



CIHR IRSC

CATALYST

RESEARCH ACCELERATING THE WAY TO HEALTH



Canadian Institutes
of Health Research

Instituts de recherche
en santé du Canada

Canada

Canadian Institutes of Health Research

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Cat. No.: MR21-57/2005

ISBN: 0-662-68663-2

C A T A L Y S T



CIHR IRSC

Health Research is...

TAKING THE PAIN AWAY

I T S O U N D S L I K E A D R E A M -

but mice who lack a gene called DREAM (downstream regulatory element antagonistic modulator) are much less sensitive to pain than those who have the gene – without showing the signs of addiction common with the drugs such as morphine traditionally used to control pain. The DREAM effect is consistent across all kinds of pain in all body tissues.

The discovery by Dr. Michael Salter and his colleagues at the University of Toronto points to a dramatically different way to control pain by developing drugs that block the DREAM gene.

Health Research is...

FINDING NEW USES FOR OLD DRUGS

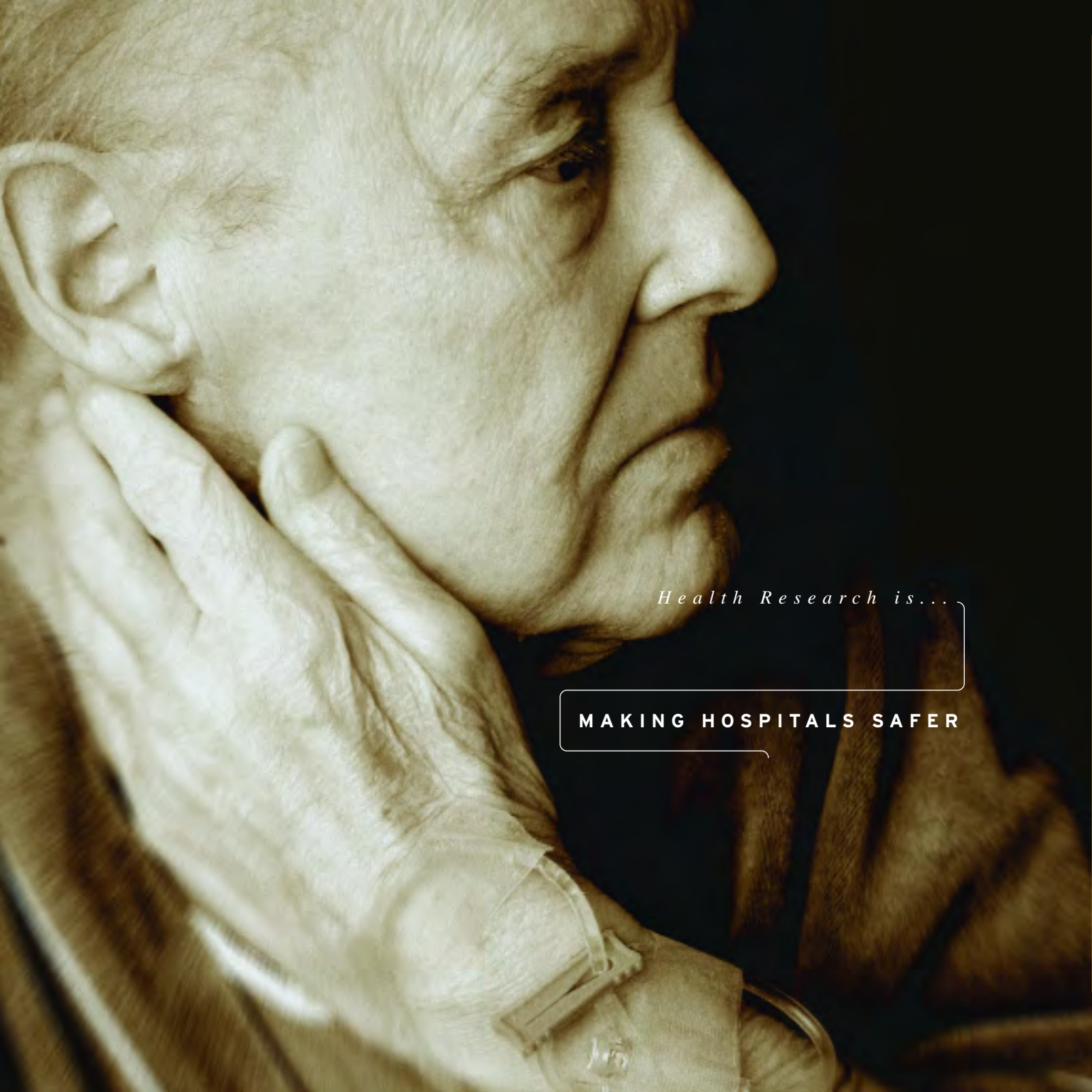


A C N E M E D I C A T I O N S -

they're safe and cheap and they could be new weapons in the fight against diseases as diverse as multiple sclerosis (MS) and cancer.

