

- 25]. Available from: <http://www.ccl-cca.ca/ccl/Reports/HealthLiteracy.html>
3. Petch E, Ronson B, Rootman I. Literacy and health in Canada: what we have learned and what can help in the future? A research report. Clear language edition [monograph on the Internet]. Ottawa, ON: Canadian Institutes of Health Research; 2004 [cited 2011 Nov 25]. Available from: www.cpha.ca/uploads/portals/h-l/literacy_e.pdf
 4. Public Health Agency of Canada [homepage on the Internet]. Ottawa, ON: Public Health Agency of Canada; 2003 [updated 2011 Oct 21; cited 2011 Nov 26]. What determines health? [about 3 screens]. Available from: <http://www.phac-aspc.gc.ca/ph-sp/determinants/index-eng.php>.
 5. Scott Murray, Data Angel Policy Research, Incorporated, Rima Rudd, Harvard School of Public Health, Irwin Kirsch, Educational Testing, Service, Kentaro Yamamoto, Educational Testing Service and, Sylvie Grenier, Statistics Canada. Health literacy in Canada: initial results from the International Adult Literacy and Skills Survey 2007 [monograph on Internet]. Ottawa, ON: Canadian Council on Learning; 2007 [cited 2011 Nov 26]. Available from: www.ccl-cca.ca/pdfs/HealthLiteracy/HealthLiteracyinCanada.pdf
 6. Rao JK, Anderson LA, Inui TS, Frankel RM. Communication interventions make a difference in conversation between physician and patients: a systemic review of the evidence. *Med Care*. 2007;45(4):340-9.
 7. Stewart MA. Effective physician–patient communication and health outcomes: a review. *CMAJ*. 1995;152(9):1423-33.
 8. Rootman I, Gordon-El-Bihbety D, Frankish J, Hemming H, Kaszap M, Langille L, et al. National Literacy and Health Research Program: needs assessment and environmental scan [monograph on the Internet]. Ottawa, ON: Canadian Public Health Association; 2002 [cited 2011 Nov 25]. Available from: www.cpha.ca/uploads/portals/h-l/needs_e.pdf

Multi-Disciplinary Health Prevention: St. Paul’s Hospital Healthy Heart Program

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ABSTRACT

The Healthy Heart Program is a team-based interdisciplinary program focused on the primary and secondary prevention of heart disease. Patients are incorporated into a health care team consisting of a physician, nurse educator, dietitian, pharmacist, exercise therapist, and counselor. The multi-disciplinary aspect of the program highlights that heart disease is a multi-faceted problem—risk factors cannot be addressed simply with drugs or diet alone, but only through coordinated pharmacologic and lifestyle changes. The Healthy Heart Program can serve as an invaluable model for clinics aimed at the prevention and management of other chronic diseases.

KEYWORDS: *multi-disciplinary, health prevention, cardiovascular*

In a time with rapidly escalating health care costs, it is clear that the best way to address health resource allocation is not merely pouring money into disease treatments. Instead, by investing in programs that encourage healthy living, we can prevent many of the chronic diseases that plague our society today. Treating disease is more expensive than preventing its onset, and therefore it makes good economic sense to support prevention programs that offer long-term outcomes.¹ Moreover, the efficacy of lifestyle changes are reflected in clinical practice guidelines, such as those of the Canadian Working Group on Hypercholesterolemia and Other Dyslipidemias.^{2,3}

As one of the greatest burdens on our health care system and the leading cause of death in North America, heart disease has a direct impact on 1.3 million Canadians and costs taxpayers over \$22.2 billion per year.⁴ Public awareness has significantly increased in recent years, thanks to non-profit organizations and

“ Many patients are often surprised to learn which foods contribute to their weight, and that most of these foods can be substituted for healthier alternatives.

public health organizations garnering interest in heart disease and promoting heart health. Still, 9 in 10 Canadians have a risk factor for cardiovascular disease, including hypertension, diabetes, high cholesterol, obesity, and physical inactivity.

HEALTHY HEART PROGRAM

Prevention and lifestyle modifications seem to be the buzzwords in heart health, and we are fortunate to be able to offer the Healthy

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Heart Program to patients. Operating out of St. Paul's Hospital, this program provides a multi-disciplinary approach to the primary and secondary prevention of heart disease. Primary prevention refers to the management of individuals with cardiovascular disease risk factors, while secondary prevention is directed towards patients who have had a previous cardiac event. There are two arms to the Healthy Heart Program: the Prevention Clinic and the Cardiac Rehabilitation Program. Both clinics make use of a team-based approach to cardiac health and regular encouragement to ensure clients stay on track to reduce their cardiovascular risk.

