



Nutritional environment at Montréal secondary schools



RÉGIE RÉGIONALE
DE LA SANTÉ ET DES
SERVICES SOCIAUX

DE MONTRÉAL-CENTRE

Direction de la santé publique



“Some North American data show large gaps between young people’s diet and health recommendations.”

Issue

Diet is a significant determinant of population health. Up to 50% of premature deaths are related to a poor diet. In addition to its impact on physical health, quality of foods is linked with young people’s cognitive development, behavioural problems, and academic achievement.

Studies show the importance of a varied and balanced diet, which favours a healthy body weight and emphasises a diet high in vegetables, fruits, grain products, especially whole grains, and which includes low-fat dairy products, fish, legumes, poultry and lean meats to promote health and prevent various currently prevalent diseases.

Some North American data show large gaps between young people’s diet and health recommendations. Youths do not eat enough fruits and vegetables and suffer from excess weight. Moreover, their diet is low in calcium and iron and too high in fat. Recent data has demonstrated that in Canada, soft drink consumption has risen 85% over 25 years. In addition to providing empty calories and being significantly associated with the risk of obesity among children, intake of sugar-sweetened drinks often supersedes consumption of more nutritious drinks such as milk.

Many factors can influence healthy food choices. It has been clearly established that health education is not enough to provoke changes in eating habits. Other factors, such as availability of food items and food policies governing what food items are offered, also have a significant influence on food choices. It has been demonstrated that the simple fact of modifying foods served in the school cafeteria can contribute to reducing youth’s fat intake and improve their diet. The quality of meals and foods offered in school cafeterias and vending machines, supported by nutrition education and a food policy, are some of the major elements of a nutritional environment that promotes health in schools.

Goal of the study

Aware of the influence of the school’s nutritional environment on youths acquiring good eating habits, the Montréal Public Health Department conducted a study designed to draw up a profile of this environment in Montréal public secondary schools.

Methodological overview

Our study was conducted among a random sample of 28 public secondary schools with more than 500 students, from four school boards (SB) on the Island of Montréal. First, we conducted interviews with dietitians from each of the participating school boards. Then, we interviewed the managing directors of food services in the targeted schools. Data collection was completed by duly-trained nutrition specialists who observed the eating environment. The variables studied were chosen based on a theoretical construct inspired by an ecological theory.

This summary report presents the results related to the following environmental factors: nutrition policies and foods available in schools. These data will be compared with youths’ food choices. We decided to assign a “healthy” label to foods that are included in *Canada’s Food Guide to Healthy Eating* (groups in CFG: grain products, vegetables and fruits, milk products, meat and alternatives) and that contain a limited quantity of fat, salt and sugar.

Acknowledgements

We wish to acknowledge the cooperation of school board dietitians and their supervisors, school principals, cafeteria managers, and the employees of food services, without whom we could not have carried out this study.

Results

Food policy

For over 30 years, Montréal Island school boards have had food policies issuing guidelines designed to encourage healthy eating habits and offer balanced and nutritious meals to students. According to the dieticians we interviewed, the four school boards studied still apply food policies in their secondary schools. In Table 1, we see that the policy of SB #1, unlike that of other SBs, subsidises various nutritious foods. In SB #3, there are gaps regarding the prohibition of selling candy bars and empty-calorie foods since the policy applies only to cafeteria items available from food services and not to vending machines. However, we should note that since a dieticians was hired in this SB, her efforts have led to these foods being banned from the cafeteria food service and the situation has improved. Overall, food service management in the schools of SB #2, #3, and #4 is in the hands of private companies (caterers). SB #1 manages its own food services.

Table 1

Some components of the food policy adopted by the school boards

Components of the food policy	School board			
	SB #1	SB #2	SB #3	SB #4
Offers a variety of nutritious foods at a low price	+	+	+	+
Subsidises a variety of nutritious foods	+ ¹	-	-	-
Food service prohibited from selling candy bars and empty-calorie foods	+	+	± ²	+
Regulation on food-related advertising	+ ³	-	-	-
Regulation on food-related sponsors	+ ⁴	-	-	-

1) Main dish with vegetable, milk and fruit.
2) This ban applies only to the cafeteria service.
3) A regulation is pending.
4) Suppliers cannot solicit students.

Foods whose sale is forbidden or limited

Each school board's food policy lists the foods whose sale is prohibited or limited. On the whole, these foods are:

High-fat foods NB: Use of a deep fryer is forbidden	Examples: French fries, poutine, chips, donuts, etc.
Foods with high concentrations of sugar	Examples: Candies and medicated cough drops Pastries rich in fat and sugar Commercially made cookies Chocolate bars Flavoured ices, popsicles Soft drinks, fruit drinks Sugar-coated cereals Coated peanuts, nuts, popcorn, etc.
High salt content foods	Examples: Salted snack foods, etc.

