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Anthony Grisé
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Dear Mr. Grisé,

Thank you for your correspondence of December 29, 2020 sharing your concerns about sodium reduction.

I would like to assure you that Health Canada is committed to helping Canadians maintain and improve their health. To do so, the Department uses the best available evidence to support food and nutrition related policies and regulations.

As you certainly know, sodium is an essential nutrient found in salt and many foods, mainly processed and commercially prepared foods. Our bodies need sodium to regulate fluids and blood pressure, and to keep muscles and nerves running smoothly. Although small amounts of sodium are necessary for good health, too much can lead to high blood pressure, a major risk factor for heart disease, stroke and kidney disease. Heart disease and stroke are leading causes of death in Canada, after cancer.

The department has committed to work towards reducing the sodium content of foods and reducing the average sodium intakes of Canadians to 2300 mg/day. In addition, Canada committed to the WHO's Monitoring Framework for noncommunicable diseases to work towards reducing sodium intakes by 30% by 2025, which aligns with our goal to reduce the average daily sodium intake of Canadians to 2300 mg in the next five years.

Sodium, hypertension and health

High blood pressure or hypertension occurs when blood pressure is too high for long periods of time. The risk of developing hypertension can be reduced by adopting a healthy lifestyle.

Approximately, 1 in 4 Canadians aged 20 years or over have been diagnosed with high blood pressure with over 70% of those 65 years and older being affected¹. Many others have high blood pressure without knowing it, since it develops slowly overtime and without obvious symptoms.

¹ Public Health Agency of Canada. 2018. At-a-glance. How Healthy are Canadians? A brief update. <https://www.canada.ca/en/public-health/services/reports-publications/health-promotion-chronic-disease-prevention-canada-research-policy-practice/vol-38-no-10-2018/at-a-glance-healthy-canadians-update.html>



It is estimated that over 30% of high blood pressure cases in Canada are due to high sodium intake². An effective way to reduce sodium intake is through lowering the sodium content of processed and commercially prepared foods as most of the sodium we eat comes from these foods. Other modifiable metabolic and behaviour risk factors associated with hypertension include physical inactivity, overweight and obesity, unhealthy diet, harmful use of alcohol, inadequate potassium intake and type 2 diabetes³.

We agree that poor diets are a concern because they are a primary risk factor for chronic disease. In fact, diets high in sodium, saturated fat, and sugars are linked to obesity and hypertension, and chronic diseases such as heart disease, diabetes and cancer. This is why Health Canada released the revised Canada's Food Guide to help Canadians eat a healthy, balanced diet, rich in fruits and vegetables to lower intakes of sodium, as well as other nutrients of concern such as fat, sugar and calories. In addition, we recently released [voluntary sodium reduction targets for processed food 2020 to 2025](#).

Since we've started working on sodium reduction, the average daily sodium intake of Canadians was reduced to 2760 milligrams (mg) in 2017, which is lower than the average sodium intake of 3400 mg/day that was estimated in 2004. However, the average intake is still higher than 2300 mg of sodium per day, the established intake goal to reach by 2025 and much higher than the recommended intake of 1500 mg of sodium per day and certainly too far from lower intakes of sodium which are particularly challenging within the current food environment.

Scientific Evidence

You expressed concerns regarding the evidence that supports sodium reduction. The Government of Canada is committed to evidence-based decision making. Health Canada relies on the totality of the best available scientific evidence to underpin its policy interventions in the area of food and nutrition. In considering the totality of evidence, more weight is placed on studies such as clinical trials designed to examine a cause-effect relationship between sodium intake and blood pressure.

In 2019, the National Academies of Sciences, Engineering and Medicine, which develops nutrient reference values that underpin dietary guidance in both the United States and Canada, released [updated Dietary Reference Intakes for sodium](#)⁴. The National Academies concluded there is high strength of evidence from randomized controlled trials, that reducing sodium intakes reduces blood pressure. In addition, there is evidence for a causal relationship between reductions in sodium intake and all-cause mortality, cardiovascular disease and hypertension.

