



Reality Check

A Background Paper for Health Professionals and Educators

*Do Alberta
youth eat
well?*

*Are they
physically
active?*

What can we do about it?

Brought to you by:

**The Beyond an Apple a Day Research Group
Spring 2004**

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EXECUTIVE SUMMARY

Adolescence is a time of independence and risk taking as youth move from childhood to adulthood. At the same time, they are building habits to last a lifetime, and the bodies that will take them there.

The target audience for this report is health professionals and educators wanting current information on the health of Alberta students in grades 7 and 8, specifically their nutrition and physical activity patterns.

This report is based on the results of focus groups and surveys conducted in Alberta schools by the “Beyond an Apple a Day” (BAAAD) project in 2002 and 2003.

BAAAD was a collaborative initiative involving a diverse group of partners. See Appendix 1 for information on the project and survey tools.

The project goals were:

- To identify key influencers of school health policy and school food and active living practices in Alberta and learn more about how to assist them in the creation of healthier school environments.
- To promote and support healthy lifestyles through healthy eating and active living for youth in school environments.
- To forge collaborative links with school health policy influencers in order to develop strategies that address the determinants of health related to diabetes prevention.
- To assess and evaluate food intake and physical activity patterns, including barriers, of Alberta youth aged 11-14 years.

This report details BAAAD’s achievements related to these goals. It concludes with recommendations to help educators and health professionals enhance the eating habits and physical activity levels of youth.

See Appendix 1 for more information about the project and the survey tools.

Other Resources

In the Helpful Hotlinks section at the end of this report, we’ve included related information and links to reliable sources of information on healthy eating and active living in youth. These include a variety of BAAAD reports and resources—pamphlets for educators, health professionals and parents; a PowerPoint presentation for schools wishing to address nutrition and physical activity; and research results.

BAAAD isn’t finished yet! We have amassed a significant amount of data, and the analyses will be coming out over the next few years.

WHAT DOES THE BAAAD RESEARCH TELL US ABOUT THE HEALTH OF YOUTH IN ALBERTA?

BAAAD Key Findings: Nutrition

During our focus group discussions, students in grades 7 and 8 were aware of the importance of eating a healthy and balanced diet. This included eating fruits and vegetables, dairy products, meat, fish, grains and cereals. Most students knew of *Canada's Food Guide to Healthy Eating* but their understanding of it was poor. Some students knew the main food groups but few were able to translate this into daily needs.

Students were able to identify healthy foods and beverages from unhealthy ones. However, some foods were areas of disagreement, for example chocolate milk and pancakes.

When the students in focus groups were asked what it meant to be unhealthy, they mentioned eating too much sugar, too much fat, and eating too much junk food such as chips, popcorn, chocolate, candy, and drinking pop. Students were well aware that not eating enough food was also unhealthy and could lead to diseases such as bulimia and anorexia.

On the whole, students understood that weak bones result from an insufficient calcium intake and that foods such as milk and cheese are needed for calcium.

Other unhealthy behaviours that were reported were smoking, drinking alcohol, taking drugs, too much caffeine consumption, sun tanning, and over-exercising.

Over 700 students completed an Internet based survey, including a 24-hour food recall. From these records we know that:

- 50 per cent of boys met the minimum number of servings recommended in Canada's Food Guide to Healthy Eating for all four food groups. However, the other 50 per cent were below the recommended ranges.
- Less than 50 per cent of girls ate the recommended minimum levels for all food groups except Vegetables and Fruits—here at least half of the girls were above the minimum.
- The proportion of energy nutrients (protein, fat, carbohydrates) in our sample was within the recommendations.
- Total energy intakes for boys were fairly stable across the three age groups (12, 13, and 14) at approximately 2,400 kcals per day.
- Girls took in fewer calories as they got older. Total intakes for 12, 13, and 14 year old girls were 2,050 kcals, 1,850 kcals, and 1,700 kcals.

The inadequate nutrition of girls is of special concern since they have lower food intakes overall. This is complicated by their increased need for iron (due to menstruation), calcium (to prevent osteoporosis in later years) and folic acid (to prevent birth defects). The decrease in total food

intake over the three year age span in this study puts girls at extra risk. The 1,700 kcal intake of the 14 year old girls is approaching a weight-loss diet and requires careful food selection to meet all nutrient requirements.

The proportion of both boys and girls below requirements increased as they got older. Girls' intakes tended to be more inadequate than boys' for each nutrient and at each age group.

