CANADIAN PARTNERSHIP AGAINST CANCER | PARTENARIAT CANADIEN CONTRE LE CANCER

COVID-19 IN RELATION TO SMOKING AND CANCER PATIENTS

SUMMARY OF EVIDENCE

KEY TAKEAWAYS

COVID-19 in relation to smoking

- **Smokers are more vulnerable to certain infections due to weakened structural and immunologic defense mechanisms in the respiratory tract**
- **Smokers are likely to be at a higher risk of adverse outcomes associated with COVID-19, which affects the respiratory tract**
- **Smoking may increase the possibility of transmitting the virus from hand to mouth**
- **Efforts that promote and support smoking cessation should continue to be a priority at this time**

COVID-19 in relation to cancer patients

- **Cancer patients may be at a higher risk of adverse outcomes associated with COVID-19**
- **Cancer patients receiving certain cancer treatments may be at a higher risk of adverse outcomes associated with COVID-19**
- **Efforts that promote and support smoking cessation for cancer patients should be an increased priority at this time**

Smoking cessation is a first-line treatment for cancer patients

- **Commercial tobacco use is the leading preventable cause of cancer in Canada**.[i]
- **Patients who smoke while receiving cancer treatment often have poorer health and treatment outcomes** (they require higher doses of cancer drugs, have prolonged durations of treatment, incur complications from surgeries and are readmitted to hospitals more frequently compared to non-smoking cancer patients).[ii]
- **Smoking cessation efforts play a critical role in improving patient health outcomes** by increasing the effectiveness of cancer treatment and reducing cancer mortality rates by up to 30-40%.[iii]

COVID-19 in relation to smoking

- **Based on the available evidence, smoking is likely associated with an increased risk of adverse outcomes associated with COVID-19**. A recent systematic review on COVID-19 and smoking found that smokers are more likely to have severe symptoms of COVID-19, be admitted to an ICU, need mechanical ventilation or die compared to non-smokers.[iv]
- Some research suggests that cigarette smoke exposure can increase the number of receptors in the lungs that COVID-19 binds to (ACE2 receptors), which may partially explain why smokers seem to be more likely to develop severe COVID-19 infections.[v] In addition, smoking can

negatively impact structural and immunologic defense mechanisms in the respiratory tract, leaving smokers more vulnerable to infections.[vi]

- New articles from CNN, CTV News, Live Science, and the New York Times, to name a few, have contributed to **widespread media coverage of the connection between smoking and poorer COVID-19 outcomes and the recommendation for smokers to consider quitting as soon as possible.**
- **The World Health Organization suggests that the act of smoking may accelerate the transmission of COVID-19** due to increased contact between hand and mouth as well as the potential sharing of cigarettes, mouth pieces or other smoking products.
- Prominent national and international health organizations have provided statements and resources on COVID-19 in relation to smoking on their websites. This is summarized in Appendix A.

COVID-19 in relation to cancer patients

- Based on the available evidence on the association between cancer and COVID-19, **it is likely that patients with cancer are at an increased risk of developing negative health outcomes from COVID-19**.[vii]
- **Many cancer patients are immunocompromised** due to the cancer itself or cancer treatments such as chemotherapy and radiation therapy, making them more susceptible to infection.[viii] For this reason, some studies have suggested that cancer patients may be at a higher risk for more serious outcomes of COVID-19.[ix,x]
- **The World Health Organization lists cancer as an underlying medical condition that may increase an individual's risk of adverse COVID-19 outcomes**.[xi] Prominent national and international health organizations have provided statements and resources on COVID-19 in relation to cancer on their websites. This is summarized in Appendix A

COVID-19 in relation to cancer patients who smoke

- **There is a no clear evidence on the association between cancer patients who smoke and COVID-19** susceptibility or disease progression. However, given that both smokers and cancer patients are likely to be at a higher risk for adverse outcomes of COVID-19, **cancer patients who smoke are probably particularly vulnerable**.
- **Smoking cessation efforts for cancer patients should be an increased priority at this time**. The Cochrane Library has prepared a resource on effective, evidence-based options for quitting smoking during the COVID-19 pandemic.

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APPENDIX A

A summary table of statements and resources on COVID-19 in relation to smoking and cancer from prominent national and international health organizations

	Health Canada	Canadian Cancer Society	The Ontario Tobacco Research Unit	QuitNow BC	National Cancer Institute	Centres for Disease Control and Prevention	World Health Organization	National Health Service	Cancer Research UK	Cancer Council Australia
Smoking may accelerate the transmission of COVID-19			X	X			X			
Smokers may be at increased risk of serious illness(es) associated with COVID-19		X	X	X	X	X	X			
Provides smoking cessation information and/or resources		X								
Cancer patients are at a higher risk for more serious outcomes of COVID-19	X	X					X*	X**		
Cancer patients receiving certain cancer treatments are at a higher risk for more serious outcomes of COVID-19	X				X	X		X		
Certain cancers or cancer treatments can weaken the immune system, making cancer patients more vulnerable to infections such as COVID-19		X							X	X

*information accessed from: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200311-sitrep-51-covid-19.pdf?sfvrsn=1ba62e57_10

**blood and bone marrow cancers