Dr. Luanne Metz of the University of Calgary has found that minocycline reduces lesion activity in the brains of people with MS. Her findings could lead to a new, safe treatment for MS that could be taken orally instead of injected and cost significantly less than the \$25,000 average annual cost for current MS medications. Canada has one of the highest rates of MS in the world.

Meanwhile, Dr. Gurmit Singh, from McMaster University, has found that tetracycline, also used to treat acne, can reduce the spread of cancer to bone by as much as 70%. After showing success in rats, the medication is now being tested in humans.



Health Research is...

MAKING HOSPITALS SAFER

B E I N G I N H O S P I T A L -

shouldn't be a risk to your health. And for the vast majority of Canadians, it isn't. But for some 70,000 people each year, a stay in hospital results in a so-called "adverse event" that could be prevented.

Before CIHR co-funded this groundbreaking study of community and teaching hospitals across the country, carried out by Drs. Ross Baker of the University of Toronto and Peter Norton of the University of Calgary, we had no idea of the extent of the problem. Now, this first-ever picture of adverse events in our health care system gives us a scientific foundation to create a climate and culture that makes being in hospital safer.



Health Research is...

SHARED GLOBALLY

NO MATTER WHERE IN THE WORLD YOU LIVE,

the same nine risk factors – including tobacco use, cholesterol and high blood pressure – appear to be responsible for 90% of all heart disease. Gender, genetics and ethnicity don't play the role it was once thought they did. This means a global focus on these risk factors might prevent premature heart attacks.

McMaster University's Dr. Salim Yusuf led INTERHEART, a first-ever study of 30,000 people in 52 countries, involving researchers from 262 centres on every continent. Dr. Yusuf built on a true Canadian strength – the ability to bring people together across boundaries – to make this project succeed.



A MESSAGE FROM THE PRESIDENT

Founded in 2000, the Canadian Institutes of Health Research (CIHR) is Canada's response to the global revolution in health research.

Our virtual Institute structure and our inclusive, multidisciplinary and outcome-driven approach to health, disease and Canada's health care system itself are transforming health research in Canada, accelerating the way to improved health for Canadians.

I invite you to read further and learn more about some of the exciting and important health research now going on in Canada.

Alan Bernstein, O.C., FRSC

President

Canadian Institutes of Health Research



CIHR BY THE NUMBERS

Total number of grants awarded in 2003-04: **4,974**

Percentage increase in the total number of grants awarded since 2000-01: **46%**

Percentage of budget invested in health research in 2003-04: **94%**

Percentage of budget spent on program delivery in 2003-04: **6%**

Number of institutions receiving funding, 2000-01: **69**

Number of institutions receiving funding, 2003-04: **95**

Increase in number of institutions receiving funding: **38%**

Number of provinces with institutions receiving funding: **10**

INNOVATE

CIHR – A UNIQUE HEALTH RESEARCH ORGANIZATION

The Canadian Institutes of Health Research (CIHR) creates new knowledge – and translates that knowledge into improved health, a strengthened health care system, and new health products and services for Canadians.

We are taking an inclusive approach, bringing together researchers from all disciplines, from the social sciences to biomedical sciences, informatics and engineering.

We are building partnerships, nationally and internationally, to bring new perspectives to health and ensure that research findings are applied where they are needed.

We are catalyzing the formation of multi-disciplinary teams of researchers, policy makers, caregivers and the public to ensure that the results of Canadian health research are applied to building an innovative, evidence-based health care system.

We are supporting our current generation of health researchers and taking innovative approaches to training the next generation, facilitating the development of interdisciplinary teams of young researchers.

Our peer review process means that CIHR is fully transparent and accountable. And with 94% of our budget going directly to funding research, Canadians' dollars are being wisely invested.

Now, CIHR's *Blueprint for Health Research* is setting strategic directions for the future that build on Canadian strengths and respond to global needs.



I N S T I T U T E S O F E X C E L L E N C E

CIHR's innovative Institutes bring together all partners in the research process – the people who fund research, those who carry it out and those who use its results – to share ideas and focus on what Canadians need: good health and the means to prevent and fight diseases when they happen.

