

# COMPENDIUM

Answers to Participant Questions

Cancer Prevention in Canada: What can we do? Webinar

February 4, 2021



**CancerCare Manitoba Webinar  
“Cancer prevention in Canada: What can we do?”  
February 4, 2021, 12-1pm CST**

**Responses to Questions Asked by Webinar Participants**

**1. Which modifiable risk factors most influence the risk of prostate cancer?**

The main modifiable risk factors for prostate cancer are:

- Excess weight which we estimated accounted for 4% of prostate cancer cases in Canada in 2015 (ComPARE Study, 2019)
- Physical activity may reduce the risk of prostate cancer (there is a weak decreased risk for higher levels of physical activity)
- Most of the risk factors for prostate cancer are non-modifiable (e.g. age, race, family history)

**2. What type of exercise matters for reduction of cancer risk (duration, intensity, etc.)?**

- All forms of physical activity (note difference from structured exercise) are associated with reducing cancer risk
- We now have evidence of reduced risk for 13 different cancer sites with higher levels of physical activity
- With respect to the frequency, duration and intensity of activity, the recommended levels for cancer prevention are 150-300 minutes per week of moderate intensity activity (WHO 2020 guidelines)

**3. What specific cancers are related to obesity?**

- About 4% of all cancer cases in Canada were associated with excess weight in 2015
- Currently more than 1 out of every 2 Canadian adults has excess weight (ie. BMI>25 kg/m<sup>2</sup>)
- In 2015, 7,200 new cancer cases were due to excess weight; that number could nearly triple to 21,200 in 2042 if current trends persist
- If Canadian had a healthy body weight, about 110,600 cases of cancer could be prevented by 2042
- The two cancers most strongly associated with excess weight are esophageal adenocarcinoma and endometrial cancer
- Excess weight is associated with an increased risk of:
  - Colorectal cancer
  - Postmenopausal breast cancer
  - Kidney cancer
  - Endometrial cancer
  - Prostate cancer
  - Stomach cancer
  - Ovarian cancer
  - Esophageal cancer
  - Liver cancer
  - Head and neck cancers (oral, pharyngeal, laryngeal)
  - Pancreatic

#### 4. What nutrition strategies are related to cancer prevention?

- Cancer risk can be reduced with a diet that is high in fruit and vegetable intake, whole grains, dairy products and low in processed and red meats, salted and preserved foods (e.g. salted fish)
- WCRF does on-going reviews on this topic and there is evidence that the following cancers are associated with **low fruit/veg** intake:
  - Lung cancer
  - Breast (low fruit)
  - Colorectal
  - Bladder
  - HNC (low veg)
  - Pancreatic
  - Stomach (low fruit)
  - Ovarian (low veg)
  - Esophageal
  - Liver (low veg)
- **Wholegrains** decrease the risk of colorectal cancers and food containing dietary fibre decrease risk of colorectal cancers
- Food contaminated by **aflatoxins** increase the risk of liver cancer
- Foods preserved by **salting** increase the risk of stomach cancer
- **Red and processed meats** increase the risk of colorectal cancers and Cantonese-style salted fish increase risk of nasopharyngeal cancers
  - Recommendation is to limit consumption of red and processed meats and eat no more than moderate amounts of red meat such as beef, pork and lamb. Eat little, if any processed meat.
- **Dairy products** decrease risk of colorectal cancers
- **Alcohol intake** is related to several cancers and has a synergistic effect with tobacco. These cancers are associated with alcohol intake with any level of intake:
  - Breast (pre and post-menopausal)
  - Head and neck cancers (oral, pharyngeal, laryngeal)
  - Esophageal
- Two or more alcoholic drinks/day increases risk of:
  - Colorectal cancer
- Three or more alcoholic drinks/day increases risk of:
  - Pancreatic
  - Stomach
  - Liver

## 5. How important is teaching cancer prevention in schools?

- Teaching cancer prevention at all ages is important, beginning in schools since education is recognized as one of the key social determinants of health in the long-term. Many agencies worldwide have recognized the key role that schools play in health education and cancer prevention. Many risk factors for cancer are common to those for other non-communicable diseases hence, teaching NCD prevention should be a core component of the curricula in schools.
- Establishing lifelong lifestyle habits that focus on reducing exposures to known carcinogens (eg. tobacco, alcohol, etc) and increasing habits known to reduce cancer risk (e.g. staying physically active, maintaining a healthy weight, eating a diet high in fruits and vegetables, low in processed meats, etc) at an early age will have lifelong benefits of reduced cancer risk.

