## The Centre of Excellence in Cancer Prevention

Archive of Website Blog Posts (October 2013 to October 2018)

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## Introduction

The Centre of Excellence in Cancer Prevention Blog was a web-based resource that was published online for five years (October 2013 through October 2018). The blog provided a regular source of accessible, evidence-based and current information on cancer prevention topics written by experts in the field. It was developed to be a useful and interesting resource for researchers, students, community organizations, policymakers, and members of the public interested in learning more about cancer prevention.

Authors of blog posts include faculty from the University of British Columbia, Vancouver and Okanagan campuses, and the University of Victoria, students and staff at the Centre of Excellence in Cancer Prevention, BC Cancer, and community organizations (Canadian Cancer Society British Columbia Yukon, Canadian Cancer Society National, the BC Healthy Living Alliance, and the Canadian Men's Health Foundation).

Collectively, the blog topics comprise a tour de force of the field of cancer prevention, with special focus on activities carried out by the Centre of Excellence in Cancer Prevention and in Canada more widely during this time period. Blogs include attention to a wide array of cancer risk factors (energy balance, shiftwork, tobacco, sun exposure, nutrition, radioactivity, infections, alcohol, obesity, physical activity, and environmental exposures including climate change). A number of defined population groups with special concerns are highlighted, including Aboriginal Canadians, South Asian immigrants, gay men, men in general, Filipinos, and international variation. Issues that affect the population as a whole are also addressed, including economics, taxation, complementary and alternative medicine, and socioeconomic status. Specific intervention programs at the Centre of Excellence in Cancer Prevention are highlighted (e.g., the Breast Cancer Prevention and Risk Assessment Clinic, Cooking Class for Prostate Cancer Patients and Partners, Cancer Prevention 101, and the shiftworkers project), as well as other programs in BC and Canada (e.g., Food Explorers, It's My Life).

Please note that this is an archive and hyperlinks are no longer active.

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## **Breast Cancer Awareness Month**

## Wondering about your breast cancer risk?



October is Breast Cancer Awareness Month

#### Written by Carolyn Gotay on October 29, 2013

Although it's not the most common cause of cancer-related death—that lies with lung cancer—breast cancer is still the most common cancer among women, representing one out of every four new cases. Improvements in treatment and screening have led to an overall decline in breast cancer deaths among women of all ages. However, there are still 23,800 new cases expected in Canada in 2013.

Many women believe that inherited genes are the major risk

for breast cancer, but in fact only a small proportion of breast cancer cases (5-10%) are due to these genes. In contrast, as many as half of breast cancer cases could be prevented by modifying lifestyle factors such as weight, alcohol consumption, diet, exercise, and <u>possibly sleep</u>.

To empower women to make these changes and lower their risk of breast cancer, in 2011 the Cancer Prevention Centre launched the <u>Breast Cancer Prevention & Assessment Clinic</u>, based at BC Women's Hospital in Vancouver, BC. The Clinic provides assessments to help women assess their risk for developing breast cancer and lower their risk factors. Workshops and sessions are free, and women interested in visiting the clinic can <u>call or email</u> for more information and scheduling. To date, the Clinic has helped more than 600 women understand their risk for developing breast cancer—and, importantly, provided them with tools and information to help them reduce their risk.

The Clinic also offers assessments in the community. <u>Visit their Facebook page</u> to learn about upcoming sessions, or <u>contact the Clinic</u> to inquire about a workshop for your organization or group.

For more information on breast cancer, including <u>risk reduction</u> and <u>screening</u>, visit the Canadian Cancer Society website. Got a question about breast cancer prevention? <u>Tweet it to us</u>, or post it on the Breast Cancer Prevention & Assessment Clinic's <u>Facebook wall</u>!

## November is Lung Cancer Awareness Month

## Written by Joan L. Bottorff on November 19, 2013

This year, approximately <u>25,500 Canadians</u> will be diagnosed with lung cancer and more than 20,000 will lose their life to the disease. More than 85% of lung cancer cases are attributed to smoking – in other words, they are preventable. The good news is that within 5 years of quitting smoking, the risk of developing lung cancer is reduced by 30-60%.



Did you know that lung cancer patients can also benefit from quitting smoking? In fact, quitting smoking can actually help improve the way the body responds to cancer therapy and those who quit experience fewer complications after surgery. Quitting can also improve breathing and reduce the risk of developing additional primary tumors.

Unfortunately, many patients who want to quit find it difficult to do so if their family members continue to smoke around them. Joan Bottorff and other UBC Okanagan researchers found that <u>a diagnosis of lung</u> cancer did not prompt family members who smoke to quit, despite the heightened distress experienced by patients with lung cancer. In addition, various efforts by patients were not successful in motivating most relatives to quit smoking. A few family members who did choose to quit, did so in support of their ill family member while others changed their smoking behaviours out of care and concern. These findings support a shift in focus away from individually-oriented interventions toward ones that consider relationship factors to motivate smoking cessation. There is also growing evidence that gender influences need to be taken into account in developing interventions.

Since family members' smoking cessation can lead to a number of benefits including eliminating smokingrelated distress for the patient with lung cancer, enhancing family support, and preventing smoking-related cancer among relatives, researchers in <u>UBC's Investigating Tobacco and Gender team</u> set out to design a new approach to supporting smoking cessation.

They recently developed parallel, gender-sensitive booklets for women and men that focus on family relationship factors to motivate smoking cessation. In an ongoing pilot test of the new booklets, <u>the team is</u> recruiting family members of lung cancer patients to provide their thoughts and feedback on the booklets.

The feedback from family members will help guide revisions for the final version of the booklets, which will aim to reduce the incidence of lung cancer by motivating family members to reduce and quit smoking. For more information about lung cancer, <u>visit the Canadian Cancer Society website</u>.



## Your guide to an "energy balanced" holiday

## Written by Kristin Campbell on December 13, 2013

This time of year often brings a busy schedule of holiday gettogethers with friends and family, resulting in more treats and less exercise. Over the course of the season this can make it hard to maintain your "energy balance"—that is, the balance of food you eat ("energy in") with getting enough exercise ("energy out").

<u>A landmark report</u> by the American Institute for Cancer Research/World Cancer Research Fund in 2007 reported that one-third of cancers could be prevented through a combination of a healthy diet, regular physical activity, and maintenance of a healthy body weight. With this knowledge in hand it becomes ever more important to manage your diet and exercise through the holidays since this is a time when healthy habits are more prone to fall by the wayside. Some helpful tools provided by the American Institute for Cancer Research to manage your "energy in" include providing recipes for healthier versions for holiday favorites and offering tips from a registered dietitian on ways to handle those common holiday season problems, such as having a constant array of treats at the office. (Hint: If there is a lot to choose from, focus on eating your favourite things and leave the rest.)

The holidays are also frequently a time of New Year's resolutions. Research shows that <u>over 40% of North</u> <u>Americans make resolutions and getting more exercise is commonly at the top of list</u>. If your goal is to increase or maintain your exercise levels, or "energy out", in 2014, consider these tips to help you succeed:

- Use SMART goals: These are goals that are <u>Specific</u>, <u>Measurable</u>, <u>Achievable</u>, <u>Realistic</u> and <u>Time</u> based (SMART). If your goal is to complete a 10 kilometre walk or run by the end of 2014, create smaller, measurable goals for each week that are specific, such as starting to walk or run for 15 minutes, 3 times per week and then build up to your goal.
- 2. Build in accountability: Whether you do this with a piece of paper with your goal written on it posted in a prominent spot in your house or workplace, by telling friends and family, or by sharing your goals on social media, go public with it! Ask friends, family or colleagues to give you friendly reminders and support to help you reach your goal, and try to find an exercise partner who has a similar goal, so you can exercise together and keep each other on track. Enroll in a workplace wellness or exercise program in your office, as these programs have been shown to help encourage healthy lifestyle behaviours.
- **3.** Plan ahead but allow for the occasional slip up: Identify what things keep you from meeting your weekly exercise targets, such as a busy work schedule, upcoming travel plans, or inclement weather, so you can plan ways to overcome these barriers. And be persistent! Don't allow a missed exercise session to derail your goal. Just keep trying.

While making a resolution to be more physically active in the New Year is a great goal, why not get a head start by being active over the holidays? Plan a walk as part of holiday events with friends and family or take time to exercise on your own to re-charge from the festivities.

How are you going to maintain your energy balance this holiday season?



## February 4 is World Cancer Day

### Written by Carolyn Gotay on February 4, 2014

With February 4 being <u>World Cancer Day</u>—an international campaign targeting improving general knowledge around cancer—we thought it would be a great opportunity to reflect on some of the accomplishments and opportunities in cancer prevention research.

Cancer remains one of the leading threats to health in BC and more

than 22,000 British Columbians will be diagnosed with cancer this year. Despite that grim number, advancements in treatment, early detection, and prevention have <u>helped increase cancer survivorship and</u> <u>reduce cancer mortality rates in Canada</u>. The breast cancer mortality rate in Canada is now the lowest it has been since 1950, reductions in smoking rates have significantly reduced the number of deaths from lung cancer, and the death rate from colorectal cancer continues to decline for men and women.

Research has also made great progress in showing that about half of cancers can be prevented by following some basic healthy living guidelines.

#### 1. Eliminate tobacco use.

Lung cancer is the leading cause of cancer deaths in Canada. <u>Stopping smoking has numerous benefits</u> on top of lowering your risk for lung and other types of cancer, and there are many <u>resources available</u> to help you quit.

#### 2. Maintain a healthy weight, eat healthy, and exercise regularly.

Obesity can lead to increased risk for cancers of the esophagus, pancreas, colon, breast, endometrium, and kidneys, as well as to increased risk for other chronic diseases. In spite of these risks, <u>obesity is an epidemic in Canada</u>, as well as many other countries. Boosting fruit and vegetable consumption, limiting alcohol consumption, and increasing physical activity are modest positive changes that can make a difference, and it's never too late to adopt a healthier lifestyle! Need some tips on how to make your healthy living goals stick? Check out our <u>blog post on managing your "energy in" and "energy out."</u>

#### 3. Limit exposure to sunlight and UV radiation.

Skin cancer is the most common cancer in Canada—and most cases are completely preventable. Stay out of the sun during peak UV periods. Wear sunscreen. Cover up, wear a hat, and wear sunglasses. Also, don't use indoor tanning equipment.

#### 4. Reduce exposure to carcinogenic substances at home, work, and in the environment.

<u>Check your home for radon gas</u>. <u>Know what harmful substances you may be exposed to at work</u>, and how to reduce these risks.

#### 5. Get a good night's sleep.

If you need some motivation to close your Netflix stream at a reasonable hour, recent research suggests that sound sleep may lower the risk of <u>prostate cancer</u> and <u>breast cancer</u>. Experts recommend seven to eight hours a night. Check out our <u>shift work study</u> to learn how we're working on improving the understanding of this risk factor.

Cancer research has come a long way, and as a result people diagnosed with cancer today have a better five-year relative survival than they did just over a decade ago. But while cancer survival is increasing, the number of new cases continues to climb. In order to help stop cancer before it starts, we need to continue to build a cancer prevention community of researchers, advocates, practitioners, policy-makers, and the public. We invite you to join this growing community.

## Health professionals' attitudes towards the prevention of cancer

#### Written by Laura Dale on March 13, 2014

Many people often tune out the "helpful" advice of well-intentioned family and friends, in favour of listening to the advice and recommendations of their health care providers—even if it is the same information being offered. This makes preventive counselling during routine health care visits an excellent opportunity for health promotion.

Canadians can receive care from a variety of health care providers operating within different health systems. Complementary and alternative medical systems, also known as "CAM" systems, are one of five common practices falling within the scope of <u>complementary and alternative medicine</u>. Examples of CAM practices include massage therapy, acupuncture, chiropractic, meditation, and using natural products. In

the literature, these CAM systems are often juxtaposed with biomedical health systems—<u>often described as</u> <u>"Western" or "Allopathic"</u> suggesting that people tend to use one or the other. Contrarily, <u>Canadians are increasingly</u> <u>frequenting CAM practitioners and</u> <u>often use CAM services in conjunction</u> with Western medicine.

I have long been interested in the dichotomy between the biomedical and CAM systems. As a result, I am an advocate of increased research to explore how these two health systems can be coordinated to ensure that Canadians can make informed



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health care decisions, whatever they may be, and so health care providers can optimize health promotion during patient visits.

For my MSc thesis, <u>I examined the beliefs about cancer prevention held by medical and naturopath trainees</u> <u>in British Columbia</u>, and I found a number of similarities and differences between them. Compared to medical students, higher proportions of naturopath students believed basic cancer prevention practices, including dietary intervention, were extremely important in preventing cancer. However, regardless of educational program, students who believed cancer prevention practices were important also were more confident in their ability to counsel their future patients on such practices.

The naturopath students expected they would spend larger amounts of time with future patients than medical students. This finding, although perhaps not completely unexpected, also highlighted one reason why naturopath students expect to spend more time counseling their future patients on cancer prevention and early detection procedures: the nature of their clinical practice and interactions with patients are different.

Considering that about half of cancers are preventable, I anticipate that interest in cancer prevention research and practice models will grow in the near future. Even brief counseling by health care providers can potentially influence a patient's lifestyle changes. Health researchers and practitioners from across the health disciplines should explore all possible avenues to best encourage cancer prevention practices, whether they work within the scope of CAM or biomedicine. To the extent that all providers provide consistent messages across health care sectors, patients will benefit.

#### <u>Hyperlinks</u>

- (1) <u>http://www.ncbi.nlm.nih.gov/pmc/articles/PMC538524/</u>
- (2) <a href="http://nccam.nih.gov/health/whatiscam">http://nccam.nih.gov/health/whatiscam</a>
- (3) http://www.biomedcentral.com/1472-6882/10/58
- (4) <u>http://hdl.handle.net/2429/45370</u>

#### Source for image:

Goldrosen, M. H., & Straus, S. E. (2004). Complementary and alternative medicine: assessing the evidence for immunological benefits. Nature Reviews Immunology, 4(11), 912-921.



# Exploring the health hazards and cancer risks of shift work

#### Written by Sarah Neil-Sztramko, April 8, 2014

Today, more than ever we live in a 24-hour society. Because of this, the demand for individuals to work

outside of the traditional working hours of 9-5 is great. Occupations traditionally associated with shift work include those in the medical professionals (such as doctors and nurses) and those working in the emergency services (such as police, paramedics, firefighters, and dispatch operators). However, there are a growing number of workers employed in the manufacturing, transportation, hospitality, and retail sectors that who may work at varying times throughout the day and night.

In recent years there has been more attention paid to some of the negative impacts that working night shifts may have on an individual's mental and physical well-being. These have been highlighted in a recent review paper by Vogel et al. (1). From a mental health perspective, some studies have found that shift workers may have higher rates of mental health problems, such as anxiety and depression. Due to irregular schedules and working when most others have time off, shift workers may have fewer opportunities for participation in social and cultural activities and spend less time with family. In terms of physical health, shift workers have a higher rate of gastrointestinal disorders, diabetes, cardiovascular disease, and certain types of cancer such as breast, prostate, and colorectal. In 2007 the International Agency for Research on Cancer classified shift work as a group 2A carcinogen after reviewing a number of human and animal studies that showed an association between shift work and breast cancer (2).

So how does shiftwork increase cancer risk? At this point, we don't completely understand the mechanism. Working at night, specifically being exposed to light during the night, may alter our circadian rhythms, the body's 24-hour cycle that dictates many of our body's hormones and physiological processes. It is thought that this disruption of these 24-hour cycles over many years may contribute to increased cancer risk (2).

We also know that shift workers may find it more difficult to engage in healthy behaviours that can reduce cancer risk(3), such as those outlined by Dr. Carolyn Gotay in her World Cancer Day blog post <a href="http://cancerprevent.ca/blog/february-4-world-cancer-day">http://cancerprevent.ca/blog/february-4-world-cancer-day</a>). Shift workers may have less free time and find it more difficult to schedule regular physical activity to meet Canada's guidelines of 150 minutes of moderate-vigorous physical activity per week

(<u>http://www.csep.ca/CMFiles/Guidelines/CSEP\_Guidelines\_Handbook.pdf</u>). The transition from night shifts to day shifts or days off can be greatly disruptive to sleep patterns leaving workers tired following both working days and on days off, making them more likely to skip their planned workout. Nutritious foods such as fruits, vegetables, and whole grains may be less available to workers during the middle of the night, leaving workers to rely on vending machines for their mid-shift snack.

At the Cancer Prevention Centre, we are very interested in learning more about what can be done to help shift workers reduce their cancer risk, as well improve other health outcomes. Together with colleagues at the Occupational Cancer Research Centre (OCRC) in Ontario, we have summarized the various shift worker health studies that have been completed to date and presented these findings at a symposium in Toronto in September 2012. Our report, along with videos of symposium presentations, can be found on the OCRC website (http://occupationalcancer.ca/2012/shiftwork-interventions-symposium/?gwcpp\_catid=43). To date, few studies have been conducted that aim to improve health in shift workers and there are no 'best practice' recommendations on how to best improve health and reduce cancer risk in shift workers.

We are currently undertaking one study that will help address this gap in knowledge. Our sleep hygiene study (<u>http://cancerprevent.ca/shiftworkers</u>) is evaluating the impact of a sleep program, for women shift workers, on sleep quality and factors related to breast cancer risk, including lifestyle and biological markers. If this program is shown to be beneficial, it may be another tool that shift workers can use to improve health and reduce cancer risk. The study is currently underway, so be sure to keep an eye on the Cancer Prevention Centre website for our results when they are available.

- 1. Vogel M, Braungardt T, Meyer W, Schieder W. The effects of shift work on physical and mental health. *Journal of Neural Transmission* 2012; 119(10):1121-1132.
- 2. Straif K, Baan R, Gross Y, et al. Carciongenicity of shift-work, painting, and fire-fighting. *Lancet Oncology* 2007; 8:1065-6.
- 3. Nabe-Neilsen K, Quist HG, Garde AH, Aust B. Shiftwork and changes in health behaviours. *Journal of Occupational and Environmental Medicine* 2011; 53(12):1413-7.



## Raising taxes on tobacco can help prevent cancer

## Written by Kathryn Seely on May 29, 2014

Every year on May 31, the World Health Organization and its partners mark World No Tobacco Day, highlighting the health risks associated with tobacco use and advocating for effective policies to reduce tobacco use. This year's theme is "raise taxes on tobacco"

(<u>http://www.who.int/campaigns/no-tobacco-day/2014/en/</u>). Higher tobacco taxes are the single most effective strategy to reduce smoking, especially among youth. Youth are particularly sensitive to price increases, and studies show a 10% price increase is estimated to reduce smoking by 3 to 5%.

The BC government recognized this by increasing tobacco taxes, effective April 2014, and the Canadian Cancer Society applauded the move as a significant step forward in preventing cancer (<u>http://www.cancer.ca/en/about-us/for-media/media-releases/british-columbia/2014/canadian-cancer-society-applauds-bc-govt-commitment-to-cancer-prevention-and-tobacco-tax-increase/?region=bc</u>). While much progress has been made, our collective work is far from done. Tobacco use is still the number one cause of preventable disease and death in British Columbia—and around the world. Not only is it still responsible for 30% of cancer deaths, but tobacco use claims the lives of 6,000 British Columbians each year, and costs the BC health care system \$2.3 billion a year.

We believe that additional tobacco policies, such as banning smoking in outdoor places and flavoured tobacco, will help reduce BC's smoking rates from 13% to 9% by 2018—one of the goals of the Canadian Cancer Society. This is why we will continue to advocate for these policies.

We believe the public places you enjoy outdoors should be smoke-free. By that we mean restaurant patios, parks, and playgrounds—all places that children visit. We would like everyone to breathe clean air and be protected from second-hand smoke. Smoke-free places de-normalize smoking, so children do not view this addiction as 'normal' behaviour.