Special Nutrients of Concern

A significant proportion of both boys and girls aged 12-14 were below the estimated average requirement (EAR) for **iron** and **folic acid** and below the adequate intake (AI) for **calcium**. These nutrients play important roles in growth and development.

Iron: The best food sources of iron are in the Meats & Alternatives group of *Canada's Food Guide to Healthy Eating*, especially in the meats.

“Many of the symptoms associated with iron deficiency are easily mistaken for behavioural or motivational problems. With reduced energy, people work less, play less, and think or learn less eagerly... Children deprived of iron become restless, irritable, unwilling to work or play, and unable to pay attention, and they may fall behind their peers academically. Some symptoms disappear when iron intake improves, but others linger...”¹

These characteristics could easily show up in the classroom and as easily be misdiagnosed as a behaviour issue rather than a food and nutrition problem.

Calcium: The most abundant food sources of calcium are in the Milk Products group of Canada's Food Guide to Healthy Eating.

Junior and senior high school students are growing quickly and simultaneously increasing their bone mass. By the time they are 13.6 years, girls will have reached 90 per cent of their adult bone mass; boys reach this level two years later.²

Folate: Folate (folic acid) most commonly comes from the Vegetables & Fruit group of *Canada's Food Guide to Healthy Eating*. Grain Products are also fortified with folate.

To make new cells, body tissues must have folic acid. This vitamin prevents birth defects (spina bifida) and is also an indicator of sufficient intake of vegetable and fruits.

BAAAD Key Findings: Physical Activity

Students in the focus groups were aware that it is important to be physically active to be healthy. Being active encompassed everything from taking walks and playing with the dog to participating in competitive sports programs.

¹ Sizer & Whitney, *Nutrition Concepts and Controversies*, 9th edition, 2003. Page 287.

² Teegarden et al. Peak Bone Mass in Young Women. *J of Bone & Mineral Research*. 10 (1995): 711-715.

Social supports vs. barriers

Students in the **rural** groups considered themselves to be active, in part due to their farming lifestyle. However, they could not see themselves remaining physically active later in life (beyond farming) because they felt they were going to be too busy with jobs and children, they would have no energy, and some felt they would not be good enough to participate on sports teams. Other students attributed decreased activity to the lack of organized sports for adults, although the curlers felt they would continue because there are adult curling teams.

The main barriers to physical activity in youth in school were lack of skill, cost and inconvenience. These barriers pull Alberta youth away from physical activity and promote sedentary lifestyles.

Most school principals and parents, especially those in the rural areas, reported strong daily physical education programs as well as high participation rates in healthy activities. Activities included organized sports with weekend tournaments, lunchtime intramurals, extracurricular outdoor education, camps, cross-country skiing, downhill skiing, running and hiking.

Many rural schools were also able to take part in some of the many externally organized health programs such as Jump Rope for Heart, the Terry Fox run, air band competitions, MS Readathon, DARE, PARTY, and KICK ASH. Other important activities were fire prevention, bicycle helmet safety and a program from the Lions Club of Canada.

Unorganized physical activity in junior high and high schools was limited since there is no recess. In both rural and urban areas, the need to catch the school bus lowered participation in after-school activities, but participation in lunchtime intramural activity remained high.

Parents were concerned about the focus on **competitive-based sport programs** over a more participatory model of physical activity. When the sheer joy of physical activity is overshadowed by competition and the drive to win, students were discouraged from participating or even prevented from playing.

Over 700 students completed an Internet based survey, including a seven day activity record. Using data on participation in 16 different activities and how often a student participated, a total physical activity score in metabolic equivalents (METs) was calculated. Higher MET scores indicate higher activity levels.

The BAAAD physical activity findings suggest that we need to pay special attention to physical activity programming for older adolescents and particularly girls:

- Boys were significantly more active than girls (223 METs vs. 180 METs).
- Younger students (12 years) were more active than older students (14 years); this was true for both boys and girls.
- The more active students were those who spent time outside right after school, were active during the weekend, and participated on school and community sports teams.

WHAT BARRIERS PREVENT HEALTHY HABITS IN OUR YOUTH?

Despite the number of articles written and television and radio programs broadcast, there is a lack of **knowledge** among parents (and students) about nutrition and activity. Without the knowledge of proper nutrition it is difficult to convince our children of the value of making healthy choices. And it is difficult to model of appropriate behaviours.

