

# Research Canada Update

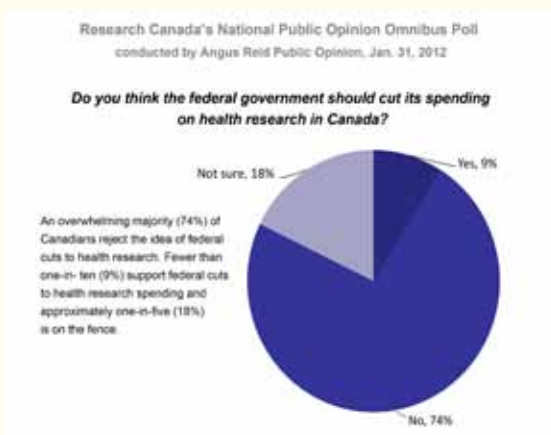
News for Parliamentarians on Canadian Health Research

Winter 2012



## Canada Speaks! 2012 national poll shows that Canadians see health and medical research as an engine for economic growth

Research Canada: An Alliance for Health Discovery asked Angus Reid Public Opinion to conduct a public opinion survey of 1,000 Canadian adults to gauge the importance Canadians place on health research in the context of Canada's current economic challenges and in advance of Federal Budget 2012. The survey updates selected results from the landmark Research Canada 2006 survey.



Canada Speaks! 2012 shows that Canadians see health and medical research as an engine for economic growth. A majority of Canadians (78%) still hold the view that health and medical research makes an important contribution to the Canadian economy: a finding similar to that from 2006. Nearly half (45%) of Canadians think that federal investments in health and medical research help to create jobs for Canadians, with agreement particularly high in Alberta and Atlantic Canada. Canadians also

agree that job creation, while an important benefit of health and medical research is not necessarily the only or most significant benefit. Canadians see benefits to the Canadian economy in a variety of ways – especially with respect to increasing innovation and new technologies and strengthening the marketability of Canadian medical advances. That's why a strong majority told us they do not want cuts to health research in the upcoming budget.

Canadians also told us that health research is an important way out of increasing health care costs. In fact, a majority (54%) said that health and medical research is part of the solution and not part of the problem when it comes to controlling the cost of health care in Canada.

To view the complete report, please visit: [www.rc-rc.ca/advocacy/canada-speaks-2012](http://www.rc-rc.ca/advocacy/canada-speaks-2012)

### Key dates for upcoming health-related awareness campaigns

February 29<sup>th</sup> is *International Day for Rare Disorders* - [www.raredisorders.ca](http://www.raredisorders.ca)

February is *Heart & Stroke Month* - [www.heartandstroke.ca](http://www.heartandstroke.ca)

March is *National Colorectal Cancer Awareness Month* - [www.colorectal-cancer.ca](http://www.colorectal-cancer.ca)

March is *National Epilepsy Month* - [www.epilepsy.ca](http://www.epilepsy.ca)

April is *Daffodil Month* (Canadian Cancer Society) - [www.cancer.ca](http://www.cancer.ca)

April is *Parkinson Awareness Month* - [www.parkinson.ca](http://www.parkinson.ca)

May is *Cystic Fibrosis Awareness Month* - [www.cysticfibrosis.ca](http://www.cysticfibrosis.ca)



## HEALTH RESEARCH CAUCUS

### Coming Events

#### Reception and Kiosk Session on Brain Research

May 14, 2012  
4 p.m. -- 7 p.m.



On Monday, May 14th, 2012, Research Canada and the Health Research Caucus will host a non-partisan kiosk-style event for parliamentarians on Brain Research in Canada. A group of eminent health researchers will present kiosks representing a range of brain research areas, including: neurodegeneration and aging, traumatic brain injury, epigenetic determinants of behaviour, senses and communication, and more. Details will follow shortly.

# RESEARCH IN ACTION

## Sharing news of Canadian health research advancements

Following are brief profiles of some of the excellent research initiatives being undertaken by members of Research Canada: An Alliance for Health Discovery.



### HIV/AIDS vaccine developed at Western University proceeding to human clinical trials



The first and only preventative HIV vaccine based on a genetically modified killed whole virus has received approval by the United States Food and Drug Administration (FDA) to start human clinical trials.

