


## CARTaGENE in numbers!

**80 health research projects approved,  
62 of which are still in progress!**



**12 years of advances in research that will  
have major impacts on our health.**



**74 articles published in scientific journals!**



## The first results of the COVID-19 CARTaGENE survey

CARTaGENE took part in the research on COVID-19 with an online survey that was sent to more than 33,000 participants of the CARTaGENE Quebec population-based cohort in early June 2020.

The survey allowed us to collect information concerning the existence of manifestations suggesting a COVID-19 infection, the tests performed and the results, the evolution, the medical history, the socio-demographic factors and potential risk factors, as well as the consequences of the pandemic on everyday life.

### ***Similar results to those observed in Quebec***

As of July 6th, 2020, 8,129 participants completed the questionnaire. Among them, 8% were tested for COVID-19 (649 participants) of which 6.3% (41) were positive. These results are similar to those observed in Quebec (7.3% of the population tested and 7.4% of positive cases among the tested). The average time to receive a test result was 3 days. Three people were hospitalized for a COVID-19 infection, but none of them were hospitalized in the intensive care unit.

This data shows that medical staff and people who have had contact with individuals tested positive for COVID-19 are the most often tested and the results are more often positive. It is important to note, however, that 7.6% of all participants report having had one of the 4 symptoms compatible with COVID-19 and have not been tested.

### ***A particular symptomatology and a more difficult access to healthcare***

The symptoms strongly associated with being positive for COVID-19 were: loss of smell, fever and headaches. Additionally, one-third of the participants experienced a decrease in access to health services. However, it is interesting to note that virtual medical consultations were widely used during the first wave.

### ***A socio-economic and psychological impact as well as a change in habits***

While the impact of the first two months of the pandemic remains limited overall, we observed there was an increase in food consumption, a decrease in physical activity and a slight increase in anxiety among women. There was also a slight income decrease. During this first wave, the majority of the participants have made changes to their lifestyle habits, especially in restricting the use of public transport.

*It will be interesting and important to follow the evolution of these results over the following months.*



## Serology Study on COVID-19

CARTaGENE will be launching the second part of the COVID-19 study in the beginning of 2021. It will involve a recontact of the cohort in order to obtain a blood sample. The study will examine the seroprevalence of antibodies specific to COVID-19 in Canada, particularly in certain populations at higher risk of infection.



The Canadian Government has invested through the COVID-19 Immunity Task Force and the Canadian Institutes of Health Research (CIHR) to fund this study to be carried out by the Canadian Partnership for Tomorrow's Health (CanPath), of which CARTaGENE is part.

This study will lead to the enrichment of the results of the study carried out in June 2020.

The new serology study will be conducted in collaboration with CanPath's regional cohorts: BC Generations Project, Alberta's Tomorrow Project, The Manitoba Tomorrow Project, Ontario Health Study, CARTaGENE (Quebec) and Atlantic Partnership for Tomorrow's Health.

This serology study will be the second part of the COVID-19 study. It will first be offered to the many participants who had answered the questionnaire in June 2020, then subsequently to the rest of the cohort. This study will first consist of updating the COVID-19 health questionnaire. Once the questionnaire has been validated, a serological kit will be sent to the participants in order to carry out a self-collected blood sample at home. This sample will allow us to study the presence of antibodies in the population at different time periods of the pandemic. After analysis in a laboratory, participants will then receive their results revealing if there is the presence or absence of antibodies against COVID-19.



## **Some examples of your contribution to health research!**

### **1- Jean-Philippe Drouin-Chartier - Université Laval - Lifestyle habits, plasma metabolites and cardiovascular health in a cohort of individuals with heterozygous familial hypercholesterolemia**

Heterozygous familial hypercholesterolemia (HF) is a genetic disease manifested by very high blood cholesterol levels and the early development of cardiovascular diseases. HF affects about one in 100 people in the French-Canadian population, making it the most common genetic cardiovascular disease in Quebec.

Treatment for HF aims to normalize blood cholesterol levels. However, our understanding of the cardioprotective potential of healthy lifestyles (ie, eating a healthy diet, being physically active, drinking moderately, not smoking, getting enough sleep) in HF remains very limited. In the age of precision medicine, characterizing the influence of lifestyle habits in individuals with HF is essential to better guide the treatment of this disease. In this study, we will assess how adopting a healthy lifestyle influences the cardiovascular health of individuals with HF.

### **2- Simon Girard - Université du Québec à Chicoutimi - Investigating the role of non-coding variations in epilepsy**

Epilepsy affects about 3% of people. It is characterized by great genetic heterogeneity, involving hundreds of genes. The recent emergence of new sequencing technologies allows to harness the full power of genomic sequencing for research in patients with epilepsy. However, even with an increasing number of genetic associations, the vast majority of cases of epilepsy remains unexplained at the genetic level. We believe this is because most genetic studies in epilepsy have focused on coding regions, leaving the vast majority of the genome (> 98%) unexplored. The objective of this project is to study the non-coding part of the genome of epilepsy patients. We propose to use the population structure to identify the non-coding genomic regions potentially associated with the disease. We expect to increase the number of epilepsy patients for whom we can find a genetic cause for their disease. This will allow us to better understand the genetic mechanisms underlying the disease. In addition, these findings could also shed light on better management and treatment of epilepsy.

### **3- Yohan Bossé - Université Laval - Susceptibility genes and molecular drivers of lung cancer**

Lung cancer is the first cause of cancer-related death. Recent studies have achieved an important step in the understanding of the genes involved in lung cancer development. Although encouraging, these new discoveries do not directly lead to better management and treatment of afflicted patients. To do so, additional steps are required to identify the molecular mechanisms by which the newly identified genetic markers cause lung cancer. The goal of this research project is to find susceptibility genes and molecular mechanisms of lung cancer. The identification of lung cancer genes is currently an essential step to improve prognostic following surgery, to develop early detection tests, to custom-tailor future medical treatment, and to find new drug targets.

**For the complete list of projects, visit : [www.cartagene.qc.ca/en/participants/projects](http://www.cartagene.qc.ca/en/participants/projects)**

## Did you know...



Physical activity plays an essential role in our physical health and well-being, as well as our quality of life. Participating in physical activity contributes to a healthy lifestyle and helps prevent certain chronic diseases such as diabetes and cancer. During our two recruitment phases, the participants have answered questionnaires where some questions were related to daily physical activity.

Here are the main results that stand out:

- \* 83.3% of the cohort engages in moderate physical activity at least 2 days per week.
- \* Only 46.9% of the cohort walks for at least ten minutes straight.
- \* 31.9% of the cohort spends 8 hours a day in a sitting position.

### *Some practical tips for being active regularly*

- \* In your spare time, decrease the amount of time spent in front of the television or computer.
- \* Choose an active mode of transportation to get around such as cycling or walking.
- \* To make the most out of all the health benefits related to sports, be active for a minimum of 2 hours and 30 minutes per week.



## Thank you for keeping your information updated

Have you moved, retired, changed your email address or phone number? Take a moment to send us your new contact information. Even if you move away from Québec or Canada, you can still stay involved! Keeping in touch with you is essential for the success of this project!

## Contact us



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