## 6. How can communities (citizens and organizations) be mobilized for cancer prevention through initiatives beyond just awareness?

- Cancer prevention programs that target individuals, workplaces, schools, communities have already been established in many jurisdictions. We could mention the approaches used by the Alberta Cancer Prevention Legacy Fund at AHS as an example of how interventions that are designed and target specific groups/places have been developed and successfully implemented.
- Programs, policies and personal practices are needed to reduce cancer at a population level

## 7. Why is exposure to toxic chemicals not included in the list?

- In the ComPARE study, we included exposure to environmental factors including air pollution and radon. These two risk factors each account for about 0.9% of all cancers.
- A parallel study led by Dr Paul Demers from Cancer Care Ontario was focused entirely on occupational exposures that are related to cancer. That study was also published as part of our special issue in the journal *Preventive Medicine* in May 2019 and the data from that study is included on our website: <https://cancer.prevent.ca>. That study found that about 4% of all incident cancers were due to occupational exposures
- The major occupational exposures were:
  - Solar radiation
  - Asbestos
  - Diesel engine exhaust
  - Crystalline silica
  - Night shift work
- Most occupational cancers affect the skin, lung, breast, bladder and mesothelium

## 8. What is the strategy for getting this information to Manitobans?

A multi-pronged approach that targets multiple sectors of society, that includes decision-makers and policy makers as well as programs for schools, workplaces, acute and primary care places, etc will be necessary.

CancerCare Manitoba's [Road Map to Cancer Control 2020](#) identifies cancer prevention as a priority and identifies actions we will take towards reducing the number of Manitobans diagnosed with cancer. As a first step, we will be embarking on a campaign to increase awareness among Manitobans about the impact healthy lifestyle choices can have on risk for cancer. Stay tuned for more to come on cancer prevention efforts from CancerCare Manitoba.

## 9. What does the best and most current literature say about the effects of coffee consumption on cancer risk?

An umbrella review published in February 2020 in BMC-Cancer by Zhao and colleagues evaluated associations between coffee intake and 26 different cancer sites including 364,749 cancer cases. Their review revealed that coffee intake was inversely associated with five cancer sites:<sup>1</sup>

- Endometrial cancer
- Liver cancer
- Melanoma
- Oral cancer
- Pharyngeal cancer.

For endometrial and liver cancers, there were robust evidence for a dose-dependent association. In addition, higher coffee intake was associated with an increased risk of:

- Childhood acute lymphocytic leukemia
- Bladder cancer.

When we used a meta-analysis of prospective cohort studies, only associations for liver and endometrial cancers were further confirmed.

This authors also mentioned that the International Agency for Research on Cancer (IARC) and the World Cancer Research Fund (WCRF) have also evaluated the evidence and have reported an inverse association with coffee drinking for liver and endometrial cancers. These agencies also evaluated that there is some suggestive evidence for an increased risk of cancers of the mouth, pharynx and larynx, and of skin cancer. However, for other cancer sites, the evidence remains too limited to draw a firm conclusion.

