

Risk Behaviour and Prevention

When considering cancer prevention opportunities, the main candidates for study are tobacco use, environmental carcinogens (e.g. asbestos, UV exposure, aflatoxins), obesity, diet and physical activity. Many factors such as obesity, nutrition and physical activity are strongly linked. Of these risk factors, tobacco use poses by far the greatest known threat to human health. Every year, more than 45,000 Canadians die as a result of tobacco use and it is estimated that smoking-related illness costs the health care system over \$3.5 billion annually, an amount that rises to \$15 billion when non-health care costs, such as worker absenteeism and lost future income, are included. In 2001, the Government of Canada established the Federal Tobacco Control Strategy, a multi-agency initiative supported by an investment of over \$500 million. As progress towards reducing tobacco consumption in Canada has been greater than anticipated the current, revised goal for the Strategy is to reduce overall smoking prevalence from 19% (2006) to 12% (by 2011). An investment of this size requires a strong evidence base to advise tobacco control programs and policies in Canada and has created significant opportunities for high impact research through population intervention studies that graft research on to the “natural experiments” being conducted by the government. In addition, tobacco related research is supported by the Canadian Tobacco Control Research Initiative (CTCRI), a collaboration of Canadian funding agencies dedicated to supporting coordinated research to address the health problems associated with tobacco use and nicotine addiction.

Current Partners in CTCRI (2008)

Canadian Cancer Society
Canadian Institutes of Health Research
Health Canada
National Cancer Institute of Canada

The CTCRI has launched a number of initiatives to address gaps within the field of tobacco control/abuse and nicotine addiction, including those:

- supporting knowledge transfer and the engagement of program and policy decision makers in research;
- identifying best practices to guide policy and program decision making;
- developing common approaches to monitoring and evaluation;
- mapping future directions in tobacco control research;
- developing mechanisms to support international research collaboration; and
- developing international research capacity.



Canadian Institutes of Health Research (CIHR) Institute of Cancer Research (ICR)

The CIHR Institute of Cancer Research (ICR) identified Risk Behaviour and Prevention as one of its original six strategic priority research areas. After a series of meetings and consultations, led by Dr. Roy Cameron, it was recommended that ICR should take advantage of partnership opportunities through CTCRI to address tobacco use and also explore additional opportunities for population intervention studies and partnerships on related initiatives led by others. In 2002, the CTCRI brought together a diverse group of investigators and stakeholders in tobacco control to develop a strategic research agenda for Canada for 2002-2012. At this Summit, the following eight major research themes were identified:

- Tobacco use and abuse by Aboriginal Peoples’;
- Determinants of use;
- Economics of tobacco control;
- Harm reduction;
- Industry practices;
- Integrated intervention;
- Nicotine addiction; and
- Sex differences and gender influence.



Advancing Science to Reduce Tobacco Abuse and Nicotine Addiction Initiative

To address the research themes emerging from the Summit, CTCRI, in partnership with the Canadian Lung Association and the Heart and Stroke Foundation of Canada, launched the “*Advancing Science to Reduce Tobacco Abuse and Nicotine Addiction*” initiative in 2003. Six CIHR Institutes took part in the initiative launch, including ICR. Several different program elements were included in the launch to accommodate the wide range of research needs.

Programs included in the *Advancing Science to Reduce Tobacco Abuse and Nicotine Addiction* initiative

Interdisciplinary Capacity Enhancement Teams (ICE)
Policy Research Grants
Knowledge Synthesis Grants
Community Based Research Grants
Student Research Grants
Research Planning Grants
Idea Grants
Researcher Travel Grants
Workshop and Learning Opportunity Grants

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Through this initiative ICR has supported 76 grants and travel awards and has committed a total of \$2.8 million dollars over five years, commencing in 2004. A few examples of some early outcomes from these funded programs are described below.

Results and Outcomes

ICE Grants

ICR is providing partial funding for three, five-year ICE grants. These grants provide support for transdisciplinary groups engaged in mentoring junior researchers or established researchers who have not worked extensively in health research in the past.

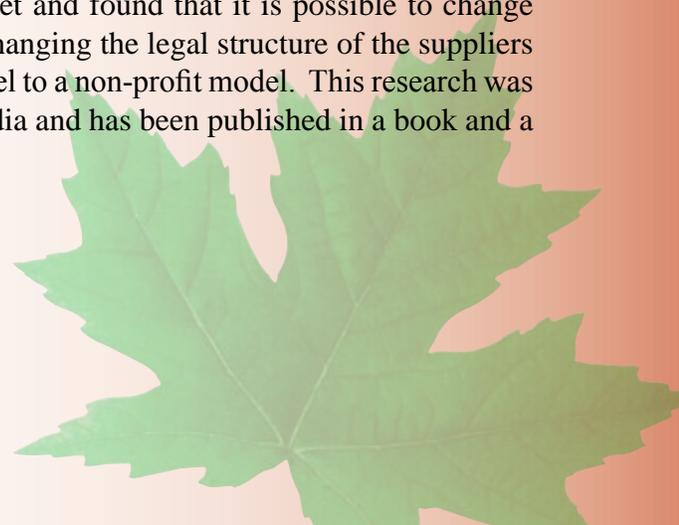
A team project led by McGill University's Dr. Paul Clarke entitled "*Nicotine addiction: Behavioural and brain mechanisms from rodents to humans*," has developed a new model that gradually delivers nicotine to the brain. Preliminary results suggest that nicotine, given in a way that more closely mimics smoking, may engage different reward mechanisms in the brain. The team has also used functional neuroimaging to gain a better understanding of the craving that appears critical to relapse in human smokers. These studies suggest that genetically determined differences in nicotine metabolism might affect the neural response to smoking cues.