Institute of Aboriginal Peoples' Health

The IAPH has a mission – to reduce the health disparities that affect the lives of so many Aboriginal Peoples in Canada. It is forging partnerships, based on research excellence, with researchers and communities that respect Aboriginal values and cultures, while engaging Aboriginal People to become health researchers themselves.

Institute of Aging

Canada's population is aging – by 2050, 20% of Canadians will be over 65. IA is helping older Canadians of today and tomorrow enjoy good health and quality of life by focusing on a wide range of conditions associated with aging.





Institute of Cancer Research

ICR has been coordinating cancer research across Canada in priority areas such as palliative and end-of-life care, establishing a model for the world. Other priorities run the range from molecular profiling of tumours to early detection of cancer, to preventing the risk behaviours that can lead to cancer.



Institute of Circulatory and Respiratory Health

Heart, lung and blood vessel diseases are the major health burdens facing Canadians – yet if we understood how our genes, the environment, and our behaviour interplay to cause these common conditions, they might be preventable. ICRH is supporting research that asks tough questions about the causes, consequences, and control of these conditions.



Institute of Gender and Health

IGH 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.

Institute of Genetics

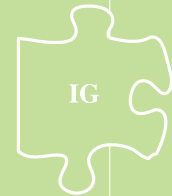
The IG supports research on the human and other genomes and on all aspects of genetics, basic biochemistry and cell biology. New advances in genetics and genomics, and in the understanding of how cells work, pose challenges to our health care system and often raise complex ethical, legal and social issues. The Institute is addressing these challenges to develop solutions that benefit Canadians.

Institute of Health Services and Policy Research

IHSPR is helping the country meet the challenge of making high-quality health care available to all those who need it, while ensuring that Canada's health care system is strong and sustainable. It fosters debate on reconciling privacy concerns with access to data needed to facilitate health research in order to protect Canadians and promote their health.

Institute of Human Development, Child and Youth Health

From fertility and healthy pregnancy to improving outcomes for adolescents, IHDCYH is building the life foundation for tomorrow's Canadians, helping to ensure that all children have the best possible start in life and achieve their potential for optimal growth and development.





Institute of Infection and Immunity

III led the charge against SARS, orchestrating a rapid research response unprecedented in Canadian health research. Its strategic priorities are the immune system and infectious disease. Areas that fall under this umbrella include vaccine development, food and water safety and the federal government's initiatives in HIV/AIDS research.



Institute of Musculoskeletal Health and Arthritis

IMHA's work is literally out of this world – among other important projects, the Institute is working with the Canadian Space Agency to fund research on long-term bed rest and bone loss in space flight. An active member of the Canadian National Action Network, IMHA is also an avid supporter of the Bone and Joint Decade launched by the World Health Organization and endorsed by the United Nations in 2000.

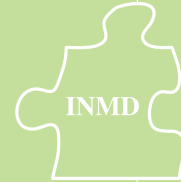


Institute of Neurosciences, Mental Health and Addiction

From diseases of the central nervous system, such as multiple sclerosis, to addiction, to mental illnesses such as schizophrenia, to the five senses with which we interpret the world, INMHA is concerned with how the brain works and how to deal with the social stigmas associated with mental illness.

Institute of Nutrition, Metabolism and Diabetes

The World Health Organization has identified obesity as the major public health issue of our time. INMD agrees; it's made obesity its number one health research priority and is supporting research on the causes, prevention, treatment and consequences of obesity. As part of its efforts, INMD is asking Canadians to “donate their steps to health research” through its *Canada on the Move* initiative to learn more about what motivates people to be physically active.



Institute of Population and Public Health

What makes some people healthy while others suffer from disease or disability? The reasons can vary, from biological to cultural to social to environmental. IPPH is studying these factors as the basis for sound programs, preventive practices and healthy public policies that will improve the health of people in Canada and around the world.



INNOVATION IN ACTION

HEALTH INNOVATION – IT'S THE ART OF CLOSING THE GAP BETWEEN WHAT WE KNOW AND WHAT WE DO.

At CIHR, we're putting ideas to work. We mobilize research to fuel innovative thinking about real health issues facing Canadians – such as reducing waiting lists in our health care system, making workplaces healthier, addressing soaring drug costs and preventing our children from taking up unhealthy behaviours like smoking.

Through its Institutes, CIHR brings together health researchers and research users – including health professionals and policy makers – right from the start. That's the key to ensuring that health research findings are applied, whether it's a better way to prevent, diagnose or treat disease, or a better and more cost-effective way to deliver health services.

