2004 Nutrition Month®

Backgrounder for Dietitians, Educators, Parents and Community Leaders

EAT WELL, LIVE WELL
T.M. Dietitians of Canada

Eating, Physical Activity and Body Weight Trends in Canadian Children and Youth

December 2003

2004 National Nutrition Month Campaign Sponsors

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This backgrounder document has been written primarily for dietitians, other health professionals, educators and community leaders in preparation for the launch of the National Nutrition Month Campaign in March, 2004. It provides an overview of the campaign goals and strategy, but the main focus is a summary of the relevant literature on eating, physical activity and obesity patterns in Canadian children and youth. This evidence is important in understanding key issues.

Other campaign features to be launched in March, 2004 will support local action to improve healthy living for school age children and youth.
Visit www.dietitians.ca/eatwell to

- use the interactive Resource Inventory to search for tools and resources, and add your favourites
- use the Stories & Strategies inventory to find what approaches are being taken in different areas of Canada to improve healthy living for the school age years

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National Nutrition Month Campaign 2004

Campaign Overview

Campaign Theme

Nutrition Month® is a registered trademark of Dietitians of Canada (DC). Since the early 1980's DC has successfully organized this annual campaign. In March 2004, the theme is focused on Healthy Eating for School Aged Children and Youth 6 to 17 years, where they live, learn, and play.

The slogan is:

Eat Well, Play Well!
Mange bien. Goûte la vie.

Campaign Target Audience

Main Target: Parents and School Leaders (e.g. teachers, school administrators, parent council members) and other community leaders that can influence eating habits of children.

Secondary Target: Students at Elementary and Secondary School (e.g. Junior High or Middle School, and High School).

Campaign Objectives

Teachers and educators and school leaders

- Profile the dietitian as a key resource for nutrition advice.
- Support teachers, educators and school leaders in providing an environment that supports students in establishing and maintaining lifelong, healthy eating and physical activity patterns.
  - ❑ Advocate to schools and government for healthy eating policies in schools and adequate recreational facilities.
  - ❑ Promote nutrition education in schools.
  - ❑ Advocate to schools and government for quality daily physical education in schools.
  - ❑ Provide schools and government with resources and tools on how to establish environments that are supportive of healthy eating and active living.

Parents

- Profile the dietitian as a key resource for nutrition advice.
- Support parents in providing an environment that assists children and youth in establishing and maintaining lifelong, healthy eating and physical activity patterns (e.g. making healthy foods available; providing regular meals and snacks; setting limits and offering guidance; providing a comfortable and pleasant meal time environment; allowing children to regulate their individual needs for foods; being role models; planning regular physical activities as a family; limiting television and computer use; focusing on the enjoyment of physical activity rather than skill development).

- Encourage the whole family to become involved in making healthy food choices, meal preparation, and active living.

School age children

- Promote the benefits of healthy eating.
- Promote the benefits of physical activity.
- Provide students with practical suggestions to meet their food, nutrition, and active living challenges.

Campaign Goal

March is *Nutrition Month*® across Canada and is a nationally proclaimed campaign. The goal of Nutrition Month is to highlight nutrition as a key component of health, and focus on motivating and enabling Canadians to make informed food choices to improve their health. *Nutrition Month*® also stimulates nutrition activities in communities across Canada, profiling dietitians as the best source of reliable nutrition information.

Campaign Rationale

Recent research supports the importance of targeting children and youth with advice on healthy eating and active living. There is reliable evidence to show that school-age children are struggling with a number of issues related to healthy eating and an active lifestyle including:

Inadequate nutrient intakes – A majority of children and youth do not consume nutritionally balanced or adequate diets. Recent Canadian data show low median intakes for most of the food groups of Canada's Food Guide to Healthy Eating in both genders across several grade levels[7, 89]. Not surprisingly, this pattern was associated with intake well below the Recommended Dietary Allowance (RDA)[7, 12]. This finding is consistent with similar US data that show that a majority of children and youth fail to achieve the recommended number of servings from each of the food groups on the USDA Food Guide Pyramid[12].

Decline in breakfast eating in adolescence – Breakfast is considered a key meal in meeting the nutrient needs of children and youth[18]. Breakfast eating is also associated with improved academic performance[19] and healthy weights [90,91]. While a majority of Canadian children aged 6 to 10 consume breakfast[20], less than half of male and approximately one-third of female adolescents report eating breakfast on a regular basis[21].

An increasing reliance on fast foods and restaurant eating - Eating out and frequent visits to fast food restaurants has become a way of life for many children. US data suggest that both children and youth are obtaining less of their energy intake at home and more at restaurants and fast food places [24]. Significant increases in consumption of pizza, cheeseburgers, and salty snacks and decreases in consumption of desserts and certain milk and meat products have been observed in children of all ages**.** Furthermore, frequent fast food restaurant use is positively associated with increases in daily soft drink and French fry use and inversely associated with daily servings of nutrient rich foods including fruit, vegetables, and milk[25].

Increasing consumption of soft drinks - The trend towards increasing soft drink consumption by children has become a concern. The prevalence of soft drink consumption among American youth ages 6 to 17 years increased 48%, from a prevalence of 37% in 1977/1978 to 56% in 1994/1998 [26]. During that same time period mean intake of soft drinks more than doubled, from 5 fl oz to 12 fl oz per day[27].

Inactivity - According to the Canadian Fitness and Lifestyle Research Institute (CFLRI), over half of children and youth aged 5-17 are not active enough for optimal growth and development[34].

A trend towards overweight and obesity - The prevalence of overweight among Canadian boys increased from 15% in 1981 to 35.4% in 1996 and among girls from 15% to 29.26% [46.] At the same time, the prevalence of obesity in children (5%) more than doubled during this same period, to 16.6% for boys and 14.6% for girls [46].

As specialists in nutrition education, registered dietitians are in the unique position to address many of the issues that negatively impact the health of Canadian children and youth. The 2004 *Nutrition Month*® Campaign will provide dietitians with opportunities to assume a leadership role in promoting the health of school aged children, and to collaborate with fitness and health promotion specialists to help children and youth eat well and play well.

Campaign Components

The 2004 *Nutrition Month*® Campaign, "Eat Well, Play Well" is supported by several web-based features:

- **Nutrition Month® 2004 Backgrounder for Dietitians, Educators, Parents and Community Leaders**. This resource contains:
    - A comprehensive review of the existing literature related to Eating, Physical Activity and Body Weight Trends in Canadian Children and Youth,
    - An overview of the Campaign theme and rationale
    - Key messages and practical action strategies for use in *Nutrition Month*® promotions and events
- ***The Dietitians of Canada and Dairy Farmers of Canada 2004 Report on Healthy Eating for the School Age Years***. This report presents the findings of DC's on-line public survey on issues related to healthy eating for children and youth aged 6 to 17 years.
- **Resource Inventory** of existing resources/materials to promote healthy eating and active living in school-age children and youth. Use the on-line interactive Resource Inventory to search for tools and resources, and add your favourites.
- **Stories & Strategies inventory**. This web feature will help you share experiences and approaches for promoting healthy eating and active living in school-age children. You can find out what approaches are being taken in different areas of Canada to improve healthy living for the school age years, as well as add your own initiatives.
- **Consumer fact sheets.** Electronic fact sheets with practical ideas for healthy eating at home and at school will be available. These sheets can be printed off for use with families, clients and other contacts.

LITERATURE REVIEW

Introduction

The goal of this literature review is to provide information on eating, physical activity and obesity patterns in Canadian children and youth. This information will serve to support the 2004 *Nutrition Month®* Campaign, which will focus on promoting healthy eating to school-aged children where they live, learn, and play.

The first section presents a demographic portrait of Canadian children and youth. The past two to three decades have seen significant shifts in the demographics of the Canadian population. These shifts impact the day-to-day lives of all Canadians, including children, and provide context to the trends observed in eating, physical activity and obesity patterns.

The second section provides an overview of the nutritional status, eating patterns and determinants of eating behaviours in children and youth. Childhood and adolescence are viewed as critical periods for the development of sound eating habits. This section also briefly discusses the challenges facing school age children with respect to integrating healthy eating into life.

The third section focuses on physical activity patterns in children and youth between the ages of six to seventeen years. Physical activity, like optimum nutrition, is considered a key component of a healthy lifestyle.

The fourth section explores an issue that has become a focal point for the medical community, health promotion specialists, educators, parents and care givers: childhood obesity. This section describes the magnitude and scope of overweight and obesity in Canadian children and youth; discusses the etiology of this problem; and describes current practice for its management.