More specifically, the policy of SB #3 specifies that the sale of high-fat foods (including French fries) in the cafeteria is limited and permitted under certain conditions whereas the sale of foods high in fat, sugar, and salt is permitted only in vending machines. Moreover, French fries are not on

the list of prohibited foods at SB #4. Finally, the food policy of SB #2 states that salty snack foods can only be sold in vending machines, once nutrition services has given its approval.

“In high

Availability of food items

Cafeteria

The cyclical menu planned for the cafeteria at the beginning of the year is usually the principal component of food services. Every day, kitchen employees refer to this menu to determine what to prepare.

We analysed the four school board's cyclical menus. Overall, we noted that two main dishes are planned every day and that these choices are varied and nutritious. Meat or poultry, in a sauce or plain, pasta, and hot meat sandwiches (tortillas, submarines, pitas, etc.) are the main dishes that make up most of the menu. We were unable to determine the nutritional value of the foods offered simply by analysing the menus but, according to the cafeteria managers interviewed, a selection of standardised recipes with reduced fat and salt content has been developed and is used by most of the cooks. Moreover, a cooked vegetable and at least one raw vegetable are offered every day.

Vending machines

Just over half the schools have vending machines. An analysis of their content showed that the variety of healthy foods available includes: 100% pure fruit juice, 2% m.f. milk, yogurt, vegetable juice, tomato pizza, etc.

A major problem was noted at SB #3, whose food policy allows high fat, high sugar, and high salt foods to be sold in school vending machines. There are from four to six vending machines in 80% of the schools studied in this SB. In these machines, there are up to 14 types of chips, 13 types of chocolate bars, 7 types of chocolate ice cream desserts, 7 types of soft drinks, as well as fruit drinks.



school, nutrition education starts with what you eat.”

In addition to analysing the menus planned for the year at each SB, we also went to the schools to look at the food offered in the cafeteria. With a few exceptions, when we compared the cyclical menu with the information collected by the observers, we noted that the main meals offered in the cafeteria corresponded with the pre-planned menu.

We saw, during direct observation of a lunch-time service, that French fries were on the menu in 80% of SB#3 and #4 schools under study, which we consider to be problematic. This problem was not observed at SB #1 and #2.

Based on each SB's food price list (2000-2001) and on direct observation, we noted that overall there is a preponderance of healthy foods among the items offered on the daily menu. Moreover, as outlined in SB food policies, these foods are, for the most part, less expensive than other items, which may help young people make better choices and increase access to healthier foods. For example, fresh fruit is sold for between \$0.15 and \$0.50 whereas a danish costs from \$0.90 to \$1.00. A wide variety of desserts are also available every day in Montréal school cafeterias. We were unable to document the nutritional value of desserts such as muffins and cookies, which are often made on site, but it seems that dieticians are constantly trying to reduce their fat and sugar content.



There is also a problem in SB #2 regarding foods available in vending machines, since salty snack foods are occasionally available.

Young people's food choices

By observing young people's food choices at cafeteria cash registers, we observed that the main meal without a vegetable is the most popular option, except in SB #3 where the "other" choices predominated (Table II). This could be explained by the fact that poutine and French fries are on the menu every day. According to the observers, many students buy French fries to eat with their box lunch. In addition, in all school boards, many students opt for a pastry only.

In SB #1, we noted that a full meal with a vegetable is just as popular as the meal without one. The meal with a vegetable is subsidised by the SB and cafeteria staff is required to put the vegetable of the day on the plate. As was noted by the managing directors of this SB's food services,

when this measure was first adopted, young people refused to take the vegetable. However, a cafeteria manager reported that increasingly more youths are eating it. The message conveyed by this measure is that a full meal must include vegetables. Our observations indicate that verbally offering a vegetable is not enough for youths to take it. On the other hand, including a vegetable with the main meal contributes to increasing its consumption.

At SB #4, we noted that the meal with a vegetable was hardly ever chosen. Students opted more often for the third thematic choice, fast food without the vegetable of the day. We see a problem in making such a choice available since most of these foods are usually high in fat and salt.



“It has been clearly established that health education alone is not enough to provoke changes in eating habits.”