We also believe that candy and fruit flavoured tobacco products should be banned. Youth are the primary target of flavoured tobacco products—products that can kill when used exactly as intended—and we want to stop the tobacco industry from marketing to youth.

Learn more about how you can help prevent BC's youth from starting to smoke by visiting <u>http://takeaction.cancer.ca</u>.



## **Cancer risk and Aboriginal communities**

## Written by Michelle Cyca on June 19, 2014

June 21 marks <u>National Aboriginal Day</u> in Canada, a day when our indigenous communities are celebrated for their

history and culture. This day can also be a reminder of some of the challenges faced by First Nations, Metis, and Inuit peoples in achieving health and quality of life. Although there are limited data specific to Aboriginal peoples and cancer rates, <u>cancer incidence is rising dramatically in Aboriginal populations</u>, and Aboriginal people are <u>likely to be diagnosed at a later stage of disease</u> than non-Aboriginal people, lowering their chances of survival.

Many of these cancers can be prevented by changing unhealthy behaviours and adopting healthier ones. However, a lot of barriers to making changes are beyond the power of the individual. Many Aboriginal communities are located in rural or remote regions, which pose challenges to healthy habits: it's too cold to be active outside for much of the year, fresh and healthy foods are expensive and in limited supply, and many people live far from the nearest health unit.

If one is facing those kinds of challenges, what can they do? For the one-in-four Aboriginal Canadians who are obese, reducing excess weight through eating healthier and exercising regularly can lower the risk of breast cancer, colorectal cancer, and other types of cancer. Even small changes, like taking short walks, having one less alcoholic drink per day, or eating fruits and vegetables rather than sweets, can make a positive difference. Smoking is also a big risk factor in Aboriginals: <u>almost three in five First Nations adults in BC are smokers</u>, and most start smoking as teenagers. Quitting or reducing smoking is one of the most important changes you can make to lower your risk of cancer and other diseases as well.

There are resources available to help Aboriginal people develop these healthy habits and combat unhealthier ones. Check out some of the resources from the First Nations Health Authority like their <u>traditional foods fact sheets</u>, which provides healthy eating suggestions, and <u>a beginner's fitness</u> <u>program</u> that can be done at home with minimal equipment. As well, the BC Lung Association has developed <u>a tobacco cessation fact sheet</u> for Aboriginals, which provides tips and strategies on how to quit non-traditional tobacco, <u>and the Canadian Cancer Society provides helpful suggestions as well</u>.

There is often the misconception that cancer is something that is only important for older people. Cancer may seem like a distant concern, but many of the changes and actions one can take to prevent cancer in the future can also contribute to their immediate well-being. Eating well, being physically active, and quitting smoking all make a positive difference in day-to-day health, as well as having benefits down the line. With almost half of First Nations populations being younger than 25 years of age, there is lots of time to develop healthy habits and combat unhealthier ones—and to continue advocating for more information and resources tailored to the needs of Aboriginal people. And for older people, remember: it's never too late to start living healthier!



## Canadian sun levels not enough to provide Vitamin D—but can still cause skin cancer

## Written by Sunil Kalia on July 15, 2014

With the dog days of summer upon us, many people will be spending more time outdoors and in the sun. But will they be practicing "sun safety"?

It is well-established that ultraviolet exposure can cause skin cancer. Despite the fact that this cancer is nearly entirely preventable, the skin cancer rate in Canada continues to increase. In the recently released Canadian Cancer Statistics publication (link: http://www.cancer.ca/en/cancer-information/cancer-101/canadian-cancer-statistics-

publication/?region=bc) the incidence of skin cancer cases in Canada is reported to be nearly equivalent to all other cancer cases combined.

By practicing "sun safety"—that is, reducing sun exposure during peak hours (between 10 a.m. and 4 p.m.), seeking shade, wearing protective clothing and sunscreen, and not using indoor tanning equipment—the risk of skin cancer can be greatly reduced.

National organizations such as the Canadian Cancer Society and the Canadian Dermatology Association conduct health promotion campaigns to remind individuals about what they can do to reduce their risk for skin cancer. But do these types of campaigns really work? The answer is unequivocally yes! In Australia, where skin cancer rates are some of the highest in the world, over the past 30 years sun safety health promotion campaigns have helped contribute to the stabilization of skin cancer incidence in that country and even decrease it in younger age groups. The campaigns have successfully reduced sunburn rates and preferences for tanning, as well as increased the likelihood of people wearing hats, applying sunscreen, and covering up. The Australian government has even taken its commitment to sun safety one step further by agreeing to a complete of ban all indoor tanning by the beginning of 2015. (link: <a href="http://www.cancer.ca/en/cancer-information/cancer-101/canadian-cancer-statistics-publication?region=bc">http://www.cancer.ca/en/cancer-information/cancer-101/canadian-cancer-statistics-publication?region=bc</a>)

In spite of these health promotion campaign successes, some people may forego sun safety believing they must do so in order to reach their recommended daily intake of Vitamin D. After all, Vitamin D is important in preventing osteoporosis and has other health benefits, too. I recently studied the amount of sun exposure that needs to be obtained in different Canadian cities to ensure adequate levels of Vitamin D all year round, and presented the results at the annual meeting of the Canadian Society of Investigative Dermatology last year (abstract SS-15) (link to: <a href="http://www.dermatology.ca/wp-content/uploads/2013/09/2013Abstracts\_Eng-web.pdf">http://www.dermatology.ca/wp-content/uploads/2013/09/2013Abstracts\_Eng-web.pdf</a>). We found that adequate levels of sun exposure cannot be obtained during the winter months throughout Canada, and is even unattainable in some parts during the fall and winter seasons. However, the risk of skin cancer due to UV exposure still remains. These results indicate that ensuring adequate Vitamin D intake through healthy eating and/or oral supplementation should be encouraged as a more reliable and safe way of obtaining Vitamin D than sun

So before you head outdoors this summer—or any time of year, make sure you "slip-slop-slap-seek-slide"! (Link to: <u>http://www.viha.ca/health\_info/sunsafety.htm</u>)

exposure. (link to: http://www.cancer.ca/en/prevention-and-screening/live-well/vitamin-d/?region=bc)



## Geography: A vital role in cancer prevention

## Written by Trevor Dummer on August 19, 2014

What has geography got to do with health, medicine, or disease prevention? After all, geography is usually associated with drawing maps—of people or places—or with our environment — the air we breathe; food we eat; water we drink; and where we live, work, and play. On the seemingly other hand, cancer prevention is about reducing or removing risk factors for

cancer—such as avoiding excess sun exposure, reducing alcohol, eating healthily, being physically active, and maintaining a healthy bodyweight. Cancer prevention is also about reducing exposure to toxins and chemicals that are in our environment, whether they are naturally occurring, like radon in our homes or arsenic in our well water, or if they are byproducts of our modern environment, such as traffic pollution or chemicals in food packaging.

As a health geographer, I combine the discipline of geography with cancer prevention to map environmental risks and identify places that have higher risks for cancer, as well as to design interventions and activities that seek to reduce exposure to external cancer risk factors.

Many cancer-causing substances are invisible to human senses. Arsenic, for example, is both <u>odourless and</u> <u>tasteless</u>, yet naturally occurs in many areas of Canada due to geology. It frequently contaminates drinking water sourced from wells, but consuming water that contains arsenic can cause bladder, kidney, skin, and lung cancer. Many Canadians rely on private wells for drinking water, and it is the responsibility of the individual well owners to test their water to ensure it is potable. Given the cancer-causing properties of arsenic-contaminated water, how do we ensure that people actually test their water—and understand the results and what they need to do to make their water safe? This is an important and complex issue right at the heart of health geography that involves health promotion, advocacy, targeted community outreach, and knowledge translation.

Working in collaboration with colleagues with the <u>Atlantic Partnership for Tomorrow's Health (Atlantic PATH) project</u>, in a recent survey of Nova Scotians <u>we found</u> that although more than three quarters of all well users thought their well water was safe and of a high quality, only around 10% tested their water <u>following Health Canada's guidelines</u>. As well, many had only tested their well water once, despite the Health Canada recommendation that well water be tested every two years. We also found that many people were unaware there may be arsenic in their drinking water, or that this was a health concern that might affect them, even though they lived in areas where high levels of arsenic had been found in well water. Furthermore, many found getting information about testing and treatment difficult.

We are now exploring different approaches to clearly communicate arsenic health risk, well water testing, and water treatment information to those who might be affected. The results of our Nova Scotia survey are helping us determine what the community information needs are, what information is already out there, and how we might be able to provide information that supports well water safety. We are partnering with provincial health and environment departments, as well as advocacy groups such as the Canadian Cancer Society, in order to help prevent cancers caused by consuming arsenic contaminated well water.

While the intervention component of this study is still in its early stages, we encourage anyone who is concerned about the possibility of arsenic in their well water to <u>test their drinking water</u>.



## Prostate Cancer Awareness Month: Cooking class study to help prostate cancer patients and their partners

Written by Svetlana Ristovski-Slijepcevic on September 23, 2014

September is Prostate Cancer Awareness Month. Being <u>the most</u> common cancer among Canadian men, it is estimated that 23,600 men will be diagnosed with the disease this year. The majority of

men who are diagnosed will survive five or more years post-diagnosis. However, many will live with side effects of the disease and treatment, and may develop chronic conditions as a result.

One of the most common therapies for prostate cancer is Androgen Deprivation Therapy (ADT), and about half of prostate cancer patients <u>receive ADT at some point</u>. ADT works to reduce levels of male hormones, called androgens, and prevent these hormones from stimulating the growth of cancer cells. However, despite the significant effects in treating or slowing progression of prostate cancer, ADT can also have serious and long-term side effects, including bone loss, increased bone fracture risk, weight gain, and lean muscle mass loss. There can also <u>be changes</u> in the patient's blood chemistry, <u>and impacts</u> on their sexuality, body image, and relationship with their partner.

Despite the severity of these side effects, nutrition can have a role in preventing some of them, or lessening their impact. Evidence suggests that nutritional interventions slow disease progression and nutritional guidance can help prevent weight gain and promote healthy weight loss. We also know that prostate cancer has a big impact on partners as well as the patients, and that responsibility for <u>health</u> and <u>food</u> <u>preparation</u> typically falls on the wife in families, particularly in today's cohort of prostate cancer patients.

In the first study of its kind for prostate cancer patients, researchers at the Cancer Prevention Centre are now recruiting prostate cancer patients receiving ADT and their partners to participate in a series of free group cooking classes. The classes, which will be led by a professional cooking instructor, will share recipes and information on healthy eating and nutrition, and will include fun and interactive hands-on opportunities to cook in a professional teaching kitchen. The information, recipes, and techniques shared will be specific to the needs of prostate cancer patients and their partners, in order to help improve some of the negative side effects associated with ADT.

The potential rewards are great. The prostate cancer patients who participate could experience immediate and long-term positive health effects. The patients and their partners may also experience positive interpersonal benefits. If this project is successful, we hope the cooking and nutrition classes could eventually be incorporated as part of standard supportive care for patients receiving ADT.

More information on the study is available at <u>http://cancerprevent.ca/cookingclass</u>. If you are interested in participating, please contact the study coordinator by phone at 604-822-3486 or email at <u>cookingclass.cancerprevent@ubc.ca.</u>



## The economics of unhealthy behaviours

### Written by Hans Krueger on October 14, 2014

Many of us recognize that certain behaviours and activities can increase the risk of developing chronic diseases, including cancer. For example, estimates tell us that almost <u>40% of</u> <u>colorectal cancer cases</u> in Canada are attributable to excess weight, physical inactivity, and tobacco smoking. What is

generally less known, however, are the overall costs associated with these factors as a result of their negative impacts—in economic terms called a burden—on the healthcare system and economy.

In Canada, excess weight, physical inactivity, and smoking are among the top five risk factors contributing to our chronic disease burden. At <u>H. Krueger and Associates Inc</u>., we have <u>developed a model</u> that seeks to quantify the economic burden of these three risk factors, as well as to determine the costs that could be avoided if the risk factors were reduced.

In 2012 in Canada, 18% of the population smoked, 43% was overweight or obese, and 44% was physically inactive. <u>Using our model</u>, we found that these risk factors resulted in annual direct costs for health care services and indirect costs, including premature mortality and short- and long-term disability, totaling \$50.3 billion. Of that, \$9.8 billion in costs were associated with cancers. If these risk factor rates were to remain stable until 2031, the annual economic burden nationally would increase to \$59.2 billion (in 2012 Canadian dollars).

However, these costs could be dramatically reduced if the number of people with each risk factor decreased by only 1% each year. To put this into perspective, a 1% relative reduction in the number of physically inactive Canadians in 2014 would require just 150,000 individuals, or 0.45% of the Canadian population, to increase their physical activity levels. Over the course of 20 years, this change would result in almost 3.3 million more Canadians being physically active—offering substantial health benefits for individuals (including a considerable reduction in chronic disease incidence and lives lost), as well as substantial benefits for the Canadian economy.

At H. Krueger and Associates Inc. our goal is to supplement this knowledge by translating the risk factor reduction into avoidable costs. For the example of physical inactivity above, the 1% annual reduction in this risk factor over 20 years would result in a \$20.3 billion cumulative reduction in economic burden. For a 1% reduction in tobacco smoking, excess weight, and physical inactivity combined, the cost avoidance would total \$77.9 billion between 2012 and 2031.

Armed with an understanding of what a meaningful impact a 1% reduction in these three risk factors can have, we are now expanding our model to include the risks associated with alcohol consumption. While the <u>evidence</u> suggests that moderate alcohol consumption can have a preventive effect on diseases such as type 2 diabetes and ischemic heart disease, the detrimental effects associated with higher consumption levels and binge drinking more than offset this benefit.

By assigning a monetary value to these risk factors, we hope this will serve as a tangible illustration of their economic burden, provide additional incentive for the prioritization of primary prevention efforts, and motivate people to adopt healthy lifestyles.



## Cancer prevention for gay men

#### Written by Michelle Cyca on November 18, 2014

November is a month for thinking about men's health, with Movember campaigns in full gear to raise awareness about prostate cancer, the most common cancer affecting men. However, for men who have sex with men (MSM) and men who identify as gay or bisexual, it can be a challenge to find cancer information specific to them. This is largely due to the fact that there isn't much information available on cancer rates and risks for sexual minorities: cancer registries do not include information on sexual orientation, and even estimating the number of LGBTQ Canadians can be difficult, as many are reluctant to disclose their sexuality due to stigma.

However, the research evidence that is available suggests that gay men and MSM are different from straight men in their risk behaviours and

cancer rates in ways that merit tailored education and prevention efforts.

Here are some ways gay men and MSM can reduce their risk of cancer:

- Avoid tobacco. While anti-smoking campaigns have drastically reduced the number of Canadians who smoke (from a high of 60% of men in 1965), surveys suggest gay men and MSM have not been as effectively reached by this prevention effort. A recent Toronto survey found that <u>34% of self-identified gay men and 45% of self-identified bisexual men reported being daily or occasional smokers</u>, compared to the 19% smoking rate of the city's general population. Smoking is the cause of an estimated 80% of all lung cancers—a disease which results in the greatest number of cancer deaths among Canadians.
- **Don't tan.** A recent study published in the <u>American Journal of Public Health</u> found that gay male youth use tanning beds four times as much as their straight peers, putting them at increased risk of skin cancer later in life. Despite rumours to the contrary, there is no such thing as a "safe tan," and base tans <u>do not protect you</u> against sun damage or skin cancer.
- **Cut back on alcohol.** Studies suggest gay men and MSM are more likely to drink regularly and binge drink than straight men. Alcohol is a risk factor for oral, liver, and stomach cancers. <u>Guidelines for low-risk drinking</u> recommend no more than 15 drinks per week, and no more than three per day.
- Eat a healthy diet and be physically active. Studies suggest gay men do not get enough fruits and vegetables (though they are on par with other Canadian men in this regard), tend to have healthier body weights, and tend to do more muscle strengthening activities. However, <u>one study reported</u> that only half of gay men reported doing any vigorous physical activity in the past week. <u>One-third of all cancers are linked to poor diet, excess body weight, and inactivity</u>. Regular exercise, a diet low in red meat and high in fruits and vegetables, and maintaining a healthy body weight can prevent many chronic diseases, including cancer.
- **Get vaccinated.** Research has found that gay men and MSM are at increased risk for HPV infections, the cause of an estimated <u>90% of anal cancers</u>, <u>50% of penile cancers</u>, and <u>25% of oral cancers</u>. The

most common types of cancer-causing HPV infection, HPV-16 and HPV -18, can be prevented by the Gardasil vaccine. However, this vaccine is very expensive (\$400-500 for three injections) and is currently only covered for males in two provinces: Alberta and PEI. The <u>Health Initiative for Men in</u> <u>Vancouver is advocating for Gardasil to be provided to all MSM</u> to protect them from preventable cancers. In the meantime, those who can afford the vaccine for themselves or their sons should consider it.

• **Get screened.** Stacey Berisavac of the Canadian Cancer Society, BC & Yukon Division reported at the 2014 Gay Men's Health Summit that <u>screening participation is thought to be lower among gay</u> <u>men and other LGBTQ folks</u>. This may be partly due to the barriers faced by gay men, who find that <u>health care settings are not always welcoming and inclusive</u>. However, many cancers are more treatable if detected early through screening, such as colorectal cancers and anal cancers.

While cancer is one of the leading health threats in British Columbia, about half of cancers can be prevented. By following the above recommendations, gay men and MSM can reduce their risk.



## Radioactivity from Fukushima-Daiichi disaster poses no danger to British Columbia

### Written by Jay Cullen on December 9, 2014

Public demand for information about the impact of the triple reactor meltdowns in March 2011 at the Fukushima-Daiichi nuclear power plant on the marine ecosystem and on the health

of those residing on the Pacific coast of North America is considerable. After all, as a result of the devastating earthquake and tsunami, radioactive elements from the nuclear power plant, including but not limited to cesium, iodine, strontium, and plutonium, were released—and continue to be released—into the atmosphere and ocean. In the more than three years since the disaster, these elements have been distributed across the Pacific Ocean and around the globe.

Radioactive elements can pose significant direct hazards to human health--increasing risk for certain types of cancer, having negative impacts on ocean plants and animals, and posing indirect hazards (such as by consuming plants and animals that have been exposed to radiation). Over time, the hazards diminish as the elements decay. However, the half-life of the radioactive elements ranges from days to more than tens of thousands of years, depending on the element.

Models produced by oceanographers and atmospheric scientists disagree on the exact timing and concentrations of radioactive elements expected to arrive off the coast of British Columbia by way of ocean currents. In an effort to track the concentrations and what kind of risks they pose, I and my colleagues have established <u>a new marine radioactivity monitoring network</u> that is engaging scientists in Canada and the US, health experts, non-governmental organizations, and even citizen scientists along the British Columbia coast.

The InFORM Network—which stands for Integrated Fukushima Ocean Radionuclide Monitoring—includes about a dozen community sites along the British Columbia coast where volunteer citizen scientists are collecting water and seafood samples monthly or bimonthly for analysis. Those samples are supplementing measurements already being taken offshore by the Department of Fisheries and Oceans and an existing citizen scientist network along the Pacific Coast. In addition, we are collecting salmon to determine the extent of contamination accumulating in the fish during their time migrating and feeding in waters around Japan. The InFORM Network is funded by the <u>Marine Environmental Observation Prediction and Response</u> (MEOPAR) Network, a Canadian Centre for Excellence established by the Federal Government in 2012.

Scientific studies that have been completed so far, in conjunction with results from the InFORM Network and what we know about exposure levels, indicate that radioactivity from the Fukushima-Daiichi disaster poses no danger and is not expected to affect the health of those on the Pacific Coast of North America. In fact, the radioisotopes owing to human activities in seawater and marine organisms largely reflect legacy sources from atmospheric nuclear weapons testing in the 20<sup>th</sup> century.

