

Introduction

- Cardiovascular disease (CVD) is the second leading cause of death in Canada, is associated with disability and low quality of life.¹
- Previous research has focused on cardiovascular disease with relatively little attention devoted to cardiovascular health.
- In 2010, the American Heart Association developed a new definition of ideal cardiovascular health based on health behaviours and factors known to contribute to the risk of CVD.²
- Purpose:** to develop the Cardiovascular Health in Ambulatory Care Research Team (CANHEART) health index to measure the cardiovascular health of the Canadian population and to examine its relationship with the risk of acute myocardial infarction (AMI) and stroke hospitalization as well as circulatory death.

Methods

- The CANHEART Health Index was defined as the sum of six cardiovascular health factors and behaviors:
 - non-smoker (or former smoker who quit >1 year ago)
 - active or moderate leisure physical activity (≥ 1.5 METS)
 - fruit and vegetable consumption ≥ 5 times per day
 - body mass index < 25 kg/m²
 - non-diabetic
 - non-hypertensive
 - Range 0 to 6, ideal=6
- The prevalence of each CANHEART health index score among Canadian adults age 20 and older was calculated by age, sex, and year.
- All prevalence estimates were weighted using survey weights to be representative of the Canadian population.
- Cox proportional hazards regression models were used to estimate the risk of AMI/Stroke hospitalization and circulatory death associated with the CANHEART health index among a sample of Ontario CCHS respondents (2000-2008) linked to ICES de-identified databases.
- Individuals with AMI/Stroke hospitalization prior to their survey date or who self-reported heart disease or stroke were excluded.
- Cox proportional hazards models were adjusted for age and sex.

Data Sources

- Canadian Community Health Survey (CCHS)³: a population-based computer-assisted telephone survey conducted by Statistics Canada on the disease status and health determinants of Canadians age 12 and older.
- Canadian Institute for Health Information Discharge Abstract Database (CIHI-DAD): a dataset containing diagnostic information on all hospitalizations in Canada (excluding Quebec)
- Ontario Registrar General Death Database (ORGD): a dataset containing information on all registered deaths in Ontario including cause of death.

Key Findings

- Fewer than 1 in 10 Canadians are in ideal cardiovascular health (Figure 1)
- Almost 40% of Canadians are in poor cardiovascular health
- Being in ideal cardiovascular health is associated with:
 - An 84% reduction in the risk of AMI/Stroke hospitalization
 - An 89% reduction in the risk of circulatory death (Table 1)

Results

Figure 1: Prevalence of CANHEART Health Index Categories among Canadian Men and Women age 20 and older (CCHS 2009-2010)