Developed by Dr. Chil-Yong Kang and his team at Western

University, with the support of Sumagen Canada, the vaccine (SAV001) holds tremendous promise, having already proven to stimulate strong immune responses in preliminary toxicology tests with no adverse effects or safety risks. It is the only HIV vaccine currently under development in Canada, and one of only a few in the world.

“FDA approval for human clinical trials is an extremely significant milestone for our vaccine, which has the potential to save the lives of millions of people around the world by preventing HIV infection,” says Kang, a researcher and professor at Western’s Schulich School of Medicine & Dentistry.

Since the virus was characterized in 1983, there have been numerous trials through pharmaceutical companies and academic institutions around the world to develop vaccines; however, no commercialized vaccine has been developed to date.

Before the SAV001 vaccine can be commercialized, it must go through three phases of human clinical trials. Phase I is set to begin in January 2012.

Read more: [www.http://www.schulich.uwo.ca/](http://www.schulich.uwo.ca/)

### McMaster research finds link between gut bacteria and behaviour

For the first time, researchers at McMaster University have conclusive evidence that bacteria residing in the gut influence brain chemistry and behaviour. The findings are important because several common types of gastrointestinal disease, including irritable bowel syndrome, are frequently associated with anxiety or depression. In addition there has been speculation that some psychiatric disorders, such as late onset autism, may be associated with an abnormal bacterial content in the gut.

“The exciting results provide stimulus for further investigating a microbial component to the causation of behavioural illnesses,” said Stephen Collins, professor of medicine and associate dean of research, Michael G. DeGroote School of Medicine. Collins and Premysl Bercik, assistant professor of medicine, undertook the research in the Farncombe Family Digestive Health Research Institute.

The research appears in the online edition of the journal *Gastroenterology*. The research was funded by grants from the Canadian Institutes of Health Research (CIHR) and the Crohn’s and Colitis Foundation of Canada (CCFC). Read more at [www.mcmaster.ca/research](http://www.mcmaster.ca/research).



### iDAPT Research Centre brings together brightest minds and state-of-the-art technology

Toronto Rehab is home to one of the world’s most advanced rehabilitation research facilities. The iDAPT Centre for Rehabilitation Research, opened in Nov. 2011, is a unique space where ideas can be cultivated and tested in a real-life setting. New assistive technologies and treatments developed at iDAPT will enhance the lives of elderly people and those with disabling injury or illness.



Until now, researchers have lacked facilities where they can safely study how adults with disabilities interact with their environment. By creating real-life conditions, the iDAPT Centre for Rehabilitation Research enables researchers to deliver

practical new therapies and well-designed products.

Built in collaboration with the University of Toronto, the iDAPT Centre is a thriving research centre where researchers team up with investigators from top academic institutions in Canada, the U.S., and throughout the world. Scientists work alongside clinicians, students, consumers, engineers, industrial designers and in partnership with industry.

The centrepiece of the iDAPT Centre is the Challenging Environment Assessment Lab (CEAL), picture above. CEAL is a state-of-the-art subterranean research lab located beneath Toronto Rehab’s University Centre. CEAL features the world’s first hydraulic motion simulator that can mimic everyday environmental challenges faced by older people and those with disabling illness and injury.

Read more: <http://www.cealidapt.com>.

### Cattle vaccine for *E. coli* O157:H7 holds promise for reducing food and water borne illness

*Escherichia coli* (*E. coli*) strain O157:H7 is a fecal coliform bacterium that is commonly found in the intestines of animals and humans. Hundreds of *E. coli* strains exist, most of which normally inhabit the human intestine and cause no disease. However, *E. coli* O157:H7 produces powerful toxins that can cause severe illness in humans, as many people will recall from the tragedies in Walkerton, Ontario in 2000 and several other food-related outbreaks caused by undercooked meat or contaminated fruit and vegetables.

Canada’s Bioniche Life Sciences Inc., based in Belleville, Ontario, has made great strides with Econiche™, an *E. coli* 0157 cattle vaccine to reduce the level of the pathogen in water, food and the environment. The vaccine has been shown to reduce the shedding of *E. coli* O157 in cattle.

Bioniche, in collaboration with Dr. Brett Finlay, University of British Columbia, and the Vaccine and Infectious Disease Organization has developed the vaccine and received a full Canadian license for Econiche™ for use in healthy cattle. Read more at: [www.bioniche.com](http://www.bioniche.com)

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### Alberta's "Tomorrow Project" seeks cancer prevention knowledge for future generations.