Idea Grants



Idea Grants are designed to encourage unique or original research that has the potential to advance knowledge in tobacco control. Grants allow investigators with innovative ideas and observations to conduct pilot studies to perform secondary analysis of data sets or to gather new evidence necessary to determine the viability of research directions or hypotheses. Idea grants are valued at a maximum of \$50,000 each for one year. ICR has supported 20 Idea Grants since 2004 for a total investment of over \$900,000. Dr. Cynthia Callard's team, "*Towards a new industrial strategy for tobacco*," based at Physicians for a Smoke Free Canada, studied the supply-side of the tobacco market and found that it is possible to change tobacco industry behaviour by changing the legal structure of the suppliers from a business corporation model to a non-profit model. This research was widely reported in Canadian media and has been published in a book and a journal article.



Canadian Institutes of Health Research (CIHR)

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Knowledge Synthesis Grants

The goal of the Knowledge Synthesis program is to support interdisciplinary teams of researchers and practitioners/decision-makers to conduct collaborative reviews of evidence for particular tobacco control interventions. The grants are valued at a maximum of \$120,000 for one year. Findings from the University of Alberta's Dr. Candace Nykiforuk's Knowledge Synthesis grant, "*Smoke-free spaces: a better practices review to identify lessons for action and research,*" were incorporated into the "policy feedback report to schools" as part of Health Canada's Youth Smoking Survey and the School Health Action and Planning Evaluation System. Within these tools, better practices around smoke-free spaces policy development and implementation in schools were included so that schools would have evidence-based information to help strengthen their school smoke-free policies.



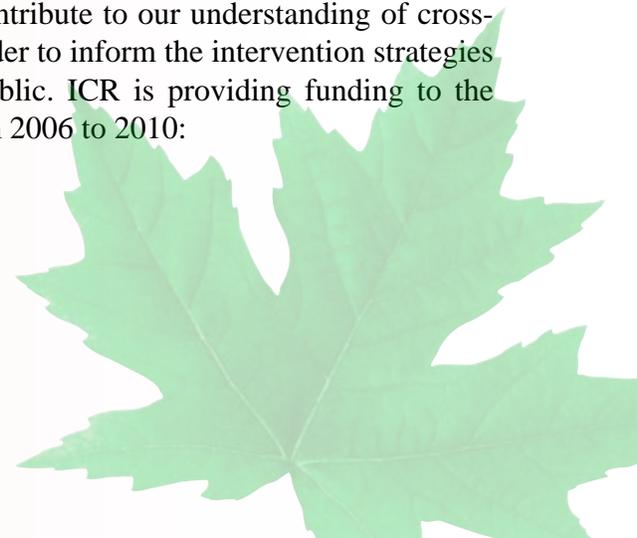
Policy Research Grants

Policy Research grants are intended to stimulate research that will influence, guide or have a direct impact on policy decisions in tobacco control. These grants are valued at a maximum of \$80,000 and the research may be conducted over two years. One example of the policy outcomes from an ICR-supported Policy Research Grant is Concordia University's Dr. Sylvia Kairouz's project, "*Effects of smoking ban in public places in Quebec on smoking attitudes and behaviour in public and private locations among smokers and recent ex-smokers.*" This study provided first-hand evidence on the impact of the smoking ban in public places in Quebec; on attitudes and behaviours of smokers in public locations; and the potential spill over effect of the ban on rules and smoking in homes and private vehicles. This information and subsequent recommendations were provided to key national decision makers during the revision of two public policies: 1) the National Public Health Program and 2) the Quebec public health prevention/intervention program.



Research in Addictions: Innovative Approaches in Health Care - New Emerging Team (NET) Grants

This initiative was launched by CTCRI and partners, to support the creation of new and previously nonexistent research teams or the development of small existing teams comprised of investigators undertaking collaborative, multidisciplinary research that will contribute to our understanding of cross-addictions of alcohol, tobacco, illicit drug use and gambling in order to inform the intervention strategies of addiction professionals, policy makers, and the Canadian public. ICR is providing funding to the following two NET grants for a total investment of \$170,000 from 2006 to 2010:



Canadian Institutes of Health Research (CIHR)

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- Dr. Usua Buston from the Centre for Addiction & Mental Health is conducting a series of studies that will lead to the identification of factors that contribute to the vulnerability of an individual to develop concurrent mental health and alcohol or tobacco use problems and that will, therefore, determine new treatments; and
- Dr. Thomas Kerr's project, "*Vancouver multi-disciplinary collaboration of injection drug use researchers*," based at the B.C. Centre for Excellence in HIV/AIDS, will harmonize six large funded cohort studies of addicted individuals in Vancouver, and will develop systems and personnel to foster collaboration among the investigators and linkages between researchers and policy-makers.