## 10. What are the new screening reporting guidelines?

CancerCare Manitoba's Screening Guidelines can be found online here:

<https://www.cancercare.mb.ca/screening/hcp>

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<sup>1</sup> Zhao, LG., Li, ZY., Feng, GS. et al. Coffee drinking and cancer risk: an umbrella review of meta-analyses of observational studies. BMC Cancer 20, 101 (2020). <https://doi.org/10.1186/s12885-020-6561-9>

**11. Example and slides of different densities; what do they mean practically?**

Please refer to our BreastCheck patient discussion guide for more information:

<https://www.cancercare.mb.ca/export/sites/default/screening/.galleries/files/breastcheck/b-hcp-results-discussion-guide.pdf>

**12. Any Metis specific resources?**

We are not aware of any Metis-specific resources. Some of our colleagues in Alberta are studying how to increase participation in cancer screening among Metis-First Nations populations currently. I am not aware of any resources that have been developed.

As CancerCare Manitoba develops cancer prevention resources, we are working with our First Nation, Metis and Inuit partners to ensure information, activities and materials are culturally relevant for Indigenous people living in Manitoba.

**13. Is there any screening for people felt to be at high risk for pancreatic cancer?**

At present, there are no population-based screening methods for pancreatic cancer that have been developed. For people who might be at increased risk of pancreatic cancer because of a family history of the disease (or a family history of certain other cancers), there may be the possibility of genetic testing to look for gene changes that cause these inherited conditions and increase pancreatic cancer risk. These tests look for these inherited conditions, not for pancreatic cancer itself. Since genetic testing is not simple or straightforward, it would be important for anyone considering genetic testing to discuss this testing with a genetic counsellor, health practitioner (e.g. nurse, doctor) who are qualified to explain these tests before being tested. It is important to understand what the tests can and cannot reveal and what they mean before being tested.

**14. Does this apply to rare cancers like sarcomas?**

No screening tests and exams are recommended for people who have a family history of sarcoma or other sarcoma risk factors. The best approach to early detection is to contact a health care provider about any unexplained lumps or growths or other symptoms that may be caused by a soft tissue sarcoma.

**15. Is anyone investigating the potential carcinogenic role of high insulin levels in increasing cancer risk? Insulin is the common denominator linking cancer, diabetes, and obesity. Insulin is a powerful growth factor in cancer and is not only associated with obesity (healthy weight individuals can also have high insulin levels).**

The role of insulin in cancer etiology has been hypothesized and studied over the past three decades given the biologic plausibility of an association between diabetes, obesity and cancer. Indeed, Dr Friedenreich and her colleagues have conducted randomized controlled exercise intervention trials that have included insulin, glucose and insulin resistance as biomarkers to understand how physical activity influences these biomarkers that are hypothesized to be part of the pathway between obesity, dietary intake, physical activity and cancer risk. These trials, and others, have provided evidence that being physically active can reduce levels of insulin and insulin resistance which could lower cancer risk. Observational epidemiologic studies have also been conducted that have demonstrated an association between high insulin levels as well as diabetes and increased risk for certain cancer sites (e.g. breast, endometrial, colorectal, pancreatic cancers).

**16. What about taxing sugary beverages? Should that be pursued?**

Please refer to the webinar for our response to this question.

**17. How did the study differentiate between physical inactivity and sedentary lifestyle? How were these defined?**

Please refer to the webinar for our response to this question.

**18. We are talking about tobacco smoking, how about marijuana smoking, does it have the same risk?**

It is possible that smoking cannabis can increase cancer risk since cannabis smoke contains many of the same carcinogens as tobacco smoke. In addition, people who smoke cannabis tend to inhale more smoke and hold it in their lungs for longer than people who smoke tobacco cigarettes. The research on cannabis and cancer risk remains limited and it is unclear what the exact nature of this association is (e.g. dose-response, strength, etc.). Furthermore, smokers of cannabis are often also tobacco smokers which makes it more difficult to isolate the effect of cannabis from tobacco on cancer risk. Finally, there is no standard amount of THC (the main active ingredient in cannabis) which makes comparisons across studies more challenging. At present, given the uncertainty around the cancer risk associated with cannabis smoking, the Canadian Cancer Society is concerned that long-term cannabis smoking may increase cancer risk and does not recommend its use.