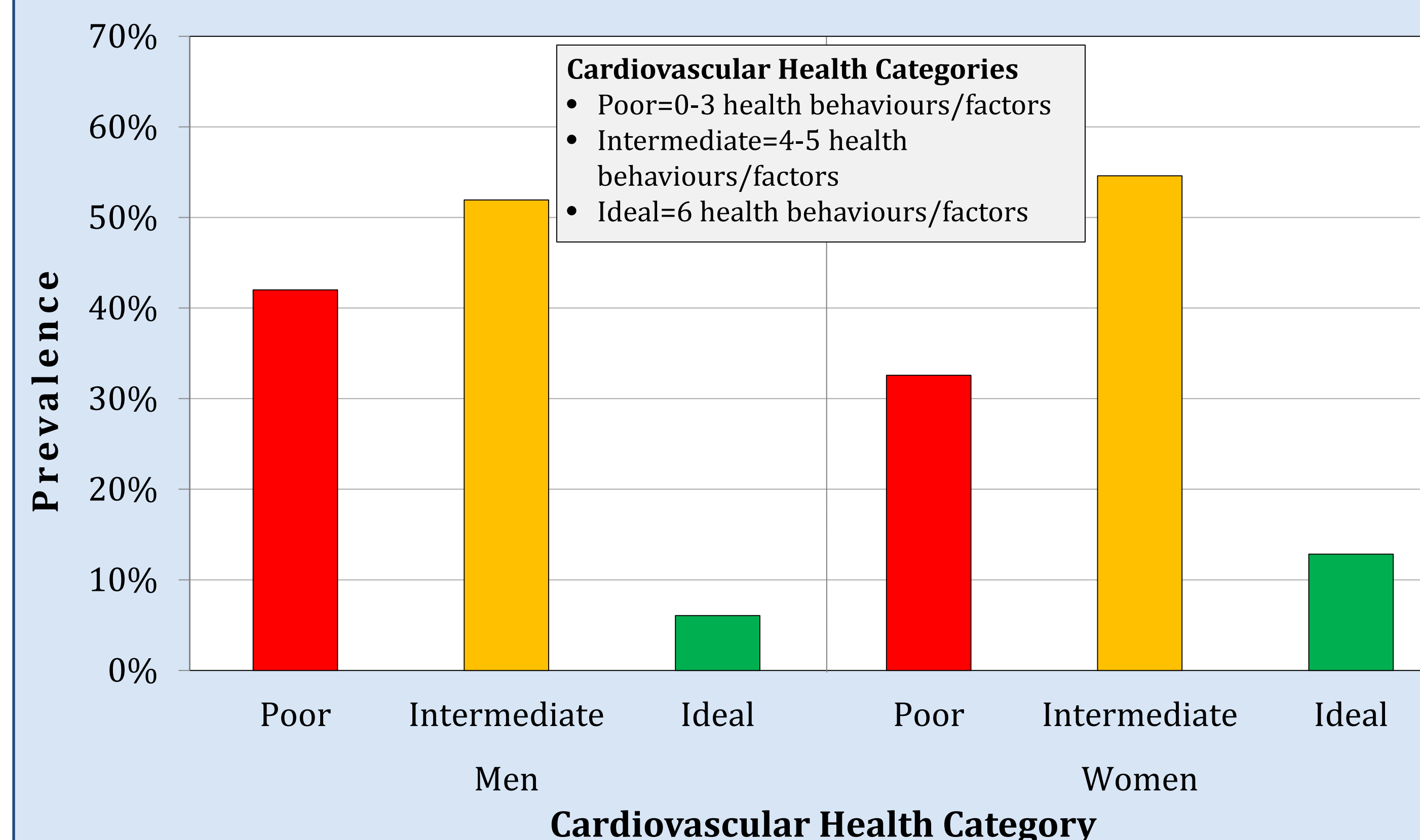