Additional ICR-funded projects related to Risk Behaviour and Prevention

In addition to the considerable investment made by ICR to support research into tobacco use, and in accordance with recommendations from the Risk Behaviour and Prevention Working Group, ICR has also partnered on related initiatives led by other organizations, including:

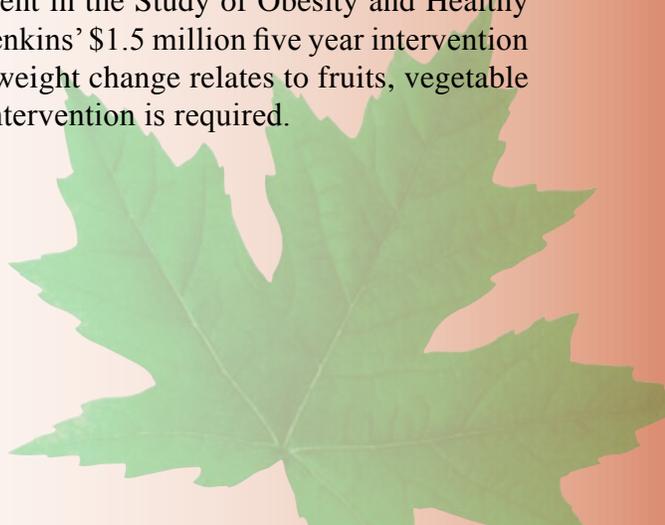
Target Obesity

The Target Obesity initiative was launched by the Heart and Stroke Foundation of Canada, in partnership with the Canadian Diabetes Association and CIHR's Institutes of Cancer Research; Nutrition, Metabolism and Diabetes; Gender and Health; Musculoskeletal Health and Arthritis; and Human Development, Child and Youth Health. The goal of Target Obesity was to support and train investigators in the area of obesity research. ICR committed funding to support four Research Fellowships and three Doctoral Research Awards. The research supported by ICR through this initiative included a study of the chemicals in the brain that regulate food intake and body weight gain and a study to identify the genes related to obesity and their environmental triggers.



Excellence, Innovation and Advancement in the Study of Obesity and Healthy Body Weight Initiative New Emerging Team Grant

In 2003, ICR partnered with the Institute of Nutrition, Metabolism, and Diabetes to support Dr. David Jenkins' "*Fruits, vegetables, and whole grains: Community-based intervention to reduce obesity*," supported through the Excellence, Innovation and Advancement in the Study of Obesity and Healthy Body Weight Initiative New Emerging Team Grant RFA. Dr. Jenkins' \$1.5 million five year intervention study, based at the University of Toronto, examined whether weight change relates to fruits, vegetable and whole grain consumption and what level of intensity of intervention is required.



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Food for Health Museum Exhibit

There are many links between food and health, including the effects of diet and other lifestyle factors on susceptibility to a variety of chronic diseases such as diabetes, heart disease and cancer. In March 2007, the *Food for Health* travelling museum exhibit opened at the Canada Agriculture Museum. This exhibit was developed in partnership with Agriculture and Agri-food Canada, the Canadian Food Inspection Agency, Health Canada, the Canadian Partnership for Consumer Food Safety and Education, and five CIHR Institutes, including ICR. *Food for Health* will create an opportunity through interactive displays, presentation of the latest research findings, educational school programs, public interpretation programs and suitcase exhibits to reach a segment of the Canadian population, including young people, with the message that a healthy diet and appropriate body weight in combination with physical activity can greatly improve a person's health and reduce the risk of chronic diseases, including cancer. The exhibit, featuring fun hands-on activities, multimedia displays, historical artifacts and graphics, is supported by a comprehensive web site (<http://www.agriculture.technomuses.ca/english/FoodForHealth/index.html>) and will travel to museum sites across Canada from 2007 to 2011.



Dr. Bhagirath Singh, Scientific Director of the CIHR Institute for Infection and Immunity, and guests visiting the opening of the *Food for Health* exhibit in Ottawa.

Canadian Cancer Cohort

ICR continues to support research into risk behaviour and prevention and has played a key advisory and facilitation role in the development, by the Canadian Partnership Against Cancer, of a Canadian cancer cohort. This cohort will serve as a laboratory for population, basic and translational research studies and will provide information on the interactions between environmental, lifestyle, socio-economic and genetic factors in the development of chronic diseases, including cancer.



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