Section 1: Demographic Portrait of Canadian Children and Youth

Significant demographic shifts have occurred in Canada over the past thirty to forty years and children and youth now represent a smaller segment of the population than ever before. Declining birth rates have led to steady reductions in the proportion of young people within the Canadian population. During the 35-year period from 1966 to 2001, the population aged 19 years and under declined by 7.7% while at the same time the population aged 65 years and older more than doubled[1]. By the year 2016 at the latest, Canada will have a population comprised of far more seniors than children aged 14 and under, a phenomenon not previously reported[2].

The so-called "greying" of the population is expected to profoundly influence the lives of today's children due to reductions in the number of "working-age" Canadians. As a result of more people leaving the labor force (through retirement) than people entering it, governments, at all levels, are expected to see significant reductions in their tax bases. This situation will, in turn, undoubtedly impact the allocation of resources and programming targeted towards children and youth.

The ethnic and cultural diversity of Canada's population continues to grow and shift. In 1867, at the time of Confederation, 61% of Canadians were of British origin, 31% were French, and Aboriginal peoples and other groups made up the balance. The proportions are much less clear today. In 1996, more than a third of

Canadians reported multiple ethnic origins, 11% and 9% of The population reported uniquely British and French origins, respectively, and nearly 19% claimed that they considered themselves to be simply 'Canadian'[3]. The ever-changing Canadian "mosaic" will undoubtedly influence the food habits of children and youth as ethnic cuisine is integrated into mainstream food choices.

Significant societal change and a secular redefinition of the term "family" have occurred in Canada over the past two generations. While an over-whelming majority of children (78%) continue to be raised in families led by two-parents, contemporary Canadian families are configured very differently in other respects when compared to families in the past[3].

The size of families has changed dramatically since the early 1960's. The so-called "nuclear family" comprised of two parents and two children no longer reflects most Canadian households, with an average of 1.1 children living at home[3]. In 1991, one in six Canadian children under the age of 14 had no brothers or sisters[3]. The number of large families, made up of six or more people has dropped from 16% in 1961 to less than 3% in 1999[3]. Similarly, intergenerational families - with grandparents, parents and children all sharing a residence – are a rarity, comprising less than 3% of Canadian households[3]. Cultural differences exist in family configuration. For example, recent immigrants to Canada headed nearly half of all intergenerational households[3].

While two-parent families continue to dominate, an ever-increasing number of Canadian children are being raised in lone-parent households. Currently, one in five families with children is headed by a lone parent, up 33% from just 10 years ago, and double the number seen in the 1970's[3]. The vast majority of lone parent families (83%) is headed by women, a situation which, in turn, impacts the socio-economic status of significant numbers of children[3].

Canadian children and youth enjoy a relatively high standard of living as compared to their cohorts in many other parts of the world. The average family after-tax income for two parent families with children in 2001 was $64,704, the highest level in more than a decade[4]. In a majority of these families (63%) both parents are employed outside of the home[3].

In the midst of a general climate of prosperity, sizable numbers of Canadian children and youth continue to live in poverty. One in six Canadian children or 1,139,000 children live in families with average incomes below the low-income cutoff line[5]. Low-income is particularly prevalent (42%) in lone-parent families that are headed by women[5]. Recognizing that income is a key determinant of health, children in these families are at risk for both short and long-term health consequences.

In addition to family and home, schools are primary environments for growth and development of children and youth. Between grade one and the end of high school, children spend over 2,300 hours at school. Public elementary and secondary school education is provided free to all Canadian citizens, landed immigrants and refugees. In 1997–98, there were 15,566 elementary and secondary schools in Canada—only 5% of which had enrolments of 1,000 students or more. Children are generally 6 or 7 years of age when they begin their first grade of elementary school. Each of the provinces and territories offers some form of pre-elementary school education. In 1996–97, between one-third and one-half of all 3- to 5-year-old Canadian children attended some form of preschool program. School attendance across the country is generally mandatory up to at least the age of 16[5].

Section 2: Nutritional Status, Eating Patterns and Determinants of Eating Behaviours in Children and Youth.

Healthy eating offers a variety of benefits to children and youth. Optimization of growth and developmental potential, as well as a decreased risk for chronic disease later in life has all been linked to the nutritional status of children.

Comprehensive data on the food habits and eating patterns of Canadian children and youth are lacking. The most recent national data come from the Nutrition Canada survey that was conducted in the early 1970's[6]. While data exist that describe food practices in Canadian children, it is important to recognize that there are sizable gaps in our understanding of these practices. There is an urgent need for additional study in this area.

Longitudinal data on the dietary intake of US children have been collected through a number of national surveys and trials. In the absence of Canadian data, these studies provide a proxy of current eating patterns in children and youth.

Energy and Macronutrient Intake

Data describing total energy intake of both Canadian and US children has been limited and inconsistent. While some US studies have observed slight increases in total energy intake, others suggest that no significant changes have occurred over the past two decades [7-15]. Enns et al tracked energy intake of American children from 1977 to 1996[8]. In 1977 the mean energy intake for girls and boys 6 to 11 years old was 1806 kcal/day, and 1950 kcal/day respectively. In 1996 a similar cohort of children was examined and energy intake remained essentially stable at 1825 kcal/day for girls and 2050 kcal/day for boys [8.] Paradoxically, in the face of the trends towards childhood obesity, a number of studies indicate that, when expressed as energy intake per kilogram body weight, intake has actually decreased [9,10,11]. For example, analysis of dietary intake of 10 year old children involved in the Bogalusa Heart Study (1973-1994) found that while total energy intake remained unchanged from 1973 to 1994, energy intake per kilogram body weight decreased from 65.5 kcal in 1973 to 55.4 kcal in 1994, in part because children's weight increased [9].

While data describing energy intakes in children and youth is wanting, the available research suggests that macronutrient distribution within the diet has shifted, particularly where fat is concerned. Enns et al found that the percentage of energy intake from carbohydrate increased by 7.61% to 54.9% for girls and by 8.0% to 54.8% in boys between 1977 and 1996. During the same time period, the percentage of energy intake from protein intake decreased by 1.6% for both genders to 13.9 % of total energy for girls and 14.0% of total energy for boys. Fat intake also decreased for both genders from 1977 to 1996. The percentage of energy intake from total fat has decreased from 38% to 32% for girls and boys, while the percentage of energy from saturated fat has decreased from 16% to 11% [8].

The dietary changes observed in school age children and youth are reflective of overall trends in the types of foods currently favoured by North Americans. Both Canadian and US studies undertaken since the early 1990's suggest a trend towards decreasing consumption of milk, vegetables, soups, whole grain breads, and eggs, while at the same time intake of fruit and fruit juices, carbonated beverages, poultry, and cheese have increased [7,8,11].

Food Intake of Children and Youth Compared with Current Recommendations
A majority of children and youth do not consume nutritionally balanced or adequate diets. Recent Canadian data show low median intakes for most of the food groups of Canada's Food Guide to Healthy Eating in both genders across several grade levels[7, 89]. Not surprisingly, this pattern was associated with intake well below the RDA for several nutrients[7]. This finding is consistent with similar US data that show that a majority of children and youth fail to achieve the recommended number of servings from each of the food groups on the USDA Food Guide Pyramid[12].

There is a trend towards decreasing nutrient intakes during adolescence. Available Canadian data describe gender differences between teenage males and females and suggest that there are "nutritional gaps" in the diets of adolescents [16]. Teenage males aged 13-17 years are significantly more likely to meet or exceed the recommended number of servings for all of the four food groups of Canada's Food Guide to Healthy Eating [16]. Teenage girls appear to be less likely than their male counterparts to achieve the Food Guide's recommendations. Specifically, results of the Food Habits of Canadians study suggest that they are at risk for low intakes of milk products and meats and alternatives[16.] Furthermore, although a majority of the respondents (male and female) in this age range met the minimum standard for vegetables and fruits, more in-depth analysis suggests that they struggled to meet folate requirements[16]. This phenomenon may be due to the marginal level of adequacy that was reported and/or a lack of variety in the specific types or forms of vegetables and fruit that are selected.

Calcium
Adolescence is a critical period with respect to the accretion of bone mass. Approximately 50% of skeletal mass is accrued during adolescent years [85]. In girls, 95% of total body mineral mass is accumulated by age 17 and 99% by age 27[85]. Optimizing bone health during adolescence not only reduces future risk of osteoporosis, but also helps to prevent fractures during youth.

Calcium is essential for bone health. Teenage girls have repeatedly been shown to be at risk for inadequate calcium intake and recent Canadian data indicate that this situation has not changed [17]. Self-reported data suggest that mean calcium intake among females aged 13-17 years approximately 1000 mg/d, far below the Adequate Intake (AI) 1300 mg/d [16]. Mean calcium intake in teenage boys is significantly higher at approximately 1400 mg/d or 108% of the AI[16].