The most recent results of Kelp Watch 2014, a program dedicated to monitoring for the presence of Fukushima sourced radionuclides off the Pacific Coast, show that no radioactive isotopes from Fukushima were detected in kelp growing at sampling sites spread across the eastern Pacific Coast. Recent tests for plutonium in the seawater and marine sediments off the coast from Fukushima showed negligible levels owing to the disaster itself against the background contamination from weapons testing. In another recently published study, a three-dimensional model for tracking the dispersion and fate of strontium in the

waters and biota of the northwest Pacific Ocean was developed and showed that strontium levels are well below the maximum dose limits thought to be detrimental to public health. Furthermore, measurements made various species of fish caught off the west coast by <u>Health Canada</u> have not detected isotopes of cesium from Fukushima as of November 2013. More than 100 sockeye salmon and steelhead from the 2014 summer and fall returns to BC rivers are currently being analysed as part of the InFORM project with results expected to be reported in December.

While so far the measured levels are not a point of concern, we want to continue to monitor for Fukushima-derived contamination because even three years later these isotopes are still being released. Anyone who is interested in becoming a citizen scientist and contributing to the efforts of the InFORM Network is encouraged to <u>contact us</u>.



# What does it mean to eat a healthy diet (to prevent cancer)?

### Written by Cheri Van Patten on January 13, 2015

You often hear "eat a healthy diet" to prevent cancer. But what does it mean to eat a healthy diet? Diet is one way to help lower the risk of developing cancer, which can be combined with other healthy

behaviours for an even greater reduction in cancer risk. Ultimately these are modifiable factors that each of us has control over in lowering our risk of cancer. Leading experts estimate that about half of cancers are preventable. Prevention remains one of the best strategies for reducing the burden of cancer.

In the recent decade, the dietary guidelines for cancer prevention (or a "healthy diet") have focused more specifically on energy (calorie) intake. Excess body weight – achieved when we are in a positive energy balance or consume more calories than we require – is a new and important risk factor for cancer. Many people are unaware of this risk compared with other risk factors, such as smoking. Rates of overweight and obesity have risen rapidly in both Western countries and developing countries that are increasingly becoming Westernized. Overweight and obesity are now thought of as the "new tobacco" and will soon overtake smoking as the leading lifestyle cause of cancer. As a result, current dietary guidelines to reduce cancer risk place greater emphasis on "energy balance", that is, balancing the number of calories you eat with your <u>physical activity</u> to maintain a healthy body weight. Body mass index, or <u>BMI</u>, assesses your weight in relation to your height. Generally, for most adults, a healthy BMI ranges between 18.5 and 24.9 kg/m<sup>2</sup>.

This is not to say that the types and quality of foods in the diet are no longer important in <u>reducing cancer</u> <u>risk</u>. Another key component to lower cancer risk is to <u>consume mostly plant-based foods</u> – focusing on fruits and vegetables, whole grains, legumes (beans), lentils, nuts, and seeds. Whole, less processed foods that retain more of the plant's nutritional properties are best. For example, choose whole fruits and vegetables rather than juices, and opt for whole grain breads, cereals, and rice. What about other foods that are sometimes linked with higher rates of cancer, such as dairy and meat? Research shows that including milk, yogurt, lower fat cheeses, lean meats, fish, and poultry as part of a balanced diet does not raise cancer risk and can contribute important nutrients to the diet. It is typically the excess of these animal-based foods in Western diets, and often higher fat and processed animal foods (such as deli style meats and high fat dairy products) that can increase the risk of some cancers.



What steps will you take to eat a healthy diet? See these resources to learn more:

- Canadian Cancer Society <u>Healthy eating and cancer</u>
- <u>Canada's Food Guide</u>
- American Institute for Cancer Research
- <u>HealthLink BC</u> phone 8-1-1 toll-free in BC

See our previous blog posts for more on nutrition and fitness



# Adapting a breast cancer prevention curriculum for South Asian women

## Written by Seema Mutti on February 2, 2015

There are many myths surrounding breast cancer. Among these are beliefs that men do not get breast cancer, that only older women get breast cancer, and that it is primarily caused by our genes. In fact,

there are approximately <u>200 new cases diagnosed each year in Canadian men</u>, <u>18% of cases occur in</u> women under the age of 50, and <u>4 in 10 breast cancers could be prevented through modifiable lifestyle risk</u> <u>factors</u>. Dispelling these myths and empowering women to take control of their breast health are the primary objectives of the <u>Breast Cancer Prevention and Risk Assessment Clinic</u>.

As a visiting PhD student, I had the privilege of working with <u>Dr. Carolyn Gotay</u>, Director of the Cancer Prevention Centre and lead for the team involved with this initiative. I was involved in adapting the existing curriculum for a South Asian audience—a population that makes up the largest visible minority group in Canada. Historically, <u>South Asian women have lower rates of breast cancer compared to Caucasian women</u>, but as South Asian women adopt a more "western" lifestyle (sedentary behaviour, limited fruit and vegetable intake, etc.), their breast cancer risk increases.

Another unique concern among this group is that these "new Canadians" also bring distinct cultural traditions including religion, food, and communication style that may also extend to health beliefs and practices. For example, the literature in this area, albeit limited, suggests that for some women, belief in karma lends itself to 'passive fatalism'—that a <u>disease outcome is the result of one's fate</u>, destiny, or of God's will. This mindset may prevent some women from getting screened, and possibly from adopting prevention strategies. Even though these views are not shared by all South Asian women, particularly those who have become acculturated, programs like the clinic, which build on these features and the preferences of this population, are more likely to be relevant and useful for South Asian women.

Our team held <u>interactive education sessions</u> in the Lower Mainland that provided attendees with tangible ways to reduce their own risk of breast cancer. At the end of each session, we would play a <u>Punjabi-language video produced by the Canadian Cancer Society</u> that aims to promote mammography in the South Asian community. The campaign, called "sirf dus", translates to "just tell" or "just ten", and asks women to spread the word and talk to just ten of their family and friends about the importance of screening. "Sirf dus" is a goal that is similar to ours: that women attending our sessions would share this information with loved ones. Our hope is that we could begin to overcome some of these cultural barriers, and empower individuals to take ownership of their breast health, one woman at a time.

If you are interested in bringing the breast health education and risk assessment session to your workplace or community group in British Columbia, contact the Breast Cancer Prevention and Risk Assessment Clinic at 604-603-5140 or email <u>info.bcprac@ubc.ca</u>.

How can I reduce my breast cancer risk? See these resources for more information:

- How to reduce your risk (Clinic handout)
- Canadian Breast Cancer Foundation: Prevention and Risk Reduction
- Five Plus Website
- <u>Siteman Cancer Center: Your Disease Risk Tool</u>
- Eating well with Canada's Food Guide (in Punjabi and other languages and for First Nations groups)



## Increasing vaccination, screening and awareness of liver cancer prevention in at-risk populations

## Written by Carolyn Gotay on March 3, 2015

Liver cancer rates are rising in Canada, but most Canadians are unaware of the risk factors and options for screening and prevention that exist. Although liver cancer is not common, <u>in 2014</u> there was an estimated 2,100 new cases in Canada. Due to late diagnosis and lack of curative therapies, individuals diagnosed with liver cancer only have a 20% chance of surviving at least five years.

Despite these bleak statistics, one of the ways of preventing liver cancer is by <u>vaccinating</u> against the hepatitis B virus. Remarkably, hepatitis B is responsible for <u>53% of cases for the most common type of liver</u> <u>cancer</u>, known as hepatocellular carcinoma.

Canada has a large number of immigrants settling from areas where there is a high prevalence of hepatitis B, which includes <u>Central, East, and Southeast Asia</u>. Since most are unaware of their potential infection status, promoting hepatitis B screening and vaccination behaviours for these individuals is a priority.

Our team reviewed North American literature published on hepatitis B and found considerable variation in respondents' knowledge of the hepatitis B virus, and their participation in screening and vaccination programs. When participants were asked if they had heard of hepatitis B, affirmative responses ranged from a <u>low of 30%</u> to a <u>high of 96%</u> depending on the study community. In three Vancouver-based studies, overall, <u>slightly more than half of the Chinese Canadian participants</u> had been <u>screened for hepatitis B</u>; in one of these studies, <u>only 38% of participants had been vaccinated for hepatitis B</u>.

We have identified 21 hepatitis B interventions that have been implemented in North America since 2007. These interventions aimed to increase participants' knowledge, screening, and /or vaccination against the virus. These interventions were culturally and linguistically tailored for the Asian community in question, and results indicated a positive impact on increasing <u>screening</u> and <u>vaccination rates</u>. The results of this systematic review will inform the development and implementation of even more successful interventions in the future.

To learn more about hepatitis B and liver cancer, please visit the resources listed below:

- Canadian Cancer Society Liver cancer
- Canadian Liver Foundation
- <u>Public Health Agency of Canada Hepatitis B</u>
- <u>S.U.C.C.E.S.S Hepatitis B public education program for improving health of at-risk populations</u>



## Can gender-specific online messages change young Canadians' awareness about cancer prevention?

### Written by Chris Richardson on May 19, 2015

Where do young people get information about health? According to a 2012 Statistics Canada survey, 89% of young Canadians ages 16-24 use the internet at least once a day, and 62% are going online to search for medical

or health-related information. A 2015 study by the Pew Research Centre shows 92% of youth ages 13-17 in the US report going online daily, and a 2013 Pew report shows 72% of young Americans ages 18-29 search for health information online.

With so many young people online, the internet is a potential tool to deliver cancer prevention information. Dr. Joan Bottorff, PhD, RN, FCAHS, FAAN, and I partnered with Dr. Carolyn Gotay, PhD, FCAHS, to build on the concept of puberty as a teachable moment for <u>breast cancer risk reduction among young girls</u>. We focussed on <u>recent evidence</u> and reports by the <u>Canadian Expert Panel on Tobacco Smoke and Breast</u> <u>Cancer</u> and the <u>California Environmental Protection Agency</u>, which indicate that there is a causal link between both active smoking and second-hand smoke exposure and breast cancer.

We developed a series of brief <u>web-based intervention messages</u> on the risk of breast cancer associated with tobacco exposure in gender- and Aboriginal-specific focus groups. Based on focus group discussions, four messages were developed. The message for girls included images of four different girls playfully holding bras, with a printed message stating, "Smoking affects more than your lungs," followed by, "Cigarette smoke, even second hand smoke, puts girls at risk for breast cancer at an early age." The message also included a suggestion for action below the image: "Avoid places where you and your friends are exposed to second hand smoke."

## Smoking affects more than your lungs.

Cigarette smoke, even second-hand smoke, puts girls at risk of breast cancer at an early age.



Avoid places where you and your friends are exposed to second-hand smoke.

If you smoke, think about quitting. Do it for yourself and for all the girls you know.

START

We compared teens' responses to messages tailored to their gender and ethnicity versus a general message describing the carcinogenic aspects of tobacco smoke.

Both the girls and the boys in the intervention group spent significantly more time viewing the messages compared with the viewing time of the control group (see Table 1).

	Girls' mean viewing time	Boys' mean viewing time	
Intervention (tailored message)	36 seconds	38 seconds	
Control (generic message)	28 seconds	26 seconds	
Statistical significance	<i>p</i> <0.01	<i>p</i> <0.01	

Table 1

Compared to controls, girls and boys who received the intervention were more likely to agree (14% and 10% greater odds respectively) that exposure to second-hand smoke increases girls' breast cancer risk. Compared to controls, girls who received the intervention message were 52% more likely to request additional information about second-hand smoke and breast cancer.

The results indicate that brief gender-sensitive messages delivered via the internet have the potential to enhance awareness of the increased risk for breast cancer associated with second-hand smoke exposure, and stimulate additional information seeking about the relationship between smoking and breast cancer, particularly by girls. Although our messages were found to influence youths' risk perceptions and requests for additional information, research is needed to evaluate the intervention's impact on health behavior (e.g., reduced up-take of smoking, reduced exposure to second-hand smoke) and how to integrate this type of intervention into a broader coordinated system of cancer prevention initiatives.

For more information on this study, see the following websites:

- <u>Supporting Tailored Approaches to Reducing Tobacco (START): Decreasing breast cancer incidence</u>
- START project website
- <u>UBC Institute for Healthy Living and Chronic Disease Prevention</u>



## Canada needs a social movement for men's health

## Written by Joe Rachert on June 15, 2015

With Canadian Men's Health Week taking place June 15-21, 2015, the Canadian Men's Health Foundation (CMHF) has launched a nation-wide awareness campaign <u>www.CanadianMensHealthweek.ca</u> to help ignite a men's health social movement.

Canadian Men's Health Week encourages men to use "one finger to click the Health Pledge", which employs a tongue-in-cheek broccoli theme to help start a social movement for men's health. The theme is one of the many humour

based strategies that CMHF employs in inspiring men to focus on lifestyle changes that will help them feel better and live healthier lives.

In any social movement it is important to be clear about the solution as well as the problem.

The problem is evident in the statistics:

- Men are 79% more likely to die from heart disease than women
- 57% more likely to die from diabetes
- 29% more likely to be diagnosed with cancer and 40% more likely to die as a result

The solution is opening up the conversation on men's health and inspiring men to make small changes in their lifestyle that can have a big impact on their health. If we can do that, we could prevent up to 70% of men's health problems without adding another dollar, doctor or hospital to the health care system. Another aspect of a social movement is engaging your audience in enjoyable and memorable ways. This is where CMHF utilizes its innovative <u>DontChangeMuch.ca</u> campaign. Don't Change Much builds on the idea of making small incremental changes, but frames the conversation as if men are talking to their buddies. Using humour, simplicity, fun, engaging graphics and design, it's all medically backed information presented in a way men can absorb, digest, and easily adapt into their everyday life.

A third way CMHF engages our audience in a memorable way is <u>YouCheck.ca</u>. YouCheck is an innovative health awareness tool that is a window into a guy's future health, and it also happens to be a world first. Following the same principles as DontChangeMuch.ca, the goal of YouCheck is to engage and inform – like a guy-friendly men's health 101. For many men YouCheck.ca will be their first introduction to the idea of men's health. YouCheck.ca assesses the risk of developing seven of the most common diseases and conditions among Canadian men. But Youcheck.ca does more than reveal risk. It provides a solution – a report that is a call to action that promotes healthy lifestyle behaviours, such as healthier eating, physical activity, alcohol moderation, no smoking, and better sleep habits.

Canadian Men's Health Week marks CMHF's second anniversary and the beginning of changing men's health for future generations.

See these additional resources for men's health:

- Don't Change Much campaign: <u>http://dontchangemuch.ca/</u>
- YouCheck risk assessment: <u>https://www.youcheck.ca/</u>
- Canadian Men's Health Week: www.CanadianMensHealthweek.ca
- Men's Health Works (webcast, links, videos, and more): http://bit.ly/workingonwellness



## Making a healthy choice the easy choice: Lessons in men's health promotion

#### Written by Samantha Hartley-Folz on July 2, 2015

Men aren't all the same, but there are some worrying trends

in men's health. Canadian men are generally less healthy overall than women, and men in northern BC are less healthy than their counterparts in the Lower Mainland. We know that men aren't seeking out information on their health, so we decided to go where the men are — the workplace.

At the BC Healthy Living Alliance Secretariat (BCHLA), we helped initiate the <u>Working on Wellness (WoW)</u> project, which delivers tailored wellness programs to male-dominated rural and resource sector work camps in BC and the Northwest Territories.

BCHLA, along with our colleagues at the Centre of Excellence in Cancer Prevention, wanted to share our successes and challenges engaging men in their health, so we hosted a workshop series, "<u>Men's Health</u> <u>Works</u>", held this spring in Vancouver and Prince George. We welcomed stakeholders from public health, First Nations, and the academic field to involve them in a lively discussion around men's health. The workshops were made possible through financial support from the Canadian Partnership Against Cancer, Heart and Stroke Foundation of Canada, and Health Canada through a CLASP grant. Additional support was provided by the Canadian Cancer Society, BC and Yukon Division.

BC is leading the charge on men's health promotion, partly because of the work of former Chief Medical Health Officer for Northern Health, Dr. David Bowering. His report "<u>Where are the Men</u>?" started conversations in communities and moved forward a number of initiatives on men's health, including the <u>Northern Health Men's Health Initiative</u> and the WoW project.

During his keynote presentation at "Men's Health Works" in Prince George, Dr. Bowering provided words of wisdom on men's health and emphasized the need for everyone to get involved. His comments came as something of a relief, as I am often struck by the number of women who sit around our WoW project table and policy advisory. Who are we to talk about men's health? Luckily, Dr. Bowering acknowledged that we all have a role to play — to show men that we care about their health, and that they should too.

After hearing Dr. Bowering's presentation and the proceedings from both workshops, I know that WoW's long term goal is to create workplace cultures that support healthy choices — that's where our efforts will become sustainable.

I also gleaned some tips from the workshops for future success in men's workplace health promotion:

- Start small and build on momentum
- Use friendly challenges but not too many! Tracking can get exhausting
- Listen to your audience and respond to their needs
- Make the healthy choice the easy choice

All of the people working in men's health can take confidence in the lessons to date — let's keep the momentum moving!



## Healthy body weight and cancer prevention

#### Written by Rachel Murphy on July 30, 2015

Obesity is never far from headlines. Just last month the most recent report from the Canadian

Community Health Survey was released. The report highlighted that the number of obese adults has continued to increase across Canada, even in British Columbia, which has the lowest prevalence of obesity in Canada. Clearly obesity is a public health concern, and one that could significantly increase cancer risk.

Most people are aware that smoking is a leading preventable cause of cancer. But far fewer people know that <u>obesity is a risk factor for many types of cancer</u>. Increased awareness and research on obesity and cancer is vital, and leading organizations such as the <u>American Society of Clinical Oncology</u> suggest that obesity will be the leading preventable cause of cancer in the near future.

Body mass index (BMI) is the most common tool used to determine if a person is overweight or obese, but BMI is not a perfect tool. BMI provides an indirect measure of body fat and may not reflect changes in the distribution of weight that naturally occur with aging. In collaboration with colleagues across Canada and the United States, <u>I studied</u> overall body fat, visceral fat (fat around the internal organs), and subcutaneous fat that were measured with radiographic images in a group of over 2,500 older adults. The goal was to understand which specific fat measures were associated with risk of developing cancer, and if there was a measure that was particularly 'risky'.

We found that women with greater overall fat mass and more visceral fat had a higher risk of developing cancer. Visceral fat was a particularly strong risk factor among men. Men with the most visceral fat had a nearly three times higher risk of many types of cancer compared to men with little visceral fat, even independent of BMI. This means that even men with a healthy BMI can have a lot of visceral fat, which may increase the risk of developing many types of cancer.

With the increased obesity prevalence, people are also living a greater proportion of their life with overweight or obesity. We are now exploring how the cumulative impact of overweight and obesity from early life to old age affects cancer risk. The results may help determine when in a person's life maintaining a healthy body weight makes the most difference in preventing cancer.

In the meantime, there are steps you can take to help prevent cancer. Eating a diet with plenty of fruits and vegetables, fibre, whole grains, and beans can help you maintain a healthy body weight. So can watching portion sizes. Making time for regular physical activity is also important for staying at a healthy body weight, which reduces your risk of cancer.

Want more information on healthy body weights? See these resources:

- Canadian Cancer Society <u>Healthy eating and cancer</u>
- <u>Canada's Food Guide</u>
- Canadian Cancer Society Physical activity
- Public Health Agency of Canada <u>Tips to get active</u>



## Five tips to stay healthy this fall

### Written by Geoffrey Scales on August 28, 2015

Fall brings the end of summer and the excitement of a new school year, with lots of opportunities for positive change. About half of all cancers can be prevented by adopting healthy behaviours, so we

wanted to find out how people at the University of British Columbia were planning to improve their health this fall. Communications intern, Geoff Scales, ventured out into campus to find out.

