

REGISTERED Integrating Snacking INTO Healthy Eating DIETITIANS



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Introduction

Snacking has become increasingly more common among Canadians. The types of snacks typically consumed however, are not always the healthiest option available, particularly among youth. Snacking can be part of a healthy diet. Educating Canadians about what constitutes a healthy choice and providing the appropriate information and promoting environments to support these choices will play an important role in this context.

Defining A Snack

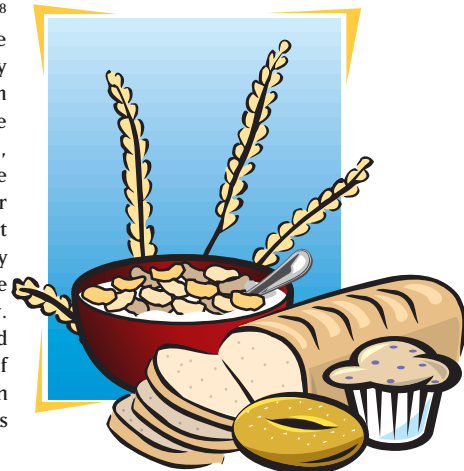
Eating patterns among children and youth have dramatically changed over the past several decades. Limited data exist on Canadian children and adolescents, however, the few isolated Canadian studies^{1,2,3,4,5} suggest that the nutrition issues are similar to those described for American children; specifically, inadequate consumption of milk and dairy products⁶ and vegetables and fruit^{7,8,9}, and excessive consumption of high fat/salty snacks and sugar-sweetened beverages.^{4,9,10,11} Eating habits formed during youth may continue into adulthood^{12, 13, 14, 15}; thus, it is imperative to teach and promote healthy eating at a young age.

Snacking refers to any food or beverage that is consumed between meals. Snacking has the potential to increase or decrease the overall dietary quality, depending on the type of snack being consumed.¹⁶ While snacking in the form of nutrient-dense foods from the four food groups of Canada's Food Guide to Healthy Eating (CFGHE)¹⁷ would improve overall diet quality, research indicates that snacking in the form of high-energy, low-nutrient content foods is increasingly more common.¹⁸ Adolescents tend to report more frequent snacking than children^{19, 20}, which may be a result of having more control over their eating habits.²¹ However, younger children have small appetites and may benefit from more frequent smaller meals and snacks to increase their chances of achieving dietary recommendations. Snacking can form part of a

balanced lifestyle; however, each individual should tailor the types of snacks to their particular needs.

Canadian Youth Snacking Patterns

Data from the United States indicate that snacking frequency has increased significantly since the 1970s among children and adolescents²² as well as adults.¹⁸ Grade five and six students in the U.S. (n=290), reportedly consumed two snacks/day with an afternoon snack being the most common.²³ Others, however, have reported that the morning²⁴, afternoon²⁴ and/or evening²⁵ snacks are the most common, which may simply suggest that snacking is quite prevalent throughout the day. Limited Canadian data suggested that among a small sample of adolescent males (n=130), an average of 1.63 snacks/day was consumed.²⁶



Secular trends from National U.S. data (1977-78 Nationwide Food Consumption Survey (NFCs) and the 1989-91 and 1994-96 Continuing Surveys of Food Intake by Individuals (CSFII)) indicated that energy from snacking has increased significantly from 280 kcal/d to 471 kcal/d among adolescents aged 12-18 years.²⁷ Moreover, snacks provided about one fifth of total calories in the diets of Americans, about one sixth of the nutrients (14% to 17% of grain servings, 21% to 24% of milk servings, and 30% to 33% of fruit servings), and one fourth of the total beverages.²⁵ Interestingly, total energy intake has remained relatively stable over this same period⁶ and therefore suggests that children and adolescents may be compensating for the added calories from snacking.