Milk and milk products remain an important contributor of calcium in the diets of children and youth. Recent research suggests that youth who achieve the 3-4 servings of milk products recommended by Canada's Food Guide to Healthy Eating also achieve the RDA for calcium[16]. Despite this, 50% of boys and girls report inadequate intakes of milk products[16].

Iron
Adolescent girls are at risk for inadequate iron intakes and iron deficiency due, in part, to the physiological demands of growth coupled with food and lifestyle choices that do not support adequate iron intakes, such as fad dieting. The very limited data that do exist suggest that iron intake amongst 13-17 yrs old females is adequate (15.1 mg/day as compared to the RDA of 15 mg/d) [16]. Confounding the issue is the recognition that while Grain Products, including fortified cereals, and Meat and Alternatives are two of the main sources of iron, almost 30% and 45% of male teens and female teens, respectively, do no consume the minimum number of servings from the Grain Products food group[16]. Additional research is needed to fully assess the adequacy of iron intakes in Canadian adolescents.

Eating Patterns and Fast Food Intake
Significant changes have occurred in North American eating patterns over the past two decades. These changes have implications for nutrient intake in children and youth and must be recognized when considering intervention measures.

Breakfast Eating
Breakfast eating patterns are an ongoing issue of interest to nutrition and health promotion practitioners. Breakfast is considered a key meal in terms of meeting the nutrient needs of children in that children who eat breakfast are significantly more likely to meet their overall nutrient requirements[18]. Children who skip breakfast have total nutrient intakes that are lower than children who consume breakfast at school or at home[99]. In addition, there is a positive association between breakfast eating and improved academic performance[19].

Breakfast eating may confer benefits in terms of obesity prevention in children[90]. An inverse relationship has been found to exist between obesity and overweight and breakfast consumption in children. European data indicate that obese children, especially girls, omit breakfast more frequently and eat smaller amounts of grain products at breakfast, in comparison to normal-weight children[90]. The energy supplied by breakfast, measured as a percentage of energy expenditure, was noted to be lower in the obese than in the normal-weight children, and their breakfasts were also lower in carbohydrates, thiamin, niacin, vitamin D, and iron[90]. This may reflect the poorer overall quality of the diets of the overweight subjects[90]. It is also possible, however, that an inadequate breakfast may contribute to the making of poorer food choices throughout the rest of the day, thereby promoting obesity[90].

A majority of children (95%) aged 6-10 years partake of some type of breakfast meal on a daily basis [20]. However, breakfast eating declines as children age, and a significantly lower number of adolescents (42.8% of all adolescents; 48.8% of boys and 36.1% of girls) report eating breakfast on a regular basis [21]. A number of factors including concerns with body weight, and decreases in shared family meals appear to influence the decline in breakfast consumption in adolescents[21].

Family Dinners Versus Fast Food
Traditional family dinners are rapidly becoming a thing of the past. Less than half of all U.S. children aged 9-14 years report eating dinner with their families on a daily basis and 17% report never eating dinner with family [22]. This trend presents negative consequences in that eating dinner as a family was associated with healthful dietary intake patterns, including more fruit and vegetables, less fried food and soft drinks, less saturated and trans fat, lower glycemic load, more fibre and micronutrients from food [22,23,98]. In addition, an increasing reliance on restaurant meals may ultimately detract from the development of food purchasing and preparation skills in children and youth.

Eating out and a reliance on fast foods has become a way of life for many children. Both children and youth are obtaining less of their energy intake from home prepared foods and more from restaurants, and take-out foods [24]. Significant increases in consumption of pizza, cheeseburgers, and salty snacks and decreases in consumption of desserts and certain milk and meat products have been observed in children of all ages[25]**.** Furthermore, frequent fast food use is positively associated with increases in daily soft drink and French fry use and inversely associated with daily servings of nutrient rich foods including fruit, vegetables, and milk[25].

It seems unlikely that North Americans will abandon their pattern of eating on the run any time soon. Recognizing this, children and their parents need assistance in developing the skills required to promote well-balanced eating under these challenging circumstances.

Soft Drink Consumption

The rising prevalence of obesity in children has been linked, in part, to the consumption of sugar-sweetened drinks and, as a result, the trend towards increasing soft drink consumption by children is becoming an issue of concern for nutrition professionals. During the period between 1977 and 1998, the prevalence of soft drink consumption among youth ages 6 to 17 years increased from 37% to 56% [26]. During that same time period, mean intake of soft drinks more than doubled, from 5 fl oz to 12 fl oz per day[27]. The home environment represents the largest source of children's soft drink access. However, an increasing share is obtained from restaurants and fast-food establishments (+53%), vending machines (+48%), and other sources (+37%) [27].

Soft drink consumption influences overall nutrient intakes in children and youth. Energy intake is positively associated with consumption of non-diet soft drinks[27]. A recent study showed that mean adjusted energy intake was 1,830 kcal/day for school-aged children who were non-consumers of soft drinks compared with 2,018 kcal/day for children in this age group who consumed an average of 9 oz of soft drinks or more per day [27]. Those in the highest soft drink consumption category consumed less milk and fruit juice compared with those in the lowest consumption category (non-consumers) [28].

Factors That Influence Food Selection and Eating Habits in Children and Youth

Childhood and adolescence are periods of rapid development and physical change. And while healthy eating would clearly be of benefit, multiple different factors influence the day-to-day food choices and eating habits of young people[97].

Determinants of Health

Nutrient intakes, eating habits and, ultimately, health result from the complex interrelationship of a number of key factors. These factors, termed the Determinants of Health, influence all aspects of life, at every stage of life, including childhood and adolescence. The evidence indicates that the key determinants that influence population health are: income and social status; social support networks; education; employment/ working conditions; social environments; physical environments; personal health practices and coping skills; healthy child development; biology and genetic endowment; health services; gender; and culture[101].

The Determinants of Health clearly recognize the sizable contribution of culture and psycho-social factors to nutritional health. These factors, which include issues such as parental influences on eating habits; concerns with body image, body weight and size; and food promotion and advertising, demonstrate the complexities that underlay food selection in children and youth.

Parental Influences on Eating Habits

From income and social status to the development of personal health practices and coping skills related to nutrition, parents have an unparalleled impact on the eating habits of their children.

Parents are role models for health and parents' eating habits have a strong impact on their children from the moment of conception right through adolescence. For example, inadequate nutrient intakes during pregnancy increase the risk of a child developing certain health problems and disabilities[92]. Conversely, infants born at a normal birth weight and young children who develop strong coping skills, a sense of

connectedness to their parents, enjoy quality childcare, good nutrition and plentiful opportunities for stimulation are more likely to practice healthy behaviours in later life[92].

Connectedness and the perceived quality of the parent-child relationship, while seemingly unrelated to nutrition, also influence food behaviours in children and youth. For example, US data indicate that students who state that they are able to communicate with parents or guardians on serious issues, are closely monitored by their parents, who live with one or both parents, and who spend minimal amounts of time at home unsupervised are significantly more likely to choose healthy breakfasts, healthy lunches, and more fruits and vegetables than those who do not enjoy this kind of close-knit relationship with their parents93. Recognizing and supporting the parent-child relationship is critical to the success of programs designed to modify food behaviours in children and youth.

Concerns about Body Weight and Size

Although a majority of Canadian youth fall within the healthy weight range, feelings of dissatisfaction with body weight and size are common, particularly among teenage girls. Over 80% of girls in a British Columbia survey reported a healthy body weight, but less than 50% of these same girls saw their weight as "about right" [29]. This data is consistent with that collected elsewhere and implies a pervasive level of dissatisfaction with body weight and shape in young women [82,83].

Food restriction and fad dieting is relatively common among teenage girls. In an attempt to manage their weight, girls may eliminate nutrient-rich foods. This, in turn, detracts from an intake of key nutrients such as calcium, and iron. Paradoxically, restricting calcium intake may make weight management more rather than less of a challenge given the growing body of research linking adequate calcium intakes to the attainment of a healthy body weight[86].

Food Promotion and Marketing

Food promotion and marketing strategies are targeted towards children and youth. These promotions have an impact on children and, as a result, influence their subsequent food choices.

Content analyses have shown that food is the most frequently advertised product category on children's TV [30]. US studies indicate that commercial food ads aimed at children contained almost no reference to whole grain products, fresh vegetables and fruit, or milk products[30].

Controlled studies on children's choices have consistently shown that children exposed to advertising choose advertised food products at significantly higher rates than do those not exposed [30]. US studies have documented positive associations between televised food commercials and food preferences in preschool children [95]. Repeated exposure to food advertising is associated with an increase in requests for the foods being promoted [32].

