

LETTERS

The cardiovascular risk of snowfall and snow shovelling in Canada

I read with interest the manuscript by Auger and colleagues that was published in *CMAJ*.¹

The major findings of their work using a large database from Quebec (administrative data) were that the quantity and duration of snowfall were associated with subsequent risk of hospital admission or death due to myocardial infarction, driven primarily by an effect in men.

About five years ago, our group published a retrospective analysis of 500 acute coronary syndromes during two consecutive winters.² The mean age of

our study population in Kingston, Ontario was 65.7 ± 13.4 years (range 31–94 yr) and 66.7% of the events occurred in males. Thirty-five (7%) events were documented to have occurred following snow-shovelling. Between patients with snow-shovelling-related and non-related events there were no significant differences in the prevalence of diabetes, hypertension, hypercholesterolemia or sleep apnea. Logistic regression did not show any significant group differences in age and known coronary artery disease; however, those who experienced a snow-shovelling-related event were 3.6 times more likely to have a family history of premature cardiovascular disease ($p =$

0.001) and were 4.8 times more likely to be male ($p = 0.01$) (Table 1);² the latter in concordance with the study by Auger and colleagues.¹ Those taking more than four cardiovascular medications seemed to be protected, maybe because it had been previously recommended that they avoid this physical activity.

This manuscript about the effects of snow-shovelling and its association with cardiovascular health is welcomed, and I hope it helps in advancing clear recommendations about who should avoid this type of physical activity.

Adrian Baranchuk MD

Professor of Medicine, Cardiac Electrophysiology and Pacing, Kingston General Hospital, Queen's University, Kingston, Ont.
Editor-in-Chief, *Journal of Electrocardiology*

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Table 1: Multivariable logistic regression model for having a snow-shovelling-related acute coronary syndrome event²

Risk factor	Significance	Odds ratio	95% CI
Male sex	0.007	5.4	1.6–18.2
Family history of premature CAD (< 60 yr of age)	< 0.001	4.3	2.0–8.9
History of stable angina	0.10	2.4	0.8–6.8
Use of ≥ 4 or more cardiovascular medications	0.07	0.4	0.2–1.1

Note: CAD = coronary artery disease, CI = confidence interval.
Model $\chi^2 = 34.4$, $p < 0.001$, Cox and Snell $R^2 = 0.069$.
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References

1. Auger N, Potter BJ, Smargiassi A, et al. Association between quantity and duration of snowfall and risk of myocardial infarction. *CMAJ* 2017;189:E235–42.
2. Nichols RB, McIntyre WF, Chan S, et al. Snow-shovelling and the risk of acute coronary syndromes. *Clin Res Cardiol* 2012;101:11–5.

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