Canadian researchers increasingly recognize the opportunity and responsibility to derive economic value for Canadians from the fruits of publicly funded research. CIHR is helping researchers navigate the complex path from the laboratory to the marketplace, so that Canadians can enjoy the economic as well as the health benefits of discoveries made here in Canada.



KNOWLEDGE TRANSLATION IN ACTION

When patients report to the emergency room, physicians have limited time to decide what tests to order. The University of Ottawa's Dr. Ian Stiell has developed guidelines for ankle, neck, knee or head injuries to facilitate decision-making on the spot. His rules reduce unnecessary procedures, waiting times and costs without missing important diagnoses and work well in a wide range of hospital and community settings.

COMMERCIALIZATION IN ACTION

Canadian researchers Drs. Brett Finlay of the University of British Columbia and Andy Potter of the University of Saskatchewan developed a vaccine against E. coli in cattle. Their discovery could reduce human illness and death, and the economic losses (some \$5 billion each year) caused by the disease. Now the vaccine is being marketed throughout the world by Bioniche, Inc., a Canadian company. Discovery and commercialization, both made-in-Canada – it's an unbeatable combination.

A 21ST CENTURY HEALTH SYSTEM

Health research offers solutions for an innovative, cost-effective and evidence-driven health care system that provides care to Canadians when and where they need it – a 21st century health care system.

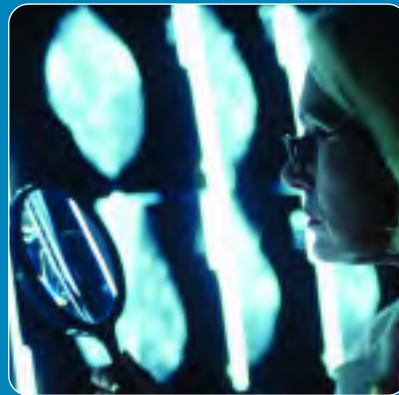
Health research develops new methods of diagnosing and treating diseases – and tests them in the lab and in humans to ensure they are safe and effective.

Health research evaluates how best to integrate these new discoveries into the health care system and how to manage the existing system to minimize waiting lists and maximize effectiveness.

Health research looks beyond the health care system, to the environments in which people live, work and learn, to protect and promote health.

Health researchers operate according to the highest ethical standards – and register their CIHR-funded clinical trials in an international public registry, ensuring trials are transparent and their results open to all.

Health researchers train the next generation of health professionals. Their critical thinking and evidence-based practices create front-line professionals who give Canadians the best possible care.



I N N O V A T I O N O F F E R I N G S O L U T I O N S

Every year, some 21,000 women in Canada receive world-shattering news: they have breast cancer. Surgery, followed by long sessions of radiation, can take over a woman's life. Hard for anyone – but for women who live far from their treatment centres, it's almost impossible. Now, Dr. Jean-Philippe Pignol, from the Sunnybrook and Women's College Health Sciences Centre, has developed a technique to implant radiation-releasing pellets into the breast, removing the need to attend radiation sessions five days a week over several weeks. The process of implanting the pellets takes less than an hour with fewer side effects than standard radiation therapy. The technique, still at the clinical trial stage, could be available in as little as four years.

CANADIAN LEADERSHIP GOES GLOBAL

SARS taught us that health does not respect national boundaries. Canadian health researchers work throughout the world to improve health outcomes for all people.

CIHR, together with the International Development Research Centre, the Canadian International Development Agency and Health Canada, has formed the Global Health Research Initiative to forge links with health researchers in developing countries and build capacity there. Canadian researchers are addressing HIV/AIDS in Africa and Asia, looking for alternative ways of treating the disease.



CIHR has also joined forces with health researchers in other countries who face similar challenges to our own. Whether it is the neurosciences (Japan), tuberculosis (Mexico) or Aboriginal Peoples' health (Australia, New Zealand and the United States), Canadian researchers are realizing the benefits of international synergies, while enhancing Canada's place in the world.

AN INTERNATIONAL APPROACH TO AIDS

Half of the 42 million people in the world infected with AIDS are women. They, in turn, spread the disease to their children through childbirth and breastfeeding. In a world where saying “no” to sex may not be an option, a prevention method that women control could save millions of lives. Dr. Michel Bergeron of Laval University is testing such a method – a vaginal gel containing the microbicide sodium lauryl sulfate – on young women in Cameroon, Kenya, Benin and South Africa for safety as well as how acceptable the product is to them. If the gel proves effective, a new method of AIDS prevention may fall under the control of those who need it most.