² Joffres MR, et al. Estimate of the benefits of a population-based reduction in dietary sodium additives on hypertension and its related health care costs in Canada. *Can J Cardiol*. 2007;23(6):437–443. [10.1016/s0828-282x\(07\)70780-8](https://doi.org/10.1016/s0828-282x(07)70780-8)

³ Nerenberg KA, et al. Hypertension Canada's 2018 guidelines for diagnosis, risk assessment, prevention, and treatment of hypertension in adults and children. *Can J Cardiol* 2018 May;34(5):506–25. [10.1016/j.cjca.2018.02.022](https://doi.org/10.1016/j.cjca.2018.02.022)

⁴ National Academies of Sciences, Engineering, and Medicine. 2019. *Dietary Reference Intakes for Sodium and Potassium*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25353>

Larger effects in blood pressure reduction has been seen among adults with high blood pressure but benefits of sodium reduction are also seen among nonhypertensive individuals.

The National Academies recommended that adults reduce their sodium intakes if above 2300 mg/day as a means of lowering their risk of cardiovascular disease⁴. This new Dietary Reference Intake value for sodium is consistent with Health Canada's intake goal of a population average of 2300 mg/day and also aligns with Health Canada's Evidence Review for Dietary Guidance from 2015, which concluded that evidence linking excess sodium intake and high blood pressure is convincing⁵.

There is a limited and inconsistent body of evidence on the potential harms of low sodium intake. The inconsistency appears to be caused, in part, by methodological approaches used in observational studies and methodologies which have not been accepted as valid measures of sodium intakes such as in the international study⁶ that you make reference in which a single spot urine test, which is not a valid measure, was used to estimate sodium intake. In addition, other studies provided in your letter are observational studies^{7,8} which are not the best designed studies to prove a cause-effect relationship between sodium intake and blood pressure or between low sodium intakes and adverse health outcomes. A 2013 Institute of Medicine consensus report⁹ found that the methodological quality of studies linking lower sodium intake with adverse health outcomes was variable and this limited the ability to make comparisons or conclusions.

Dietary sodium reduction is a cost-effective and efficient health intervention to reduce blood pressure and the risk of cardiovascular disease. Even a modest reduction in dietary sodium can result in a significant decrease in blood pressure. Our approach to sodium reduction is consistent with current international efforts of sodium reduction. Like Canada, several other jurisdictions have also launched initiatives to reduce the sodium intake of their populations, most notably Finland, the United Kingdom, the European Union and the USA.

⁵ Health Canada. [Evidence Review for Dietary Guidance: Summary of Results and Implications for Canada's Food Guide 2015](#)

⁶ O'Donnell M, et al. Urinary Sodium and Potassium Excretion, Mortality, and Cardiovascular Events. *N Engl J Med* 2014; 371:612-623. DOI: 10.1056/NEJMoa1311889

⁷ Park J. and Keun Kwock C., Sodium intake and prevalence of hypertension, coronary heart disease, and stroke in Korean adults. *Journal of Ethnic Foods*. Volume 2, Issue 3, September 2015, Pages 92-6. <https://doi.org/10.1016/j.jef.2015.08.007>

⁸ Stolarz-Skrzypek K., et al. Fatal and Nonfatal Outcomes, Incidence of Hypertension, and Blood Pressure Changes in Relation to Urinary Sodium Excretion. *JAMA*. 2011;305(17):1777-1785. doi:10.1001/jama.2011.574

⁹ Institute of Medicine. 2013. Sodium Intake in Populations: Assessment of Evidence. Washington, DC: The National Academies Press, 2013. 10.17226/18311



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In conclusion, in reviewing currently available scientific evidence, officials at Health Canada have determined that the scientific consensus and totality of best evidence continues to support the health benefits that can be achieved by lowering sodium intake, which has been shown to reduce blood pressure in people with normal blood pressure, and more so in people with high blood pressure. I'd like to assure you that Health Canada continues to monitor emerging science to keep up to date with the latest evidence and adjust its policies accordingly.

Yours sincerely,

Karen McIntyre
Director General
Health Products and Food Directorate
Health Canada