Like other forms of advertising, the marketing of food products to children in Canada is regulated by both voluntary and legislated means. The Canadian Code of Advertising Standards is the principal instrument of advertising self-regulation in Canada[94]. The Code was developed to promote professional practice of advertising and sets the criteria for acceptable advertising. The Broadcast Code for Advertising to Children is designed to complement the general principles for ethical advertising outlined in the Code, which applies to all advertising. The Code for Children serves as a guide to advertisers and agencies in preparing commercial messages that adequately recognize the special characteristics of the children's audience[94]. As well, all food advertising must comply with the Food and Drug Act and the Guide to Food Labelling and

Advertising, which support Health Canada's Guidelines for Healthy Eating and Canada's Food Guide to Healthy Eating.

Section 3: Physical Activity Patterns of Children and Youth

Regular physical activity offers a wide range of health benefits to both children and youth. These benefits include:

- Chronic disease prevention,
- Promotion of healthy body weights,
- Increased levels of self-efficacy and higher self-esteem,
- Improved academic and cognitive performance, and
- Positive improvements in attitudes, discipline, behavior and creativity.

Canadian children and youth are becoming increasing inactive**.** According to the Canadian Fitness and Lifestyle Research Institute (CFLRI), over half of children and youth aged 5-17 are not active enough for optimal growth and development[34].

Participation Levels and Favoured Activities

Participation levels for physical activity vary with age, and gender. The available data suggest that Canadian girls are less active than boys at all ages. While 48% of boys are considered active enough for optimal health benefits, only 38% of girls achieve this level of participation [34]. Gender differences are present in both grade-school children and teenagers [34.] For children aged 5-12, 44% of girls versus 53% of boys are considered active enough, while 30% of adolescent girls and 40% of adolescent boys report sufficient levels of physical activity[34.]

Age and gender differences are also apparent with respect to favoured types of activities [34]. Bicycling is the most reported physical activity among children aged 5-12, followed by swimming, playing on playground equipment (e.g. swings, slides, teeter-totters), then walking [34]. Boys aged 5-12 are more likely than girls of the same age to play golf, snowboard, skateboard, and participate in team sports (e.g. soccer, football, hockey, basketball, or baseball) [34]. However, more girls than boys participate in social dancing, skating, gymnastics, ballet or other dance classes, and play on playground equipment [34].

In general, the activities cited as being "most popular" among children aged 5-12 remain popular among adolescents, although the proportion of teenagers participating in each activity is usually lower [34]. In addition, teens cite higher levels of participation in a number of activities that relatively few younger children partake in including alpine skiing, weight training, volleyball, social dancing, badminton, golf, tennis, football, basketball, exercise classes, and snowboarding [34]. Teenage girls are more likely than teenage boys to participate in social dancing, cross-country skiing, exercise classes or aerobics, and ballet or other dance classes. In contrast, teenage boys report higher levels of participation than teenage girls in activities such as bicycling, golf, snowboarding, skateboarding, weight training, and team sports [34].

Barriers to Physical Activity and Active Living

The levels of inactivity reported by Canadian children and youth suggest that barriers exist to greater participation. A 1999 CFLRI survey of Canadian parents identified the following barriers to participation in physical activity by children and youth[35]:

- Lack of skill and ability—13% of parents strongly agree that their children do not feel they are good at sports and physical activity.

- Excessive cost—26% of parents strongly agree that the dollar costs associated with their children doing physical activity are too high.

- Lack of information—20% of parents strongly agree that there is not enough information on local physical activity and sport opportunities available for children.

- Inconvenience—16% of parents strongly agree that the hours and class times offered by their local centres do not suit the needs of their children. In addition, 19% strongly agree that it is too hard to get to places where their children can be active.

- Program issues—22% of parents strongly agree that there are not enough programs, services, or facilities in and around their local communities that offer opportunities for their children to be active. In addition, 18% strongly agree that the programs and facilities available are not the right types for their children.

- Lack of social support—23% of parents strongly agree that there are not enough places where a family can be active together. In addition, 17% strongly agree that it is too difficult to find the right type of coaching or instruction for their children, and 15% estimate that it is too difficult to find other people with whom their children can be active.

- Safety concerns—13% of parents strongly agree that safety concerns keep their children from walking or bicycling.

Teens identify other barriers to activity in addition to those described by their parents. For example, in one recent study of over 1000 Toronto area high school students' time cited constraints due to school, work, and family activities as barriers to physical activity[36].

It is noteworthy that both parents and teens equate being physically active with organized activities or sport. This suggests that the potential benefits of activities such as walking, cycling, and active play are under-valued by many Canadians.

Predictors of Physical Activity in Children and Youth

Physical activity levels in children and youth are influenced by multiple factors ranging from income and socio-economic status to parental and peer support and role modeling for an active lifestyle. No one factor is singly responsible for determining whether or to what degree children and adolescents are active. Key predictors cited in the literature include:

Peer and Parental Support

The 1988 Campbell Survey on the Well Being of Canadians indicated that all forms of social support (e.g. family, peers, significant adults) positively influenced physical activity levels in children of all ages [38]. Peer support is of particular importance to adolescents and teenagers, with those who enjoy high levels of peer support for physical activity tending to be more active.

The influence of parental support for and involvement in activity lessens as a child ages. However, data from Statistics Canada indicate that children and youth with two physically active parents have 4.8 times

greater chance of sport participation than those whose parents are inactive parents [39]. In addition, according to the General Social Survey [GSS], direct parental involvement in sport with their children - either as a participant or a volunteer - further enhanced participation [40]. When parents were both participants themselves and volunteers, child participation climbed to 86% [40].

Age

There is an inverse relationship between age and physical activity. In general, as adolescents age there is a trend towards declining levels of activity [34]. A number of factors are thought to be contributing to this trend including declining peer and parental support for physical activity.

Gender

As previously stated, girls are less likely than boys to be physically active. The phenomenon is observed at all ages from early childhood to adulthood [34]. A wide range of factors, including physiological differences, and socio-cultural influences may be responsible for this phenomenon [37].

Media/Television/Video Game Use

Television viewing and video game use has a profound impact on the lives of Canadian children and youth. According to the Canadian Pediatric Society, by high school graduation, the average teen will have spent more time watching television than in the classroom [41]. On average, Canadian children aged 2-11 years watch 14.2 hours of television each week, while older children and adolescents watch an average of 13.1 hours of television each week[42].

An inverse [negative] relationship exists between television viewing and physical activity levels.
TV viewing and video game use are sedentary pursuits that detract from physical activity in children and youth. Work by Gortmaker et al suggests that more than 60% of overweight incidence may be associated with excess TV viewing time, a finding that is consistent with those from a number of other studies [43,67,68]. Crespo et al found that the prevalence of obesity was lowest among children watching ≤ 1 hr of TV, and highest among those watching ≥ 4 hr of TV per day [69.] Children who spend time watching television also spend less time outdoors and physical activity levels have been directly related to the amount of time spent outdoors[44].

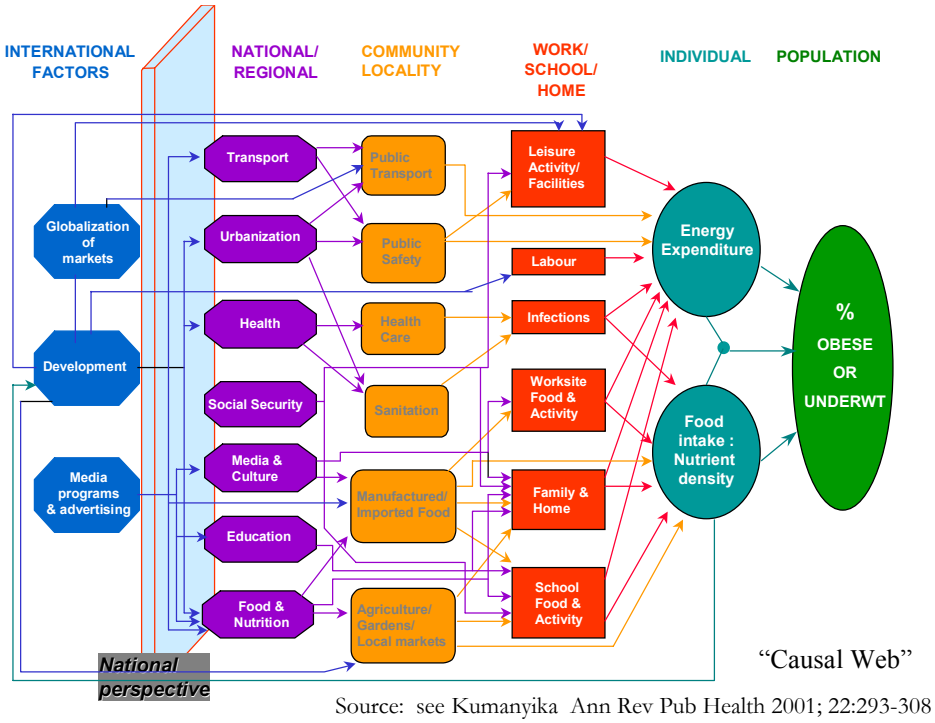
Income and Socio-economic status [SES]

Income is a key determinant of health behaviours including physical activity [45]. In general, as income and SES decrease, physical activity levels decline [45]. Limited financial resources may make it impossible for a young person to pay user fees, buy necessary clothing or equipment or travel to a fitness facility. In addition, issues such as concerns for personal safety have been cited as barriers to participation to more affordable forms of physical activity such as walking and cycling[84].

