

Preventing Cancer

An apple a day



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An apple a day — if only it was that simple. While there are no guarantees in this world, a report released in November 2007 concluded diet, physical activity and weight management play a significant role in preventing cancer.

“Food, Nutrition, Physical Activity and the Prevention of Cancer: a Global Perspective,” outlines 10 recommendations related to cancer prevention, including both personal guidelines about how individuals can take action as well as public health goals to assist policy makers.

“This report brings together information accumulated over the last 20 years,” said Dr. Heather Bryant, Vice President, Cancer Control, for the Canadian Partnership against Cancer. “The information will be very helpful, particularly in speeding up the processes and policies already in progress – such as limiting high calorie food and drink in schools.”

While the report is specific to reducing cancer risk, many of the recommendations, if implemented, could also decrease the risk for other chronic diseases. For this reason, a collaborative approach, at

the population level, involving government, organizations such as chronic disease alliances, diabetes, and heart health programs, among others, will yield the greatest health benefits for Canadians.

“In Nova Scotia, we are well positioned to respond to the evidence cited in this report,” said Judy Purcell, Prevention Coordinator, *Cancer Care Nova Scotia*. “As a province, we have established comprehensive strategies in healthy eating, physical activity and alcohol consumption. “The findings from this report reinforce the value of and the need for continued investment in these areas. A policy document, expected in fall 2008, will expand our thinking further and inform our ongoing work in each of these areas.”

The report, while global in perspective, speaks directly to the Canadian population. “We have a very sedentary population, high rates of obesity, and easy access to calorie-dense foods,” said Dr. Bryant. “It’s time for us to work together and adopt a holistic approach to diet and physical activity with a focus on disease prevention and wellness.”

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In terms of diet, the evidence indicates that individuals should:

- Eat mostly plant foods (vegetables, fruits, whole grains and beans)
- Eat only a small portion (about 3 ounces) of meat or fish daily, ideally fish or poultry
- Eat no more than 18 ounces of lean red meat a week
- Avoid processed meat (sausage, bacon, ham, lunch meats)
- Limit alcohol to no more than two drinks a day for men and one drink a day for women
- Avoid salt-preserved, salted or salty foods

“There has been a tendency over the past few years to downgrade the evidence of the protective effect of fruits and vegetables, but diets high in fibre and low in fat have always been important for optimal health,” said Dr. Tony Miller, Professor Emeritus, Department of Public Health Sciences, University of Toronto and former Director/Founder of the epidemiology unit of the National Cancer Institute of Canada, one of the early groups to initiate studies on diet and cancer. “This report re-emphasizes what we have known for some time. A diet rich in plant foods provides the body with nutrients essential for preventing and repairing cell damage, which over time, can lead to cancer. Combined with regular exercise, this diet also helps individuals maintain a healthy weight, important for reducing the risk of certain cancers, particularly cancers of the breast and colon.”

The evidence concerning physical activity recommends that individuals begin by committing to a

minimum of 30 minutes of physical activity every day, with a goal of building up to at least 60 minutes of moderate activity or 30 minutes of vigorous activity daily as fitness level improves. Aside from weight maintenance, regular exercise lowers hormone levels, which has been shown to cause some cancers.

In addition to diet and physical activity, the report commented on two other areas, the first pertaining to breastfeeding. The evidence shows that breastfeeding has benefits for both mother and child – protecting the mother from breast cancer and preventing overweight and obesity in children. To realize these benefits, women should breastfeed infants exclusively for the first six months and continue breastfeeding, adding other food and drink, as appropriate, thereafter.

The final recommendation addresses the cancer survivor community and recommends that survivors, if able, should follow all guidelines for diet, healthy weight and physical activity as recommended for the general population.

“It is past time for action,” said Dr. Miller. “Governments, at all levels and ministries, including health, agriculture, environment, transportation and others, need to be involved in developing policies and providing infrastructure to support individuals in making healthy choices. We need to totally rethink the way we live and work. Lifestyle change is not easy, but the benefits are worthwhile. If we take action now, Canadians could begin to see a decrease in the incidence of some cancers within five to ten years.”



Understanding Viruses and their Potential to Fight Cancer

Fight disease with disease! This may sound like an unusual mantra, but it may bear truth in the near future, says Dr. Chris Richardson, a virologist and cancer researcher at Dalhousie University. Dr. Richardson is among a number of scientists world-wide who is researching a possible treatment for cancer that involves injecting the measles virus into tumour sites. He's been studying the measles virus since 1978, and within the last six months a realization has surfaced that could be promising in the fight against cancer.

Measles virus normally uses either one of two receptors - CD46 or SLAM – to attach to and infect host cells. However, Dr. Richardson's team recently discovered another receptor expressed on many cancer cells, which

renders them susceptible to attack by this virus. The idea is to use the vaccine strain of measles virus to infect the cancer cells, which already have crippled immune systems, knocking out the cancer cells and leaving the healthy cells alive.

While Dr. Richardson is excited about this breakthrough, he maintains that more screening is needed to accurately identify and understand how this receptor works. One approach is to screen DNA and protein chips and examine the differences between cells that have the receptor and those that don't. This technology can then be used to identify candidate receptors. Another approach is called 'shotgun expression cloning' where you clone a candidate gene from a cell that has the receptor and then



inject the cloned gene back into a cell line that normally lacks the receptor, infecting it with the florescent virus. If you have found the receptor, the infected cell glows.

