

CARDIOVASCULAR DISEASE, DIABETES &

SMOKING



Key Messages for Health Care Providers and Policy Makers

Overview

Data from the National Population Health Survey and the Canadian Community Health Survey suggests that the prevalence of heart disease and the risk factors of hypertension, diabetes and obesity increased from 1994 to 2005 in all age groups in Canada. ¹ Cigarette consumption declined during this period, but smoking rates remained high (about 3.2 million men and 2.7 million women still were smoking in Canada).¹

The Link between Smoking and Cardiovascular Disease and Diabetes

- Smoking is an important risk factor for hypertension and diabetes, and is a risk factor for death, chiefly from cardiovascular disease.²⁻⁴
- Smoking influences atherosclerosis at every stage, right from the stage of endothelial dysfunction to the occurrence of an acute clinical event.⁵ Smoking is associated with elevated levels of cardiovascular risk factors including fibrinogen, C-reactive protein and homocysteine. Key mechanisms by which smoking contributes to atherosclerosis may include Inflammation and hyperhomocysteinemia. People who currently smoke have higher levels of these risk factors than those who formerly smoked. Risk factor levels increased with the number of cigarettes smoked.⁶
- Smoking increases concentrations of plasma triglycerides, decreases high density-lipoprotein-cholesterol concentrations, and impairs glucose tolerance.⁷⁻⁹

Impact

- There were an estimated 37,209 tobacco-attributed deaths in Canada in 2002, amounting to 16.6% of all deaths in that year. Of these, 10,853 deaths were attributable to cardiovascular disease. Deaths due to tobacco use were associated with a loss of 515,607 potential years of life, and illnesses attributed to tobacco use were responsible for 2,210,155 days of acute care in hospital.¹⁰ If current rates of tobacco use continue, approximately 1 million Canadians will die over the next 20 years as a direct result of smoking and second-hand smoke.¹¹
- Compared to white respondents, members of visible minorities in Canada had a lower prevalence of diabetes (4.5% v. 4.0%), hypertension (14.7% v. 10.8%), and smoking (20.4% v. 9.7%).¹² High rates of smoking among Aboriginal populations are associated with an increasing prevalence of cardiovascular disease.¹³
- The Nurses' Health Study showed that ¹⁴ women with type 2 diabetes, who no longer smoked had a relative risk for coronary heart disease of 1.21 compared with those who never smoked; the relative risk was 1.66 for women currently smoking 1-14 cigarettes/day, and the relative risk was 2.68 for women currently smoking ≥ 15 cigarettes/day. The risk for diabetic women who stopped smoking for more than 10 years was similar to that for women with diabetes who never smoked.
- A meta-analysis ¹⁵ of 32 studies and showed that the overall risk of stroke associated with smoking is 1.5.

Actions

- Health care providers can positively impact their patients' ability to quit smoking, yet few integrate cessation counselling into routine practice. Smoking cessation training for health care providers can result in significant and lasting improvement in counselling, and an increase in assisting patients to quit.¹⁶
- Simple smoking cessation advice from a physician alone can result in 3% of patients quitting without relapse within 1 year.¹⁷

Actions (cont'd)

Participation in a smoking cessation programme can produce differences (compared to usual care) of up to 35%, with an average of almost 20% more patients quitting.¹⁸

- The CAN-ADAPTT Guideline Development Group recommends 19 that health care providers should:
 - Ask patients about tobacco use status on a regular basis.
 - Clearly advise patients/clients to quit.
 - Assess the willingness of patients or clients to begin treatment to quit smoking.
 - Offer assistance to every tobacco user who expresses the willingness to begin treatment to quit.
 - Conduct regular follow-up to assess response, provide support and modify treatment as necessary.
 - Refer patients or clients to relevant resources as part of the treatment, where appropriate.

Helpful Resources

- Health Canada. *Smoking and Heart Disease*. <<http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/body-corps/disease-maladie/heart-coeur-eng.php>>
- Public Health Agency of Canada. *Heart Disease and Stroke in Canada 1997: Risk Factors for Cardiovascular Disease*. <<http://www.phac-aspc.gc.ca/publicat/hdsc97/s06-eng.php>>

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