**19. Losing weight it easy?**

It is well-recognized that losing weight is very challenging and requires a multi-pronged approach that needs to be individualized to each person.

**20. Interesting to see low fruits being more of a risk as compared to low vegetables. Can you explain why the difference between the two?**

Please refer to the webinar for our response to this question.

**21. Clearly there is preventative value in increasing activity in 25 year olds. What is the benefit at age 65?**

Our research has definitely shown a benefit to increasing physical activity levels at all ages and that is “never too late to start”. Indeed, one of the early studies conducted by Friedenreich and colleagues in Alberta found a stronger risk reduction associated with higher levels of physical activity in postmenopausal women and also in women who initiated and increased their physical activity levels after menopause. Hence, physical activity can be recommended at all ages. In addition, there are numerous other health benefits, including reducing the risk of several non-communicable diseases, improving mental health and brain health (ie., cognition) that warrant maintaining an active lifestyle throughout life.

**22. Is there any evidence that having the HPV vaccine in older women would reduce rates of cancer?**

The Canadian Cancer Society recommends that all persons through age 26 years be vaccinated whereas for adults aged 27-45 years, the public health benefit of HPV vaccination in this age range is minimal. In addition, they state that shared clinical decision-making is recommended since some persons who are not adequately vaccinated might benefit.

**23. Have you looked at pesticides such as glyphosate and its association with cancer risk?**

We did not consider pesticides in the ComPARE study, however, the association between glyphosate and cancer risk has been thoroughly reviewed by the International Agency for Research on Cancer. They published an IARC Monograph on the carcinogenicity of five organophosphate insecticides and herbicides: diazinon, glyphosate, malathion, parathion and tetrachlorvinphos (Vol. 112) in 2015. The herbicide glyphosate and the insecticides malathion and diazinon were classified as probably carcinogenic to humans (Group 2A). The insecticides tetrachlorvinphos and parathion were classified as possibly carcinogenic to humans (Group 2B).

**24. Rather than just focusing on increasing price of high sugar foods/taxes, I wonder if we could somehow decrease costs on fruits and vegetables.**

Yes, making healthy food choices more affordable for the entire population would be an excellent strategy for encouraging a higher intake of fruits and vegetables. Unfortunately, this type of price change is likely quite challenging to implement given the number of producers in different jurisdictions around the world involved in the global food production, distribution and sales.

**25. Comment: Weight is not a modifiable behaviour. Excess weight is associated with more weight stigma, reduced access to medical care, more stress, etc. Eating better, more fruits and vegetables, less alcohol, being active are modifiable behaviours. The communication/message is important. How is this being addressed?**

We agree that excess weight is more appropriately considered a health condition than a modifiable behaviour. The behaviours associated with excess weight that are modifiable are dietary intake, physical activity and sedentary behaviour. We considered all of these factors, as well as excess weight in the ComPARE study given their strong, independent associations with cancer risk. The communication and messaging around these topics are taken into careful consideration by all agencies who are developing cancer prevention programs and policies. These factors are all very important in cancer prevention and thoughtful approaches are needed that address how these behaviours can be modified to reduce cancer risk at a population level.

**26. Are there links between artificial sweeteners and cancer? Is it better to drink beverages with natural sugars IF drinking pop for example?**

There is no evidence that artificial sweeteners increase the risk of cancer. There was some early evidence in animals and humans that suggested an association between aspartame and cancer risk, however, this research has since been shown to be incorrect and the current conclusion by numerous cancer agencies worldwide is that there is no association. The best advice is to limit intake of sugar-sweetened beverages, such as pop, because of the sugar content that can increase overall caloric intake without providing much nutritional value.