Barriers to Youth

Taste preferences of youths for sugary and high fat fast foods are encouraged by advertising; those who don't choose these foods are different from their **peers**. The fear of **being judged** about body weight, shape, size and other topics influences many decisions at this age. Students reported that making healthy choices (eating and activity) can require **too much effort**. **Role modeling** from parents has a strong influence on youth.

“There's no use anymore. That's what my dad says. He's too old.” A student quoting excuses heard for not being active

Both principals and students reported that health and physical education was offered as **discipline** and often after a schoolyard incident. The message being received by students was that health education is a punishment for bad behaviour.

“Health is something we get when we are bad.” *A student participating in the focus group*

Barriers for Families

Parents have less and less **time** to prepare wholesome foods and participate in physical activities because of their busy lifestyle. The result of the fast paced lifestyle has been an increase in the demand for convenience and fast foods.

The higher **costs** of healthy foods compared to less nutritious fast foods are very discouraging to families with tight budgets. Parents report that money is the main barrier to healthy eating and active living programs.

As the students observed, parents are role models for health habits. They have a strong impact on their children from the moment of conception right through adolescence.³ During our focus groups, principals and parents agreed that parents are one of the greatest role models. There was concern that many parents are ill-informed of proper nutrition and therefore ill-prepared to coach their youth.

Barriers to Schools

The first priority for schools was **academic achievement** (96 per cent of respondents); health issues and programs were much less important. Physical education curriculum issues were of lower importance than extracurricular sports (50 and 67 per cent respectively). Nutrition curriculum and school food programs were rated much lower in importance: 31 and 34 per cent.

There were competing demands for **time and resources** from other curricular areas; fitting a new program into the daily program of an already busy schedule is very difficult. Some principals reported a

³ Dietitians of Canada (2004). *Eat Well, Play Well*. 20004 Nutrition Month Backgrounder for Dietitians, Educators, Parents and Community Leaders.

perceived lack of time among their teaching staff to review new materials. The persons most likely to bring physical activity and health-related issues to the school's attention were teachers, administrators, parents and health agencies.

The most significant factor in addressing physical activity and/or nutrition-related school health issues was inadequate **facilities**. However, in the inventory of school facilities and programs, almost all schools had an outdoor playground or sports field, a gymnasium, organized competitive sports and qualified physical education teachers.

Some schools are disadvantaged. They may have other needs that take priority over nutrition and physical education issues. Or they may lack the necessities to implement the programs never mind try to find time to fit it into their programs.

Nutrition is not a program on its own; rather, it is covered in the K-9 Health and Life Skills program, which contains outcomes for student learning in many aspects of health education.

Generally, health programs focusing on immediate risks were widely implemented: combating violence and/or promoting kindness (89 per cent overall) and human sexuality (87 per cent overall, 100 per cent in schools with only middle/junior and junior/high school grades). Although these issues are important, research indicates that physical activity and nutrition influence overall health and reduce chronic disease. However, their impact is not immediate, rather, it is in the future.

Another problem principals dealt with was justifying introducing a new program to administrators, teachers and parents. Principals felt serving many different stakeholders with competing interests was difficult.

FOOD AS A FUNDRAISER

Two-thirds of principals and three-quarters of superintendents said their school or schools in their district have an exclusive contract for **beverage vending machines**. About one-quarter reported an exclusive contract with a **snack food** supplier, and fewer still sold food from a fast food chain. While almost half of superintendents reported schools in their district had private corporations advertising on school grounds as a means of generating revenues, very few principals or parents indicated this.

For those schools with vending machines, profits from the sales of food and beverages were used most commonly for extracurricular activities, school trips, and athletic programs or sports equipment. Funds were less likely to be used to support educational, in-class or library materials and equipment.

Vending machines aren't inherently bad; it is the quality of the foods in them that can be an issue. Although the BAAAD project didn't ask what was specifically in the vending machine, we did ask what types of foods were supplied in the school. Eighty per cent of respondents said their school had pop, 75 per cent had fruit juice/drinks, 62 per cent had water, 56 per cent had milk; less than half had sports drinks, hot beverages or Slurpees. A similar pattern of the higher energy/ lower nutrient choices is found with the foods available at school: 82 per cent had pizza/hot dogs, 75 per cent had chips/chocolate bars/candy while only 35 per cent had soups/ salads/ vegetables and 17 per cent had fruit.

Respondents were asked to indicate whether their school or school district had restrictions on **food and beverages**. Some restricted the times during which vending machines could be used; most principals did not allow access before school or during class time, and limited access during recess and lunchtimes. Some limited where the foods and beverages could be consumed: 90 per cent of schools allowed students to have water bottles in class but only 20 per cent allowed soft drinks. Soft drink consumption

in the classroom was more common in schools with only junior/high school grades than the K-12 schools.