Section 4: Overweight and Obesity in Children and Youth

Overweight and obesity are complex health problems that are impacted by multiple factors linked to the Determinants of Health (See Figure 1: Causal Web). Research suggests that the prevalence of childhood obesity in Canada has increased dramatically. However, the factors underlying this trend have not been fully quantified.

Figure 1: Causal Web for Obesity or Underweight[100]



Source: see Kumanyika Ann Rev Pub Health 2001; 22:293-308

Prevalence

Canada currently has no surveillance system in place to monitor trends in overweight and obesity in children and youth. In addition, the definitions and measures used to assess and classify body weight in children and youth have varied considerably, both in Canada and internationally[88, 96]. Despite these concerns, recent reports support the fact that weight disturbances are a serious and growing problem that impacts a significant numbers of younger Canadians.

There is strong evidence to suggest that the prevalence of both overweight and obesity in Canadian children and youth has escalated dramatically over the past two decades [46]. The results of analysis done using nationally representative, longitudinal data to examine changes in body BMI in children aged 7-13 years indicate that since 1981, BMI values have increased at a rate of nearly 0.1 kg/m^2 per year for both genders at most ages. Tremblay and Willms found that the prevalence of overweight (defined as a BMI greater than the 85th age and gender specific percentile) among boys increased from 15% in 1981 to 35.4% in 1996 and among girls from 15% to 29.2% [46]. The prevalence of obesity (defined as a BMI greater than the 95th age and gender specific percentile) in children (5% in 1981) more than doubled during this same period, to 16.6% for boys and 14.6% for girls [46].

Canadian children are not alone in their struggle with weight. The World Health Organization (WHO) considers childhood obesity to be epidemic in some areas and rising in many others [47]. The trend towards increasing overweight and obesity in children and youth has been observed in both industrialized and developing nations worldwide where, paradoxically, it often coexists with under-nutrition [47]. WHO estimates suggest that as many as 1 billion adults and 17.6 million children under age five worldwide are overweight or obese [47].

Health Consequences of Overweight and Obesity in Children

Overweight and obesity increase, either directly or indirectly, the risk for a number of health problems and medical conditions. Positive correlations exist between increased adiposity in children and adolescents and the development of dyslipidemia, hypertension, impaired glucose tolerance, type 2 diabetes mellitus, menstrual irregularities, asthma, orthopedic injuries and obstructive sleep apnea [48-56].

Overweight and obesity also impact mental health independent of any physical consequences. Work by Schwimmer and colleagues shows that obese children and adolescents report significantly lower health-related quality of life compared to healthy weight children[57]. Overweight and obese children are also more likely than their healthy weight peers to report suffering from peer directed social marginalization, verbal harassment, and bullying [58]. Problems with depression and low self-esteem are associated with these kinds of weight disturbances, particularly if they persist into adolescence [59].

Weight disturbances in children and youth appear to pose long-term consequences and a persistent increase in the risk for chronic disease. Obesity in childhood and adolescence is an independent risk factor for adult obesity. This risk presents at an early age and increases through adolescence. For example, Guo and Chumlea reported that the probability of childhood obesity persisting into adulthood increases from approximately 20% at 4 years of age to approximately 80% by adolescence[60]. Furthermore, links have been made between adolescent obesity and an increased risk for health problems during adulthood. Adolescent overweight has been shown to increase both all cause morbidity and mortality from coronary heart disease [50]. Particularly concerning is evidence indicating that overweight in adolescence is a more powerful predictor of lifetime health risk than overweight in adulthood [50].

Etiology

Overweight and obesity are complex conditions with genetic, physiological, psychological, social, and familial dimensions to their etiology. Each of these dimensions or factors is thought to exert some influence on individual risk. However, the specific contribution of each factor has not been quantified.

Genetics

Genetics undoubtedly influence the propensity for overweight and obesity in some children, independent of environmental factors such as learned eating behaviours. There is also recognition that obesity tracks through some families and that genetics, may underpin this situation. For example, younger children with 1 obese parent have a 3-fold increase in the odds ratio for adult obesity [61]. The odds ratio increases markedly to more than 10 if both parents are obese [61]. It is important to recognize that this situation may also be influenced by environmental factors, such as shared eating and activity patterns.

Genetic conditions including Prader-Willi syndrome, Trisomy 21 [Down syndrome], Bardet-Biedl syndrome, and Cohen syndrome, while relatively rare, are known to be associated with an increased risk for obesity in conjunction with a number of other symptoms.

The impact of genetics on body weight and composition, while influential, is not felt to be a major factor in the trend towards obesity and overweight in children and youth. The rapid rise in the prevalence of childhood obesity suggests that, while genetics may play a role in the etiology of this problem, the influence of environmental factors is particularly profound. The magnitude of changes observed in BMI over the past 15 years is felt to have occurred too rapidly to be related to genetics. Instead, a sustained positive shift in energy balance is believed to play a central role in the increasing trend towards childhood obesity.

Energy Intake

Longitudinal data detailing mean energy intake in Canadian children and youth is lacking. No tracking or surveillance system is in place to quantify the energy intake and nutritional status of this segment of the population, and the last comprehensive national nutrition survey occurred in 1970[6]. The only recent Canadian information on energy intakes in children and youth are derived from the Food Habits of Canadians study which found mean energy intake of 2201 kcal/d for females aged 13-17 years[16]. The same study reported mean energy intake of 3206 kcal/d for adolescent males. These values, for both genders, are relatively close to the Estimated Energy Requirement (EER) in comparable age and gender groups based on an active physical activity level (PAL) [62]**.** As such, they would not be expected to produce the magnitude of weight gain observed in this population assuming physical activity patterns are at the "active" level assumed by the DRI.

Research on trends in energy intake in the United States does little to clarify the specific impact of diet on childhood obesity. As previously noted, data from national dietary surveys has produced mixed results with two surveys indicating that energy intake has decreased and one suggesting an opposite effect. Analysis of ecologic or population data conducted by Harnak and colleagues supports the notion that energy intake has climbed progressively over the past 2 decades [63]. Based on per capita energy availability estimates from the United States Department of Agriculture, these data indicate that energy availability increased by 15% between 1970 and 1994 [63]**.**

Increases in portion sizes of foods have been suggested as a contributing factor in childhood obesity. Canadian data describing trends in portion sizes of foods is limited to estimates of daily per capita nutrients available from the food supply and, as a result, parallels cannot be drawn between portions sizes, energy intake and the trend towards childhood obesity. US data suggest that portion sizes of foods, both served at home and in fast food restaurants, have shown dramatic increases since the late 1970's [64]. This, in turn, is speculated to be a contributor to obesity. However, it must be recognized that data demonstrating a causal link between the trend towards larger portion sizes of foods and obesity is lacking. As such, it would be inappropriate to draw any conclusions about the contribution of portion size to the prevalence of overweight and obesity in children.

Additional research is clearly needed to quantify the relationship between energy intake and childhood obesity.

Physical Inactivity and Energy Expenditure

Physical activity comprises a key component of energy expenditure, the second variable that along with calorie intake determines energy balance. Physical inactivity correlates strongly with an increased risk for overweight and obesity in children. Analyses of data from the 1988 Campbell's Survey on the Well-Being of Canadians suggest that there is a negative relationship between self-reported physical activity and BMI[38]. Children and youth who report low levels of physical activity are more likely than their active cohorts to be overweight or obese [38, 66]. Data collected for the World Health Organization's *Health Behavior Survey, A Cross-National Study* suggest that physical activity levels in Canadian children aged 11-15 decreased significantly in the period between 1990 and 1996 [70]. This situation must be addressed in the immediate future if Canadians are to achieve any measure of success in terms of curbing childhood obesity.

Socio-cultural and Familial Influences on Obesity

Family and home environment are key mediators of eating habits and physical activity patterns in children and youth. As a result, family dynamics, and experiences and role modeling at home have implications on risk for weight disturbances.

