



# Obesity



CIHR IRSC

**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 **\$23.6 million** in 2006-07 across Canada in research on obesity.**

## The Facts

- In 2004, 18% of children aged 2 to 17 were overweight and 8% were obese. Childhood obesity is a major risk factor for diabetes; one in three children born since 2000 will likely develop diabetes.
- In 2004, 23% of Canadian adults were considered obese, compared to just 14% in 1978. One in four seniors over the age of 75 was obese.
- One-quarter of Canadians who were overweight in 1994-95 had become obese by 2002-03; only 10% had returned to a healthy weight.
- Deaths attributable to complications of overweight nearly doubled between 1985 and 2000.
- Obesity is a risk factor for heart disease, stroke, type 2 diabetes, gallbladder disease and some forms of cancer. It has also been associated with hypertension (high blood pressure), osteoarthritis and sleep disorders such as sleep apnea.
- The health costs of obesity, including hospital care, physician services and drugs, were estimated to be more than \$4.3 billion in 2001, or 2.2% of total health-care expenditures for diseases in that year.
- Research has shown that environmental, behavioural, social, cultural and genetic factors all contribute to the development of overweight and obesity.



## 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 health-care system. Composed of 13 Institutes, CIHR provides leadership and support to more than 11,000 health researchers and trainees across Canada.

# Finding Solutions

### Emotional eating

Are your eating habits an indicator of your mental health? Research by CIHR-funded investigator Dr. Simone Lemieux at Laval University found that a woman who eats in response to emotional stress and feels unable to stop is very likely to have a poor self-image, regardless of her weight. These findings suggest that dieting history can be used to identify women who are suffering from low psychological well-being and at risk for depression.

### Breast really is best

New mothers are used to hearing "Breast is best" when it comes to feeding their babies. Now, new research has demonstrated even more benefits. CIHR-funded researcher Dr. Gary Goldfield at the University of Ottawa has found that infants who are breastfed have a better chance of beating obesity later in life than infants who are formula-fed. Previous studies showed that being breastfed reduces a child's risk of becoming obese, but poor diet and an inactive lifestyle during childhood can override these obesity-preventing effects. However, Dr. Goldfield's study found that obese pre-teens who were breastfed as infants lose weight more easily than pre-teens who were formula-fed. These findings suggest that breastfeeding may have more long-lasting benefits than researchers originally thought.

### How does obesity harm the heart?

Too much of a hormone called leptin may be bad for your heart. Obese people typically have elevated leptin levels and CIHR-funded researcher Dr. Gary Sweeney of York University has shown that this hormone increases the size of heart muscle cells. The hormone also alters the type of cells that surround the heart. This "remodelling" of the heart may contribute to obesity-related heart failure.

### Your brain says eat!

We all know what hunger feels like, but how does our brain tell us we're hungry? Dr. Michiru Hirasawa, a CIHR-funded researcher at Memorial University, is investigating how the chemical messengers in our brains are involved in regulating hunger. In a recent study, Dr. Hirasawa examined how dopamine, a chemical produced by the brain, interacts with a specific type of brain cell to regulate hunger. She found that smaller-than-normal amounts of dopamine excited these cells in the rat brain, causing rats to eat more. However, large amounts of dopamine shut down the cells, curbing the rats' appetites. Dr. Hirasawa and her colleagues believe that a disruption in dopamine signalling could lead to overeating and obesity.



## The Researchers

### Dr. Kim Raine – Building the momentum towards a healthier world

Dr. Kim Raine at the University of Alberta is trying to uncover how your community influences your waist size. In a recent study, she looked at Edmonton's "foodscape" and found that the city's poorest neighbourhoods contain 2.7 times more fast food restaurants than its wealthiest neighbourhoods.

"It may seem counter-intuitive, but the highest obesity rates are among the poor in Canada. Our research is showing that healthier food products are actually the most expensive and the least accessible," says Dr. Raine.

Dr. Raine began her career as a nutritionist, trying to help people achieve health through balanced

diets. "I soon recognized that regardless of the good advice that I was giving the people who would come to my office, and despite their best intentions, they were really struggling to make changes," says Dr. Raine.

Dr. Raine believes we must re-examine outdated policies that influence food and physical activity to determine whether or not they are promoting obesity. As an example, she points to food policies in schools.

"Do schools allow soft drink machines? Are schools counting on those soft drink machines to subsidize the costs of their extracurricular activities because there have been cutbacks to the education budget? These are food policies that can have a huge impact," she says.

Dr. Raine is working on ways to use research to change policies. "It's exciting, because we're at the beginning of what I think could be a huge momentum of change," says Dr. Raine.

