Institute of Nutrition, Metabolism and Diabetes

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Towards a Global Initiative on Gene-Environment Interactions in Diabetes/Obesity in Specific Populations

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CIHR Mandate & Structure

To excel, according to internationally accepted standards of scientific excellence, in the creation of new knowledge and its translation into improved health for Canadians, more effective health services and products and a strengthened Canadian health care system.
The INMD supports research to enhance health in relation to diet, digestion, excretion, and metabolism; and to address causes, prevention, screening, diagnosis, treatment, support systems, and palliation of conditions and problems associated with hormone, digestive system, kidney, and liver function.
Obesity in Canada: The Challenge

- In 2008, ~one-quarter of Canadian adults were obese (Body Mass Index $\geq 30$), and 62% were classified as either overweight or obese.

- Canada ranked 4th in prevalence of obesity in OECD Countries, 2004-2008 (behind the United States, Mexico, and New Zealand).

- Prevalence of obesity was 2.5 times higher in 2004 than 1978/79 among Canadian children and youth aged 2 to 17 yrs; obesity tripled, from 3% to 9%, among youth aged 12 to 17 yrs.

- There is no one data source for obesity among First Nations, Inuit, and Métis peoples in Canada, but in 2004 an estimated 38% of Aboriginal adults living off-reserves were obese.

*SOURCE: Organisation for Economic Co-operation and Development (OECD) Health Data, 2009*
Diabetes in Canada: The Challenge

- Almost 2.4 million Canadians (7%) were living with diabetes in 2008/09

- From 1998/99 to 2008/09, the prevalence of diabetes increased by 70% among Canadians; the greatest relative increase occurred in 35-39 and 40-44 year age groups, likely as a consequence of increasing rates of overweight and obesity

- The Canadian Aboriginal population is diverse (First Nations, Inuit, and Métis people on and off reserves) and diabetes prevalence varies between and within groups

- Age-standardized prevalence rates of diabetes among Canada’s First Nations is 17% for individuals living on-reserves and 10% among First Nations individuals living off-reserves, compared to 5% in non-Aboriginal populations
Age-standardized† prevalence and number of cases of diagnosed diabetes (>1 yr. age) in Canada: 1998/99 to 2008/09

† Age-standardized to the 1991 Canadian population.

Source: Public Health Agency of Canada, using the Canadian Chronic Disease Surveillance System (July, 2011)
At its inception, INMD distinguished itself from the other institutes within CIHR by choosing of a single strategic priority: obesity and healthy body weight.

Between 2000 and 2008, the annual number of Canadian obesity research publications tripled: from 93 in 2000 to 283 in 2008.

Canada ranked 5th in the world for total number of publications in obesity between 2000 and 2008.

A 2011 international review judged that INMD had an impact in presenting a “focus for obesity research and, in that sense, has had a transformative impact on the [Canadian research] community.”
INMD Strategic Priorities

Obesity and Healthy Body Weight: Seeking Solutions

Environments, Genes and Chronic Disease

Food and Health

Continuum of Care

2009 - 2014

INMD Strategic Plan available at: www.cihr-irsc.gc.ca/e/41572.html
INMD aims to:

- support research on solution-focused interventions at the clinical, policy, and population health levels

- foster research on priority populations including: children, Aboriginal peoples, and morbidly obese persons

- emphasize knowledge translation to improve prevention approaches and enhance weight management strategies
Environments, Genes and Chronic Disease

INMD aims to:

- advance knowledge about the influence of the environment and genes on the development of chronic disease

- increase knowledge on the phenotypic variation of both common and rare diseases

- foster research to better understand interactions with the human microbiome

- support research into the health consequences of changes in the natural and built environments
Workshop Objectives:

1. Define strengths, gaps, and opportunities for targeted research to identify the interactions and roles of natural and built environments, human behaviour, and genes on the pathogenesis and pathobiology of chronic non-communicable diseases.

2. Identify strengths, gaps, and opportunities for increasing research capacity in Canada in the area of natural and built environments and their impacts on genes and chronic non-communicable diseases.

3. Identify Canadian research priorities for an environments, genes and chronic disease targeted research initiative.
Canada’s legacy in diabetes research

Thank you for your attention!
Questions, comments, feedback, . . .