Andrew, who researches radio wave patterns at UBC, plans to work out a lot and eat well. "During school, it's hard because you've got classes, you've got a lot of responsibilities and a lot of stress," he says, "But you've got to take time to work out. You know, you can't compromise on that."

New friends from the <u>Jump Start</u> program at UBC – Lisa, Alicia, Heather, Ruzxin, and Hannah – all plan to exercise as part of their back-to-school plans by cycling, walking, running, and dancing.

Dianne and her son Harry, visitors to the campus from Summerland BC, will boost their health by walking to work and working out. Satoru, who studied English at UBC this summer, will continue to cycle from his home in Japan to the commuter station every day, and Rylan, a first-year student, plans to hit the gym.

Our featured member for September, Dr. Sandra Krueckl, tells us her fall plans for healthy living:

This fall I plan to keep up my running – even on rainy days – and I'll feel suitably proud of myself if I don't let the rain stop me! In addition I love yoga and haven't made time for it in a couple years so the fall seems like a great time to start up again.

#### Five tips to stay healthy this fall

#### 1. Increase your physical activity

<u>Being active for at least 150 minutes each week</u> can help reduce your risk of many cancers and chronic diseases, such as heart disease, osteoporosis, and obesity. Physical activity coupled with a healthy diet can contribute to reaching and maintaining a healthy body weight, <u>which is linked to a decreased risk of cancer</u>.

#### 2. Eat more fruit and vegetables

Fruits, vegetables, and other plant foods are great sources of vitamins and minerals. They are also low in calories, which help you maintain a healthy body weight and reduce your risk of developing cancer. You can get great produce <u>even if you are on a tight budget</u> by buying seasonal fruits and vegetables, shopping for canned and frozen produce, and bringing a list when you hit the grocery store.

#### 3. Cut back on cocktails

Alcohol is part of many social gatherings, but limiting your intake can <u>reduce your risk of cancer</u> and other health problems. The less you drink, the lower your risk of cancer. <u>See the Canadian Cancer</u> <u>Society website for tips on reducing your intake.</u>

#### 4. Break away from tobacco and nicotine

<u>Smoking in Canada is on the decline</u>, but 14% of British Columbians still light up on a regular basis. Fortunately, there are organizations available to help you quit smoking, such as <u>QuitNow.ca</u> and <u>Smoker's Helpline</u>.

#### 5. Limit your sun exposure

Summer is ending, but the sun can still do damage. Even in September the <u>UV index</u> can still be 'high' or 'moderate.' <u>Take sun precautions</u>: Wear protective clothing, hat, sunglasses, and sunscreen when out in the sun. Seek shade near midday when the sun is the strongest.

What are the best ways to stay healthy and prevent cancer this fall? Join our Facebook and Twitter survey to let us know.



## How does breast cancer risk change when Filipino women immigrate to Canada?

Written by Tracey Mager on October 1, 2015

As a Lifestyle Counsellor for the <u>Breast Cancer Prevention &</u> <u>Risk Assessment Clinic</u>, I have spoken to a lot of women

about breast cancer. This fall, I reached out to the Filipino community to find out if there was interest in learning more about how to improve their breast health.

According to Statistics Canada's <u>2011 National Household Survey</u>, Filipinos are the fourth largest non-European community in Canada. A total of 350,425 Filipino women live in Canada, and 85,285 emigrated from the Philippines from 2006-2011. In Metro Vancouver, Filipinos are one of the <u>top three visible</u> <u>minority groups</u>.

<u>Research shows</u> that women's breast cancer risk increases when they move from countries with low incidence to those with high incidence. Breast cancer incidence in Canada is higher than in the Philippines. According to the <u>International Agency for Research on Cancer</u>, <u>age-standardized rates (ASR)</u> for breast cancer incidence is 79.79 new cases per 100,000 in Canada and 47.01 in the Philippines. When Filipino women immigrate to Canada, their breast cancer risk likely increases because of changes in lifestyle and environment.





Lifestyle and environment are factors we can do something about, and the Breast Cancer Prevention & Risk Assessment Clinic <u>developed a program</u> to help Filipinas reduce their risk of breast cancer through making healthy changes to modifiable risks. Our education sessions teach Filipinas about healthy lifestyle behaviours, such as maintaining a healthy body weight, eating healthy foods, increasing physical activity, stopping smoking, and limiting alcohol consumption and well as help them to navigate barriers to mammography. This September, we held sessions in Burnaby and Vancouver, BC and just under 30 women attended. We plan to continue reaching out to Filipinas across the Lower Mainland.

This October also marks the fourth anniversary of the Breast Cancer Prevention & Risk Assessment Clinic, a program that helps women in BC and across Canada improve their breast health. The clinic offers free, evidence-based breast cancer prevention sessions in-person and online to individuals or community groups. Over the past four years, the clinic has helped more than 2000 women in BC and across Canada reduce their risk for breast cancer, including special sessions for <u>Southeast Asians</u>. <u>Chinese</u>, <u>First Nations</u>, <u>high</u> <u>school students</u>, and others.

The clinic is open to all women who are at increased risk of breast cancer, or who are worried about their risk. Women do not need a physician's referral and there is also no cost to attend. To register for the clinic, please call 604-603-5140 or <u>contact the clinic online</u>.

The clinic is a program of the Centre of Excellence in Cancer Prevention, with funding from the Canadian Breast Cancer Foundation BC/Yukon Region.


## How can shiftworkers improve sleep and reduce breast cancer risk?

Written by Carola Munoz on November 2, 2015

New research aims to improve sleep quality and reduce breast cancer risk among women who work night shifts.

This month, Dr. Carolyn Gotay will be presenting results from the Improving Cancer Related Outcomes in Shiftworkers (ICOS) study at the <u>Canadian Cancer Research Conference</u> in Montreal, QC. As the ICOS project manager, I have been responsible for administering the study, ensuring participant recruitment, data collection, and follow-ups as well as data management and analysis, among other things.

In 2007, the International Agency for Research on Cancer designated <u>shiftwork with circadian disruption as</u> <u>a probable carcinogen</u>, based primarily on breast cancer evidence. CAREX Canada lists night <u>shiftwork</u> as a high priority for cancer prevention efforts in occupational settings with high exposure, and estimates that approximately 1.9 million Canadian workers have shifts between midnight and 5 a.m., representing around 13% of working Canadians.

Despite this identifiable risk and the considerable concern it has generated in the public, <u>few interventions</u> <u>have been reported</u> for shiftworkers that could potentially reduce their risk for breast cancer. While we do not fully understand the biological pathways that lead to the increased breast cancer risk, disruptions in both sleep quality and healthy lifestyle have both been implicated.

Given the hypothesis that sleep disruption may play an important role in increasing breast cancer risk in women who work night shifts, we investigated the effects of an intervention based on sleep hygiene and cognitive behaviour therapy on lowering the breast cancer risk factors in this group of women. Forty-seven women shift workers (average age = 47), who work in occupations with high circadian disruption (rotating or permanent night shifts), participated in the ICOS study. The majority (79%) of our participants work in the medical field (e.g., nurses, emergency communications personnel, and paramedics) while a minority (21%) work in a variety of other occupations (e.g., airport operations, casino workers, and firefighters).

Participants were provided with a 10-session, telephone-delivered intervention to increase healthy sleep and lifestyle through addressing behaviours that may affect sleep quality (e.g., sleep environment, stimulant intake, naps, and exercise). Participants' perceived sleep quality was measured by a standard sleep quality questionnaire (Pittsburgh Sleep Quality Index - PSQI) and assessed at baseline, 6 months, and 12 months later.

Results show that most participants (79%) reported "poor" sleep quality on the PSQI at baseline. When assessed at 6 months later, only 54% reported "poor" sleep quality, with a further decrease to 49% at 12 months. This sleep intervention showed promising improvements in reported sleep quality, a modifiable risk factor with the potential to reduce cancer risk. We are continuing research into sleep and cancer prevention, a novel approach to reducing cancer risk.

Learn more about shiftwork and health:

- <u>Rotational shiftwork fact sheets</u> Canadian Centre for Occupational health and Safety
- <u>Shift work and health</u> Institute for Work & Health

What can you do to improve your sleep habits?

- <u>Help yourself to a good night's sleep</u> Sleep Disorders Program UBC Hospital
- <u>What you need to know about excessive sleepiness and shift work</u> (alertness and sleep tips) National Sleep Foundation
- <u>Tips for sleeping during the day</u> National Sleep Foundation
- <u>Tips for healthy eating and exercising when working shifts</u> National Sleep Foundation



## Festive ways to celebrate the holidays and limit your liquor

## Written by Jennifer Parisi on December 17, 2015

Maximize your holiday cheer while minimizing your cancer risk

Enjoying the winter holidays with friends and family often begins with the question, "What can I get you to drink?" Watching your alcohol consumption is not always a priority on special occasions, and the link between alcohol and cancer may be only a distant concern. But with a little planning, you can enjoy yourself and stay within the cancer prevention guidelines.

There are many types of <u>cancers linked to alcohol</u>, including cancers of the head and neck, breast, colorectum, and liver. In fact, the International Agency for Research on Cancer (IARC) has classified alcoholic beverages as <u>carcinogenic to humans</u> (Group 1). Although researchers aren't sure exactly how alcohol affects cancer risk, it is clear that the less you drink, the lower your risk.

The existing evidence doesn't pinpoint a zero-risk level of drinking. However, following recommended guidelines can help you <u>lower your risk of cancer</u>. The <u>Canadian Cancer Society</u> recommend less than one alcoholic drink a day for women and less than two a day for men, which is lower than Canada's <u>low risk</u> <u>drinking guidelines</u>. And when it comes to breast cancer, any amount of alcohol increases risk.

What does a drink mean?

- Beer, cider, or cooler 341 ml / 12 oz (5% alcohol content)
- Wine 142 ml / 5 oz (12% alcohol content)
- Spirits 43 ml / 1.5 oz (40% alcohol content)



Remember, even small amounts of alcohol increase the risk of certain cancers, so the less alcohol you drink, the more you reduce the risk of developing cancer. Any type of alcohol – beer, wine or spirits – increases the risk of cancer. If you want to enjoy a delicious holiday drink without the booze, try this alcohol-free nog from <u>Joyous</u> <u>Health</u>. It is a decadent treat! To reduce the fat content, try light coconut milk instead of full-fat, and consider using a sugar-free sweetener to minimize your caloric intake.

Here are ten tips to help you reduce the amount you drink:

## 1. Plan ahead

If you are planning to drink alcohol, decide on a limit before the night begins.

## 2. Eat something

Eat something before you have a drink to slow down the effects of alcohol. Choose something with whole grains, fats, and proteins that take longer to digest. While you're digesting, alcohol will enter the bloodstream more slowly.

## 3. Drink water

Alcohol is a diuretic, which can lead to dehydration and compound how you experience alcohol's effects. Order sparking water, wedges of lemon or lime, and fancy glassware to make it more delicious!

## 4. Get a fancy mocktail

Cutting back on alcohol can be fun! Ask the bartender to create a delectable drink without the booze. If you are entertaining, there are lots of online recipes to try!

## 5. Drink slowly

Sip your drinks and savour them. Not only do you save a few dollars, you reduce the amount of alcohol you imbibe over the course of the evening.

## 6. Alternate drinks

Swap every other drink for a non-alcoholic one, starting with your first! Try water, soft drinks or juice to mix it up.

## 7. Delay

If you are dining out, wait about half an hour before diving into the wine rack, and if you're at a party, avoid drinking games that quickly multiply the alcohol you drink.

## 8. Dilute

Try a shandy or a wine spritzer that mixes beer or wine with soda or juice. Not only are these tasty, but they'll help you limit your alcohol intake.

## 9. Stop topping up

Tell your host to hold the bottle! Finish one drink before pouring another so you can measure the amount of alcohol you consume.

## 10. Tell a friend

You might be surprised by your friend or partner's reaction when you tell them you're cutting down on alcohol. Ask if they can support you – they may even join you!

Tips adapted from the following resources:

Canadian Cancer Society

http://www.cancer.ca/en/cancer-information/cancer-101/what-is-a-risk-factor/alcohol/?region=bc

HealthLinkBC

http://www.healthlinkbc.ca/healthfeatures/healthy-holiday-habits-3.html

Cancer Research UK

http://www.cancerresearchuk.org/about-cancer/causes-of-cancer/alcohol-and-cancer/how-to-cut-downon-alcohol

Centre for Addictions Research of BC: <u>https://onlineacademiccommunity.uvic.ca/carbc/2015/11/26/how-to-have-a-great-night-and-remember-it-the-next-day/</u>



# Don't diet: Adopt the Mediterranean way of eating to feel great (and reduce your risk of cancer)

## Written by Narsis Afghari on January 13, 2016

The Mediterranean diet is a traditional dietary pattern in countries bordering the Mediterranean Sea, such as Greece, Spain, and Italy. First identified in the 1960s as "health-protecting," this diet includes a high intake of vegetables, fruits, nuts, fish, cereals, and legumes with limited alcohol consumption and low consumption of dairy and meat. I first encountered the cancer prevention potential of the Mediterranean diet when I worked at the Entekhab Cancer Control Center in Iran providing nutritional counselling to cancer patients and healthy people who were at risk of getting cancer. Since then, I started to read a lot about the Mediterranean diet and its role in cancer prevention. This dietary pattern emphasizes daily consumption of whole grains, legumes, fruits, vegetables, and virgin olive oil. Fish, poultry, and low-fat dairy products are recommended weekly while red meat and sweets should be limited to monthly use. Unsalted nuts are included, but are high in calories and should be consumed with attention to overall energy intake to avoid weight gain.

## Key elements of Mediterranean diet

## Daily

- Eat lots of fresh fruits and vegetables, whole grains
- Use virgin olive oil or canola oil on salads and for preparing food
- Use legumes as a good source of protein
- Drink plenty of healthy beverages
- Be physically active

## Weekly

- Consume low-fat dairy products
- Consume fish and sea foods about twice a week
- Eat poultry and turkey

## Monthly

• Eat red meat and sweets less often

## Rarely

- Limit salt intake, use herbs and lime juice to flavour foods
- Limit alcohol consumption
- Limit sugar-sweetened beverages, such as juices and cola



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## How might the Mediterranean diet prevent cancer?

Following a Mediterranean diet is associated with decreased overall mortality because of increased antioxidant intake. This helps your body resist free radicals and oxidants. This way of eating can also help prevent cancer by:

- Reducing your body weight and improving blood lipids;
- Significantly decreasing blood pressure, risk of <u>cardiovascular disease</u> and some types of cancers;
- Significantly decreasing risk of dementia; and
- <u>Increasing antioxidant intake</u>, which has been shown to decrease DNA damage in prostate cancer patients.

Olive oil is one of most important components of the Mediterranean diet and evidence suggests that it may play a role in decreasing the risk of <u>breast cancer</u>. Other research shows that the Mediterranean diet is inversely associated with <u>colorectal cancer</u> risk.

Nutrition experts suggest making small changes to improve your health and decrease your disease risk (especially cancer). For example, increase your intake of fresh fruit and vegetables, consume whole grains instead of refined grains, and choose protein from vegetable sources (like soy and beans) instead of animal

sources (like meat or pork). Use low-fat dairy products and drink healthy beverages. For additional benefits, try adding physical activity to your daily routine, at least 30-45 minutes each day.

Need some help getting started with the Mediterranean diet? We walk you through a simple Greek salad in this video:

## **Resources:**

- Email a Dietitian (HealthLinkBC)
- What is the Mediterranean diet? (HealthLinkBC)
- <u>A heart-healthy diet may also prevent cancer (American Institute for Cancer Research)</u>
- Body weight and cancer prevention (World Cancer Research Fund)

## Mediterranean Greek Salad (adapted from allrecipes.com)

- 3 cucumbers, sliced
- 3 cups diced roma tomatoes
- 1/2 red onion, sliced
- 1 cup Kalamata olives, pitted and sliced
- 1/3 cup diced oil packed sun-dried tomatoes, drained, 1 tablespoon oil reserved
- 1 tablespoon red wine vinegar (optional)
- Salt or salt alternative and pepper to taste (optional)
- 1 1/2 cups crumbled feta cheese or feta cheese alternative (optional)

In a large salad bowl, toss together the cucumbers, roma tomatoes, red onion, olives, sun-dried tomatoes, reserved sun-dried tomato oil, and red wine vinegar. Season with salt and pepper to taste. Top with feta cheese if desired. Chill until served.

## Additional references:

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## We can prevent cancer: World Cancer Day 2016

## Written by Jennifer Parisi on February 3, 2016

February 4<sup>th</sup> marks <u>World Cancer Day</u>, a global event that raises awareness about cancer. The <u>World Cancer Research</u>

Fund estimates that there were 14.1 million cancer cases around the world in 2012, 7.4 million in men and 6.7 million in women. By 2035, this number is expected to increase to 24 million globally. In Canada, an estimated <u>196,900 new cancers will be diagnosed</u>, 25,400 of these in British Columbia. The number of new cases is expected to <u>grow 79% by 2032</u> primarily due to the aging Canadian population. Despite these devastating numbers, it is important to know that many of these cancers can be prevented if we act now.

## 1. Stop smoking

Smoking remains the leading cause of cancer death in Canada, but it doesn't just affect your lungs. Tobacco use is also linked to cancers of the esophagus, colon, mouth and throat, pancreas, bladder, kidney, and cervix, <u>among others</u>. Check out <u>QuitNow.ca</u> for resources and help to quit smoking.

## 2. Maintain a healthy body weight, get more exercise, and eat healthy foods

Obesity is a risk factor for many types of cancer, and as the number of obese Canadian adults continues to rise, so does the cancer risk. <u>Eat a healthy diet</u> that emphasizes fruits, vegetables, whole grains, and beans to help maintain a healthy weight. Also be sure to make time for <u>regular</u> <u>exercise</u>. For more, read our blog post on <u>healthy body weight and cancer prevention</u>.

Watch our animated map of Canada's obesity rates over time.

## 3. Limit alcohol consumption

Alcohol is part of Canada's social fabric and accompanies many of our celebrations. But <u>many</u> <u>cancers have been linked to alcohol</u>, including cancers of the head and neck, breast, colorectum, and liver. Researchers aren't sure exactly how alcohol affects cancer risk, but evidence clearly indicates that <u>the less you drink</u>, the lower your risk. Check out our blog for <u>10 tips to reduce the amount you drink</u>.

## 4. Reduce sun exposure (UV radiation)

Skin cancer is very common, but also easy to prevent. <u>Reduce your exposure</u> to ultraviolet (UV) radiation from sources like the sun, tanning beds and lamps. Cover up, limit your time in the sun, use sunscreen, and avoid tanning beds.

## 5. Reduce exposure to carcinogenic substances

Substances such as radon, asbestos, and arsenic in our homes, workplaces, and environments cause cancer. However, remediation and protective measures can minimize or eliminate exposures. Radon and arsenic testing kits are available, and specialists can assist with asbestos removal. Read our blog post on arsenic remediation in well water.

Together, we can prevent about half of cancers by making healthy lifestyle choices, building healthy communities, and shaping policy to protect Canadians. For more on World Cancer Day, see <u>http://www.worldcancerday.org/</u>.



## It's My Life! Cancer prevention tool evaluation

## Written by Elizabeth Holmes on February 19, 2016

If you knew about half of all cancers could be prevented, would you try to reduce your cancer risk?

If most people knew that <u>about half of all cancers could be prevented</u>, would they do something to reduce their cancer risk? If most people aren't aware about cancer risk factors and are going online for their health information, how do we better reach them? How can we present cancer statistics in a user-friendly way? How do we make prevention information more engaging?

