



CHU Sainte-Justine
Research Center
Mother and Child
University Hospital Center



Project title	<i>Validation of novel lung function tests (oscillometry) in asthmatic children.</i>		
Study level(s)	<input type="checkbox"/> MSc	<input type="checkbox"/> PhD	<input checked="" type="checkbox"/> Postdoctorate
Principal investigator(s)	Francine M. Ducharme		
Project duration	2-3 years		
Start date	Summer 2021		

Student position

Funded postdoctoral fellowship in clinical epidemiology applied to oscillometry and pediatric asthma.

Research laboratory presentation

Dr. Ducharme's clinical laboratory tests several instruments and oscillometry techniques applicable to children aged 1 to 17 years old. Indeed, asthma guidelines recommend periodically assessing lung function (i.e., spirometry) in children to properly adjust the treatment. Now, for the vast majority of children with asthma, doctors do not use spirometry, because of insufficient cooperation in young children and/or lack of access. An interesting alternative is the use of oscillometry performed in spontaneous breathing, which is effortlessly for the child, using portable devices newly (or in the process of being marketed) in Canada. An entire research program aims to provide reliable, valid and accessible measurement of lung function in children at the doctor's office or at home.

Research project description

A large structured cohort study has collected data in more than 600 children. These data will serve to establish all pre-requisites to allow uptake of this technique in clinical practice.

The objective of the post-doctoral training are to:

- Determine the feasibility of oscillometry according to age and children's characteristics;
- Establish the reproducibility of different oscillation parameters;
- Establish the best parameters to measure the airway obstruction and response to therapy;
- Propose threshold values to distinguish between mild, moderate and severe obstruction and to identify clinically significant improvement or deterioration;
- Propose a simple interpretation algorithm;
- Develop and test an online training module for health professionals;
- Develop skills for writing manuscripts, preparing presentations and writing grant applications.



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Required training and profile

- Completed PhD in epidemiology, physiology, biomedical sciences, or related sciences or an MD with a Msc, MPh, or PhD with advanced training in clinical research and expertise in pediatrics or pulmonology;
- Excellent academic record;
- Excellent statistical analysis skills;
- Excellent knowledge of computers and softwares (Office Suite, SPSS, SAS, R, etc.);
- Excellent ability to review scientific literature;
- Excellent competence in written and oral English. Linguistic competence in French is an asset.

Conditions

A research grant, reserved for this project, will cover the scholarship for the first 2 years; the candidate will be also invited to apply for training awards and operational funds at various competitions and programs.

Submit your application

Candidates must send the required documents to Dr Francine M. Ducharme by email to francine.m.ducharme@umontreal.ca

Please provide:

- ✓ *Curriculum vitae*
- ✓ Most recent transcripts
- ✓ Cover letter
- ✓ 2 References on request

Francine M. Ducharme, MD, MSc, FRCP(c), CAHS

Professor, Departments of Pediatrics and of Social and Preventive Medicine

Tel : (514) 345-4931 ext. : 4398

CHU Sainte-Justine, Room 17.B.000

1375 Côte Ste-Catherine

Montréal, Qc, H3T1C5, Canada

Studies at the CHU Sainte-Justine Research Center

Pursue your [graduate or postdoctoral studies](#) at the **CHU Sainte-Justine Research Center**, and be one of the 500 students, fellows and interns involved in accelerating the development of knowledge in the field of maternal, child and adolescent health, whether in basic or clinical research. Under the supervision of prominent scientists, especially in leukemia, rare pediatric diseases, genetics, perinatology, obesity, neuropsychology and cognition, scoliosis and rehabilitation, you will have the opportunity to work with multidisciplinary scientific teams and collaborators from all over the world.

About the CHU Sainte-Justine Research Center



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CHU Sainte-Justine Research Center is a leading mother-child research institution affiliated with Université de Montréal. It brings together more than 200 research investigators, including over 90 clinician-scientists, as well as 500 graduate and postgraduate students focused on finding innovative prevention means, faster and less invasive treatments, as well as personalized approaches to medicine. The Center is part of CHU Sainte-Justine, which is the largest mother-child center in Canada and the second most important pediatric center in North America. More on research.chusj.org