The next step is to conduct further research using mice to gain a basic understanding of how tumours are

attacked. Phase I clinical trials, for safety, are underway at the Mayo Clinic in Rochester, Minnesota, and researchers are cautiously hopeful. Within five years researchers should know whether some cancers could respond to oncolytic measles treatment in humans.

Leadership – Nova Scotia Style

Dr. Robert Sers says there's really nothing complicated about leadership. He believes lots of people have ideas – good ideas – but they don't always act on them. "In its simplest form, leadership is having an idea of how something could be, and then working to move that idea forward by bringing others along who will contribute their skills and insights," he says. "Eventually, the idea takes on a life of its own."

In his role as Chief, Division of General Surgery for Guysborough Antigonish Strait Health Authority (GASHA), Dr. Sers has been a leader and an advocate for colorectal cancer awareness, prevention and screening for more than 12 years. He began by promoting the value of screening among local primary care health professionals. Through his early conversations, he discovered that screening was happening among high risk patients who experienced symptoms, but that it wasn't happening often enough among average risk patients (e.g. those who do not have a family history). After discussing the benefits of screening with his colleagues, Dr. Sers noted that fecal occult blood testing (FOBT*) increased.

Knowing more could be done, he approached the School of Nursing at St. Francis Xavier University to assemble a team of second year nursing students to examine ways to educate the general public about bowel cancer prevention. The students developed an annual awareness campaign. Since its introduction in 2003, the campaign has resulted in a 300 per cent increase in the number of FOBTs performed. CCNS continues to work with Dr. Sers to determine how this has affected cancer rates.

"The project is still evolving," says Dr. Sers. "We have learned that radio is the most effective media for promotion, that shopping areas are better locations to reach people than pharmacies, and not surprisingly, that men are harder to reach. We have focus groups planned to find ways to address this challenge."

Another challenge in the fight to decrease the

incidence of colorectal cancer is obtaining accurate data. "The data is out there," explains Dr. Sers, "but it's hard to get. Historically, data has been collected by county and now by district and, as yet, there is no standard for this type of data collection in the province."

The challenges of data collection and many others specific to colorectal cancer screening, are among the issues being addressed by *Cancer Care Nova Scotia*, in partnership with district health authorities, as it develops and introduces a provincial, population-based Colorectal Cancer Prevention Program.

Dr. Sers is sharing his leadership and expertise as a member of Program's steering and clinical advisory committees. His experience in GASHA will help inform the development of a quality, provincial Colorectal Cancer Prevention Program.

**FOBT involves testing stool samples for the presence of a small amount of blood which may indicate a cancer or pre-cancer.*

Dr. Robert Sers



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The deadline for articles and story ideas for Volume IX, Issue Two is April 5, 2008.

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Music Therapy in Palliative Care: Improving Quality of Life for Patients and Families

It's been said that music has the power to change the world. While some may debate this statement, most everyone would agree that music enriches our lives and greatly influences our mood and behaviour.

As such, it's not surprising to learn that health professionals are developing a growing interest in music as a complementary therapy, especially for improving the quality of life for patients in palliative care. Dr. Robert Horton, a staff physician with the Palliative Care Team at the Queen Elizabeth II Health Sciences Centre, says it's a natural fit.

"I've always had an interest in alternative therapies. When I came to the QEII five years ago I wanted to research different ways to improve the quality of care among palliative care patients. In particular, I wanted to improve the holistic 'feel' or environment of the unit."

In September 2006, with funding from the QEII Foundation and endowments to the Palliative Care Music Therapy Program, Dr. Horton introduced music therapy as a six-month pilot project on the unit. Erin Montgomery, a trained music therapist, was hired to spend two, half days per week, using music and musical elements to promote health and well-being among palliative care in-patients and their families. An overwhelming success, additional funding was secured to increase Erin's time to four, half days per week, and the project was extended. Currently, it is the only formal program of its kind in Nova Scotia. In addition to in-patients, about 115 patients from the community participate through a newly developed at-home visitation program.

"The music therapy program has been a welcome addition," says Erin. "Through experiences such as music listening, song writing, and recreating and improvising music, patients and their loved ones are able to reflect and express their emotions."

Music functions as a distraction from physical ailments such as pain and discomfort associated with many terminal illnesses; it can decrease pain perception and anxiety, and increase a patient's ability to relax."

Aside from bedside care and home visits, the program includes weekly music therapy group sessions on the unit. There, patients, families, staff

and volunteers participate and support each other through song and conversation.

"I believe the greatest benefit of music therapy is the relationships that develop between patients and their loved ones," says Erin. "It is truly gratifying to have a job where I am appreciated for the unique and meaningful service I provide."

Dr. Horton is currently working to sustain this program and to increase Erin's presence on the unit, expand the at-home visits and deliver more group services. He takes every opportunity to promote the program during medical rounds and by sharing information at conferences in this province and elsewhere.

"I'm confident something will work out," says Dr. Horton, "It just takes perseverance. "We've developed the framework. With a focus on improving quality care, our hope is that music therapy becomes integrated into all aspects of Capital Health's Palliative Care Program."

Left to right: Marianne Arab, Bereavement Coordinator and Erin Montgomery, Music Therapist, Capital Health's Palliative Care Program.