The benefit of vending machines is that they bring in **funds**. A common argument for vending machines is that students can go off-campus to a nearby store for these same fast foods, depriving the school of the money. Another consideration from school councils was the acceptability of other types of fundraisers such as bingos.

The use of vending machines in schools was contentious. School councils were particularly sensitive to the message that selling low-nutrient foods at school gave to their children. However, some school council members and principals, as the financial officers of the schools, were also aware of their money-making potential.

“We are part of the problem. I look at the kinds of confectionery items we sell... and we contribute to this. Chocolate almonds are being sold for a ski trip. It drives me crazy that we do this, but we do because they sell.” ... *A Principal*

BAAAD RECOMMENDATIONS...

For Schools

- Allocate specific time within the K-9 Health and Life Skills program to address the nutrition and active living outcomes.
- Provide quality learning experiences for students in both Physical Education and Health and Life Skills. See www.learning.gov.ab.ca/physicaleducationonline for teacher support materials
- Involve the families in your programs. See the “For Parents and Guardians” section below for parent advice.
- Invite student participation in program development to ensure that messages are age-appropriate and perceived as relevant.
- Focus on girls—they are at greater risk, both for poor nutrition and inadequate activity.
- Focus on the older students—both food intake and physical activity decrease as the students get older.
- Focus on less active students and participatory rather than competitive activities.
- Balance the health programs within the Health & Life Skills program to ensure that nutrition and physical activity are given the same priority as high-risk behaviours with immediate-impact e.g. drugs, pregnancy, and violence.
- Create healthy living policies including nutrition and physical activity for your schools. See the Saskatchewan School Trustees site in the Hot Links section for ideas on how to create healthy school policies.
- Consider the role of food in school fund-raising. See the Calgary Health Region’s *School Nutrition Handbook* in the Hot Links section for information on incorporate health conscious fundraisers in your school.
- Follow these **hot links** to download *Promoting Healthy Eating and Active Living in Youth: The Role of School Administrators* and *Promoting Healthy Eating and Active Living in Youth: How Teachers Can Help*.

For Health Professionals

- Provide youth with ideas for healthy choices in fast food restaurants.

- Work with parents to teach their children how to eat well and stay active. See the “For Parents and Guardians” section below for ideas.
- Choose your battles—focusing on small issues (trans fatty acids, ideal heart rate) may take people away from the bigger issues—inactivity and overall diet quality.
- Include activities that are low cost and less competitive—these factors are barriers for youth wishing to participate in physical activities.
- Be an advocate and a resource. Those who work at the local level are ideally placed to make local changes.
- Focus on the short term benefits—most of junior high aged youth don’t yet see the long term.

Follow this **hot link** to download *Promoting Healthy Eating and Active Living in Youth: How health professionals can help*.

For Parents & Guardians

- Whether they show it, your children are watching you and the choices you make, so be a good role model.
- Eat with your children. This gives you a chance to show them how to make healthy food choices. Research shows that children who eat with their families have better nutrient intakes.
- Be active with your children. They will be more active and the benefits will last all life long. Your choices can be simple: walking is a powerful and effective activity.
- If you are overweight, try to lose weight. One of the greatest risks for obesity in our children is obesity in ourselves.
- Teach your children how to make healthy food choices at fast food restaurants and take-outs.

HELPFUL HOT LINKS ON YOUTH, NUTRITION & PHYSICAL ACTIVITY

BAAAD Reports and Resources

Nutrition File for Health Professionals:

Spring 2004: **Reality Check I: The Health of our Youth**. A literature review and an extensive reference list

http://www.albertamilk.com/nutritioneducation/_pdf/NutritionFileSpring2004.pdf

Summer 2004: **Reality Check II: The Seminar**

http://www.albertamilk.com/nutritioneducation/_pdf/NutritionFileSummer2004.pdf

Reality Check: A PowerPoint presentation. Contains slides and speakers notes for parents and teachers making presentations on this topic to schools

Promoting Healthy Eating and Active Living in Youth fact sheets are available for school councils, teachers and school administrators

Healthy Tweens and Teens. A pamphlet for parents and schools

WellSpring Spring/2004 15(2). **Beyond an Apple a Day: The Alberta Healthy Schools Project.**

<http://www.centre4activeliving.ca/Publications/WellSpring/2004/Spring/PhysActivityResults.html>