These are some of the questions my colleagues and I had that inspired the development of the Canadian Cancer Society's interactive online cancer prevention tool, <u>It's My Life</u>! (IML). Combining the Society's annual Canadian Cancer Statistics <u>publication</u> with evidence-informed <u>cancer prevention information</u>, we launched IML in September 2014.

In Canada, a 2013 <u>study</u> highlighted the need for better dissemination of cancer prevention information to the public, prompting a call by the authors to consider more innovative, online knowledge translation methods. It is clear that an <u>evidence-informed</u>, <u>user-friendly approach</u> to promote cancer-related lifestyle and risk behaviour change is needed.

It was important for us to be able to measure how the tool advanced our strategic priority of more Canadians adopting healthy behaviours and reducing their cancer risk. To collect information on individual behaviour, an intercept survey was programmed to pop up when visitors reached the last page of the tool. This survey captured initial impressions and a follow-up survey was sent about 2 months later. These surveys were conducted using Survey Monkey and we used Google Analytics to track visitor engagement.

In its first year, over 30 000 individuals visited the tool with a subset choosing to participate in an initial pop-up survey after completing the tool (902) and a follow-up survey a few months later (250). Initial survey results show that participants found IML to be relevant and easy to understand. They learned a lot about how to reduce cancer risk, and many respondents stated their intention to make a change in lifestyle.



Individual survey responses from the follow-up survey suggest that IML succeeded in encouraging Canadians to adopt healthy behaviours.

"I thought this was such a positive tool developed and think it will hit home for a lot of individuals... After going through this interactive tool it did actually raise concern and was the push and realization I needed to take better care of my health for the present and future. I signed up at a local gym, went for food allergy testing, regular check-ups at the doctor and began eating clean, healthy food. I am proud to say I have taken control back in my life and I am a more positive and happy individual because of it." Hannah

IML has increased the level of knowledge about cancer prevention and inspired commitment to change behaviour. The tool also led Canadians to support the Society's mission (visit website, follow on social media, volunteer, advocate) and anecdotally led to behaviour change. With almost three-quarters of Canadian <u>home Internet users going online for health information</u> and many Canadians unaware lifestyle risk factors linked to cancer<sup>1</sup>, IML is a tool that can increase awareness and encourage behaviour change.

Find out how to reduce your cancer risk. Try It's My Life now

<sup>&</sup>lt;sup>1</sup> Reference: The cancer prevention – attitudes, awareness and behaviours – survey, 2008, conducted by Environics Research Group on behalf of the Canadian Partnership Against Cancer.



International comparison of cancer prevention-related statistics in 5 countries: Ireland, Iran, Mexico, Canada, Pakistan Written by Bushra Mahmood on March 9, 2016

According to the World Health Organization's (WHO) International Research Agency for Cancer, there were 14.1 million new cancer cases, 8.2 million cancer

deaths, and 32.6 million people living with cancer worldwide in 2012. Cancer is estimated to become the leading cause of death globally.

At the School of Population and Public Health's (SPPH) Centre of Excellence in Cancer Prevention, we have a unique opportunity to reflect on the international impact of cancer. We are five graduate trainees at SPPH with a first-hand perspective on cancer in our home countries, which are globally dispersed and represent varied social, economic, and political realities. This post is our first in a series that touches on several issues associated with cancer, including risk factors, prevention, programs, and policies. In this post, led by PhD student Bushra Mahmood, we will compare and contrast cancer incidence and mortality in our five home countries. Canada, Ireland, Mexico, Iran, and Pakistan represent a mix of low, middle, and high income economies with considerable variation in cancer prevention, diagnosis, and treatment.

## Making international comparisons

While two of these countries — Canada and Ireland — have population-based cancer registries that provide high quality credible data, cancer surveillance and monitoring is either poor or virtually non-existent in Pakistan, Iran, and Mexico. Most of the cancer-related mortality data in these countries has been based on national incidence estimates (where available) or modeled on survival data.

To make cross-national comparisons among our five countries, we will be drawing on <u>WHO's Cancer</u> <u>Country Profiles</u>, which use age-standardized rates for calculating incidence and mortality. Agestandardized rates are helpful in comparing cancer rates across countries as they adjust for age, so that the mortality and incidence rates are not affected by difference in population age distributions. Rates in this blog will be reported per 100,000 population as is standard.

## **Overall trends**

Overall cancer incidence remains low in the developing world. Some of this is likely due to the absence of cancer surveillance systems and registries, which lead to under-reporting of cancer. However, cancer incidence in developing nations is expected to grow. According to the <u>International Network for Cancer</u> <u>Treatment and Research</u>, smoking, unhealthy diets, and sedentary lifestyle are leading causes of cancer in high income countries. As these behaviours are increasingly adopted in developing nations, cancer incidence and mortality are predicted to rise.

Although incidence rates are relatively low, developing nations experience higher mortality rates. Cancer cases are often diagnosed at an advanced stage because preventive and screening services are absent or lacking. In addition, many poor patients are <u>unable to access optimal treatments</u> because they cannot afford it, which contributes to high mortality rates.

Recently, WHO identified cancer as a 'neglected' health problem in the developing world, and predicted cancer will soon replace infection as a major cause of death. This has the potential to become a crisis with far reaching implications for resource-constrained countries.

## Age standardized cancer incidence for top three cancers in each country by gender (WHO 2012)

In 2012, prostate cancer had the highest age-adjusted incidence in men in Canada, Ireland, and Mexico. Ireland reported the highest rate (114.2), followed by Canada (88.9) and Mexico (27.3). In Iran, age-adjusted incidence rates were highest for stomach cancer (20.6). Pakistani men had high incidence rates for lip, oral cavity (10.5) and lung cancers (9.7).



Graph 1a

In women, breast cancer had the highest incidence rates in all five countries in 2012, with highest rates in Ireland (92.3) followed by Canada (79.8) and Pakistan (50.3). The second highest cancer incidence in females varied by country: colorectal cancer in Ireland (27.4) and Iran (10.5); lung cancer in Canada (34.4); lip and oral cavity cancers in Pakistan (9.1); and cervical cancer in Mexico (23.3).





## Age standardized cancer mortality rates (all cancers excluding non-melanoma skin cancer) (WHO 2012)

Ireland, had the highest cancer mortality rates, with rates of 123.3 male and 96.4 female deaths in 2012, followed by Canada, with rates of 117.6 for males and 91.7 for females. It is interesting to note that men had higher cancer mortality in all countries except Pakistan.





For men, lung cancer accounted for the highest mortality rates in Canada, Ireland, and Pakistan with 32.5, 29.8, and 8.7 deaths per 100,000 respectively. The highest male cancer mortality rate in Mexico, was due to prostate cancer (11.3), and in Iran, to stomach cancer (17.3). For women, breast cancer had the highest mortality rate in four countries, with the highest rates seen in Pakistan (25.2) and Ireland (19.1); in Canada, the highest female mortality rate was due to lung cancer.

Table 1

	Males - highest mortality (per 100,000) WHO, 2012		Females - highest mortality (per 100,000) WHO, 2012		
Canada	32.5	Lung	25.1	Lung	
Ireland	29.8	Lung	19.1	Breast	
Mexico	11.3	Prostate	9.7	Breast	
Iran	17.3	Stomach	9.9	Breast	
Pakistan	8.7	Lung	25.2	Breast	

Despite tremendous advances in the screening and treating cancer, prevention remains our best bet for many cancers. Cancer risks can be substantially decreased by modifying our lifestyle — getting the required amount of physical activity, eating a balanced diet, maintaining a healthy weight, and avoiding known toxins like tobacco.

Our next blog post will investigate how diet, overweight, obesity, and cancer are linked in each of the five countries. We will explore issues like nutrition transitions in the developing countries and increased consumption of energy-dense diets in the Western countries and how this has led to an increase in population BMI.



## The future of cancer control: Is prevention the key?

## Written by Barbara Kaminsky on March 20, 2016

Outgoing CEO, Barbara Kaminsky, reflects on past successes and next steps for the Canadian Cancer

## Society.

As an army of dedicated volunteers fans out across the province for our annual Daffodil Month campaign, I am packing up my desk to retire from my position as CEO at the Canadian Cancer Society at the end of the month.

The cancer paradigm has evolved remarkably since I arrived 22 years ago. It used to be very medically focused, acute-care oriented. We used to think, "Let's find the cure." As time has gone on, we've understood there is no single cure, that cancer is not one single disease.

Today, more people understand that about half of all cancers can be prevented. We know smoking is the number one preventable cause of cancer. We've successfully advocated for smoking bans on school property, in cars with passengers under the age of 16, and in public places – including workplaces, bars and restaurants. We worked with the government to reduce skin cancer rates by banning the use of tanning beds for anyone under the age of 18. We established the Canadian Cancer Society Chair in Cancer Primary Prevention and the Centre of Excellence in Cancer Prevention through the University of British Columbia and continue to work with and fund the Centre today.

These are a few of the significant wins that will help more Canadians live longer, healthier lives. We can be proud that people now understand they have the power to reduce their cancer risk and governments know they can make healthy choices easier choices for more people. We think by the year 2040, we will be able to increase survival rates from about 63 percent to 80 percent. But even if we could have 100 percent survival, isn't it better to not get cancer in the first place?

As I retire, I am inevitably asked where I think the Society will head next. Of course, I believe that providing support programs for those facing cancer will always be an integral part of our mission but a key area needing even more emphasis is cancer prevention. We need to be persistent – in our public education around cancer risks, our advocacy to government for policies protecting Canadians, and our funding of prevention-focussed research. The way to honour those we have lost, those who are fighting and those who will face cancer, is to stop cancer before it ever starts. I trust you agree.

[E]ven if we could have 100 percent survival, isn't it better to not get cancer in the first place?



## **Global obesity – an emerging cancer threat**

## Written by Narsis Afghari on April 11, 2016

Obesity is a condition in which the individual has excess body fat that may have adverse health effects. It is one of the most important worldwide health issues today. The

prevalence of obesity is increasing in both developed and developing countries. In fact, a recent study predicts that <u>18% of men and over 21% of women globally will be obese by 2025</u>. People who are overweight or obese have a <u>higher risk of chronic diseases</u> including cancer, type 2 diabetes, cardiovascular disease, respiratory dysfunctions, psychosocial dysfunctions, and overall mortality. This post is the second in a series on cancer risk factors written by five graduate trainees at the School of Population and Public Health's (SPPH) Centre of Excellence in Cancer Prevention. In this post, led by MSc student Narsis Afghari, we will compare and contrast cancer incidence and mortality in our five home countries: Canada, Iran, Ireland, Mexico, and Pakistan.

## What is the relationship between overweight, obesity, and cancer?

One way to estimate whether someone is overweight or obese is to calculate their Body Mass Index (BMI). BMI is determined by dividing a person's weight (in kilograms) by their height (in meters squared). The World Health Organization <u>defines overweight and obesity</u> as follows:

- A BMI greater than or equal to 25 is overweight
- A BMI greater than or equal to 30 is obesity

Overweight and obesity not only increase an individual's risk of chronic disease, but also increase the risk of many cancers, including the following:

- Breast (after menopause)
- Endometrium
- Esophagus
- Gallbladder
- Liver
- Pancreas
- Colon and rectum
- Kidney
- Thyroid

Epidemiologic evidence shows that there is a strong relationship between obesity and incidence of some kinds of cancer, and scientists have begun to identify some mechanisms for how this may occur. For example, excess body fat increases estrogen levels in the body, which is related to the onset of breast and endometrial cancers. Obesity is also a major risk factor for medical conditions linked to cancer, such as acid reflux (esophageal cancer), gallstones (gallbladder cancer), and fatty liver disease (liver cancer). The relationships between obesity and other types of cancer like pancreas, colon and rectum, kidney, and thyroid are still unknown.

## Overweight and obesity in Canada, Iran, Ireland, Mexico, Pakistan

Prevalence and patterns of overweight and obesity vary between different countries. We decided to compare prevalence of overweight and obesity in five different countries: Canada, Iran, Ireland, Mexico and Pakistan.

We used age-standardized estimates on <u>overweight</u> and <u>obesity</u> from the World Health Organization for 2010 and 2014 (see charts 1 and 2). Overall, Mexico, Canada, Iran, and Ireland have a higher prevalence of overweight and obesity than Pakistan. The percentage of overweight and obese individuals increased between 2010 and 2014 in all countries for both females and males. Canada and Mexico had the highest total prevalence of overweight and obesity. However, obesity prevalence was highest for females in Mexico and Iran. Interestingly, although overweight and obesity prevalence is comparatively low in Pakistan, a recent global study identified Pakistan as having the ninth largest number of obese individuals.



### Chart 1: Prevalence (%) of overweight, BMI $\geq$ 25, World Health Organization



## Chart 2: Prevalence (%) of obesity, BMI ≥ 30, World Health Organization

## What factors contribute to national differences?

The most important causes of overweight and obesity include inactivity and unhealthy diet, which may be influenced by socioeconomic status, ethnicity, immigration, and environmental factors, among others. Medical factors, such as some diseases and certain medications, may also cause weight gain. Other considerations include genetic factors and age. In developing countries, rapid social and economic transition along with cultural changes have led to adaptation of a western lifestyle, including changes in dietary habits and physical activity. Urban lifestyles and ready availability of food with low nutritional value may have a bearing on overweight and obesity prevalence around the world and many governments and experts are calling for progressive policies to tackle the growing crisis.

Next in the series: Obesity prevention policies

Read other posts in the series

Read other posts related to obesity:

- Healthy body weight and cancer prevention
- What does it mean to eat a healthy diet (to prevent cancer)?



## Can nutrition policy help prevent the obesity epidemic?

## Written by Narsis Afghari on April 26, 2016

<u>Obesity</u>, or excess body fat, is a major risk factor for many chronic diseases, such as diabetes, cardiovascular diseases, and some cancers. While global rates of

overweight and obesity continue to rise, the rates of illness and mortality are expected to dramatically increase. Lifestyle behaviours, including poor nutrition, are primary contributing factors for overweight and obesity.

However, there is a real opportunity for governments and health authorities around the world to reduce death and disease by promoting healthy diets. The World Health Organization (WHO) has developed a <u>Global Action Plan for the Prevention and Control of NCDs 2013-2020</u>, which outlines policy recommendations that can be adopted by Member States. In particular, the plan suggests adherence to WHO's <u>Global Strategy on Diet</u>, <u>Physical Activity</u>, and <u>Health</u>.

This post is the third in a series on cancer risk factors written by five graduate trainees at the School of Population and Public Health's (SPPH) Centre of Excellence in Cancer Prevention. In this post, led by MSc student Narsis Afghari, we will compare obesity prevention policies related to nutrition in our five home countries: Canada, Iran, Ireland, Mexico, and Pakistan. In <u>our previous post</u>, we compared overweight and obesity prevalence among these five nations.

All five countries are Member States of the World Health Organization. All five nations participated in regional consultations on the WHO strategy on diet and physical activity. <u>Canada, Mexico</u>, and <u>Ireland</u> endorsed the draft.

## What policies are currently in place to prevent obesity?

Canadian obesity policy targets <u>childhood obesity</u>, but also includes a <u>patchwork of policies</u> that address healthy eating and physical activity: healthy food subsidies, active transportation, food labeling, regulating food and beverage marketing to children, and financial incentives for healthy behaviours. Nutrition labeling is one policy that helps consumers to make healthier and more informed food choices. Most prepackaged food items are required by law to include a nutrition facts table and an ingredient list. The <u>nutrition facts</u> <u>table</u> gives Canadians information about the number of calories in the product, <u>% Daily Value</u> of nutrients contained in the product, and information about 13 core nutrients. Along with the nutrition facts table, Canada has <u>food guidelines</u> that outline how much and what types of food should be consumed on a daily basis. Image 1: "Eating well with Canada's Food Guide" (excerpt), and a sample nutrition facts label, Canada

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Daily Val 42 %

70 %

14.%

1.9 0%

63

30 %

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The Canadian Task Force on Preventive Health Care has also released protocols that help family physicians monitor the weight of their overweight or obese adult patients and offer interventions to help patients change behaviours related to diet and exercise.

In Ireland, the Special Action Group on Obesity (SAGO) is responsible for supporting healthy eating in restaurants, schools, and at home. The SAGO is also responsible for detecting and treating obesity. The Minister for Health has tasked a sub-committee of SAGO to investigate and develop a range of options around pricing to reduce consumption of foods and drinks from the top-shelf of the food pyramid.

## Image 2: Food pyramid, Ireland

## Understanding the Food Pyramid



<u>Childhood obesity prevention</u> is also a primary focus in Ireland. A campaign titled "Let's Take on Childhood Obesity, One Step at a Time", has been developed through a partnership between Safe Food (a British and Irish implementation body), the Health Service Executive, and the Department of Health, to communicate practical solutions to childhood obesity for parents. The latest phase of the campaign, "<u>It's bedtime</u>," focuses on the link between too little sleep and obesity among children. It provides practical tips and advice on increasing the amount children sleep and methods of monitoring the levels of sleep children are getting. In Iran, the health minister and public health system focus on obesity prevention in children and adults. The Iranian Food and Nutrition Leadership Program launched in 2009, with the goal of building and improving graduate students' leadership skills in in nutrition. <u>Recent research</u> shows Iranians experience important barriers to healthy foods, and food preferences. Following urbanization and more access to media, unhealthy eating habits have increased in Iranian society, especially in children. One of the most important policies in Iran today is promoting healthy nutrition through the media.

Other obesity prevention policies in Iran include food labeling, legislation on the marketing of unhealthy foods and beverages to children, and unhealthy food taxes and price policy. The Iranian health ministry also started an <u>electronic public education program</u> and designed health <u>applications and games</u>. The Health department of Tehran and other cities municipalities use billboards with creative designs and health slogans to encourage people to lose weight, eat healthfully, and increase physical activity.

### Image 3: Healthy eating billboards, Iran



Mexico began its national obesity prevention programs in 2001. Key strategies of these programs have targeted the food and beverage industry as well as school and workplace nutrition. For example, the <u>PABI</u> <u>Code 2010</u> introduced a self-regulatory code of conduct on advertising to children in Mexico, signed by major multinationals in the food and beverage industry. In 2010, a law for nutrition assistance at the workplace was passed to improve employee's diets, and in 2013, constitutional changes prohibited unhealthy foods in schools. Mexico introduced a 10% sales tax on sugar-sweetened beverages in January 2014 to help prevent obesity and diabetes. A <u>recent study</u> shows that the beverage tax significantly reduced sales of targeted beverages, but more research is needed to demonstrate the implications for health.

Other national plans in Mexico have also been launched to promote nutrition and physical activity to reduce overweight, obesity, and non-communicable diseases, including <u>ANSA 2010</u>. Other health promotions efforts include <u>PREVENIMSS 2001</u> and PrevenISSSTE 2010. As well, a national council, CONACRO 2010, was established to help prevent and control non-communicable diseases and associated risk factors.

### Image 4: Eating well plate, Mexico



To our knowledge, Pakistan does not have any existing obesity policies. Pakistan's constitution does <u>not</u> <u>include health as a fundamental human right</u>. A <u>2013 article on obesity prevention in Pakistan</u> states, "Pakistan needs to develop a national strategy to control obesity in its population by implementing the recommendations of the WHO global strategy on diet, physical activity and health." There is just one related program, the <u>Pakistan Diabetes Prevention Program</u>, which began in 2011 and focuses on preventing diabetes with a related objective to reduce obesity in the general population. For more information on obesity policies around the world, see the <u>World Obesity Federation's directory of</u> <u>prevention policies and interventions ></u>

Next in the series: Physical activity Read other posts in the series >

Read other posts related to obesity:

- Global obesity: An emerging cancer threat
- Healthy body weight and cancer prevention
- What does it mean to eat a healthy diet (to prevent cancer)?



