



Canadian Journal of Cardiology 29 (2013) 628-631

## Training/Practice Training/Health Policy and Promotion

# Results of a National Survey Examining Canadians' Concern, Actions, Barriers, and Support for Dietary Sodium Reduction Interventions

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#### **ABSTRACT**

Population-wide dietary sodium reduction is considered a priority intervention to address sodium-related chronic diseases. In 2010, the Canadian government adopted a sodium reduction strategy to lower sodium intakes of Canadians; however, there has been a lack of coordinated action in its implementation. Our objective was to evaluate Canadians' concern, actions, reported barriers, and support for government-led policy interventions aimed at lowering sodium intakes. We conducted a survey among Canadians about sodium knowledge, attitudes, and behaviours. Data were weighted to reflect the 2006 Canadian census. Among 2603 respondents, 67.0% were concerned about dietary sodium and 59.3% were currently taking action to limit sodium intake. Those aged 50-59 years (odds ratio [OR], 1.79; 95% confidence interval [CI], 1.17-2.72) and 60-69 years (OR, 1.63; 95% CI, 1.05-2.55) were more likely to be concerned about sodium vs younger

#### RÉSUMÉ

La réduction du sodium alimentaire à l'ensemble de la population est considérée comme une intervention prioritaire pour lutter contre les maladies chroniques liées au sodium. En 2010, le gouvernement du Canada adoptait une stratégie de réduction du sodium pour abaisser l'apport en sodium des Canadiens. Cependant, un manque d'actions coordonnées pour sa mise en œuvre a été noté. Notre objectif était d'évaluer les préoccupations, les mesures et les obstacles rapportés par les Canadiens, ainsi que leur soutien des interventions en matière de politique gouvernementale ayant pour but la réduction de l'apport en sodium. Nous avons mené une enquête sur les connaissances, les attitudes et les comportements concernant le sodium chez les Canadiens. Les données ont été pondérées de façon à refléter le recensement canadien de 2006. Parmi les 2603 répondants, 67,0 % étaient préoccupés par le sodium alimentaire, et 59,3 % ont déclaré qu'ils

Most Canadians have sodium intake levels that exceed recommendations, a risk factor for several cardiovascular conditions. To address this issue, a federal government-appointed Sodium Working Group developed A Sodium Reduction Strategy for Canada. Recommendations focused on the food supply, education and awareness, and research to achieve mean population intakes of 2300 mg/d by 2016. Food supply recommendations were for structured voluntary sodium reductions in food, with the option for regulation should industry fail to reach targets. Except for the recent release of

sodium reduction targets for the food industry and a public education campaign, <sup>2</sup> there is little known coordinated action toward implementing the Strategy's 27 recommendations and presently no monitoring and evaluation framework exists.

We conducted a survey to assess Canadians' concern about sodium, and actions and barriers in limiting sodium consumption. Public opinion to a large degree influences the political agenda, and in light of the proposed federal Bill C-460, to legislate the implementation of the Strategy's recommendations, we also sought to determine Canadians' level of support, if any, for multisectoral sodium reduction initiatives.

Received for publication December 10, 2012. Accepted January 28, 2013.

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#### **Methods**

An online survey was administered in November-December 2011 to a longitudinal Canadian survey panel representative of the Canadian population for age, sex, province, and education (http://consumermonitor.ca/). English- and

individuals (20-29 years), as were hypertensive patients vs normotensive patients (OR, 4.13; 95% Cl, 3.05-5.59). Older age groups and those with hypertension (OR, 3.48; 95% Cl, 2.58-4.69) were also more likely to limit sodium consumption. Common barriers to sodium reduction were limited variety of lower sodium processed (55.5%) and restaurant (65.8%) foods. High support for government-led actions was observed, including interventions for lowering sodium levels in processed (86.6%) and restaurant (72.7%-74.3%) foods, and in food served in public institutions (81.8%-82.3%), and also for public education (80.4%-83.1%). There was much less support for financial incentives and disincentives. In conclusion, these concerns, barriers, and high level of support for government action provide further rationale for multi-sectoral interventions to assist Canadians in lowering their sodium intakes.

French-speaking eligible participants were: age 20-69; a household grocery shopper; and had e-mail access. Thirty thousand were invited; 6665 completed the baseline questionnaire. The present survey was the ninth survey administered to this panel. Typically 2000-3000 responses were obtained per survey.