The Tomorrow Project, led by Alberta Health Services (AHS), Cancer Care, is the largest research study ever undertaken in the province. Its primary goal is to discover more about what causes cancer, so that it may be prevented in the future. Information provided by people who join the Tomorrow Project may also be used to learn more about other long-term health conditions.

Researchers are seeking 50,000 Albertans between the ages of 35-69, who have never had cancer to join this long-term study by mid 2013.

"Much of the important knowledge to be gained from this project about what causes cancer will benefit our children and grandchildren," says Dr. Paula Robson, principal investigator for the Tomorrow Project.

Partners for the Tomorrow Project include AHS, Alberta Innovates-Health Solutions, Alberta Cancer Foundation and, at the national level, the Canadian Partnership Against Cancer. The Tomorrow Project in Alberta is part of a national study called the Canadian Partnership for Tomorrow Project that is recruiting Canadians from five provinces.

AHS is the provincial health authority responsible for planning and delivering health supports and services for more than 3.7 million people living in Alberta.

For information and to join the study, visit [www.in4tomorrow.ca](http://www.in4tomorrow.ca) or call toll-free 1-877-919-9292. There are two permanent study centres in Calgary and Edmonton, as well as frequent mobiles that travel across Alberta periodically. There is also a mail-in option for those who live too far from study centres.

### Thunder Bay scientist publishes leading paper on breakthrough technique for imaging brain function

Dr. Mitchell Albert, newly recruited Scientist at the Thunder Bay Regional Research Institute (TBRRI) and Research Chair and Professor of Chemistry at Lakehead University, recently published a paper in the peer-reviewed science journal PLoS ONE reporting an innovative new technology for imaging cerebral activity in the brain: hyperpolarized (HP) xenon MRI.

"This important discovery demonstrates for the first time that HP xenon MRI can be used to image brain activity with one-shot (using one image)", says Dr. Albert. "It has a much higher signal intensity than the clinical standard we use now to image the brain known as functional MRI, which depends on many images being taken. It can image not only thought processes of the normal brain, but also diagnose psychiatric diseases including Alzheimer's disease, Parkinson's disease, schizophrenia, and many others."

Dr. Albert adds, "It's potentially a breakthrough because it has never been done before. Functional MRI was the first big step, and is today's standard for brain imaging, but HP xenon MRI might be the next giant leap forward."

Read more at <http://www.tbri.com>



### World's first bedside genetic test proves effective: Canadian heart researchers

Tailored anti-platelet therapy, made possible through a novel point-of-care genetic test, optimizes treatment for patients who carry a common genetic variant, researchers at the University of Ottawa Heart Institute (UOHI) have found.

A UOHI clinical trial known as RAPID GENE studied 200 patients undergoing coronary stent implantation for acute coronary syndrome or stable angina. Use of a simple, saliva swab test performed by nurses at the bedside on half of the patients allowed doctors to almost instantly identify those with the genetic variant, known as CYP2C19\*2, which puts them at risk of reacting poorly to standard anti-platelet drug therapy, and administer an alternative drug.

The study demonstrated that tailored drug treatment therapy made possible by the genetic testing successfully protected all of the patients with the at-risk genetic variant from subsequent adverse events, while 30 per cent of patients treated with standard therapy did not receive adequate protection.

"These results are extremely promising, not only in the field of cardiology but for all areas of medicine. If you can administer a simple, rapid genetic test at the bedside, doctors can prescribe the right drug to the right patient at the right time. We then have a much greater chance of improving health outcomes and providing cost savings for the health care system," said Dr. Derek So, lead researcher for the study and Staff Interventional Cardiologist and Assistant Professor at the University of Ottawa Heart Institute.

Traditionally, genetic testing to gain this kind of patient knowledge takes anywhere between five to seven days. The rapid nature of this first bedside test allows doctors to react much more quickly to make effective decisions about treatment.



### Dear Parliamentarian:

#### Do you have questions about health research?

Let us help you find the information you need. If you and your staff have received requests from constituents or are looking for background on a particular research subject, please do not hesitate to contact Research Canada's National Office. We will be glad to assist you with these requests. Please send any questions you may have to [info@rc-rc.ca](mailto:info@rc-rc.ca), or call 613-234-5129.