



Heart Disease

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 \$100.2 million in 2006-07 across Canada in research on cardiovascular disease.

The Facts

- Cardiovascular disease is the leading cause of death in Canada and accounted for at least 33% of all deaths (34% among women, 32% among men) in 2002.
- Men are more likely to develop heart disease early in life; women tend to “catch up” around menopause. Women experiencing heart disease or stroke are often under-diagnosed or managed differently than men.
- According to the 2003 Canadian Community Health Survey conducted among persons aged 12 years or more, five million Canadians say they are affected by heart disease, hypertension and stroke.
- Cardiovascular disease is the most costly disease affecting Canadians. In 1998, it was responsible for \$18.5 billion in expenditures, or 11.6% of the total cost of all illnesses in Canada. Of this, \$6.8 billion was in direct costs, particularly for hospital care, and \$11.7 billion was in indirect costs, most due to premature death.



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

Simple solutions for a healthier heart

Clogged arteries may have just gotten a lot easier and a lot less expensive to treat. A team of researchers at McMaster University has found that angioplasty, a popular procedure for unblocking coronary arteries, is no more effective than medication and lifestyle changes when it comes to preventing heart attacks and stroke. This CIHR-funded study, led by Drs. Koon Teo and William Boden, could result in big savings for the health-care system. In 2003-04, doctors performed 167 angioplasties for every 100,000 Canadians over the age of 20.

How do you fix a broken heart?

Research by Dr. Ren-Ke Li of the Toronto General Hospital, University Health Network, may point the way to helping restore the health of heart muscles after a heart attack and preventing further heart failure. The research team discovered an "SOS" distress signal that starts the repair process after a heart attack. When damaged tissues send out this signal, a specific kind of bone marrow stem cell mobilizes and stimulates the growth of new blood vessels in the heart.

Congenital heart disease – Not just for children

Improved surgical techniques have reduced the number of children who die from congenital heart disease (CHD), meaning that there are increasing numbers of adults living with the condition. According to CIHR-funded research by Dr. Ariane Marelli of McGill University, one in every 85 children and one in every 250 adults live with CHD, a fact that increases demands on the health-care system. CHD patients need life-long care and are more at risk for developing other forms of heart disease.

Heart disease patients more likely to have a heavy heart

Heart disease patients routinely receive an array of medications after discharge to help their recovery and keep them healthy. But physicians need to pay attention to their mental as well as their physical health. As many as 20% of heart disease patients suffer from major depression, according to CIHR-funded researcher Dr. François Lespérance from the University of Montreal, who says family doctors should be alert to the possibility of depression and should not be afraid to include antidepressants in patients' drug treatment plan. Research by Dr. Lespérance also determined that drug therapy is more effective than psychotherapy for relieving depression among these patients.



The Researchers

Dr. Jack Tu – Protecting Canadians' hearts with numbers

Some physicians save lives with scalpels, some with medicines. Dr. Jack Tu saves lives with statistics and his laptop. The CIHR-supported cardiologist and health policy researcher at Sunnybrook Health Sciences Centre in Toronto is a world leader in mining hospital data to identify best practices in cardiac care. Every year the results of his research mean the difference between life and death for hundreds of Canadians with heart attacks and heart disease.

In 1999, Dr. Tu and his team released the first hospital report cards on cardiac care in Ontario. The report cards revealed major disparities between heart patient survival rates at different hospitals. A patient admitted to a hospital with top marks had three times the chance of

surviving a heart attack compared to a similar patient admitted to a hospital with the lowest score.

"The results understandably caused a bit of stir. Nobody likes to be evaluated," says Dr. Tu, also the team leader of the CIHR-funded Canadian Cardiovascular Outcomes Research Team (CCORT). "But the good news is they also caused change."

Another report card in 2004 revealed that differences in heart attack survival rate were in part attributable to how quickly and comprehensively hospitals administered key medications. The study revealed that up to 400 lives per year in Ontario could be saved if all heart attack patients quickly received "clot-busting" drugs on hospital admission, and specific medications on discharge.

In 2006, Dr. Tu and the CCORT team published the *Canadian Cardiovascular Atlas*. A Canadian first, the atlas graphically identifies regional differences in cardiac care and survival.



For more information, go to
www.healthresearchatwork.cihr-irsc.gc.ca
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