## Are we active enough? Global physical activity rates and cancer prevention.

Written by Ace Chan on May 18, 2016

Good lifestyle choices such as healthy eating, maintaining a recommended body weight, and being active can decrease your risk of cancer and other chronic diseases. In <u>previous blog posts</u>, we have seen how nutrition and obesity can affect your risk for cancer, and now we will explore physical activity's relationship with cancer.

This post is the fourth in a series on cancer risk factors written by five graduate trainees at the School of Population and Public Health's (SPPH) Centre of Excellence in Cancer Prevention. In this post, led by MSc student C. Chan, we will compare physical activity rates and policies in our five home countries: Canada, Iran, Ireland, Mexico, and Pakistan.

## How is physical activity linked to cancer?

Physical activity, as defined by the <u>World Health Organization</u> (WHO), is "any bodily movement produced by skeletal muscles that require energy expenditure." Over the course of the 20<sup>th</sup> and 21<sup>st</sup> centuries, we have seen reductions in physical activity levels due to changes in lifestyle, including activity at work and during leisure and changes in modes of transportation.

A new study shows that physical activity is linked to a <u>reduced risk of cancer</u>. Researchers looked at leisure time physical activity from the US and Europe by analyzing population data from over 1.4 million men and women. The study found that physical activity lowered cancer risk for 13 of the 26 cancers examined. Higher levels of activity were associated with a 7% lower risk of total cancer, and the effect was only slightly reduced for individuals with a higher <u>Body Mass Index</u>.

In addition, <u>sedentary behaviour</u> or "too much sitting" has been linked to <u>chronic diseases including cancer</u>. For example, sedentary behaviour can lead to obesity, which is a <u>strong risk factor for some types of cancer</u>, such as breast and colorectal cancers.

The physical activity guidelines for each country vary, but the <u>WHO has global recommendations</u> for various age groups:

Age Group	Recommended Amount of Physical Activity
5-17 years	60 minutes of moderate to vigorous-intensity physical activity daily
18-64 years	At least 150 minutes of moderate-intensity physical activity
	OR
	At least 75 minutes of vigorous-intensity physical activity during the week.
65+ years	At least 150 minutes of moderate-intensity physical activity
	OR
	at least 75 minutes of vigorous-intensity physical activity during the week.

Examples of moderate-intensity physical activity: riding a bike or walking briskly Examples of vigorous-intensity physical activity: running or swimming

The World Health Organization has mapped the age-standardized prevalence of <u>insufficient physical activity</u> in our five home countries.



The prevalence of physical inactivity is quite high for all five nations, and may continue to increase in the future.

## How is physical inactivity being addressed?

In **Canada**, the <u>Pan-Canadian Healthy Living Strategy</u> sees a future for Canadians where they are able to "experience the conditions that support the attainment of good health." Formed in 2005, the strategy aims to coordinate efforts across Canada that prevent chronic disease and promote health. An overarching goal of the strategy is to increase the proportion of Canadians who are physically active, eat healthily, and maintain a healthy body weight.

In **Mexico City**, there has been a lot of effort put towards making cycling around the city more accessible. This has been done by improving bike infrastructure and integrating cycling into the transit system as a means of commuting from one place to another. In attempts to create a cycling culture and to decrease accessibility issues, Mexico City has also included <u>shared bicycle system</u> as an alternative means of public transit.

Unfortunately, according to the WHO, **Pakistan** does not currently have any policy or plans in place to increase <u>physical activity</u> levels among its citizens.

In **Iran**, physical activity is promoted in various ways. One is with the help of billboards that contain slogans to encourage people to be more physically active. Iran also holds public running, cycling, and walking competitions, along with public physical activity classes every morning at public parks in efforts to engage the entire community in healthy lifestyles.

**Ireland** launched its first <u>National Physical Activity Plan</u> earlier this year with a goal of increasing the number of people exercising regularly by 50,000 every year for the next ten years. This campaign encourages people to get more active through social media campaigns; community walking groups; and new initiatives, Get Ireland Swimming, Get Ireland Cycling, and Get Ireland Running. There will also be a new push for employers to encourage healthy workplaces through walking and exercise activities, standing desks, and other measures.

Here are some easy ways to increase your daily physical activity from the <u>Canadian Society for Exercise</u> <u>Physiology</u>:

- Join a community running or walking group
- Go for a brisk walk around the block after dinner
- Take an evening dance class
- Bike or walk to work or school every day
- Rake the lawn, and then offer to do the same for a neighbour
- Be active with your family on the weekend

Next in the series: Tobacco control Read other posts in the series >

Read other posts related to physical activity: We can prevent cancer: World Cancer Day 2016 Healthy body weight and cancer prevention

Five tips to stay <u>healthy</u> this fall



## Global tobacco use and cancer prevention

## Written by Molly Sweeney Magee on June 3, 2016

As we have seen in earlier posts in this <u>blog series</u> written by five graduate trainees at the School of Population and Public Health's Centre of Excellence in Cancer Prevention, lifestyle choices play a powerful

role in determining one's risk of developing cancer. Research has demonstrated that diet, obesity, and lack of exercise are responsible for approximately one third of all cancers. However, these hazards are dwarfed by tobacco, a preventable risk factor we will discuss in this blog entry led by PhD student Molly Sweeney Magee.

Lung cancer is the type of cancer most strongly associated with smoking: nine out of every ten cases of lung cancer can be linked to smoking. Cancers of the lung are deadly; more people die from lung cancer than from any other type. However, in addition to the strong link between smoking and lung cancer, this risk factor has also been linked to a wide range of other cancers including bladder, cervix, liver, pancreas, and stomach.

## How is tobacco use related to cancer?

Evidence has shown that tobacco use causes cancer in numerous ways. Chemicals in tobacco smoke can damage cell DNA, disrupting their normal functioning. This can cause cells to replicate at a rapid rate and/or to mutate and lead to a cancerous tumour. In addition, the toxic chemicals in tobacco smoke reduce the body's ability to protect itself from cancer. These chemicals overwhelm neutralizing enzymes and damage cilia, the small hairs that clean the body's airways. The immune system is also compromised by these toxins, making it less able to fight cancerous cells.

## Tobacco use on a global scale

Smoking rates vary globally and are closely tied to economic development. In recent years, for example, smoking rates have dropped off in higher-income countries and increased in those with lower incomes. The latter is partly due to tobacco companies turning their attention to these newer markets. The combination of large populations of potential smokers coupled with lax policies on tobacco control make developing countries appealing to the tobacco industry. These shifting global patterns of smoking emphasize the importance of addressing this cancer risk factor on a global scale. In 2005, the World Health Organization (WHO)'s <u>Framework Convention on Tobacco Control</u> entered into force in response to the global tobacco epidemic. The framework has been <u>ratified by 168 countries</u>, including all five nations we examine in this blog post: Canada, Iran, Ireland, Mexico, and Pakistan. The framework establishes international measures that aim to improve the monitoring of tobacco use, enforce bans on tobacco advertisement, raise taxes on tobacco products, and warn people of the dangers of tobacco use.

### **Rates of tobacco use**



The above graph shows the <u>2013 WHO</u> age-standardized estimates for the prevalence of current cigarette smokers aged over 15 in <u>Canada</u>, <u>Iran</u>, <u>Ireland</u>, <u>Mexico</u>, and <u>Pakistan</u>. The considerable gender differences in this graph for some countries suggest a connection between cultural norms and smoking rates, with smoking being a much less acceptable behaviour for woman in Iran, Mexico, and Pakistan. Also, in <u>Iran</u> and <u>Pakistan</u>, forms of tobacco smoking other than cigarettes also contribute significantly to overall prevalence. These differences highlight the importance of tailoring tobacco control strategies to the individual country level.

## How is tobacco use being addressed?

In Ireland, the government launched a tobacco control policy in 2013 which aims to achieve a <u>tobacco-free Ireland</u> (defined as less than 5% of the population smoking) by 2025. The overall target of the initiative is to de-normalize smoking through a complex strategy involving 60 recommendations including changes in legislation, improved support for quitting smoking, and education campaigns. The most recent progress report, published in 2015, detailed changes in legislation such as a ban on smoking in cars where children are present, an extension of the national quit smoking support services, and an increase in the tax on tobacco products. However, no data have been published on smoking prevalence since the policy was launched, so its efficacy in reducing smoking rates can't yet be assessed.

Canada's tobacco control strategy also focuses on legislative change, with a specific focus on the packaging requirements of tobacco products. Canada's <u>Federal Tobacco Control Strategy 2012-17</u> aims to strictly regulate the marketing of tobacco products to limit the attraction of new smokers. This strategy also

focuses on the reduction of tobacco use on the global scale through a commitment to developing international guidelines and working against the trafficking of tobacco products. This strategy also targets reducing tobacco use in two groups with higher than average smoking rates: First Nations and Inuit communities, and young adults.

In Mexico, the <u>General Law on Tobacco Control</u> (2009) introduced considerable restrictions to the advertisement and promotion of tobacco products. It also prohibited smoking in many public spaces such as schools, restaurants, and federal buildings. Aside from legislative changes, the Mexican Ministry of Health has established a national plan for smoking cessation, as well as education and social media campaigns to promote knowledge of the detrimental impact of smoking on health. Future goals in tobacco control outlined by the Mexican government include the complete ban of tobacco advertising, increases in taxation on tobacco products to 75% of the retail price, and establishing a body to monitor tobacco consumption in the country.

In Iran, legislation has been used to increase the number of designated smoke-free buildings. However, a recent WHO report has indicated that there is <u>no coordinated effort to enforce compliance with these laws</u>. Legislation also controls the health warnings displayed on tobacco products; 50% of the display area must be covered by warnings (graphics must be included). Tobacco advertising, promotion, and sponsorship is also banned. Increasing the tax on tobacco products is an area targeted for improvement by the Iranian government. At present, approximately 25% of the retail price of these products is tax; the aim is to bring this in line with many countries by increasing it to 75%.

Finally, Pakistan also <u>restricted the use of tobacco in government buildings, public transport, and places of</u> <u>work in 2002</u>. Warning messages on cigarette packages have been targeted; by law they must comprise 85% of the front and back of all cigarette packs. In Pakistan, the advertisement of tobacco products is restricted on some, but not all, forms of media. Currently, taxation comprises just over half of the price of tobacco products but a technical working group established by the government has called for this taxation to be raised in the 2016-17 budget.

## Helping people to quit

As can be seen from the figure below, all of the countries discussed have a national quit line, nicotine replacement therapy (NRT), and some cessation services available cost free for residents, with the exception of Pakistan. The <u>evidence</u> is clear that a combination of medication (NRT or prescribed medications such as varenicline or bupropion) and behavioural support is most effective for helping people to quit smoking. The following map on <u>tobacco dependence treatment</u> (2014), from the WHO, suggests all five countries make this available to those wanting to quit. However, more information is needed on factors such as the barriers to use of these services and the effects of specific types of cessation services.



In Canada, help to quit smoking is available from the following sources:

- Health Canada On the Road to Quitting
- Government helpline for information on support in your area: 1-866-366-3667
- Quitnow.ca

Next in the series: Cancer control: cost effectiveness

Read other posts in the series

Read other posts related to tobacco control:

- Raising taxes on tobacco can help prevent cancer
- November is Lung Cancer Awareness Month



## Cost effectiveness of cancer prevention interventions

## Written by Angelica Leon on July 18, 2016

Considerable evidence has shown that cancer prevention interventions have many direct benefits, such as reducing the

incidence of disease and increasing the quality of life. However, there are also indirect economic benefits including increasing productivity and decreasing absenteeism rates at the worksite. <u>Throughout this blog series</u>, we have discussed different interventions implemented in our home countries – Canada, Iran, Ireland, Mexico, and Pakistan – that aim to tackle <u>the risk factors the World Health</u> <u>Organization (WHO) considers</u> to be responsible for 30% of cancer occurrences worldwide: tobacco use, diet, and physical activity.

However, how can we determine whether these interventions are a good use of resources? There are many indicators used in health care to assess the value of a public health intervention, and one frequently-used metric is *cost effectiveness*. This indicator involves calculating a ratio that measures the balance between cost and health benefits that are not monetized (typically, lives saved). When the benefits are higher than the costs, the intervention is deemed cost effective.

For the purposes of this post, we have compared the direct cost of cancer to the cost of prevention. It is important to mention that indirect costs of cancer are a very important component of the overall cost of cancer. Because data about these costs are not available, the direct cost data we discuss below are underestimates of the true fiscal impact of cancer.

Note: It is also important to mention that during the research for this post, country-specific data were difficult to find, especially for Iran and Pakistan.

## How much does cancer cost?

There are many factors involved in estimating the overall cost of cancer. There are direct costs associated with medical attention, such as hospitalization, medications, and physician visits. There are also indirect costs that are not associated with health care expenditures, such as loss of productivity, travel, and out of pocket expenses.

We have shown the direct cancer costs in three of our home countries in Table 1. Unfortunately, data was not available for Iran or Pakistan.

Table 1. Cancer expenditures					
Country	Direct cancer cost as % of health care expenditure	Direct cancer cost per capita USD			
Canada	<u>6.7%</u>	<u>157</u>			
Iran	NA	NA			
Ireland	<u>6.6%</u>	<u>139.7</u>			
Mexico	NA	<u>1,146</u>			
Pakistan	NA	NA			

It is also important to mention that all of these countries have widely differing health care systems with varying levels of public sector funding, private insurance, and use of pharmaceuticals, which leads to differences in cancer-related expenditures.

## How much does prevention cost?

As mentioned previously, the interventions we have discussed in this series of posts are based on changing individual behaviours, which are difficult to change. However, once a behaviour has been changed and maintained, the benefits can be seen in the long term.

Despite this, the <u>WHO estimates in its Global Action Plan</u> it will cost around 11 billion USD to implement interventions for prevention and control of non-communicable diseases targeting insufficient physical activity, tobacco use and obesity, among others. In contrast, <u>the WHO estimates</u> it will cost 7 trillion USD if no action is taken.

Let's review the costs and benefits of each of the risk factor interventions we have reviewed in our blog series:

### Tobacco use

Tobacco is responsible for 90% of lung cancer cases, and it has shown to be linked to many other cancer types as well. In 2005, as a response to the burden of tobacco use, Canada, Iran, Ireland, Mexico, and Pakistan signed the WHO Framework Convention on Tobacco Control. This framework establishes international measures for tobacco control, including specifications on packaging and marketing restrictions, taxation on tobacco products, and laws restricting smoking in public places.

According to the <u>WHO Report on the Global Tobacco Epidemic</u>, government expenditures on smoking prevention vary greatly among these five countries, and so do the estimated expenditures on smoking-related health costs.

Table 2. Smoking prevention interventions budget and vosts				
Country	Smoking prevention budget million USD	Smoking-related health care cost billion USD		
Canada	<u>33.57</u>	<u>0.7</u>		
Iran	<u>1.50</u>	<u>8.57</u>		
Ireland	<u>1.82</u>	0.52		
Mexico	<u>0.01</u>	4.13		
Pakistan	<u>0.03</u>	<u>1.3 - 1.85*</u>		

\*Estimated using Bangladesh experience

Table 2 shows that Canada and Ireland have the lowest health care expenditures related to smoking and the highest budget for smoking cessation programs. It is important to mention that the high-income countries and low-middle income countries are in very different stages of implementing tobacco control policies. Whereas high-income countries are now seeing the effects of the interventions as a reduction on incident cases, low-income countries are still implementing the interventions and the effects are yet to be determined.

#### Overweight and obesity

The prevalence of obesity has increased rapidly worldwide, and obesity has been linked to several types of cancer. There are many factors contributing to the increase in body weight, including those discussed in our blog series: <u>nutrition</u> and <u>physical activity</u>.

In terms of nutrition, the most important interventions we discussed were laws on food labeling and marketing restrictions for children, as well as special programs for children and adolescents. For physical activity, we discussed active commuting programs and media campaigns to promote physical activity. Government reports and research show that Canada and Mexico have the highest budget to tackle overweight and obesity as well as the higher health related costs:

Table 3. Overweight and obesity budget and costs				
Country	Obesity prevention budget million USD	Obesity-related health care cost billion USD		
Canada	<u>158</u>	<u>5.61</u>		
Iran	NA	<u>0.59</u>		
Ireland	14.56 ( <u>1</u> , <u>2</u> )	<u>1.86</u>		
Mexico	<u>192</u>	<u>2.31</u>		
Pakistan	NA	NA		

<u>According to an OECD report</u>, implementing an obesity prevention intervention can prevent approximately 25,000 deaths from chronic disease in Canada and approximately 47,000 in Mexico.

## What can be done?

Since cost effectiveness does not include non-health related benefits, such as return on investment (ROI), <u>opinions and evidence are divided about the cost-effectiveness of prevention programs</u>. Some studies support the assertion that prevention is a cost-effective strategy. However, other studies suggest that prevention only adds to health care costs in the long term, due to increase in longevity and lifetime demand on health care services.

However, let's not forget that the benefits of prevention go beyond people not getting sick. Prevention interventions can increase quality of life, save lives, tackle health inequalities, and increase the number of productive years. Moreover, prevention also presents a less expensive way to improve health when compared to most treatments.

The single best answer to the fight against cancer is to invest in prevention strategies. The challenge is how we are to allocate resources to get the most benefit on every dollar spent, which requires having a comprehensive plan that includes primary prevention as an important component of reducing the incidence of cancer. There is also a great opportunity in low-middle income countries to provide evidence and data that would help decision-makers make informed decisions on prevention.

## Read other posts in the series

Read other posts related to tobacco control, obesity, and health economics:

- <u>Raising taxes on tobacco can help prevent cancer</u>
- November is Lung Cancer Awareness Month
- Healthy body weight and cancer prevention
- What does it mean to eat a healthy diet (to prevent cancer)?
- <u>The economics of unhealthy behaviours</u>

## Cancer incidence, mortality, and socioeconomic status in British Columbia

## Written by Ciana Maher on August 12, 2016

Cancer does not pose an equal burden across the population. Research has shown that outcomes for cancer, like those for many other health conditions, vary according to socioeconomic status (SES). Researchers at the Centre of Excellence in Cancer Prevention explored the link between SES and cancer outcomes at a community level in British Columbia.

Watch: What is SES and how is it linked to cancer outcomes?

Data documenting all incident cases of breast, lung, prostate, and colon cancers diagnosed in adults aged 20+ in BC during the years 2000 to 2009, as well as five-year cancer survival rates in the province between 2000 and 2005, were obtained from the BC Cancer Registry as well as. SES was measured by both household income and economic hardship, and these data were obtained from BC Stats.

The analysis revealed overall cancer incidence was highest among individuals in the lowest income groups and those in groups of higher economic hardship. This same relationship was also clearly seen for lung cancer, with higher cancer rates in those with lower income. In contrast, the opposite was found for breast and prostate cancers, with higher incidence rates in the highest income group.

In terms of cancer mortality, living in areas with the highest income and least economic hardship was associated with the highest survival rates for breast, prostate, and overall cancers. No significant relationship was observed between income or economic hardship and lung cancer survival. For colon cancer, there was also no significant difference in survival between those with lower incomes and those with higher incomes. However, there was a significant difference in survival according to economic hardship—those experiencing the most economic hardship were least likely to survive five years following a colon cancer diagnosis.

Based on our analysis, we created maps showing how income, economic hardship, and cancer incidence and survival varied across the province.