Questions were developed by sodium and/or consumer survey experts, or taken from similar national surveys.<sup>3,4</sup> Each question was plain language-reviewed and pilot-tested among a small group of participants from Guelph, Ontario, and many questions were administered to a larger panel of Ontarians. Snap 10 Professional Survey Software and Webhost (Snap Surveys, Portsmouth, NH) were used for survey administration. Participants provided informed consent. Research ethics board approval was obtained from University of Toronto and University of Guelph.

#### Statistical analysis

Data are presented as percentages and standard errors. A 5-point Likert scale was used (1 = not at all important/strongly)disagree; 5 = extremely important/strongly agree). Responses of concern about sodium and action in limiting sodium intake were dichotomized based on responses: "4 or 5" = "concern" or "taking action" and "1, 2, or 3" = "no concern" or "not taking action." For barriers, responses were coded: "1 or 2" = "not important" or "disagree"; "3" = "neutral," "4 or 5" = "important" or "agree", and "6" = "not applicable." Rao-Scott  $\chi^2$  tested the association between action and reported barriers. Multivariable logistic regression was used to determine relationships between action and/or concern and age, sex, and blood pressure status. All estimates were weighted to be representative of the 2006 census population. P < 0.05 was considered statistically significant. SAS version 9.3 (SAS Institute, Cary, NC) was used for statistical analyses.

prenaient des mesures pour limiter leur apport en sodium. Ceux âgés de 50 à 59 ans (ratio d'incidence approché [RIA], 1,79; intervalle de confiance [IC] à 95 %, 1,17-2,72) et de 60 à 69 ans (RIA, 1,63; IC à 95 %, 1,05-2,55) étaient plus susceptibles d'être préoccupés par le sodium que l'étaient les individus plus jeunes (20 à 29 ans), tout comme l'étaient les patients hypertendus par rapport aux patients normotendus (RIA, 4,13; IC à 95 %, 3,05-5,59). Les groupes d'âge plus avancé et ceux ayant de l'hypertension (RIA, 3,48; IC à 95 %, 2,58-4,69) étaient également plus susceptibles de limiter leur consommation de sodium. Les obstacles communs à la réduction du sodium étaient limités à la variété des aliments transformés plus faibles en sodium (55.5 %) et des aliments plus faibles en sodium servis dans les restaurants (65,8 %). Un important soutien aux mesures gouvernementales était observé, incluant les interventions pour la réduction des concentrations de sodium dans les aliments transformés (86,6 %) et dans les aliments servis dans les restaurants (72,7 %-74,3 %), dans les aliments servis dans les institutions publiques (81,8 %-82,3 %), ainsi que ceux servis dans l'enseignement public (80,4 %-83,1 %). Un soutien beaucoup moins important à l'incitation et la dissuasion financières était observé. En conclusion, ces préoccupations, ces obstacles et ce haut niveau de soutien aux mesures gouvernementales fournissent une justification supplémentaire aux interventions multisectorielles pour aider les Canadiens à diminuer leur apport en sodium.

#### **Results**

There were 2603 respondents, 65% women (Supplemental Table S1). Respondents were slightly older and had a higher level of education compared with 2006 Canadian census respondents. One-fifth (20.9%) had been diagnosed with hypertension.

#### Concern

Most respondents (67.0%) were concerned about sodium intake. Those 50-59 years old (odds ratio [OR], 1.79; 95% confidence interval [CI], 1.17-2.72) and 60-69 years (OR, 1.63; 95% CI, 1.05-2.55) were more likely to be concerned compared with respondents aged 20-29 (Supplemental Fig. S1), as were hypertensive individuals compared with normotensives (OR, 4.13; 95% CI, 3.05-5.59).

#### Personal action

Many respondents (59.8%) believed that their health would improve if they reduced sodium in their diet, and 59.3% were actively trying to do so. Action toward limiting dietary sodium was more likely with each increasing age group, and among hypertensive individuals (OR versus nomotensives, 3.48; 95% CI, 2.58-4.69) (Supplemental Fig. S2). There were no differences between men and women.

Primary reasons for limiting, previously limiting, or interest in limiting sodium (78.2% of respondents) were: to improve overall health (84.5%), because they heard they should (54.2%), to manage a health condition (38.2%), or a health professional recommended it (26.3%). Reasons for not limiting sodium (21.8% of respondents) were: low or normal blood pressure (69.9%), overall good health (56.4%), a health care professional had not recommended it (36.6%), or do not like the taste of lower sodium foods (27.2%). Most

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