Types Of Snacks Consumed

Youth tend to choose foods that are convenient and quick to prepare and consume.¹³ Canadian food consumption data (1992-2002) suggested a decrease in consumption of milk (-9%), and an increase in consumption of sugars and syrups (+12%), soft drinks (+14%), and fruit juices (+23%) in our overall diets.²⁸ Specific food items from a recent nutrition survey of Canadian youth (Health Behaviours in School-Aged Children (HBSC), 2000) indicated that beverages (containing sugar and caffeine) and sweets (candy or chocolate) were consumed daily rather than in moderation by nearly half of school-aged youth.²⁹ Furthermore, preliminary analysis by the USDA of snacking patterns in 6-19 year olds showed that the top contributors to caloric intake from snacks were: cakes, cookies, savoury snacks, fried potatoes, and milk, milk desserts, fruit drinks and soda.³⁰

Consumption of low nutrient-dense snacks is of particular concern. Other isolated studies of Canadian youth have reported that food choices from the "other" food group according to CFGHE contributed over 25% of total energy consumed.³ Moreover, low nutrient-dense foods (cakes/cookies/pastries, carbonated beverages, sugars/jams/syrups, and salty snacks) were the top contributors to total energy.⁴ There may also be differences between the genders, as among a relatively large sample of grade 9 and 10 students from Ontario and Alberta (n=2615), males reported consuming more low nutrient dense foods (salty snacks, cola-type pop, and candy) at least once per day than females.³² Among adolescents, taste^{23,33}, hunger³³, price³³, and value³ appear to be the most important predictors of snack choice. A study assessing a small U.S. sample (n=290 5th and 6th graders), fruits were popular choices, yet were chosen less often at snack time than foods from other food categories.²³

No Canadian data exist suggesting that snack food choices of youth may be a function of socioeconomic status. However, among U.S. adults, fried potatoes, potato chips, whole milk, and fruit drinks and ades were chosen more often as snacks by those 130% of the poverty line than those above (as opposed to grain-based salty snacks, fruits, skim milk, soft drinks, coffee, tea, and alcoholic beverages).²⁵

Where Youth Buy/Consume Snacks

Food purchasing and consumption away from the home has increased in recent decades.¹³ Secular trends indicate the greatest increase in source of snack foods consumed among adolescents comes from vending machines, stores, and fast food restaurants.²⁷ In 251 U.S. middle- and high schools, the Center for Science in the Public Interest (CSPI) (2004) found that 75% of beverages and 88% of snacks sold in vending machines were of poor nutritional quality.³⁴ Interestingly, in a sample of U.S. children aged 8-13 (n=560), those who reported that soft drinks were available in their school were 2.38 times more likely to consume soft drinks five or more times per week than were those attending schools with no soft drink vending machines.³⁵ In addition

to vending machines, many schools have cafeterias and/or school stores which also provide foods of minimal nutritional value.³⁶

Recently, schools have been under pressure for selling snack foods to supplement or offset school budgets.³⁷ Students may receive some nutrition knowledge in the classroom; however, often receive confusing and counterproductive messages in the cafeteria and other school venues.³⁶ For example, the curriculum teaches CFGHE and the importance of a healthy diet; however, when students step outside the classroom, they are often confronted with an environment that favours energy-dense, nutrient-poor alternatives in cafeterias, vending machines and fund-raising initiatives.

Nutritional Effects Of Snacking

Snacking may allow individuals to increase the overall chance of meeting individual nutrition recommendations. In Canadian and U.S. adolescents, consumption of more meals and snacks per day was positively associated with total energy^{26,39}, calcium intake⁴⁰, and in males, overall dietary quality.⁴¹ Furthermore, although a higher number of eating occasions per day was associated with a higher energy intake, it was also negatively associated with BMI. This may suggest that an increased frequency of eating smaller meals and snacks may be beneficial for weight control.

In contrast, however, a "nibbling" or "grazing" meal pattern has significantly predicted higher daily sugar intake in children⁴¹ and adults.⁴² This may be a result of an increased consumption of sugary snacks or sugar-sweetened beverages. In children and adolescents, increased intake of sweetened beverages has been associated in some (though not all) studies with decreased consumption of fruits, vegetables, and nutrient-dense beverages such as milk and 100% fruit juice.^{43,44}

Snacking habits may also influence body weight. The obesity epidemic among Canadians of all ages has prompted researchers to examine all possible factors, including snacking behaviour. However, among a large sample of grades 6-10 students from 169 schools across Canada, no association could be found between an unhealthy eating index (comprised of sweets, nondiet soft drinks, cake or pastries, potato chips, and french fries) and increased body weights.⁴⁵ However, increased snacking habits have repeatedly been associated with children and adolescents who watch increased amounts of television^{46,47,48}, which may have a mediating effect through other confounding factors such as decreased physical activity.

