

THE BIG LITTLE NEWSLETTER FOR THE STUDY ON THE PREVENTION OF CARDIOVASCULAR DISEASE AND TYPE 2 DIABETES IN CHILDREN AND ADOLESCENTS



Countdown starts NOW!

The first families have already taken part in their 3rd visit. Each week, we welcome a few teens for this latest round of evaluations. Make sure to keep your appointment when your turn to visit comes up. Your continued participation is so important to us. Every one of you helps bring us closer to achieving our goals in this study.

We estimate that about 610 of you will continue on in the study.

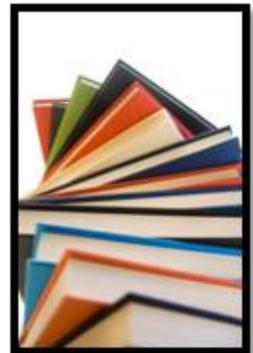
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The buzz in science magazines is all about you!

The QUALITY study in which you are such valued participant is grounded in scientific methods. In order to fund QUALITY, each and every study protocol must be approved by a scientific committee. Data are collected using the most valid procedures possible, and later analyzed using rigorous statistical methods.

The aim of any scientific endeavour is to advance our state of knowledge in a particular area, which in our case is cardiovascular health. The publication of research results in scientific journals is a privileged way of sharing our findings with others in the medical and research professions. This is one of the best ways to help move research even further, and most importantly, to improve the quality of health care delivered to the population.



20 The number of published or accepted articles in scientific journals.

These publications occurred between 2007 to 2012 and these manuscripts were reviewed by other researchers in the same field to ensure that the information is scientifically valid.

17 The number of different journals in which the articles have been published. Here are some journal titles :

Journal of the Canadian Dental Association, Journal of Hypertension, Canadian Journal of Public Health, Diabetes Care, Obesity.

31 The number of researchers, co-investigators and collaborators who are participating or have participated in the success of the QUALITY study since its inception.

63 The number of conference talks or scientific posters presented to share results of the study with the scientific community.



Scientific manuscripts in brief

Here are summaries of some recently published articles in journals using the information from the very first year you participated in the QUALITY study.

Cohort Profile : The Quebec Adipose and Lifestyle Investigation in Youth cohort

International Journal of Epidemiology, December 2012

Marie Lambert, Andraea Van Hulst, Jennifer O'Loughlin and collaborators

This article explains how the QUALITY study came to be and what the objectives are. This publication describes how families were recruited as well as the conditions for entry into the study. It outlines the various measures that have been collected during the first and second visits as well as those planned for the third visit. This article also mentions the retention rate (i.e. how many of you kindly agreed to stay in the study!) of participants from the first to the second visit. In addition to presenting the early findings, the article describes the strengths and weaknesses of the study. Finally, funding sources, acknowledgments and references are listed.

How Are Physical Activity, Fitness, and Sedentary Behavior Associated With Insulin Sensitivity in Children?

Diabetes Care, June 2012

Mélanie Henderson, Katherine Gray-Donald, Marie-Ève Mathieu, and collaborators

When children were first enrolled in the QUALITY study, they were aged 8 years; we found that their insulin sensitivity (i.e. the systemic responsiveness to glucose) was influenced by how much exercise they do and how active they are overall. It was also affected by how sedentary they were (i.e. how much time they spent sitting, watching television, etc.). However, the impact of physical activity and sedentary behaviour on insulin sensitivity is different depending on the percentage of adipose tissue (fat). According to the same data, we find that the more girls spend time in front of screens, the lower their insulin sensitivity, regardless of their percentage of body fat. Finally, we noted that kids that were fitter also had healthier insulin sensitivity.

Mechanical Efficiency During a Cycling Test Is Not Lower in Children With Excess Body Weight and Low Aerobic Fitness.

Obesity, June 2012

Georges Jabbour, Marie Lambert, Jennifer O'Loughlin, and collaborators

As part of the QUALITY study, children 8 to 10 years old had similar mechanical efficiency (i.e. the ability to transfer chemical energy into mechanical energy, which in this case was measured by pedaling on a stationary bicycle) regardless of their weight status (i.e. regardless of whether they were thin or overweight). In addition, mechanical efficiency was independent of their aerobic capacity. This led us to conclude that when it comes to exercises like cycling, overweight children perform (i.e. are able to transfer energy) as efficiently as normal weight children.



Interview with Ginette Lagacé, biochemist



We know that there are saliva samples that are sent to Germany to be analyzed by biochemical experts. Apart from them, are you the only biochemist in Montreal doing the analysis of biological samples for QUALITY?

No, routine biochemical assays are performed at the central laboratory of the hospital. The CHU Ste-Justine received national certification for quality control (Agrément Canada) demonstrating that conditions for high quality standards are met. As for me, I am conducting the more specialized analyses in a laboratory dedicated to the QUALITY study.

As mentioned earlier, for an article to be considered scientifically valid, it is essential that the results cited therein be obtained using valid data. What basic criteria do you need to follow in order to ensure that this happens?

First, we are extremely diligent about adhering to the established procedures as strictly as possible. For example, all biological samples must be collected, stored and analyzed in exactly the same way. If there is a lapse in the protocol, the sample is excluded from the study.

There is also the inclusion of quality control measures in the analysis of samples. That is to say that each time a "batch" analysis is conducted, there are standardized "mock" samples that are assayed at the same time. These "mock" samples are the same for all such analyses across the province of Quebec. If during any analysis, values that do not correspond to standard reference values are obtained, corrective measures are taken and typically a second analysis is performed.

In addition, the lab solutions that we use or any given analysis always come from the same company,

and even from the same lot number. This is because we are interested in detecting variation caused by differences in people, not by differences in procedures and materials used to analyse those samples!

Do you need to calibrate the equipment you use regularly and if so, can you give us an example?

Yes, a simple example is the pipette. Using a very special pipette I am able to transfer small amounts of samples into another tube. These pipettes are calibrated by a specialized company in such a way as to ensure a great level of precision. Thus, thanks to this calibration, I can ensure that my results are highly reproducible, which is to say that the amount of liquid transferred is precisely accurate and identical each and every time.

Are there other protocols in place to ensure that the data are of the highest quality?

For most analyses, two samples of the same specimen are processed (duplicates). If there is a significant difference between the results of the two samples, the analysis is then repeated because we know that the results should be identical.

Later in the process, we double enter results into the computer. We enter each value into the computer twice so that an error in data entry can be immediately detected.

Which strengths are essential to your profession and what did you study?

The most important qualities are being resourceful, organized, methodical and meticulous.

As for my training, I hold a bachelor's degree in microbiology and a master's degree in biochemistry. Other paths can also lead to this kind of career, including a bachelor's degree in biotechnology.

Team work



Some QUALITY team members present at the September 28th, 2012 meeting

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Pour l'amour des enfants