Founded originally as the Lipid Clinic at Shaughnessy Hospital, family physicians and cardiologists regularly refer patients to the Healthy Heart Prevention Clinic. One of the first steps to health prevention is effectively reaching the target population: via direct referral, primary care providers can inform patients and refer them to this invaluable program. With a convenient referral process making health prevention accessible to primary care providers across the province, this model has been replicated at health prevention programs at other hospitals.

In the Cardiac Rehabilitation Program, the focus is on the rehabilitation and secondary prevention of cardiovascular events. Patients are encouraged to take the necessary steps to address their prior cardiovascular history (ie. heart attack) and to work towards preventing future events. A multi-focal approach to cardiac rehabilitation has long proven that risk factor reduction, such as through regular exercise, will decrease mortality.⁵ The Stanford Coronary Risk Intervention Project employed a multifactor risk factor reduction strategy, involving a low-fat and low-cholesterol diet, exercise, weight loss, smoking cessation, and medications to significantly reduce in measurable coronary artery disease and cardiac event-related hospitalizations.⁶ Both the Prevention Clinic and Cardiac Rehabilitation Program make use of these findings and promote a healthy diet, regular exercise, and other lifestyle modifications.

TEAM-BASED APPROACH TO PATIENT EDUCATION AND EMPOWERMENT

Health education goes hand-in-hand with disease prevention, but finding an effective method to educate patients can often be a challenge. Rather than using information pamphlets with no target population, the Healthy Heart Program employs a patient-centered approach for health education, facilitated by a multi-disciplinary team of health professionals to provide a sound, consistent approach that allows for effective patient education and implementation into clinical practice.⁷ Upon their initial visit, patients are greeted by a registered nurse (trained as a patient educator) who introduces and explains key concepts including risk factors and the importance of a healthy lifestyle.⁸ After this brief orientation about the values and goals of the Healthy Heart Program, the patient sees a registered dietitian and a cardiologist to discuss dietary risk factors and undergo a complete physical exam, respectively. Throughout this process, patients are encouraged to ask questions and to think of creative ways to modify their lifestyle and diet to reduce their cardiovascular risk. Furthermore, patients of the Cardiac Rehabilitation Program are

expected to attend an exercise class at St. Paul's Hospital at least twice weekly, and are followed regularly by a pharmacist and exercise specialist. Counselors are also a major part of the team to address depression and other psychosocial issues associated with suffering from a cardiovascular event.

ENCOURAGING A HEALTHY LIFESTYLE

Yet, the question becomes how to prevent heart disease, and what barriers might prevent patients from leading the idealistic 'healthy lifestyle'. Lack of motivation is often blamed when patients fail to meet risk reductions, when in fact, many patients are simply unaware of what steps they can take to lead a healthier lifestyle. In an interview with a Dietitian, we learn that many patients are often surprised to learn which foods contribute to their weight, and that most of these foods can be substituted for healthier alternatives. Dietary interventions have been shown to effectively reduce cardiovascular risk, and these can be implemented through consultations with a dietitian.⁹ Similarly, physical activity can play a significant role in the primary and secondary prevention of chronic diseases such as cardiovascular disease.¹⁰ Thus, exercise is prescribed at the Healthy Heart Program just like any other medication, and resources, such as regular exercise classes, are provided to support patients.¹¹ In many cases, patients are keen to take responsibility of their health and reduce their cardiovascular risk factors, but require support from the health care system to help them get started. The one-on-one approach with a number of health disciplines helps to ensure patients' needs are thoroughly addressed in order to make a real change in reducing the cardiovascular risk in our community. Plenty of evidence supports the goal of risk factor reduction, including dietary management and exercise, to decrease mortality and cardiac-related hospitalizations.¹² Interesting new evidence looking into additional follow-up for these patients, after completing the Cardiac Rehabilitation Program, may suggest even further Framingham risk reduction, although non-significant and only after a one-year intervention period.¹³ To address this, there is a community branch to the program: Happy Hearts Plus consists of education and exercise classes for secondary prevention in low-risk individuals that have completed the Cardiac Rehabilitation Program.

CLOSING THOUGHTS

By incorporating multiple disciplines, the Healthy Heart Program takes advantage of different expertise to more fully address the populations whom it serves, highlighting the fact that heart disease is a multi-faceted problem – one that cannot be addressed simply with drugs or diet alone, but with a coordinated approach incorporating lifestyle and sometimes pharmacologic changes. Preliminary research into the Healthy Heart Program suggests an improvement in lipid management and blood pressure.¹⁴ This team-based interdisciplinary approach seems to translate into better education and better patient outcomes, and may serve as an invaluable model for clinics aimed at the prevention and management of other chronic diseases. 