What Can We Do To Promote Healthy Snacking?

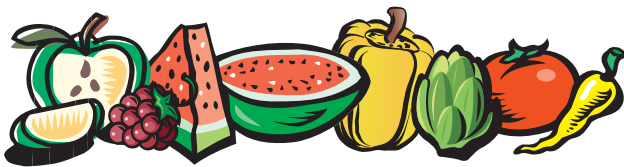
Because children spend a significant amount of their time in school and consume approximately 35% to 40% of their total daily energy intake there⁴⁹, schools are a logical place to begin when designing nutrition strategies.⁵⁰ The Annapolis Valley Health Promoting Schools (AVHPS) project is one of the most comprehensive approaches to creating supportive environments.⁵² This project worked with food industry, researchers, school administrators, parents, and students to create a school-specific environment that allowed students to make healthy choices more easily. Grade 5 students participating in AVHPS reportedly had lower rates of overweight and obesity, consumed more fruits and vegetables, and had better dietary quality than students from schools without a nutrition program.⁵³ In order to achieve and maintain healthy dietary behaviours, individuals must be surrounded by supportive environments which are conducive to healthy snacking.¹³ ⁵⁰

While schools should be a primary focus in the improvement of snacking habits, dietitians can also play an important role. This could involve promoting healthy snack choices from the four CFGHE food groups, particularly those that are either low-fat, high-fibre, or nutrient-dense options. In particular, parents should be encouraged to purchase these types of snacks rather than energy-dense, nutrient-poor alternatives, as well as to model healthy snacking behaviours for their children. Partnerships between nutrition professionals and the food industry can also encourage healthy snacking and help to



provide an environment conducive to healthy snacking. Strategies could include the development and promotion of portion-controlled, nutrient-dense snack foods and pricing policies which make such products more attractive to consumers, as well as the use of advertising to highlight the benefits of a healthy lifestyle.

By providing individuals with the knowledge required to choose healthy snacks and environments which support such choices, these initiatives can help to facilitate the adoption of healthy snacking habits. In this way, snacking can be an important part of a nutritious and balanced diet.



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FROM RESEARCH TO PRACTICE

SMART SNACKING



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Snacking has become part of the daily routine for many Canadians. Snacks can be an important part of a healthy eating plan and compliment meals to help meet nutritional needs. Healthy snacks provide energy and nutrients to carry out daily activities, support healthy growth and development, and may help prevent overeating later in the day.

The Role of Snacking

Snacking fills a variety of needs, driven by physiological, emotional, social and/or lifestyle factors. Snacks are eaten to satisfy hunger, for comfort, to ease stress, as a reward, to replace a meal, as part of social occasions and when time is at a premium, to provide a quick source of energy and nutrients. Considering these influences, the actual snack food choices your clients make are largely impacted by:

- 1) Occasion (who they are with, what they are doing and how they are feeling)
- 2) Food requirements (the qualities and attributes they desire from the food)
- 3) Control (age, for example, is one factor in autonomy over what foods are eaten)



Adapt Snacking Guidelines to Fit Client Needs

Given the role that snacking plays in today's fast-paced lifestyle, there is a need to provide relevant guidance to ensure that snacks are meeting your clients' expectations and needs, as well as contributing to their nutrient intake. It's important to personalize snacking recommendations and provide guidelines that are realistic, practical and consistent with the supply of snack foods that are available.

Principles for Smart Snacking

- **Consider snacks as a compliment to meals, not an addition to meals.**
Monitor consumption to ensure that overall energy intake does not increase. Choose snacks that will help make up for essential nutrients that may be missed at meals.
- **Plan snacks in advance considering what, when and how much to eat.**
Help prevent overeating and impulse eating by having nutritious snacks readily available at home and work, as well as in a car, purse and backpack for convenient and planned access.
- **Choose foods that provide a source of essential nutrients.**
Emphasize nutrient-dense choices, such as foods from the Vegetables & Fruit and Grain Products groups in Canada's Food Guide to Healthy Eating.
- **Watch portion sizes by selecting individually wrapped or single serve foods.**
Choose foods that are single serve to help avoid overeating. In particular, portable grain-based bars and fresh fruit are portion-controlled, convenient and taste great.
- **Remember it is total energy and nutrient intake over time that matters.**
It's OK to have an indulgent snack occasionally!