Overweight and obesity are universal concerns that impact children from all walks of life. However, the prevalence of overweight and obesity in children and youth is not equally distributed and some children are at higher risk than others. For example, low socioeconomic status is a predictor for the development of obesity [71, 87]. The relationship between low SES and obesity is complex. Lack of food and access to nutrient-dense foods, such as vegetables and fruit, is clearly a barrier to healthy eating. In addition, low socioeconomic status may infringe upon a child's ability to be physically active on a regular basis by curbing access to safe facilities and fee-based programs.

Mothers exert significant influence on the eating habits of their children and certain maternal-child feeding patterns may promote overweight, obesity and/or disordered eating [73]. Longitudinal data suggest that maternal restriction of food can promote overeating in girls [74.] Conversely, mother-child feeding patterns that allow children to participate in food selection are associated with reduced child BMI[73].

The challenge to overcome the socio-cultural and familial influences on childhood obesity is immense. Health professionals may be limited in their ability to change many of these factors. However, continued promotion of healthy eating and active living to families is still warranted.

Prevention and Treatment of Childhood Obesity

Identifying strategies to prevent childhood obesity has become a focus for dietitians, physical activity and health promotion specialists, pediatricians, parents and other caregivers. However, overweight and obesity are complex concerns that have proven to be difficult to prevent and manage.

Increases in overweight and obesity in children have fuelled a great deal of recent research. However, sizable gaps in understanding are still present and the need for additional study remains.

A recent systematic review of interventions to prevent obesity in children was conducted as part of the Cochrane Collaboration[75]. This review involved an extremely comprehensive literature search and evaluation process. Studies included in the review were required to meet specific consideration criteria (e.g. randomized controlled trials and non-randomized trials with concurrent control group that observed participants for a minimum of three months; targeted children < 18 years of age, intervention focused on obesity prevention in children and involved diet, physical activity and/or life stage and social support). Only 10 studies out of the many thousands found in the literature met these criteria; seven were long-term (children observed for at least one year), three were shorter term (at least 3 months). Eight were school/nursery-based interventions, one was a community-based intervention targeting low-income African-American families, and one was a family-based intervention that targeted non-obese children of obese parents. The studies included were diverse in terms of study design and quality, target population, theoretical underpinning of intervention approach, and outcome measures, and, as a result, it was not possible to combine study findings using statistical methods. Three of the four long-term studies that combined dietary education and physical activity interventions resulted in no difference in overweight, whereas one study reported an improvement in favor of the intervention group. In two studies of dietary education alone, a multimedia action strategy appeared to be effective but other strategies did not. The one long-term study that only focused on physical activity resulted in a slightly greater reduction in overweight in favor of the intervention group, as did two short-term studies of physical activity. After considering all of

the evidence, the author's concluded that "there is limited high quality data on the effectiveness of obesity prevention programs and no generalisable conclusions can be drawn. However, concentration on strategies that encourage reduction in sedentary behaviours and increase in physical activity may be fruitful" [75].

Prevention remains the priority in terms of thwarting childhood obesity. However, because significant numbers of children and youth already suffer from obesity increasing attention has been paid to identifying effective treatment modalities. The complexity of this issue has made this process challenging and no one approach has proven itself to be particularly efficacious thus far.

The Cochrane Collaboration has conducted a systematic review of the literature relating to the interventions to treat childhood obesity[76]. This work, which was independent of their work on prevention strategies, was also limited by a lack of high quality data. After reviewing 18 randomized controlled trials involving almost 1000 participants in total the author's concluded that "there is a limited amount of quality data on the components of programs to treat childhood obesity that favor one program over another" [76].

The findings of the Cochrane review on interventions to treat childhood obesity reiterate the need for additional study on the effectiveness of treatment programs and, as such, no generalisable conclusions can be drawn. However, given the differing nature of the studies evaluated within the Cochrane review, it may be more appropriate to broadly group intervention studies according to setting and target. Doing so results in a clearer picture of long-term efficacy and sustainability of obesity treatment and prevention modalities. What is clear from the broader analysis of studies included in the Cochrane review is that multifactorial interventions prove to be the most successful. The greater the number and foci of the interventions used in concert, the greater the consistency in the data for a positive effect. Viewed from this perspective, multifaceted interventions that combine dietary modification with physical activity, and behavior change strategies result in the most powerful effects in all settings, including school, clinic and family. This is especially true for school and family based settings where the totality of studies reporting interventions combining all three factors showed significant positive effects. Although, as concluded by the Cochrane review, data is still wanting, the available data may be interpreted as suggesting that school and family settings are preferred over the clinical setting for administering similar multifaceted interventions in children. Further research that considers psychosocial determinants for behavior change, strategies to improve clinician-family interaction, and cost-effective programs for primary and community care is required [76].

Despite the relative lack of guidance from the literature, a number of health care provider organizations and groups have developed policy or position statements that deal with childhood obesity, either directly or indirectly [77,78,79,80,81]. Without exception, these policy or position statements recognize the complex interaction of dietary intake and physical activity in the etiology of weight disturbances in children. Lifestyle measures are encouraged, as is the involvement of an inter-disciplinary treatment team.

Methods Employed in the Development of This Review

Articles for review were identified based on:

1. *On-line search of databases (Medline, Psycharticles, the Leisure Information Network Recreation Database) using the keyword method. The following keywords were used: Nutrition and/or healthy eating and children and/or youth; physical activity and/or active living and children and/or youth; obesity and/or overweight and children and/or youth.*
2. *Recommendations of appropriate articles from project reviewers and specialists in the areas of nutrition, exercise physiology, sport sciences, and pediatrics, and*
3. *Sources cited by the collected articles.*

Additional selection criteria included:

1. *The study sample was comprised of, or included, children between the ages of six to seventeen years.*
2. *Articles published in the last five years and studies conducted in Canada were the focus. However, relevant studies published earlier or conducted elsewhere were included when appropriate.*

The findings or conclusions reported in each article were considered from an evidence-based perspective. The quality of evidence from systematic reviews, such as those developed through the Cochrane Collaboration, was considered to be stronger than that originating from unrefined sources (e.g. individual trials or studies).

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KEY MESSAGES AND STRATEGIES FOR PROMOTING HEALTHY EATING AND ACTIVE LIVING IN THE SCHOOL AGE YEARS

Key messages are "talking points" that can be used in your *Nutrition Month*® campaign, promotions, interviews, and articles. Use as many of these key messages as possible throughout your campaign.

1. Healthy Living Builds Healthy Kids

Key strategies to help promote healthy lifestyles in the school age years:

- Teach children to eat well by example. Focus on choosing sensible portions of healthy choices from *Canada's Food Guide to Healthy Eating*".
- Encourage daily physical activity in a variety of ways.
- Offer a variety of foods from the four food groups.
- Choose "Other" foods such as soft drinks, candy and higher fat snack foods less often.
- Recognize and reinforce the important contribution family, friends, and teachers make in a child's life.

2. Breakfast Matters

Key strategies to promote breakfast eating:

- Be a role model. Get the day off to a healthy start. Parents and caregivers who choose a healthy breakfast demonstrate its value to their children.
- Offer a variety of foods from the four food groups that children enjoy eating.
- Aim for a breakfast that includes choices from at least three of the four food groups of *Canada's Food Guide to Healthy Eating*.
- Make breakfast a family affair. Involve everyone in some aspect of breakfast, from choosing the foods that will be served to preparing the meal and cleaning up.
- Use your imagination to make breakfast choices new and exciting.
- Get organized the night before (e.g. set the table, get out the cereal boxes and/or toaster, cut up fruit …).
- Try something new. Recipe ideas can be found in the Dietitians of Canada cookbook and website at www.dietitians.ca/eatwell

3. Do Dinner – Together!

Key strategies for encouraging family dinners:

- Plan ahead. Sketch out dinner ideas in advance. Use *Let's Make a Meal!,* the on-line menu planner at http://www.dietitians.ca/english/menuplanner/overview.html
- Focus on balanced eating. Include a variety of choices from each of the four foods groups of *Canada's Food Guide to Healthy Eating*.
- Mix and match home-prepared foods with convenience items like roasted chickens, or bagged salads to save time.
- Involve the kids. Enlist the help of children, regardless of their age, in planning and preparing dinner.
- Make the grocery store an educational experience. Help children understand how to read the nutrition information on food labels. Look for help at *Healthy Eating is in Store for You*™ www.healthyeatingisinstore.ca
- Be unconventional. Why not try pancakes or waffles for supper?
- Make the most of time spent cooking. Whenever possible, cook in bulk, and freeze the extras for a later date.
- Seek out nutritious foods when eating out. Examples include baked, broiled or roasted entrees instead of those that are deep-fried, salads, baked potatoes, chili, soup served with a whole grain dinner roll, milk or fruit juice instead of pop.