Relative incidence for overall cancers by region for cases diagnosed from 2000 to 2009 in BC
Our findings are generally consistent with other international and Canadian literature for overall cancer incidence, in that higher SES is linked with better cancer outcomes. For incidence, consistent with other studies, we found higher lung cancer rates in lower SES individuals, and higher breast cancer rates with higher SES. These findings are likely linked with the prevalence of risk factors and screening for the specific cancer as related to SES. For example, tobacco use, strongly linked to lung cancer, is more prevalent in individuals of lower SES. Breast cancer risk factors, such as being older at the age of first birth and taking post-menopausal hormone replacement therapy, are more common among the higher SES groups. Prostate cancer incidence is strongly linked to prostate specific antigen (PSA) testing. Men who have a personal family physician may be more likely to obtain PSA testing that leads to a prostate cancer diagnosis, and having a family doctor is more prevalent with higher SES. This possible explanation requires more investigation. In contrast to previous studies, we did not find a consistent SES relationship for colon cancer incidence or survival rates.

Overall, our results show SES is a strong correlate of cancer-related outcomes. However, the direction of the relationship between SES and cancer varies according to cancer site. Further research is needed to better understand what factors might be contributing to different cancer outcomes and to develop strategies to mitigate them. The results of this study and the maps can assist policy- and decision-makers in developing and delivering cancer and chronic disease prevention and control programs and in allowing community members to have a better idea of cancer rates in their communities.

#### Acknowledgements:

- Dr. Carolyn Gotay was the Principal Investigator of this study. Brad Loewen and Hui Shen were also part of the research team.
- The Centre of Excellence in Cancer Prevention gratefully acknowledges Barbara Kaminsky, former CEO of the Canadian Cancer Society, BC and Yukon Division, for originating the idea for this study.



## Evaluating the evidence for hot drinks and cancer

## Written by Trevor Dummer on October 17, 2016

In 1991, the International Agency for Research on Cancer (IARC) classified coffee as a Group 2B carcinogen, meaning it was "possibly carcinogenic to humans." A recent reassessment of the evidence downgraded coffee to Group 3,

which means it is "not classifiable" on the basis of there being insufficient evidence to suggest a link between coffee and cancer. However, IARC noted that the temperature hot drinks are consumed at might be associated with cancer. As a result, hot drinks were classified as Group 2A, meaning they are "probably carcinogenic." But what do all these classifications really mean to us on a daily basis? To better understand, we need to consider how IARC classifies agents that might be associated with cancer.

IARC investigates agents where there is some concern or suspicion that they cause cancer. After evaluating the available evidence, agents are placed into one of <u>four groups</u>. The IARC classification reflects the strength of the evidence for a causal relationship between an agent and cancer, but does not describe the potency of the carcinogen or how many cancers it can cause.

**Group 1** is for agents where there is sufficient evidence they are "carcinogenic to humans." In this group are things for which there is strong evidence showing they cause cancer, such as cigarette smoking or ultraviolet (UV) radiation.

The next level in the IARC hierarchy is **Group 2**, which is further sub-divided into two categories—**Group 2A** for things that are "probably carcinogenic" and **Group 2B** for things that are "possibly carcinogenic." For agents placed into these groups, there is some evidence from human and animal studies suggesting a link to cancer, but this evidence is insufficient to enable us to be reasonably conclusive about the cancer link. We may need to be cautious about Group 2 agents, but we may also need further studies to adequately assess the cancer risk because the available evidence is lacking.

Next there are **Group 3** agents, which are "not classifiable as to its carcinogenicity to humans." Agents that IARC evaluates are placed into Group 3 because there is insufficient evidence for a causal association with cancer, but also not enough data to be truly certain there is no cancer link. Therefore, Group 3 agents are low down in the hierarchy of concern.

Finally, there are Group 4 agents, which are "probably not carcinogenic to humans."

Moving back to the recent re-evaluation of hot drinks and cancer risk, while IARC downgraded coffee to Group 3, it did find evidence suggesting that the temperature of hot drinks might be what is important for cancer risk. IARC considered a number of studies showing an increased risk of esophageal cancer associated with drinking very hot tea or mate (an infusion made from dried leaves of *Ilex paraguariensis*, which is predominantly drunk in South America). IARC now classifies very hot drinks of any kind as Group 2A ("probably carcinogenic"), where very hot is defined as greater than 65°C.

So, for those of us who enjoy tea, coffee, and other hot beverages, should we be concerned about what we are drinking? While available evidence suggests avoiding a specific type of hot beverage is not necessary, being mindful of the temperature is important. In North America, hot drinks are typically made at

temperatures below 65°C. However, it is still possible to get hotter beverages. In terms of cancer risk, a good rule of thumb is that if it is hot enough to burn your tongue, you should probably let it cool down a little before consuming it.

## **Cancer Prevention 101 evaluation**

#### Written by Melissa Ashman on November 16, 2016

University can be a time of great change, and a period when students form habits for a lifetime. Eating processed foods on the go, sitting for long periods of time while studying, and binge drinking alcohol are just some of the things that can take their toll on students' health in both the short- and long-term. With about half of cancers potentially being preventable through lifestyle choices, healthy habits adopted in university can help significantly in reducing risks for cancer. However, we know many teenagers and young adults are unaware of what they can do to prevent cancer, based on outreach work researchers at the Centre of Excellence in Cancer Prevention did with high school students in Metro Vancouver from 2014-2016.

In response, we developed <u>Cancer Prevention 101</u>—a free and interactive online resource that provides tailored advice, tips, and resources for the nearly 60,000 students across all of UBC's campuses. The goal of this evidence-based resource is to help students identify changes they can make to their lifestyles to reduce their risks for cancer. The modules cover six modifiable cancer risk factors: healthy eating, physical activity and sedentary behaviour, body weight, tobacco and marijuana, UV exposure, and alcohol consumption. Each module is about 5-7 minutes long and includes a very short quiz. The modules were reviewed by and incorporate extensive feedback from a dozen UBC students at the Okanagan and Vancouver campuses.

In a partnered promotional campaign that launched on October 11, 2016, students were encouraged to review the modules that were relevant to them, and make small, gradual lifestyle changes. The promotional campaign, which ran for three weeks, included <u>five short, but high energy YouTube videos</u>; images of UBC students engaging in healthy habits on the Vancouver and Okanagan campuses; Twitter and Facebook messages; blog posts; e-newsletter articles; web stories; and motion digital signage on the Vancouver campus.

It's too early to tell whether the resource has encouraged students to adopt healthy lifestyle habits for the long-term. However, the short-term evaluation results are encouraging. The online modules have had nearly 400 page views during the campaign, predominantly by users situated in areas near the Vancouver and Okanagan campuses. Furthermore, the time spent on each module page and the in-page link clicks (the percentage of people clicking links on each page) during the campaign indicate that viewers were reading and interacting with the material.

The promotional campaign was successful in large part due to the reach made possible by leveraging campus and community partners. The social media and newsletter messages garnered nearly 49,000 impressions during the campaign. (Impressions are the number of times a message is viewed.) There were 70+ Twitter and Facebook messages sent (with 81 likes and more than 700 clicks), two blog posts published, and three web news stories published. In addition, the topic of <u>cancer prevention was added</u> to the list of health and wellness topics included on the UBC Student Services website.

A snapshot of some of the evaluation results from both the resource and the campaign are highlighted in the infographic below.

## **Cancer Prevention 101 by the numbers**



The Centre of Excellence in Cancer Prevention is grateful for the invaluable feedback provided by the student reviewers at the Vancouver and Okanagan campuses. We also extend our gratitude and thanks to our partners who extensively promoted the resource during the campaign period, including the UBC School of Population & Public Health, UBC Student Services, UBC Recreation, University Relations at UBC's Okanagan campus, the Irving K Barber School of Arts and Sciences at UBC's Okanagan campus, the UBC Cancer Association, and the Canadian Cancer Society BC & Yukon.

Next steps for this project may include running a follow-up promotional campaign in 2017 and partnering with organizations to explore integrating the content into new programming to reach other audiences. If you are interested in discussing partnership opportunities, please <u>contact us</u>.

If you would like to learn more about how you can reduce your risk for cancer, please visit <u>https://cancerprevent.ca/resources/cancer-prevention-101</u>.



## Connecting public health to climate change

#### Written by Amina Moustaqim-Barrette on December 13, 2016

This November, I had the unique opportunity of joining 16 inspiring youth from across Canada at the United Nation's  $22^{nd}$ 

Framework Convention on Climate Change (COP 22) in Marrakech, Morocco. I spent two weeks listening to scientists and health professionals from around the world discuss the unique health challenges threatening populations due to greenhouse gas emissions and a warming climate. I also had the privilege to hear from affected communities, and to learn about their resilience and how they are adapting.

So what does climate change have to do with public health?

A changing climate affects human health directly, and interacts with a number of other environmental changes, such as population movements, forest clearance, land-use patterns, and loss of biodiversity, to aggravate vulnerabilities and health disparities within populations. From increased heat-related mortality and skin malignancies due to increased UV exposure, greater frequency of infectious disease epidemics following floods and storms, and substantial health effects following population displacement and food and water shortages, climate change has been associated with a vast range of health impacts. Its resulting effect on public health, social, and political systems will be pervasive and far-reaching, and countries must put every effort into halting this crisis in its tracks.

Importantly, while these health impacts will likely be felt indiscriminately in terms of their global nature, the impacts are, and will continue to be, disproportionately felt by the world's most marginalised and vulnerable populations.

On an international level, countries that have contributed least to the climate change problem will be the worst affected. At COP 22, low-lying island nations repeatedly appealed to the international community for the need to keep within a 1.5°C limit of warming. While this level of global warming will have relatively little effect on the general population in North America, this is the threshold at which many island nations are at risk of disappearing under water due to sea level rise. Many other countries who have contributed little in terms of emissions are in the developing world, and do not have the resources to properly adapt or mitigate rising sea levels.

While Canada may have more resources than developing countries to adapt to rising sea levels and other effects of climate change, there are communities who will remain vulnerable, particularly First Nations communities and those in rural and remote locations. Because climate change can affect rainfall patterns, river and stream levels, fisheries, animal migrations, and plant growth, stable and adequate access to food and water supplies can be difficult. This, in turn, can have devastating impacts on the health of people living in those communities.

My experience at COP 22 has revitalised my commitment to public health, and has given me a renewed sense of admiration and urgency for the work my colleagues undertake at the Centre of Excellence in Cancer Prevention. Public health research will be vital in determining how the Canadian healthcare system will need to adapt to meet changing demands because of climate change, and to address the new health challenges our world will face in the coming decades.

My master's work focuses on how the Canadian healthcare system can adapt to the drastic increase in refugees and displaced peoples expected in the coming decades due to climate change. Refugees have greater health needs than other immigrants due to their pre-migration experiences and the resettlement process, and yet few studies have addressed their unique health experiences. My research will focus on cervical cancer prevention in refugee women, and the barriers to information that exist for current refugee populations in accessing cervical cancer screening in British Columbia. The more we are able to hone in on a holistic approach to health and prevention efforts, the easier it will be to mitigate and adapt to a quickly changing world.



# Evaluating the impact of a nutrition program in BC elementary schools

## Written by Gaya Murthy on March 27, 2017

"But I don't like broccoli!"

If this sounds familiar, you're not alone. In many Canadian families, mealtimes can be confusing, stressful, and frustrating. From navigating picky eating to separating fact from fiction when it comes to deciphering "healthy" foods and quantities,

it's no wonder many Canadians are struggling to make day-to-day decisions about food and nutrition.

As a Registered Dietitian, I have witnessed these struggles first-hand. I've worked with families trying to alleviate mealtime mayhem, people who struggle with food due to a chronic health condition, and school-age children who are keen to learn food skills and nutrition in and out of the classroom. All too often I have seen how picky eating in children can become a significant barrier to adequate intake of vegetables and fruit in childhood and adulthood.

Nutrition education programs are one strategy that may improve children's eating behaviour. Government agencies and not-for-profit organizations have identified healthy eating in children as a public health priority and have developed nutrition programs focused on promoting intakes of nutrient-dense foods, such as fruits and vegetables, whole grains, and dairy. One such program is the Food Explorers program, which was developed by the British Columbia Dairy Association and is currently taught in approximately 100 kindergarten and grade 1 classrooms across BC. The program aims to impact food neophobia (fear of trying new things) and pickiness through teacher-led classroom activities of eight different foods (two from each food group). A new food is introduced with an activity, such as a song, poem, or story, and then the children taste it. Afterwards, they complete a journal on the activity, such as recording if they liked the food or drawing a picture of what they ate. They are also given a playing card with a picture of the food and an associated healthy recipe. Both the playing card and journal can then be taken home to share with their family.

As part of my master's work, under the supervision of Dr. Rachel Murphy, I am evaluating the impact of the Food Explorers nutrition program on the diet intake and willingness to try new and familiar foods of children, including completing an in-classroom assessment of neophobia and pickiness. Children will be shown a series of photographs of foods that are new and familiar and will be asked how they feel about tasting it. Parents will also be asked to rate their children's pickiness and neophobia and to complete an online diet record. At the end of the study, the measures will be repeated, and parents and teachers will be asked additional questions on their experience with the Food Explorers program. This research will provide insight on strategies targeting school children that improve intake of nutrient-rich foods and positively affect dietary behaviour. The outcomes from this study will also help educators to further refine and deliver nutrition education in classrooms across BC. Results are anticipated in spring 2018 and will be presented in a report to the BC Dairy Association.

The Food Explorers program is available to all teachers in BC, and <u>interested teachers can order the study</u> <u>material and register for free workshops through the BC Dairy Association</u>. The BC Dairy Association also offers mini-food grants for teachers, which provides funds to buy foods for the classroom.



## The role of diet in healthy aging and longevity

## Written by Carly Sable on August 2, 2017

What if the foods we eat could provide clues to living not just a long life, but a long and healthy life?

Lifespan in Canada dramatically <u>increased from 50 to close to 80</u> years during the 20<sup>th</sup> century, and Canadians aged 85 years and

older are the second fastest growing segment of our population. From 2011-2016, <u>Canadians aged 100+</u> were actually the fastest growing segment of the population. While reaching 85 years is a milestone, aging is often accompanied by chronic diseases and disability, which can decrease quality of life, place a burden on family members, and strain the healthcare system. Given the increasing size of our aging population, it is important to understand the factors that contribute to healthy aging.

As a dietetics student with a future career in healthcare, I am familiar with the role of a nutritious diet in promoting recovery from illness and contributing to overall wellbeing. A lesser known, but still very important, area to investigate is what role diet may have in healthy longevity. For example, populations in which people tend to have long lives and good health, such as the <u>Okinawan peoples in Japan</u> or the <u>Ikarian peoples of Greece</u>, have dietary patterns that are similar to the <u>Mediterranean diet</u>, which is primarily plant-based and high in vegetables, legumes, and healthy fats. However, we know very little about diets of healthy older Canadian populations.

To address this knowledge gap, I am completing a summer research internship under the supervision of <u>Dr.</u> <u>Rachel Murphy</u> and in collaboration with <u>Ms. Christina Gu</u>, an MSc student at the Centre. Together with Dr. Murphy and Ms. Gu, I am examining the usual dietary intake of over 100 "super-seniors" from Canada and over 100 usual-aging individuals between 50 and 67 years from British Columbia. Super-seniors are those people who have reached 85 years or older without a diagnosis of cancer, cardiovascular or pulmonary disease, dementia, or diabetes. This study is part of, and complements the work of, the larger <u>Healthy Aging</u> <u>Study</u>, which seeks to identify genetic factors that might contribute to healthy aging and resistance to agerelated diseases.

For the portion of the study on which I'm working, participants were asked to recall how often they consumed a variety of foods, drinks, and dietary supplements over the past year. Investigating the dietary intake of super-seniors and the usual-aging group may help to identify dietary patterns within a Canadian population that are associated with healthy aging. We initially hypothesized that the super-seniors would consume red and processed meats, refined grains, and processed foods less often, and that they would consume fish, fruits and vegetables, and whole grains, more often, similar to the <u>Mediterranean dietary pattern</u>.

Our preliminary findings confirm our hypothesis that super-seniors consume whole grains more frequently than usual-agers. However, we found no difference in the frequency of consumption of fruits and vegetables or red and processed meats. Preliminary results also indicate that the super-seniors in the study ate butter and/or regular margarine, as well as high-sugar foods (such as cake, pastries, and cookies) more frequently.

Overall, this study provides a more complete picture of what older Canadians are eating. Our results highlight dietary differences between super-seniors and usual-agers. The findings suggest that even super-

seniors may be able to improve their diets by eating high-sugar foods less often. It's never too late to adopt healthier habits for continued health! (See <u>this reference</u> and <u>this reference</u> for more information.)

It is important to keep in mind this study only looked at how often, but not how much of a food was consumed. <u>Older adults tend to eat less</u> than younger populations and so even though the frequency of consumption of some foods was higher in super-seniors, the total amount consumed may have been comparable or less than usual-agers. Future studies in this population may consider measuring amounts of foods consumed, as well as other factors that influence dietary intake, such as access to foods, availability of foods, and the motivations behind dietary choices. Other behaviours may also be important in ensuring a long and healthy life span, such as not smoking, not drinking excessive alcohol, and keeping physically fit. We have a lot more to learn from super-seniors!

To learn more about or to participate in the study, visit the <u>Healthy Aging Study website</u>.

If you're interested in learning more about what you can do to prevent cancer and other chronic diseases, check out the Canadian Cancer Society's interactive online tool <u>"It's My Life."</u>

This research is funded by the Canadian Cancer Society (grant #704735).

Related blog posts

Don't diet: Adopt the Mediterranean way of eating to feel great (and reduce your risk of cancer)



## A novel approach to preventing breast cancer in BC

## Written by Carolyn Gotay on November 7, 2017

As the most common invasive female cancer in Canada, breast cancer represents a significant burden for women and society. Approximately 1 in 8 Canadian women will develop breast cancer in her lifetime, and 1 in 31 women will die from the disease. In British Columbia in 2017, an estimated 3,500 women will be

diagnosed with breast cancer, and 610 will die from the disease. As many as 40% of breast cancers could be prevented by modifying lifestyle risk factors, yet this fact is not well-known in the population.

The Breast Cancer Prevention & Risk Assessment Clinic launched in BC in 2011 with the aim of providing women with objective risk assessments and evidence-based counseling about how to reduce their risks of breast cancer. Over the course of the next seven years, this Clinic reached more than 4,200 individuals. We used a structured curriculum, delivered by professional lifestyle counselors with expertise in physical activity and nutrition.

Over the course of the Clinic, there were a number of lessons learned. We came to understand that interest in breast cancer prevention and risk reduction wasn't limited to middle aged and older women (the group at highest immediate risk). It also extended to men (as both men and women attended a number of the community sessions) and young people. Also, modifying the sessions to tailor them to the needs of specific groups—including translation where needed—increased the personal relevance of the content for attendees. (For example, we translated our presentation into Chinese and Punjabi.) We provided evidencebased and culturally-appropriate content for specific populations of women, including women of South Asian, Filipino, Aboriginal, Chinese, and Ismaili descent, as well as breast cancer survivors and women with a history of chemical dependency.

We found we needed to change our approach in response to our resources and the needs of the target populations. Our initial intensive 2-on-1 approach at BC Women's Hospital offered a high-quality experience, but it was not an effective way to reach large numbers of women. It also wasn't sustainable within our operating budget. We had much greater success going to where the women were, rather than expecting them to come to us, and by providing sessions to larger groups. We also provided two kinds of sessions: one where women completed risk assessments beforehand that were discussed at the Clinic and another where the educational sessions did not include a risk assessment. The latter approach was most effective for larger groups. With the increasing use of internet-based approaches to education and training, online sessions were a natural next step. We had one national online session that reached offices across Canada and another that reached First Nations Health Authority personnel BC-wide.