Table II
Youths' lunchtime food choices as observed at cafeteria cash registers

School board	Meal with vegetable of the day	Meal without vegetable of the day	Pastry only	Assorted sandwiches	Other choices observed
SB #1	28%	30%	11%	17%	14% ¹
SB #2	6%	42%	1%	16%	28% ²
SB #3	3%	38%	10%	6%	42% ³
SB #4	0%	48%	18%	11%	23% ⁴

- 1) Others: tomato pizza, Creole pâté, salad, soup, fruit plate, ice cream.
2) Others: hot submarine, Creole pâté, soup, salad, starchy food of the day, frozen desserts.
3) Others: poutine, French fries, Creole pâté, pizza, hot-dog, hamburger, seasoned potatoes, soup, salad, ice cream.
4) Others: French fries, tomato pizza, Creole pâté, macaroni or vegetable salad, frozen desserts.

Table III
Youths' lunchtime choice of beverage to accompany the main meal or sandwich, as observed at cafeteria cash registers

School board	Beverages				
	Plain milk	Chocolate milk	100% pure fruit juice	Other beverages ¹	No beverage
SB #1	10%	6%	55%	5%	21%
SB #2	17%	6%	45%	4%	29%
SB #3	4%	3%	38%	6%	50%
SB #4	13%	10%	32%	5%	39%
Total	12%	6%	48%	5%	28%

- 1) Yogurt drink, water, vegetable juice, coffee.

The beverage chosen most often by youths (48%) is 100% pure fruit juice (Table III). Just 12% of youths observed opted for plain milk despite its low cost, whereas 6% chose chocolate milk. Based on these data, it is impossible to determine if the fact that few students decide on milk for their lunchtime beverage has consequences on their calcium intake, since they can meet their needs through other sources (yogurt, cheese), and at other times during the day.

Almost one third of students do not buy anything from the cafeteria counter to accompany their main meal or sandwich. In SB #3, we observed that this proportion is higher (50%) than average (28%). Some students stated that they preferred buying soft drinks or fruit drinks from vending machines since they get more for their money. Moreover, in this SB, only 4% of young people chose plain milk for their beverage. These data cause us to believe that vending machines selling soft drinks and fruit drinks interfere with choosing the nutritious beverages served in the cafeteria.

Findings

The school boards have food policies that prohibit or limit the sale of foods with a high content of fat, sugar or salt. The food policy of SB #1 stands out from the others, notably because this SB subsidises various nutritious foods.

Various food policies prohibit the use of deep fryers. However, processed French fries reheated in school ovens are offered in the cafeterias of 80% of SB #3 and #4 schools under study. This situation uncovers a problem related to the policies prohibiting, or not, the sale of certain foods.

There is a problem in SB #3 regarding foods available in the vending machines in the schools studied; this finding also indicates that this SB's policy should be reviewed.

Selling the main meal, which includes meat, a starchy food, and a vegetable at a low price, has a positive impact on youth eating vegetables

The bibliography is available from the authors of this study.

Produced by the Health, Nutrition and Physical Activity team/2002

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All rights reserved
1301 Sherbrooke Street East, Montréal,
Quebec H2L 1M3
Telephone: (514) 528-2400

Information: Ivanier@santepub-mtl.qc.ca
gcote@santepub-mtl.qc.ca

This document is also available on the Internet at the following site:
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Suggestions for action

- It seems inevitable that some components of food policies at some Montréal school boards must be reviewed to improve the nutritional environment at secondary schools. More specifically, in SB #3 and #4, compromises related to offering foods high in fat, sugar or salt should no longer be tolerated.
- Improving access to a healthy diet should be bolstered by an increase in subsidies for healthy meals or foods sold by food services.
- Innovative measures should be taken to ensure that at lunchtime, young people eat foods from each group of the CFG. In fact, a very low proportion of youth buys a full meal or plate that includes a vegetable. One promising solution seems to be to offer a main meal that includes meat, a starchy food and a vegetable. Another interesting solution might be to develop healthy fast foods that contain foods from at least 3 CFG groups. SB #1 and #2 have already made noticeable efforts in this direction. These healthy fast foods could also help deal with heavy outside competition.
- Conclusive experiences highlight the importance of establishing advisory committees on nutrition in the schools (involving students, teachers, the executive, food service personnel and dietitians) to generate solutions unique to the different problems.

These suggestions for action cannot be carried out without the active participation of school board dietitians. We wish to emphasise the daily efforts the dietitians make and encourage them to carry on with their work. The Montréal Public Health Department wishes to maintain the partnership initiated with the educational sector and caterers to support actions geared towards optimising the nutritional environment at secondary schools on the Island of Montréal, and thus encourage optimal development among youth.