4. Discover the Fun and Great Tastes of Healthy Eating!

Strategies to demonstrate that healthy foods are fun and taste great:

- Be adventurous! Try a variety of different foods from each of the four food groups, combining shapes, flavours, and colours… and preparing foods in new ways.
- Share recipe ideas with family, friends, other parents and kids. Try new recipes.
- Get the kids involved. Encourage children and youth to play an active role in shopping and food preparation.
- Eliminate the competition. Fill your cupboards and fridge with nutrient rich foods like whole grain breads and cereals, fresh and dried fruits, cut up vegetables and yogurt-based dips, meats and alternatives.

5. Get Out and Play

Key strategies for promoting active living in children and youth:

- Use *Canada's Physical Activity Guide to Healthy Active Living for Children and Youth* to educate children about the importance of daily physical activity. Reinforce the importance of an active lifestyle to overall health, growth and development.
- Offer support. Act as their fan club at sporting events. Coach your child's team.
- Act as a role model for physical activity. Take the stairs instead of the elevator. Go for a brisk walk daily. Try a new activity. Get off the bus a stop or two early and walk the rest of the way.
- Build activity into daily life. Plan family activities like hiking, cycling, walking, in-line or ice-skating. Try new activities together. Examples include yoga, martial arts, and gardening.
- Offer a wide choice of activities beyond organized sport. Examples include washing the car, walking the dog, planting a garden, playing tag, building a snowman, shoveling the driveway or sweeping the garage.
- Downsize TV, computer and video game time.
- Keep it fun. Seek out activities that everyone truly enjoys.

6. Help Children Grow into A Healthy Body Weight

Strategies to promote a healthy body size in children and youth:

- Promote healthy eating by choosing a variety of foods from the four food groups in *Canada's Food Guide to Healthy Eating.*
- Eat "Other" foods such as soft drinks, greasy snack foods, and candy less often.
- Start the day with a good breakfast
- Discourage dieting, skipping meals or other restrictive eating as ways to manage weight.
- Encourage an active lifestyle that includes daily physical activity.
- Stock up on healthy snack foods such as, fresh vegetables and fruit, yogurt, cheese sticks, nuts, whole grain breads, cereals and crackers.
- Focus on overall health and well-being rather than weight management specifically when talking to children.
- Provide children with positive comments on their strengths, as well as their efforts toward healthy living.
- Recognize that children's body weights increase and fluctuate as part of normal growth and development and that this is not, necessarily cause for concern.

7. Build Healthy Lunches

Strategies to encourage children to choose healthy lunches:

- Think like a kid. Children like to eat foods cold. Try packing pizza, perogies, chicken pieces, or soft shelled tacos.
- Include your children's favourite foods. Stick to foods you know your children will like. Introduce new foods at home instead of in the lunch bag.
- Involve children in the planning and making of lunches. Kids like to feel ownership, and are more likely to eat their lunch if they have prepared it.
- Include a small surprise. Add a little "I Love You" note to their lunch, a favourite cookie, or a sticker occasionally to give them something to look forward to.
- Try variety. Lunch doesn't have to always be about sandwiches. Leftovers like soup, or a breakfast type meal for lunch (cold pancakes, waffles) is fine too. Offer your child a selection of nutritious foods and let them chose his/her favourite. For example, let them choose between bread or a bun, applesauce or a fruit cup.
- Remember there is no single recipe for the perfect lunch. What works for one of your children, may not work for the other.

8. Take a Stand – Advocate for Healthy Eating and Active Living Supports for Children and Youth

Strategies to promote community involvement in issues related to nutrition, active living and children:

- Encourage community members to get involved in promoting healthy eating and active living for school-aged children. Parents (by acting as role models and food providers), schools (by implementing healthy school nutrition and physical activity policies, improved access to nutritious breakfast, lunch and snack choices, improved access to regular physical activity, ensuring that healthy food choices are available at a reasonable cost, and nutrition education programs), and children themselves (who ultimately control what they eat) can all impact the nutritional health of school-age children and youth.
- Recognize that many factors [such as friends and peers, influence and support of family/parents, role models, availability and cost of healthy food at school and advertising of foods] can impact a child's healthy living habits. Encourage children to think about the factors that drive them to make specific food choices.
- Advocate for quality daily physical education in schools.
- Advocate for healthy food choices in schools and recreation center foodservice and fundraising activities.

9. Seek Out An Expert For Help

Strategies to find additional information or assistance in promoting optimum health in school-age children and youth:

- Contact a registered dietitian. Registered dietitians are the experts when it comes to translating the science of nutrition into practical, everyday choices that support healthy eating.
- Look for credible nutrition information from Dietitians of Canada at www.dietitians.ca, at www.missionnutrition.ca and the Healthy Eating Centre of the Canadian Health Network at www.canadian-health-network.ca
- Dietitians work hand-in-hand with other professionals such as public health nurses, health promotion specialists and fitness and lifestyle practitioners. Dietitians can link you to these other health services.

Nutrition Month® Campaign Action Ideas

Here are some ideas for planning and promoting *Nutrition Month*® activities in your worksite or in your community.

Use these campaign ideas to:

- Increase your community's awareness of the *Nutrition Month*® theme of on Healthy Living for School Age Children and Youth, where they live, learn, and play.
- Increase your community's awareness of healthy eating resources and how to access a dietitian.
- Encourage use of the "Resource Inventory" and "Stories & Strategies" inventory on www.dietitians.ca/eatwell
- Promote the *Nutrition Month*® site at www.dietitians.ca/eatwell which will link visitors to background information and resources.
- Connect with local media to profile messages and activities.
- Profile campaign corporate sponsors that make this event possible each year.
- Forge a collaborative relationship with physical activity organizations and teachers to promote healthy eating and active living in school age children and youth.

Strategies to reach the public:

- Email clients daily or weekly nutrition and active living tips, recipes and links to the *Nutrition Month*® consumer fact sheets (available in pdf format at www.dietitians.ca/eatwell), Canada's Food Guide to Healthy Eating, and Canada's Physical Activity Guides to Healthy Active Living.
- Have copies of *Nutrition Month*® consumer fact sheets, Canada's Food Guide to Healthy Eating (http://www.hc-sc.gc.ca/hpfb-dgpsa/onpp-bppn/food_guide_rainbow_e.html) and Canada's Physical Activity Guides to Healthy Active Living (available at: http://www.hc-sc.gc.ca/hppb/paguide/) on display or available in waiting areas or cafeterias, or distribute on patient trays or after a counseling session.
- Add the *Nutrition Month*® banner ad to your web site (available at www.dietitians.ca/eatwell.
- Organize group nights where you can do grocery store tours and food demonstrations on topics related to healthy eating for children and youth. Include DC's cookbook *Cook Great Food,* and Canada's Physical Activity Guide in the registration fee.
- Partner with local sporting goods stores or fitness facilities to offer demonstrations of fitness classes or equipment.
- Partner with fitness facilities or local resorts to offer trial visits at discounted prices.
- Start a neighborhood walk to school group. Available adults can take turns walking a group of children to school instead of having parents drive them.
- Find out which local health clubs or community centres offer physical activity programs for children or youth. Volunteer to present a nutrition topic or offer a demonstration of healthy snacks for the children in conjunction with the fitness program.
- Advocate for healthier food choices at recreational centers. Post nutrition messages or posters in these areas to inform parents of their rights to advocate for healthier food choices at these centers.

Strategies for worksites/employees

- Email staff/employees daily or weekly nutrition and active living tips, recipes and links to *Nutrition Month*® consumer fact sheets (available in pdf format at www.dietitians.ca/eatwell). Circulate a quiz at the end of the month. Enter those with correct responses into a prize draw for something simple, related to nutrition or active living (e.g. a skipping rope, a small set of weights, cookbook, food basket, a gift certificate for a consultation with a registered dietitian).
- Send out nutrition message or *Nutrition Month*® consumer fact sheets with pay cheques.
- Add the *Nutrition Month*® banner ad to your company web site. (available from www.dietitians.ca/eatwell)
- Host noon hour "Lunch & Learn" or "Walk & Talk" that focus on providing practical strategies for promoting healthy eating and active living in children and youth. Distribute the Nutrition Month® consumer fact sheets and copies of Canada's Physical Activity Guides to Healthy Active Living for Children and Youth (available from http://www.hc-sc.gc.ca/hppb/paguide/
- Organize "tasty and easy" cooking demonstrations in your workplace. Invite employees to help with the cooking and provide their healthy eating solutions for family dinners, school lunches or breakfast on the run.
- Have a "make time to eat together as a family" contest. Employees can submit their recipes or family meal suggestions. Post recipes/suggestions in your worksite newsletter, on bulletins boards, in elevators, company website, etc. Give copies of DC's cookbooks *Cook Great Food* or *Great Food Fast* as prizes. Alternatively, organize an "active families" contest. Ask employees to describe their solutions to keeping their family active. Offer prizes that support active living such as swim passes, or balls.
- Organize a family challenge. Offer prizes for the most meals eaten together or most activities done as a family.
- Set up a computer in waiting areas or cafeteria and show consumers what's available on the *Nutrition Month*® website www.dietitians.ca/eatwell There's lots to explore including the *Nutrition Challenge, Let's Make a Meal!, Virtual Kitchen*, *Nutrition Profile*, *Meal Planner*, *Healthy Body Quiz*, *FAQ s* and f*act sheets*, *Find a Dietitian, Healthy Eating Challenges and Solutions.*
- Post a "take the stairs" sign by the elevator. At each landing on the stairs post nutrition or active living tip for adults, children, or families.
- Network with local fitness professionals to provide a lunch and learn session that encompasses both a physical activity component and a nutrition session and highlights the Nutrition Month® key messages.
- Promote family-friendly workplaces that provide adequate child benefits, maternity/paternity leave, parental time, and pensions to support parents in their attempts to balance work and family responsibilities.
- Advocate for a food and nutrition policy in your worksite.

