McGill | Department of Epidemiology, Biostatistics and Occupational Health

***EPIDEMIOLOGY SEMINAR SERIES***
***Winter 2017***

*****THE DEPARTMENT OF EPIDEMIOLOGY, BIOSTATISTICS AND OCCUPATIONAL HEALTH, - SEMINAR SERIES IS A SELF-APPROVED GROUP LEARNING ACTIVITY (SECTION 1) AS DEFINED BY THE MAINTENANCE OF CERTIFICATION PROGRAM OF THE ROYAL COLLEGE OF PHYSICIANS AND SURGEONS OF CANADA*****

# François Reeves, MD

Cardiologist and Associate professor of Medicine, Université de Montréal

## *Environmental cardiology*

**Monday, 23 January 2017**
**4:00 pm - 5:00 pm – McIntyre Medical Building**
**3655 promenade Sir William Osler – Meakins – Rm 521**

**ALL ARE WELCOME**

**SYNOPSIS:**
Starting about twenty years ago, we began to understand that the environment plays a significant role in cardiovascular disease and that the environment is highly changeable.

We now know that the Industrial Revolution unleashed dietary and airborne nano-aggressors to which our pre-anthropocentric ancestors were not exposed. The main food nano-aggressors –widely used in processed foods – are fructose-glucose syrup, excess salt and synthetic trans fats. They are major sources of cardiometabolic syndrome, high blood pressure, obesity, diabetes and dyslipidemia. The major airborne aggressors are the result of our massive and growing use of fossil fuels to produce energy; they include fine and ultrafine particulates, nitrogen dioxide, and sulfur dioxide as well as toxins such as lead, composed of volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAHs).

These nano-aggressors are toxic not only directly to our blood vessels, where they can lead to atherosclerosis, thrombosis and autonomic nervous system disorders, but they may also result in cardiovascular risk factors such as high blood pressure, diabetes, dyslipidemia and even obesity. When these food and airborne nano-aggressors converge, they mutually potentiate to create a "perfect cardiovascular storm." First seen in the 1950s in North America during its Industrial Revolution, this storm is now enveloping the developing nations.

However, green spaces can significantly reduce both the impact of pollutants and the accelerating effects of climate change in urban environments. People – the poor, in particular – living in or nearby green spaces have fewer cardiovascular events. Numerous studies have demonstrated the many pleomorphic benefits of green spaces on all aspects of human health, from dementia and depression to cardiovascular disease; in addition, access to green spaces seems to directly encourage outdoor physical activity and to help improve social relations among neighbours.
In other words, a cardio-protective city must eliminate the airborne nano-aggressors created by the burning of fossil fuels and also the food nano-aggressors in the form of toxic additives in processed food. Such a city must also aim to create an optimal urban canopy that encourages active transport and outdoor activities, and that reintroduces the biodiversity necessary for ecological and climactic equilibrium in the urban environment. Dr Salim Yusuf, the world-renowned expert in cardiovascular epidemiology from McMaster University in Ontario, has said: "After all, cardiovascular disease was not common in 1830, so why can't it now become uncommon by 2050? That is the challenge we all face." And ensuring the quality of the environment is essential to meeting that challenge.

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**François Reeves, MD**
Epi Seminar – January 23, 2017

**OBJECTIVES:** At the end of this seminar, participants will be able to:

1) To recognize the impact of different milieus on cardiac health
2) To understand the main effects of environment on the cardiovascular system
3) To review the principal guidelines of the Lancet Commissions and WHO about Health and Climate Change

**BIO:**
Dr François Reeves is an interventional cardiologist and Associate Professor of Medicine with a joint appointment in the Department of Environmental and Occupational Health at the University of Montreal. Head of the cardiac catheterisation laboratories at, successively, Notre-Dame Hospital, the CHUM and Cité de la santé in Laval and member of the Steering Committee of the Quebec Tertiary Cardiology Network, he now devotes a significant part of his professional life to environmental cardiology. In 2011 he published Planète Cœur, Santé cardiaque et environnement, a book which examines the impact of the environment on our arteries. The English and upgraded version, Planet Heart: How an Unhealthy Environment Leads to Heart Disease was released in March 2014 by Greystone Books, Vancouver, which was finalist for the Lane Anderson Award 2014
http://sph.unc.edu/adv_profile/jennifer-lund-phd-msph/