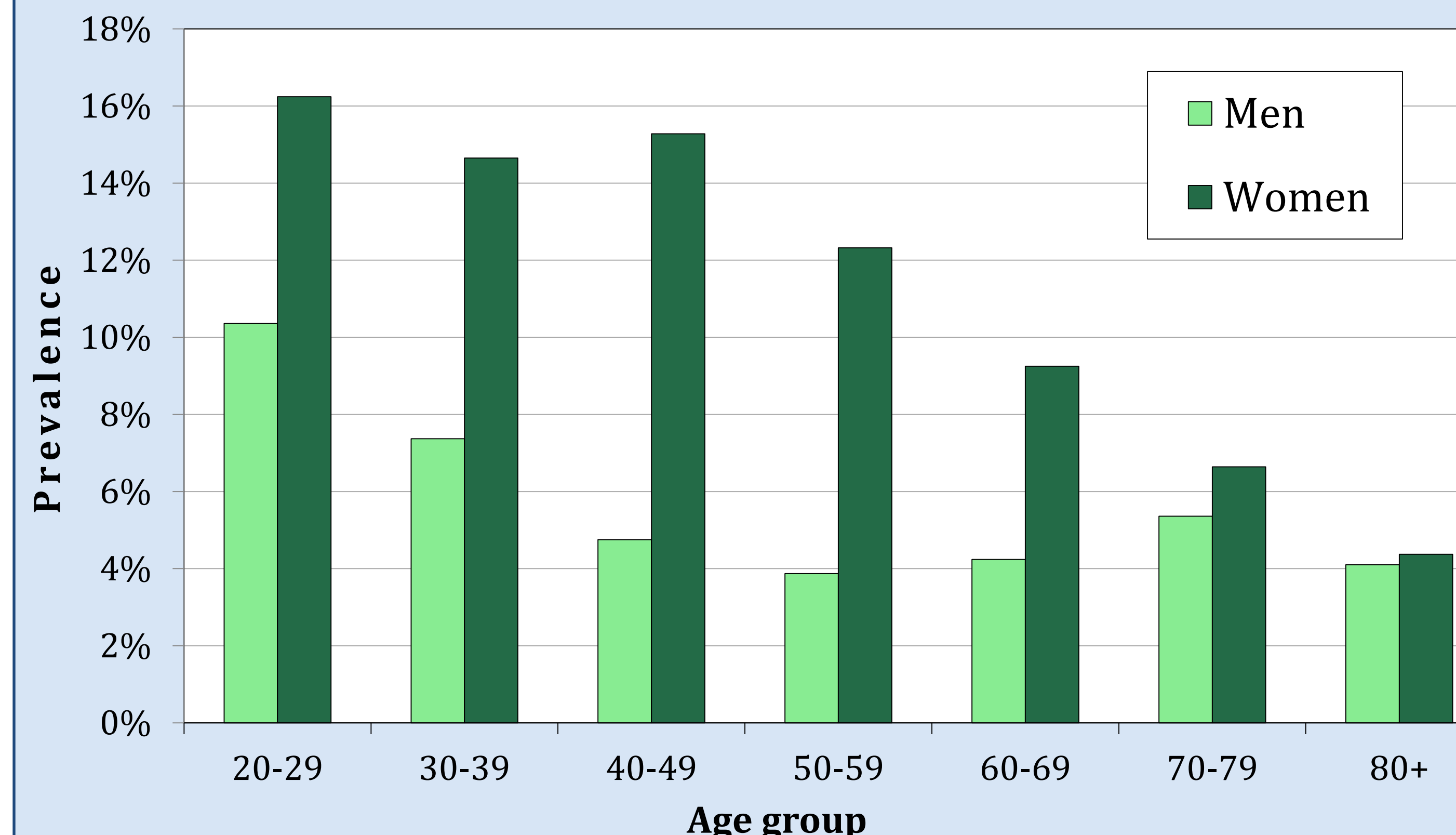