**27. Regarding obesity: are there any studies regarding decreases in obesity and how much/over how long it decreases the certain (or overall) cancer risks, and if it's done before a certain age versus later in life. i.e, if people are obese their whole lives and then improve that in their 50, 60's etc, how much benefit, versus if they improve it in their 20,30's etc?**

There is limited research on how losing weight may lower the risk of developing cancer. Some evidence exists that weight loss might reduce the risk of post-menopausal breast cancer and endometrial cancer. Some of the biologic mechanisms that occur with weight loss might reduce cancer risk. These include reduced levels of metabolic hormones such as insulin and sex hormones such as estrogens and androgens and inflammatory biomarkers. These hormones have been associated with an increased risk of breast and endometrial cancers. Losing weight at any time point in life will have benefits for reducing cancer risk and should be encouraged.

**28. How are newcomers impacted....do we have any data?**

There are limited data on how newcomers to Canada are at risk for cancer and more research needs to focus on the specific exposures that new Canadians have and how their risk for cancer is different from those of people born in Canada. We do know that acculturation occurs as immigrants move to a new country and that they adopt the lifestyle habits of their new homeland. Early studies found, for example, that Japanese who moved to North America experienced increased risks of several cancers as they adopted the dietary patterns and lifestyle habits of North Americans which included diets higher in fats, red and processed meats, lower in fruits and vegetables, etc. There are, however, a multitude of factors that influence cancer risk that need to be considered when examining and comparing the risks across different population sub-groups.

**29. I'm stage 4 nasopharyngeal cancer patient diagnosed April 2019. Cancer is inactive but some brain damaged due to too much radiation and swollen cerebrum. Taking steroids right now. What kinds of physical activities do you suggest?**

Doing any kind of physical activity that you can do would be desirable. Walking is a preferred activity for many people as it requires no special equipment or training and is achievable by most people. You might also benefit from yoga or some other mind-body exercise such as Tai Chi. The general recommendation is to try for three days per week of aerobic activity (which would be walking) of about 30 minutes.

**30. Is it safe to say that vegetarians have a lower risk of getting cancer?**

As discussed during the webinar, we know that diets rich in fruit, vegetables and whole grains, are associated with lower cancer risk, while eating red and processed meat increases colorectal cancer risk and may increase risk of other cancers. Vegetarians (those that exclude all meat and fish) and vegans (those that further exclude dairy products and eggs) usually consume a higher amount of plant foods compared with people who eat meat. We would expect that because vegetarians and vegans do not eat meat and have a higher intake of plant foods, people who follow these diets have a lower cancer risk. However, these diets are also generally relatively low in some important nutrients and we don't know if that may increase risk of some cancers. While some studies have observed that those who follow a vegetarian diet have a lower risk of developing cancer as a whole, no individual study has been able to show with enough reliability that vegetarians have a lower risk of developing specific cancers (e.g. colorectal cancer, breast cancer or prostate cancer). A study is being led at present at the University of Oxford that is combining data from all international

population studies that have a significant number of vegetarians (at least 25% or at least 5000 vegetarians in the cohort) to assess if people who follow a vegetarian diet have a lower risk of developing cancer. This pooled analysis will provide a more accurate assessment of how a vegetarian or vegan diet may lower risk of developing specific cancers.

**31. People are scared to go and get themselves screened.....is there a counselling helpline that will help people with this?**

The CancerCare Manitoba Screening Program Health Educators can help remove some of the fear that people may experience about screening for cancer. Health educators may help individuals prepare for screening by providing education and information about the test and what to expect at a screening appointment. The Health Educators can be reached at [screening@cancercare.mb.ca](mailto:screening@cancercare.mb.ca). Primary care providers can also be very supportive to educate and prepare patients to participate in screening.

**32. Thank you for your research. Are you aware of programs and interventions (aside from those already in place) that have or are being implemented based upon this research? Are there any new programs and most especially ways to implement public education which we really need to work on?**

The ComPARE study was conducted in partnership with the Canadian Cancer Society and they have already been implementing several programs and advocating for policy changes based on our research. The study results were widely disseminated internationally and are likely be used in many jurisdictions worldwide to develop public education programs. There is certainly a great need to do so and the aim of the ComPARE study was to provide the necessary rationale and evidence to target these types of cancer prevention programs and policies.

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