

## The CIHR Institute

CIHR's Institute of Gender and Health is the first research institute in the world to examine the health of women and girls, men and boys. It champions efforts to better understand how sex and gender influence access to the health system, chronic conditions and disabilities, health across the lifespan, health behaviours and addictions and environmental determinants of health.

## About CIHR

The Canadian Institutes of Health Research (CIHR) is the Government of Canada's agency for health research. CIHR's mission is to create new scientific knowledge and to catalyze its translation into improved health, more effective health services and products, and a strengthened Canadian healthcare system. Composed of 13 Institutes, CIHR provides leadership and support to more than 10,000 health researchers and trainees across Canada.

The Canadian Institutes of Health Research (CIHR) is the Government of Canada's agency for health research. Through CIHR, the Government of Canada invested approximately \$37.9 million in 2005-06 in research on gender and health across Canada.

## The Facts

- Women experience more illness, more years of disability and more stress than men, but they also live longer. Even when diagnosed with a fatal disease, women survive longer than men.
- Life expectancy for women born in 2002 was 82.1 years, compared with 77.2 years for men. Between 1979 and 2002, life expectancy for men improved by 5.8 years while that of women improved by 3.3 years.
- Women are more likely than men to consider overall health and weight when choosing food, while men are more likely to engage in vigorous activity during their leisure time. As of 2004, 65% of males and 53% of females in Canada were considered overweight or obese based on the Body Mass Index or BMI.
- By age 65, 77% of men and 85% of women have at least one chronic condition. Arthritis is the most prevalent chronic condition.
- In 2002, more than 600,000 Canadians were dependent on alcohol and nearly 200,000 were dependent on illicit drugs. Men are more likely than women to drink heavily and use illicit drugs.
- A person's age and gender have a remarkable influence on their likelihood of experiencing poverty. Women are more likely to experience poverty. So are the young and the elderly. In fact, children and youth are over-represented in this group, accounting for more than 40% of the poor population.
- One in twelve Canadian children aged 4 to 7 in 1998-99 had witnessed violence at home. Children who witness violent behaviour are more likely to be overtly aggressive.

## Research Finding Solutions to Gender and Health

- A study by Dr. Shari Brotman of McGill University has found that elderly homosexuals have a difficult time getting health and social services and, in a number of cases, face prejudice. Dr. Brotman conducted 90 interviews with elders, caregivers and health and social service providers in Vancouver, Montreal and Halifax. The study recommends better training and standards to respect patients' lifestyles and to give them the care they need.
- When kids, girls in particular, reach the age of 12, they enter a vulnerable period filled with conflicting information about what constitutes a healthy body type and weight. Dr. Gail McVey of the Hospital for Sick Children, University of Toronto, is developing tools and programs to help "vaccinate" students during this period and prevent risk factors that can trigger eating disorders such as anorexia nervosa and bulimia. Based on previous research, Dr. McVey's team has created a series of Web-based resources that can be used by teachers and students as part of their daily classroom activities. Lessons explore topics such as media literacy, healthy eating, the impact of teasing, the impact of adult role models and active living.
- Molar pregnancies, pregnancies that have no embryo, only placental tissue, affect approximately one out of a thousand women. Dr. Rima Slim from McGill University, in collaboration with partners from India, Pakistan, Lebanon and Germany, has, for the first time, linked this disorder with a particular gene mutation. The finding could lead to new screening and diagnostic tests.

- A CIHR-funded researcher from the Ottawa Health Research Institute, Dr. Andrée Gruslin, has found that an underactive enzyme could lead to miscarriage by interfering with the proper growth of the placenta. The gene that produces the enzyme can also result in the birth of underweight babies – called fetal-growth restriction. By identifying women with the gene Dr. Gruslin and her team hope to be able to monitor pregnant women and prevent stillbirths.

## In the Pipeline... Gender Differences in Respiratory Diseases

Chronic Obstructive Pulmonary Disease (COPD) is the fourth leading cause of death in North America. Once considered a “man’s” disease, COPD is increasing in women. A new interdisciplinary research program at the University of British Columbia called ICEBERGS is studying the reasons why and building capacity for more research in this area. Led by Dr. Susan Kennedy, researchers will address physiological differences – women have larger airways which could result in more toxins being inhaled and deposited – as well as socio-economic and environmental factors. As a first step, team members, all experts in the area of respiratory diseases, are also re-examining their earlier research to see if different conclusions can be drawn if gender is considered.

## The Researchers... Dr. Jacques J. Tremblay – Defining What it Takes to Be a Man

It’s at the heart of what it means to be a man but, strangely, it has not yet been the subject of a Motown hit song. Even within scientific communities, it has received little study, giving CIHR-supported researcher Dr. Jacques J. Tremblay a head start on his colleagues.

Dr. Tremblay, assistant professor in the Faculty of Medicine at Université Laval, is studying the function of what are known as Leydig cells, just one of some 200 different types of cells found in the human body. Each of these cells has its own specialized function and Leydig cells, found in testes, are responsible for producing steroids such as testosterone.

“I’m interested in understanding the gene expression events that make the Leydig cell what it is and that, ultimately, give it the capacity to produce steroids,” Dr. Tremblay notes.

To understand this process, Dr. Tremblay is studying what are known as transcription factors, proteins that help unravel and relay instructions contained in genes. It’s a long, complicated cascade of events involving signalling and communications between many different molecules during cell development and each has a specialized function.

“Collectively, these factors are working in what we’ve described as a kind of ‘combinatorial code’ – a unique combination or sequence of events at the molecular level that tells the cell to become what it is,” Dr. Tremblay explains.

According to Dr. Tremblay, such a detailed understanding is critical in helping to correct problems caused by the lack of certain hormones produced by Leydig cells.

Studies have suggested that maternal exposure to environmental pollutants known as phthalates (commonly found in cosmetics and flexible plastics) and excessive estrogen levels (having many causes, including medication, maternal obesity and the environment) cause reproductive disorders that target the male embryo, Leydig cells in particular.

“The Leydig cell is both the source of masculinity and its Achilles heel,” concludes Dr. Tremblay.