Figure 2: Prevalence of Ideal Cardiovascular Health by Age Group among Canadian Men and Women age 20 and older (CCHS 2009-2010)



References

- Public Health Agency of Canada. *Tracking Heart Disease and Stroke in Canada*. Ottawa (ON): The Agency; 2009.
- Lloyd-Jones DM, Hong Y, Labarthe D et al. Defining and Setting National Goals for Cardiovascular Health Promotion and Disease Reduction: The American Heart Association's Strategic Impact Goal Through 2020 and Beyond. *Circulation* 2010; 121:586-613.
- Canadian Community Health Survey Annual Component. Ottawa (ON): Statistics Canada; 2012. Available: <http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=3226&lang=en&db=imdb&adm=8&dis=2> (accessed 2013 Oct 1).

Results

Figure 3. Prevalence of Self-reported Heart Disease by CANHEART Health Index Score among Canadian Adults age 20 and older (CCHS 2009-2010)

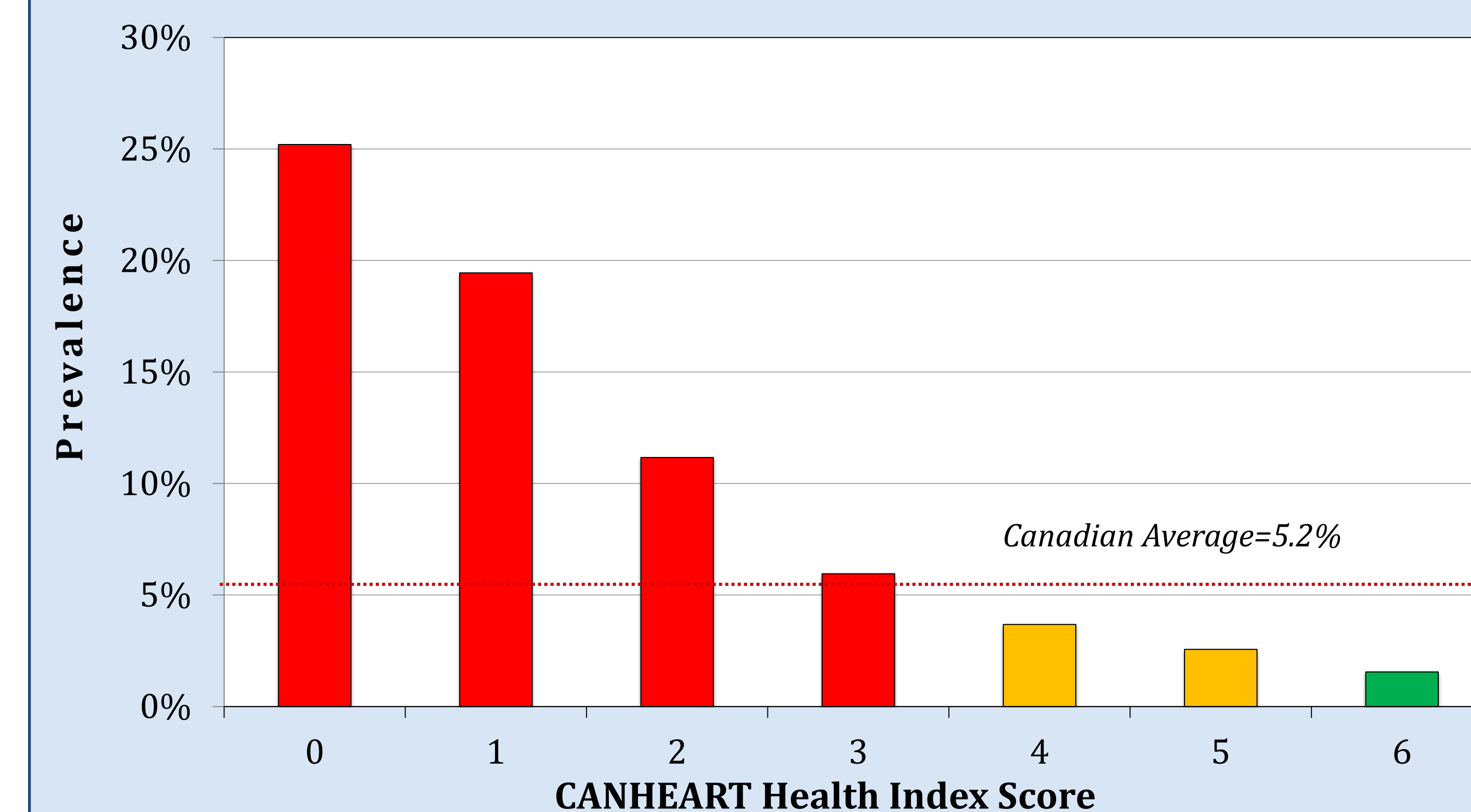


Table 1. Hazard ratios for AMI/Stroke Hospitalization and Circulatory Death in a Linked Sample of Ontarians, CCHS 2000-2008 (n=98,879)

Event	CANHEART Health Index	No. Events	Hazard Ratio†	95% CI
AMI/Stroke Hospitalization	0	17	1.00	-
	1	158	0.74	0.45, 1.22
	2	493	0.52	0.32, 0.83
	3	833	0.41	0.25, 0.66
	4	691	0.31	0.19, 0.50
	5	352	0.26	0.16, 0.43
	6	75	0.16	0.10, 0.28
Circulatory Death	0	10	1.00	-
	1	68	0.50	0.26, 0.96
	2	230	0.37	0.19, 0.69
	3	365	0.27	0.14, 0.50
	4	336	0.22	0.12, 0.41
	5	138	0.15	0.08, 0.29
	6	32	0.11	0.05, 0.22

†adjusted for age and sex.

Conclusions

Few Canadians are in ideal cardiovascular health and many are in poor cardiovascular health. Appropriate population health interventions are needed to improve the cardiovascular health of Canadians by targeting modifiable health behaviors, which may help to reduce the burden of CVD in the population. The Heart and Stroke Foundation of Canada will use the CANHEART health index to monitor population trends and target foundation intervention activities.

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