While this was not a research project, we collected information for evaluative purposes. Data were collected before and after the sessions from the women who attended the risk assessment sessions. We found that before the sessions, attendees estimated their personal risk of breast cancer as 32.5% (standard deviation of 23.6). After the sessions, they rated their risk as 24.8% (SD=29.8), which was a statistically significant decrease (p < .0001, N=516). Although perceived risk was still higher than the population-based figure of 12.5%, women's risk estimates became more realistic. Regarding agreement with the statement "Breast cancer can be prevented," after the session, 45% of women (N=158) said that they were "very" or "extremely" confident in this statement, compared to only 22% (N=520) who said the same before the session.

Our programs for high school students in Metro Vancouver included most of the same information provided to adult women, except the style of presentation was tailored to a teenaged audience. For example, specific information pertaining to younger audiences, such as the importance of physical activity across the life-course for reducing breast cancer risk and the significance of reducing environmental tobacco smoke exposure for cancer in younger women, was added. More than 1,500 students in 12 secondary schools attended, with males comprising 35% of the audience. Attendees were asked, "What is one thing you will do differently after hearing this presentation?" Responses were open-ended and coded by category. Fifty-three percent said they would eat a healthier diet, and 36% said they would increase their level of physical activity.

Breast cancer continues to be the most common cancer diagnosis in Canadian women, and we have found the population of British Columbia is eager to learn more about how to reduce risks for this disease. With the end of funding in 2016, the Clinic moved to operating on a cost-recovery basis and continues to offer inperson and telehealth sessions to organizations, health care providers, and community groups. We are also open to collaborating with organizations that may want to take on this program as part of their health and wellness goals. Please <u>contact us today</u>, if you are interested in partnering in breast cancer prevention.

<u>Read the Clinic's final report on cIRcle ></u> <u>Learn more about the Clinic ></u> <u>Find evidence-based answers to 29 FAQs about breast cancer ></u> <u>Discover what you can do to prevent breast cancer ></u>

## Acknowledgements

The team conducting this project includes Carolyn Gotay, Principal Investigator, Marliese Dawson, Clinic Manager, Hui Shen, Biostatistician, Melissa Ashman, Education Director, and Bonnie McCoy and Tracey Mager, Lifestyle Counselors. We are grateful to the Canadian Breast Cancer Foundation and the Canadian Cancer Society for funding this innovative program and to the BC Women's Hospital for providing a location for the Clinic.



## **Celebrating Ten Years of Excellence in Cancer Prevention Research**

Written by Carolyn Gotay on January 13, 2018

Photo: Staff photo from 2017 Winter Tea Get-together

It's hard to believe it's been ten years since I came to the University of British Columbia (UBC) to become the inaugural holder of the Canadian Cancer Society Chair in Cancer Primary Prevention. This Chair was established in 2008 thanks to an endowment from the Canadian Cancer Society British Columbia Yukon (CCS BCY) and the province of British Columbia.

One of my first activities was working in collaboration with the CCS BCY to establish a cancer prevention centre that would raise the profile and impact of cancer prevention research. In particular, we sought to identify ways to increase connections among and between researchers, practitioners, policy makers, and the public, with the ultimate goal of reducing cancer incidence and risk factors through new research and dissemination of existing knowledge.

In the following years, our Centre has achieved many successes:

- I have received multiple peer-reviewed grants for cancer prevention intervention research.
- Three new faculty (Drs. Kristin Campbell, Trevor Dummer, and Rachel Murphy) were recruited with the assistance of Centre funds, and each has subsequently received competitive research funding.
- Our faculty have supervised more than 40 graduate students pursuing cancer prevention research careers.
- In 2015, the Centre was designated as a Centre of Excellence in Cancer Prevention by the UBC Faculty of Medicine.
- Our faculty have played national leadership roles in the Canadian Cancer Society Research Institute, the Canadian Partnership Against Cancer, the Canadian Cancer Trials Group, and Prostate Cancer Canada, among others.

Centre faculty, in collaboration with partners across the country, have made contributions to numerous areas of cancer prevention research, including interventions to reduce cancer risk through improving physical activity, sleep, nutrition, and protection from unhealthy environmental exposures. They have also added to understanding the biology behind lifestyle changes; elucidating interactions among lifestyle, environment, and genetics; and improving the science of self-reported outcomes.

Centre members (faculty, staff, and students) have worked in partnership with the CCS BCY and others on community-based activities, including sponsoring four community forums; providing breast cancer prevention clinics to more than 4,000 participants, including 1,500 high school students; and developing Cancer Prevention 101, a free, interactive online resource providing tailored advice, tips, and resources to nearly 60,000 students across all of UBC's campuses.

As a new decade beckons, the achievements of the past 10 years provide a strong foundation on which to build. With the numbers of cancer cases still rising in Canada, the need for more cancer prevention research and knowledge mobilization has never been more urgent. We look forward to continuing to contribute to cancer prevention research and programs in the years to come.

We invite you to read our full 10 year report, which will be published in January 2018 on cIRcle, UBC's digital repository for research and teaching materials.

#### Addendum

Link to report published January 31, 2018 <u>https://open.library.ubc.ca/cIRcle/collections/facultyresearchandpublications/52383/items/1.0363295</u>



## 10 things you can do to prevent cancer

## Written by Carolyn Gotay on April 26, 2018

Cancer is one of the leading threats to the health of Canadians. It is the top cause of death in the country, accounting for more than 80,000 deaths

(30% of all deaths) in 2017. In the same year, more than 200,000 Canadians were diagnosed with the disease and lung, colorectal, prostate or breast cancer accounted for about half of these cases.

While there is a growing number of older people in the population due to the "Baby Boomer generation" and the actual numbers of cancer cases are projected to rise over the coming decades (since cancer is more common in older people), there is some good news. Cancer rates – both for new cancers and cancer deaths – have been stable or declining for most types of cancer in the past 10 years. This is due in part to improved cancer therapies, more cancer screening programs, and prevention initiatives.

The good news doesn't end there. People who have been diagnosed with cancer are now typically living longer. In fact, almost two-thirds of Canadians diagnosed with cancer will survive at least five years after their diagnosis. (In 2017, <u>more than 800,000 Canadians were cancer survivors who were diagnosed during the previous decade</u>.)

There's even more reason to be optimistic about cancer: <u>many cancers – between 40% and 60% - could be</u> <u>prevented, based on applying what we know now</u>. Preventability estimates vary, with figures reflecting the prevalence of different risk factors in specific populations and research methodologies.

Based on current knowledge, only 5-10% of cancer overall is due to inherited genes. Other non-modifiable factors, such as age, sex, and health and reproductive history also account for a large proportion of cancers.

However, a much larger proportion of cancers can be attributed to specific modifiable risk factors. Here are 10 things you can do to reduce your risks of cancer:

1. If you don't smoke, don't start. If you do smoke, explore ways to quit. And if at first you don't succeed in quitting, keep on trying. It's the best thing you can do for your health and that of people around you.

In 2015, Cancer Research UK (CRUK) analyzed more than 160,000 cases of preventable cancers (about 40% of all cancer cases) in the United Kingdom, and tobacco accounted for the largest numbers of cancers by far. While the link between tobacco use and lung cancer is well-known, what may be less familiar is that smoking also increases the risk of many other cancers, including cancers of the head and neck, bladder, kidney, pancreas, cervix. Fortunately, smoking rates have decreased markedly in Canada from a prevalence above 50% in the 1960s to a national rate of 12% in 2016. Accordingly, lung cancer rates are beginning to decrease, demonstrating the preventability of this cancer.

2. Maintain a healthy body weight, eat a balanced diet high in fibre (especially found in fruits and vegetables and whole grains), and limit consumption of processed and red meats.

In the CRUK analysis, diet was assessed through low fibre and high intake of processed meat, both of which have been linked to colon cancer. In other studies, additional aspects of diet have also been linked with increased cancer rates, including low consumption of fruits, vegetables, and whole grains. This is significant because excess weight has been linked with many cancers, including cancers of the esophagus, pancreas, colon, breast, endometrium, and kidney. Because obesity and overweight have increased dramatically in much of the world, including Canada, during the past several decades, rates of these cancers are expected to rise in coming years.

- 3. Protect your skin from excess sun exposure and don't use tanning beds.
- 4. Protect yourself from exposure to dangerous chemicals and substances at worksites.
- 5. If you choose to drink alcohol, follow Canada's Low Risk Drinking Guidelines, which include recommendations of fewer than 10 drinks per week for women and fewer than 15 for men.
- 6. Get immunized for HPV and hepatitis.
- 7. Avoid unnecessary radiation exposure.
- 8. Be physically active as much as possible as often as possible.
- 9. Encourage women to breastfeed their infants, if they are able to do so.
- 10. Consider the risks and benefits of using hormone replacement therapy and oral contraception.

## **Emerging research in cancer prevention**

#### Written by Melissa Ashman on September 13, 2018

Three students are recent recipients of MSc degrees from the University of British Columbia's School of Population and Public Health. All three were supervised by Dr. Carolyn Gotay and they conducted thesis projects consistent with priorities of the Centre of Excellence in Cancer Prevention. All three research projects identified the need for more tailored cancer prevention interventions for defined population groups: sexual and gender minority communities, employees in the workplace, and newcomers to Canada.

#### Cervical cancer screening in gender and sexual minority communities

The BC Cancer Agency recommends women between 25-69 years of age be screened for cervical cancer every three years since screening and follow-up can prevent cervical cancer from developing. However, population-based data have shown that cervical cancer screening rates are decreasing. This is particularly troublesome in sexual and gender minority communities since these communities are at a higher risk for cervical cancer.

While BC has sexual and gender inclusive guidelines for cervical cancer screening, barriers for accessing these services still exist. UBC MSc graduate Ace Chan led a study to identify some of these barriers, recruiting 239 sexual and gender minority participants to complete an online survey. Some of the barriers the respondents listed included self-identifying as asexual, a history of sexual assault, and gender dysphoria (when a person is uncomfortable with their body parts due to their sex assigned at birth). The respondents suggested a need for more cultural sensitivity training for health care providers, so that members of sexual and gender minority communities feel more comfortable accessing cervical cancer screening services.

#### Leveraging the workplace for cancer prevention interventions

In recent years, the incidence of many non-communicable diseases (including cancer) and their associated risk factors have increased. The workplace represents a convenient setting to reach a large segment of the adult population with health promotion programs. Given the central role that employers play in providing these programs, recent UBC MSc graduate Angelica Leon <u>led a study</u> to better understand BC employers' motivations for implementing these programs and to identify factors affecting their implementation.

Ms. Leon found that employers are motivated to improve the health of their staff through workplace health promotion programs and that they recognize the benefits of these programs for the individuals and their businesses more broadly. While such programs have been offered in BC for a number of decades, this study showed that those who coordinate or offer workplace health promotion programs need improved access to information about how to incorporate best practices and current research into their programs.

## Cancer prevention in immigrants to Canada

People who emigrate to a new country are likely to undergo acculturation, a complicated cultural and psychosocial process of adapting behaviours and cultural practices to a new environment. Ms. Narsis Afghari, a UBC MSc graduate, recently <u>completed a study</u> that assessed the level of acculturation, level of awareness of cancer risk factors, and health behaviours of 205 Iranian immigrants aged 18 to 55 years in Greater Vancouver.

Her results showed that Iranian immigrants were highly aware of smoking as a cancer risk factor. However, the majority of the study participants were not aware of other cancer risk factors: older age, eating less

than five servings of fruit and vegetables a day, eating red or processed meat once a day or more, getting sunburnt more than once as a child, and being infected with HPV.

Nearly half of the study participants were overweight or obese, about a third had low physical activity, and more than half consumed few servings of fruits and vegetables per day. Furthermore, 13% were daily or occasional smokers, 75% reported drinking during the past 12 months with 32% of these participants reporting binge drinking, and 7% consumed red or processed meat daily. Findings indicated that acculturation was positively associated with more awareness of cancer risk factors and drinking alcohol. Ms. Afghari suggests that developing culturally-sensitive cancer prevention interventions targeting lifestyle factors in Iranian immigrants to Canada could be helpful.

Read the thesis for Ace Chan <u>https://open.library.ubc.ca/cIRcle/collections/ubctheses/24/items/1.0365744</u>

Read the thesis for Angelica Leon https://open.library.ubc.ca/cIRcle/collections/ubctheses/24/items/1.0365703

Read the thesis for Narsis Afghari https://open.library.ubc.ca/cIRcle/collections/ubctheses/24/items/1.0371616



## Emerging research in cancer prevention, healthy eating, and immigrant populations

This post is authored by Christina Gu, Amina Moustaqim-Barrette, and Gaya Murthy on October 2, 2018.

Three students are completing their MSc programs at the

University of British Columbia's School of Population and Public Health. Christina Gu will receive her degree in November 2018, while Gaya Murthy will defend her thesis that month. Both students are supervised by Dr. Rachel Murphy. Under the supervision of Dr. Trevor Dummer, Amina-Moustaqim-Barrette is nearing the completion of her degree. All three students conducted thesis projects consistent with priorities of the Centre of Excellence in Cancer Prevention and identified the need for more cancer prevention programs tailored to specific populations.

#### Examining the relationship between diet and environment in cancer survivors

Cancer survivors are encouraged to eat healthy and have a healthy body weight. Although they are often motivated to make healthy lifestyle changes after diagnosis, these changes may be helped or slowed by where they live, work, and play. Moreover, their diet and body weight may also change due to cancer itself and treatments. Therefore, it is crucial to understand the diet quality of cancer survivors, how diet relates to obesity, and how neighbourhood environment may impact diet.

UBC MSc graduate, Christina Gu, led a study to examine these three aspects with approximately 20,000 people (including 1,930 cancer survivors) in Atlantic Canada, where cancer rates are higher than the Canadian average.

Ms. Gu found that cancer survivors have a slightly better diet than people without cancer. However, both groups need to make improvements in their diets. Poverty, social relationships, and the number of people in neighbourhoods affect diet quality, indicating that neighbourhood environment does affect diet. The null association found in this study between diet and obesity suggested the complexity of dietary behaviours and obesity. Factors including demographics, socioeconomic status, lifestyle behaviours, health status, and environment all need to be considered to promote healthy eating and weight.

The study results suggest health promotion interventions should account for multiple factors at multiple levels, including individual- and area-levels. Dietary interventions are warranted for both cancer survivors and non-cancer controls. Achieving a healthy diet is particularly important for cancer survivors, who have a higher risk of other health conditions (i.e., comorbidities).

## Evaluating the impact of a school-based nutrition program on healthy eating

Dietary habits are established early in life, and early unwillingness to eat a variety of foods may lead to unhealthy dietary habits and negatively impact health. Exposure to "healthy" foods at an early age helps to promote child health and prevent chronic diseases in adult life. However, food neophobia (reluctance to try new foods) and pickiness (unwillingness to eat familiar foods) have been identified as significant barriers to intake of healthy foods in children.

Schools provide a valuable opportunity to provide food and nutrition education in children. The <u>Food</u> <u>Explorers</u> program, developed by the BC Dairy Association, is one such school-based food experience program, offered by teachers, to address food pickiness through classroom-based activities. UBC MSc student. Gaya Murthy led a study to examine the impact of the Food Explorers program on neophobia and pickiness among children, as well as the strengths and weaknesses of the program from the parents' and teachers' perspectives.

Ms. Murthy found the program reduced food pickiness in children. Teachers were motivated to offer the program as they recognized the benefits, including children's openness to trying new foods and learning new food-based vocabulary. Parents also indicated positive experiences with respect to children's willingness to try new foods at home.

This research has the potential to help encourage educators to deliver food/nutrition education programs that may enhance children's knowledge of healthy food in classrooms across BC and more widely. The findings of this study will be shared with decision makers, school boards, teachers, health educators, and community members who can benefit from a better understanding of the barriers to healthy eating in school children. This research may contribute to changes in the development of school nutrition policies and guidelines.

#### Increasing uptake of screening services for new immigrants to Canada

The Canadian immigrant population is expected to increase from 20% in 2006 to between 25% and 28% by 2031, which makes it increasingly important to monitor immigrant health and healthcare access in Canada, including preventative cancer screening care, in order to reduce avoidable inequities.

UBC MSc student Amina Moustaqim-Barrette recently conducted a study to provide a comprehensive overview of differences in breast, cervical, and colorectal cancer screening uptake in immigrants compared to the Canadian-born population. She also evaluated differences between immigrant subgroups and changes in immigrant screening uptake over time. Her study was based on 10 years of data from a nationally representative cross-sectional survey.

The research found a statistically significant difference in uptake between recent immigrants (emigrated during the past nine years) and the Canadian-born population for all three cancer screening outcomes of interest. Long-term immigrants (emigrated 10 or more years ago) showed similar screening rates to those of the Canadian-born population. Importantly, screening rates for both immigrant subgroups did not significantly improve between 2005 and 2015. The results of this study demonstrate a need for targeted interventions that address increasing uptake of screening services for new immigrants to Canada.



## Last blog post: What's next in cancer prevention?

## Written by Carolyn Gotay on October 15, 2018

This will be our last blog post. I'll explain more at the end. But first, I'd like to look in my crystal ball and speculate on advances in cancer prevention over the next decade.

## Vaccinations for cancer prevention

HPV (human papilloma virus) vaccinations have been shown to prevent cervical cancers and are likely to result in lower rates of cervical cancer, and other HPV-related cancers, over the next decade. In fact, Australia has announced a goal of eradicating cervical cancer by 2028. There is no

reason why Canada could not also set a similar goal, with increased emphasis on extending vaccinations to a broad swath of the population, such as all men and women up to age 45, which is a <u>recently-announced</u> <u>recommendation from the US Food and Drug Administration</u>.

## Improved assessment of environmental and behavioural exposures

While health behaviours, such as nutrition and physical activity, are strongly implicated in cancer etiology, these fields have often been unable to draw definitive conclusions. Some challenges stem from difficulties in measuring individual lifestyles through self-report; e.g., people often can't remember what they did, so the information gathered often isn't accurate. Advances in measurement hold the potential to address such problems. One approach is ecological momentary assessment, which queries individuals in real time about their behaviours, often using electronic approaches to data capture (e.g., smartwatches and apps). Another approach is the identification of biomarkers--objective measures, such as blood indicators, that reflect the impact of a given exposure (e.g., a chemical or food) on the body. Centre of Excellence faculty Drs. Dummer and Murphy are both contributing to this field.

## Personalized prevention

In cancer treatment, "personalized" or "precision" medicine has been a major emphasis in recent years-that is, developing treatments tailored to the unique characteristics of patients and their tumours, such as genetic profiles. The same approach will likely increasingly be applied to prevention as research clarifies which approaches are likely to be most effective in individuals and groups, based on biology (e.g., genetics), values (e.g., culture) and personal preferences (e.g., in person vs. online interventions).

## A shift in the societal landscape

Prevention has often been a low priority for policymakers, given the short timeframe in which they operate. Thus, prevention research and programs continue to receive only limited support, and research support for cancer prevention still lags well behind that for other areas. Given the spiraling costs of health care across the globe, the time seems to be right for prevention to emerge as an area for investment. Dame Sally Davies, Chief Medical Officer for England, proposes that <u>society needs to adopt new priorities to achieve</u> <u>prevention of chronic diseases, improvements in public health, and reduction of health disparities</u>. It can be argued that the current emphasis on including citizen voices in research priority-setting is a step in this direction and will only intensify in the coming decade.

#### Next steps at UBC.

We have been very grateful for the Canadian Cancer Society, BC and Yukon's support of UBC Centre of Excellence in Cancer Prevention since 2008. The Canadian Cancer Society is currently evolving its priorities and programs and will no longer be supporting this Centre. As a result, we will be discontinuing this blog, the website, and social media activities as of October 31, 2018. I have transitioned into a position as Professor Emeritus, and recruitment for my previous position as CCS Chair in Cancer Primary Prevention will be initiated in the coming year.

We have appreciated the support of you, our readers, for many years. There are many exciting opportunities emerging for cancer prevention research, and I urge you to continue pressing on to make cancer prevention a reality.