Useful Alberta Sites

Alberta Centre for Active Living <http://www.centre4activeliving.ca>
Alberta Health & Wellness www.healthyalberta.com. There are sections devoted to Children & Youth under both the Active Living and the Healthy Eating tabs
Alberta Learning
Alberta Milk www.albertamilk.com Nutrition and Education tab
Calgary Health Region www.calgaryhealthregion.ca/nutrition and www.calgaryhealthregion.ca/activeliving
Calgary Health Region School Nutrition Handbook
<http://www.calgaryhealthregion.ca/hecomm/nal/SchoolHandbook/SchoolNutritionHandbook.htm>
Ever Active Schools
Health Canada
Health in Action <http://www.health-in-action.org>
University of Alberta: Agricultural, Foods and Nutritional Science <http://www.afns.ualberta.ca>

Other Canadian sites

ASPEN (Action in Schools for Physical Education and Nutrition) www.cancer.ab.ca and follow the links for ASPEN
Canadian Fitness and Lifestyle Research Institute www.cflri.ca
Canada's Food Guide to Healthy Eating www.hc-sc.gc.ca/hpfb-dgpsa/onpp-bppn/index_e.html
Canada's Physical Activity Guides for children, youth and adults www.hc-sc.gc.ca/hppb/paguide
Canadian Health Network <http://www.canadianhealthnetwork.ca>
Dietitians of Canada www.dietitiansofcanada.ca/eatright
Ontario Society of Nutrition Professionals in Public Health. Call to Action: Creating a Healthy School Nutrition Environment http://www.osnp-ph.on.ca/call_to_action.pdf
Saskatchewan School Trustees Association www.ssta.sk.ca. Search for "nutrition" to download Nutrition Guidelines for Schools
Summer Active <http://www.cd.gov.ab.ca/asrpwf/programs/active/SummerActive/index.asp>

International sites

California's Project LEAN (Leaders Encouraging Activity and Nutrition) www.californiaprojectlean.org
Center for Science in the Public Interest (a nutrition advocacy organization with many consumer reports on topical issues) www.cspinet.org
Centers for Disease Control and Prevention (US) <http://www.cdc.gov>
World Health Organization <http://www.who.int/en>

APPENDIX 1

Beyond an Apple a Day (BAAAD)

Alberta Milk, with funding from Health Canada, has led a three-year initiative to study both the food habits and physical activity practices of Alberta junior high students, specifically grades 7 and 8.

The BAAAD Advisory Committee

We were fortunate to have an involved Advisory Committee comprised of the following organizations and personnel:

- University of Alberta: Dr. Linda McCargar, Department of Agricultural, Food and Nutritional Science
- University of Alberta: Dr. Dru Marshall and Dr. John Spence, Faculty of Physical Education and Recreation
- Alberta Learning: Karen Fetterly and Marg Schwartz
- Alberta Health & Wellness: Helen Legg and Keith McLaughlin
- Ever Active Schools: Dean Hengel
- Health Canada: Silvana Moscardelli
- Alberta's Community Nutritionists: Kerri Staden, Calgary Health Region
- Alberta Milk: Heidi Bates and Mary Anne Yurkiw

Two graduate students worked on the data collection and analysis as part of their thesis requirements: Kendall Taft (Department of Agricultural, Food and Nutritional Science) and Lisa Workman (Faculty of Physical Education and Recreation).

Amy Richter wrote this report in partial fulfillment of the requirements for her dietetic internship.

Expertise from Criterion Research and Magellan Research conducted the focus groups and the mail out survey of principals, school councils and district superintendents.

We would also like to thank the schools, parents and students who participated honestly and wholeheartedly in our surveys. Without them, there would be nothing.

BAAAD Data Collection

	Students	School Councils (Parents)	Principals	Superintendents
Literature Review	<i>Healthy eating and active living patterns of Canadian youth between the ages of 12-15 years</i> (Bates, 2002) Nutrition File for Health Professionals. <i>Reality Check (Part I): The Health of Our Youth</i> (Bates, Spring 2004)			--
Qualitative: Focus groups	<i>Beyond An Apple A Day: The Alberta Healthy Schools Project. Focus Group Report.</i> Principals, School Councils and Students (Grades 7 and 8) (2002)			--
Quantitative: Surveys	Internet survey	<i>Healthy Eating & Active Living in Grade 7 and 8 Schools in Alberta: Survey of principals, superintendents and school councils</i> (Magellan survey)		