

Commentary

What about the mouth? Connecting oral health and food environments

The Office of the Chief Dental Officer of Canada

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Oral health is a fundamental component of our overall health and well-being:¹

Oral health is multi-faceted and includes the ability to speak, smile, smell, taste, touch, chew, swallow and convey a range of emotions through facial expressions with confidence and without pain, discomfort and disease of the craniofacial complex.

Oral diseases, which range from tooth decay to gum disease to oral cancer, are among the most common and widespread diseases in Canada and worldwide.^{2,3} Oral diseases share common risk factors and have causality or clinical exacerbation relationships with some of the leading chronic diseases: diabetes, cardiovascular diseases, chronic respiratory diseases and cancer. Some of the common risk factors are unhealthy diet (particularly those high in added sugars), smoking, alcohol abuse, and poor oral hygiene.⁴

Considering that what we eat and drink goes through the mouth first, the dietary choices that we make—as influenced by food access and availability, food promotion and pricing and food labelling—can have direct implications on our oral health. As highlighted by Vanderlee and L'Abbé in the September issue of this journal,⁵ dietary choices go beyond the individuals. Even though we can argue that we all have a certain degree of responsibility over the food choices we make, we need supporting food environments that contribute to make the healthy options—fresh, nutrient-dense foods—attractive, available and easily accessible, at reasonable prices.

As part of Canada's *Healthy Eating Strategy*,⁶ Health Canada has the vision to “Make the healthier choice the easier choice for all Canadians.” The Office of the Chief Dental Officer (OCDO) of the Public Health Agency of Canada, along with the Federal-Provincial-Territorial Dental Directors Working Group (the individuals appointed as the senior government authority in oral health in each of Canada's provinces and territories) share that vision.

A lot still needs to be accomplished to achieve that goal. Health Canada notes that many food environments make it difficult for Canadians to make healthy choices due to the following:⁷

- Widespread availability of inexpensive foods and beverages high in calories, fat, sodium and sugars;
- Marketing of foods is very powerful and children are particularly vulnerable;
- There is a constant flow of changing (and often conflicting) messages;
- Canadians face challenges in understanding and using nutrition information;
- Some sub-populations in Canada face challenges in accessing nutritious foods.

The sugary and/or fatty low-cost and nutrient-poor foods and beverages are still too often the tempting and readily available options in so many places.

Sugar consumption is the most obvious example when we talk about effects on oral health. We all know that sugar is not good for our teeth—the primary risk factor for dental caries (or tooth decay) is a diet high in added sugars. In fact, there is

a consistent association in scientific literature between tooth decay and higher sugar consumption. We have a clear understanding of the biological mechanism that causes tooth decay: sugar acts as a substrate for oral bacteria, leading to the production of demineralizing acids.^{8,9} Some research suggests that modifying our diet, and more specifically our sugar consumption, could potentially be more effective to minimize the risk of developing tooth decay than even fluoride application.^{8,9}

Soft drinks, sports and energy drinks often have large amounts of sugar and calories—a can of soft drink contains the equivalent of 10 teaspoons of sugar.¹⁰ Sugar-sweetened beverages (SSBs) are the largest contributor of sugars in Canadians' diet, especially among teenagers and young adults. Regular carbonated soft drinks make up the largest portion of SSBs consumed by these two groups. Greater consumption of SSBs is associated with increased risk of obesity, type 2 diabetes, cardiovascular disease, kidney diseases, osteoporosis, some cancers, and tooth decay.¹¹

Tooth decay affects 57% of Canadian children aged 6 to 11 years and 96% of Canadian adults over their life time.² This prevalence increases to 94% in First Nations and 93% in Inuit children and > 99% of First Nations and Inuit adults.^{12,13} Consequences of untreated tooth decay—a fully preventable disease—may include pain, discomfort, infection, abscesses, reduced ability to speak, to socialize or eat, time lost from work and school, it can also lead to lower self-esteem and confidence and potential

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discrimination (based on dental appearance). It is an economic burden on the health care system (2nd largest health care expenditures after medications/drugs—oral health expenditures are greater than 13 billion annually).¹⁴ In Canada, dental procedures are the leading cause of day surgery for children aged 1 to 5. Each year over 19 000 day surgery operations—mostly due to tooth decay—are performed under general anesthesia, with disproportionate representation of Indigenous children.¹⁵

As with our general health, our oral health is influenced by social determinants, including our socioeconomic status, our level of education, where we live, food security, and access to care.¹⁶

The burden of oral diseases thus disproportionately affects vulnerable populations such as the elderly, low income, adolescents, Indigenous people (rural or isolated), new Canadians, and the mentally or physically challenged.⁴ There are particular concerns over access barriers to healthy nutritious foods for vulnerable populations and the effects on their oral health and overall health. Low socioeconomic status has been linked to the consumption of higher amounts of unhealthy food and drinks, and people who are food insecure will eat fewer fruits and vegetables and have less variety in their diet.¹⁷

In order to make the healthy choices the preferred choices for all, the healthy options that can have a positive impact on people's oral health and overall health and well-being need to be made attractive and more broadly available, affordable and accessible. This is the focus of this special issue of the journal: looking at the current situation in different public venues where people consume food and drinks, proposing avenues for improvement, and exploring the potential impacts of specific programs or initiatives to ensure better access to healthy options, especially for vulnerable populations.

It is important to work together to consolidate what already works, and to find new and improved ways to promote healthy habits and healthier food environments. In doing so, we should keep in mind that, in the overall picture of general health and well-being, oral health is an integral piece of the puzzle. The mouth matters. Research, policies, programs and interventions related to food, diet, nutrition and food environments

should, ideally, develop the reflex of thinking about the connections to oral health, and the oral health community should be a part of those conversations.

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