Strategies for communities

- Connect with local media to encourage stories and coverage of your events. Your regional representative and regional spokesperson can offer guidance, news releases and sample articles/fact sheets. *The Dietitians of Canada and Dairy Farmers of Canada 2004 Report on the Healthy Eating for School Age Children and Youth* provides a great way to capture media attention.
- Deliver a "fast and easy" kid friendly recipe from *Cook Great Food* or *Great Food Fast* to a local radio DJ or television host in time for the dinnertime or rush hour news. Include a copy of *Nutrition Month*® key messages and *Nutrition Month*® news release.

- Offer to do an interview and/or quick cooking demonstration on television or radio or at a local community event.
- Look for opportunities to build partnerships with other health professionals to extend the reach in promoting healthy eating and active living e.g. teachers, community recreation leaders, public health nurses, etc.
- Organize *Nutrition Month*® proclamations with local politicians. Use the guide/template available on the DC web site: www.dietitians.ca/members_only/nutritionmonth.asp
- Post nutrition and/or active living posters in prominent places in cafeterias, schools, waiting areas, community centres, libraries, etc.
- Provide *Nutrition Month*® consumer fact sheets to libraries, schools and recreation facilities for their staff and community bulletin boards. Include information on dietitians in your community they can contact for more information, speakers, events, etc.
- Organize "tasty and easy" cooking demonstrations in your community. Focus on recipes that are appropriate for busy families. Invite local media personalities to do the cooking and make it a media event!
- Offer an hour consultation with a registered dietitian as a prize. Follow up with an interview with the winner and submit to your local paper.
- Conduct in-store food demonstrations and tours at your local grocery store. Feature recipes for "speed-scratch cooking" that include some fresh and convenience products. For recipe ideas check *Cook Great Food* or *Great Food Fast*.
- Ask your local grocery store to sponsor a "healthier grocery cart" contest. Have dietitians in the store available to help overhaul shoppers' grocery carts. Enter participants name in a raffle to win the cart full of healthier groceries or copies or DC's cookbooks.
- Offer to do "healthy breakfast or school lunch makeovers" and publish results in your local media. Provide updates on successes and challenges.
- Promote community food programs for those with low income or limited access to healthy foods such as community kitchens, cooperative gardens. Investigate to see if school kitchens could be used for collective cooking programs while offering recreation programs for participants' children at the same time.
- Highlight the positive efforts underway in your community. Write a brief newspaper article profiling the efforts of local schools or community groups in promoting healthy eating, active living, and enhanced school nutrition environments.
- Partner with local businesses. Encourage local restaurants to feature "Healthy Kids Meals" during Nutrition Month®. Encourage recreation centres, swimming pools and fitness facilities to offer special family rates and activities.

Strategies for Families

- Provide parents with quick and easy meal suggestions that kids will enjoy.
- Provide parents with time-saving strategies for preparing nutritious meals and snacks.
- Organize grocery store tours for families including older children and teens. Include information about selecting nutritious choices from each of the four food groups, looking at labels for key nutrients, more fibre and less fat, healthy snack choices, fast and easy main meal items. Offer sample meal plans and grocery lists for tasty and easy lunches and suppers.
- Have a recipe contest in local papers for children to submit a "healthy supper menu plan" that they and their family would enjoy.

- Write articles for parents to inform them of the availability of resources in the community (books/videos/websites) where they can access healthy eating/active living information. Distribute copies to the media, community centres, libraries and schools.
- Prepare information for parents about the importance of the family meal and healthy eating/active living. Promote affordable food and activity choices, meal suggestions, and time-saving strategies.
- Explore a variety of ways to be active as a family (e.g. go to local community rink and skate together or play shinny hockey, tobogganing, go for family walks, swim as a family, learn a new activity as a family [i.e. tai chi, bowling, golf, skiing, etc], take nature hikes together year round, bike together). (Additional information is available at: http://www.in-motion.ca/youth/ideas.php)
- Promote affordable food and activity options.

Strategies for Schools

- Promote nutrition education resources like *MISSION NUTRITION*®* at www.missionnutrition.ca that are specifically designed for schools by Canadian dietitians to promote healthy eating, physical activity and positive self-esteem.
- Contact schools in your area. Let them know you are available to act as a nutrition resource person. Share your interest in supporting healthy eating and active living in school.
- Identify and partner with like-minded practitioners already working in schools. Examples include community health nurses and other public health specialists; physical education, health or foods teachers; regional and provincial fitness and active living organizations.
- Contact the home economics teachers at schools in your area. Find out if they are interested in having a registered dietitian come to talk to their classes about healthy eating, nutrition and active living activities offered in their community.
- Partner with school foodservice providers to asses the nutritional quality of food choices available to students, and discuss areas where there could be improvements. For example, suggest that they offer baked potatoes instead of fries a couple of days a week. Consider providing school foodservice operators in your area with point of purchase nutrition information or healthy recipes for incorporation into the school menu.
- Review related curriculum documents (e.g. health, physical education, home economics, or science) and provide local teachers with ideas for activities or homework assignments that would help meet specific curriculum outcomes related to healthy eating or active living. Promote www.missionnutrition.ca to teachers.
- Distribute *Nutrition Month*® consumer fact sheets, *Canada's Food Guide to Healthy Eating* and *Canada's Physical Activity Guides to Healthy Active Living for Children and Youth* through local schools.
- Host a cooking class for children or teens at your local high school or elementary school. Discuss planning a healthy meal around *Canada's Food Guide to Healthy Eating*, tasty and easy lunches and snacks.
- Host a food demonstration for parents at your local high school or elementary school. Discuss planning a healthy meal around *Canada's Food Guide to Healthy Eating*, incorporating tasty and easy meals and snacks. Distribute the meal planner from *Let's Make a Meal!* at http://www.dietitians.ca/english/menuplanner/overview.html or host a session on how to use the nutrition information on the food label by using the information at www.healthyeatingisinstore.ca
- Have *Nutrition Month*® consumer fact sheets available as handouts in cafeteria or waiting areas or email to employees.
- Feature DC's cookbook *Cook Great Food* recipes in cafeteria and distribute recipes.

- Focus on schools as a place to reinforce and provide programs for healthy eating and active living. Schools are a hub in the community where families connect for programs outside of school such as daycare, after-school programs, and recreational activities.
- Encourage school gyms and community centres (swimming pools) to be available to kids and families after school, on weekends, and holidays (summer vacation) to provide more opportunities for activities.
- Promote healthy school environments/policies that are consistent with what is taught in the classroom. For example, cafeterias, vending machines, tuck shops, hot lunches, snack and breakfast programs, special events and fundraising activities should include healthy food choices at affordable prices. Encourage schools to provide adequate time and places for children to eat and enjoy foods - particularly school lunch.
- Involve youth in planning, developing and implementing healthy living programs that are designed for them.
- Incorporate games or active play into nutrition education activities.
- Organize a healthy lunch contest where students or neighbouring schools compete for prizes while creating innovative, and nutritious brown bag lunches.
- Implement an active living challenge. Have different classes within a school estimate how much physical activity is done by the class on a daily basis and challenge another class to see which group can make the biggest improvement.
- Create bulletin boards and display pictures, posters, or stories about healthy eating and active living.
- Encourage schools to offer a breakfast program, a milk program during lunchtime and a snack programs to all students.
- Explore a variety of ways to promote active living in the school environment (e.g. school walks [the entire school starts the day with a 15 minute walk], hallway dances, extended recess time [providing structured and non-structured activity time], classroom "motion" breaks [taking 5 to 10 minutes to do an active activity during class time]). Additional strategies are available at: http://www.in-motion.ca/youth/ideas.php
- Organize a school 5-to-10-a-Day vegetables and fruit challenge.

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