REFERENCES

- Vijgen SM, Hoogendoorn M, Baan CA, de Wit GA, Limburg W, Feenstra TL. Cost effectiveness of preventive interventions in type 2 diabetes mellitus: a systematic literature review. *Pharmacoeconomics*. 2006;24(5):425-41.
- Fodor JG, Frohlich JJ, Genest JJ, Jr., McPherson PR. Recommendations for the management and treatment of dyslipidemia. Report of the Working Group on Hypercholesterolemia and Other Dyslipidemias. *CMAJ*. 2000 May 16;162(10):1441-7.
- Genest J, Frohlich J, Fodor G, McPherson R. Recommendations for the management of dyslipidemia and the prevention of cardiovascular disease: summary of the 2003 update. *CMAJ*. 2003 Oct 28;169(9):921-4.
- Foundation HaS. Statistics. 2011 [cited 2011 Oct 8]; Available from: <http://www.heartandstroke.com>.
- Oldridge NB, Guyatt GH, Fischer ME, Rimm AA. Cardiac rehabilitation after myocardial infarction. Combined experience of randomized clinical trials. *JAMA*. 1988 Aug 19;260(7):945-50.
- Haskell WL, Alderman EL, Fair JM, Maron DJ, Mackey SF, Superko HR, et al. Effects of intensive multiple risk factor reduction on coronary atherosclerosis and clinical cardiac events in men and women with coronary artery disease. The Stanford Coronary Risk Intervention Project (SCRIP). *Circulation*. 1994 Mar;89(3):975-90.
- Kingsbury K. Taking AIM: how to teach primary and secondary prevention effectively. *Can J Cardiol*. 1998 Apr;14 Suppl A:22A-6A.
- Frohlich J, Kingsbury K. Lipid clinics/cardiovascular risk reduction clinics: current state and future consideration. *Adv Exp Med Biol*. 2001;498:337-47.
- Huang J, Frohlich J, Ignaszewski AP. The impact of dietary changes and dietary supplements on lipid profile. *Can J Cardiol*. 2011 Jul-Aug;27(4):488-505.
- Tilley BC, Palesch YY, Kiebertz K, Ravina B, Huang P, Elm JJ, et al. Optimizing the ongoing search for new treatments for Parkinson disease: using futility designs. *Neurology*. 2006 Mar 14;66(5):628-33.
- Warburton DE, Nicol CW, Bredin SS. Prescribing exercise as preventive therapy. *CMAJ*. 2006 Mar 28;174(7):961-74.
- Angermayr L, Melchart D, Linde K. Multifactorial lifestyle interventions in the primary and secondary prevention of cardiovascular disease and type 2 diabetes mellitus--a systematic review of randomized controlled trials. *Ann Behav Med*. 2010 Aug;40(1):49-64.
- Lear SA, Ignaszewski A, Linden W, Brozic A, Kiess M, Spinelli JJ, et al. The Extensive Lifestyle Management Intervention (ELMI) following cardiac rehabilitation trial. *Eur Heart J*. 2003 Nov;24(21):1920-7.
- Kingsbury KJ, Frohlich J. The Atherosclerosis Reversal Clinic: the way of the future. *Adv Exp Med Biol*. 2001;498:331-5.

Pain Assessment in Patients: Will Objectifying Pain Ever Be Possible?

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ABSTRACT

Current methods of assessing pain in patients include standardized questionnaires, numeric scales, and face scales. New methods of quantifying nociception are on the horizon, stemming from the discovery that numerous molecular markers of nociception correlate well with the many parameters of pain. However, it is questionable whether or not these techniques can eventually replace current methods of pain evaluation in patients. This commentary argues for the merit of pain scales and questionnaires in assessing the multidimensional phenomenon of pain even if the quantification of nociception, currently done primarily in animal studies, should someday be made feasible in humans.

KEYWORDS: *pain, assessment, evaluation, nociception, measurement*

INTRODUCTION

The International Association for the Study of Pain defines pain as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage.”¹ As opposed to nociception, which describes the neural pathways and biochemical events that arise from noxious stimuli, pain is a complex quality affected by many psychological factors.¹ In the clinic, patients are often asked to rank their level of perceived pain on a standardized scale and to give a verbal, qualitative

description of their pain. Despite their subjectivity, these questions are easy to ask, eliciting quick responses from patients who are able to communicate their pain. Nevertheless, scientists have experimented with more objective methods of assessing pain down to its nociceptive, molecular level. For instance, c-Fos is a protein marker that has been shown in animal studies to correlate well with many parameters of pain, including its location, duration, intensity, and quality.² Another example is pERK, the product of ERK (extracellular-signal-regulated kinase) phosphorylation, which, like c-Fos, is expressed after a noxious stimulus is administered.² The expression of both c-Fos and pERK is topographically organized within the spinal cord, enabling

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