



Healthy Weights, Diet & Physical Activity and the Health and Well-Being of Children and Youth

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**BRITISH
COLUMBIA**

Healthy Weight

- A healthy weight can:
 - Make you feel good about yourself
 - Give you the energy for work and play
 - Lower your risk for weight-related diseases (e.g. heart disease, stroke, diabetes, high blood-pressure, cancer, osteoarthritis)
- Healthy weight can be achieved through:
 - Good eating
 - Regular physical activity
 - Not smoking
 - Managing stress

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Source: Rodgers, E. and Terra, R. *BC Health Guide: Healthy Weight*. Ministry of Health. Province of BC. (July 23, 2004). Available at: <http://www.bchealthguide.org/kbase/topic/special/aa122915/sec1.htm> Accessed: June 08 2006.

Cooke, Kerry V. and Fackler, Amy. *BC Health Guide: Body Mass Index*. Ministry of Health. Province of BC. (May 27 2005). Available at: <http://www.bchealthguide.org/kbase/topic/special/aa122915/sec3.htm> Accessed: June 08 2006.

Information Box

Body mass index (BMI) measures weight for height and provides a way to estimate the effect of weight on health. The higher the BMI, the greater the risk of some diseases, including high blood pressure, coronary artery disease, stroke, osteoarthritis, some cancers, and type 2 diabetes.

Unhealthy Weight

Unhealthy weights in childhood can lead to health issues in adulthood, such as:

- Heart disease
- Stroke
- Diabetes
- High blood-pressure
- Cancer,
- Osteoarthritis
- Premature Death

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Source: Rodgers, E. and Terra, R. *BC Health Guide: Healthy Weight*. Ministry of Health. Province of BC. (July 23, 2004). Available at: <http://www.bchealthguide.org/kbase/topic/special/aa122915/sec1.htm>
Accessed: June 08 2006.

The Current Context

- While the majority of youth are at a healthy weight, the proportion of male youth who are overweight or obese has been increasing over the last decade.
- This trend is consistent amongst Aboriginal male youth and Non-Aboriginal male youth.
- The proportion of female youth who are overweight or obese has remained constant, whereas there is a declining trend in the proportion of Aboriginal female youth who are overweight or obese.

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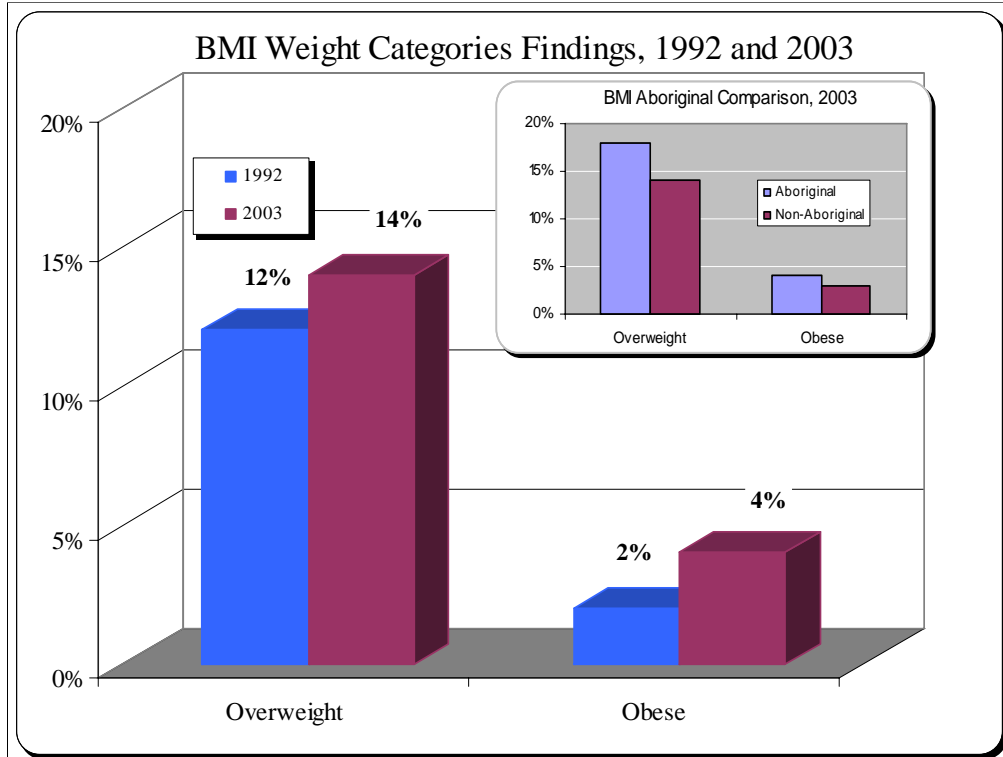
Source: McCreary Centre Society, *“Promoting healthy bodies: Physical activity, weight, and tobacco use among B.C. youth,”* pg. 14, 2006.

- The 2003 AHS results showed the percent of overweight/obese youth has increased compared to 1992 AHS results.
- There are differences when comparing between genders and ethnicity.
- While proportion of male youth showed increases in 2003 of overweightness and obesity, the female proportions remained constant.
- Non-Aboriginal and Aboriginal males had similar trends, meanwhile Aboriginal females had decreases in 2003 in the proportion of overweight and obese female youths.

Information Box

The Adolescent Health Survey (AHS) is an extensive survey of the physical and emotional health of B.C. youth, and of factors that can influence health during adolescence and throughout life.

The McCreary Centre Society, a non-profit, non-government research organization, conducted the first Adolescent Health Survey (AHS I) in 1992, the second (AHS II) in 1998, and the most recent (AHS III) in 2003. More than 30,500 students in grades seven to twelve filled out the 2003 questionnaire. In total, over 72,400 students have completed surveys over the past decade, providing important information about trends among B.C.’s youth.



Source: McCreary Centre Society, *“Promoting healthy bodies: Physical activity, weight, and tobacco use among B.C. youth,”* pg. 14, 2006.

- The majority of youth (78%) were at a healthy weight, 14% were overweight, and 4% were obese.

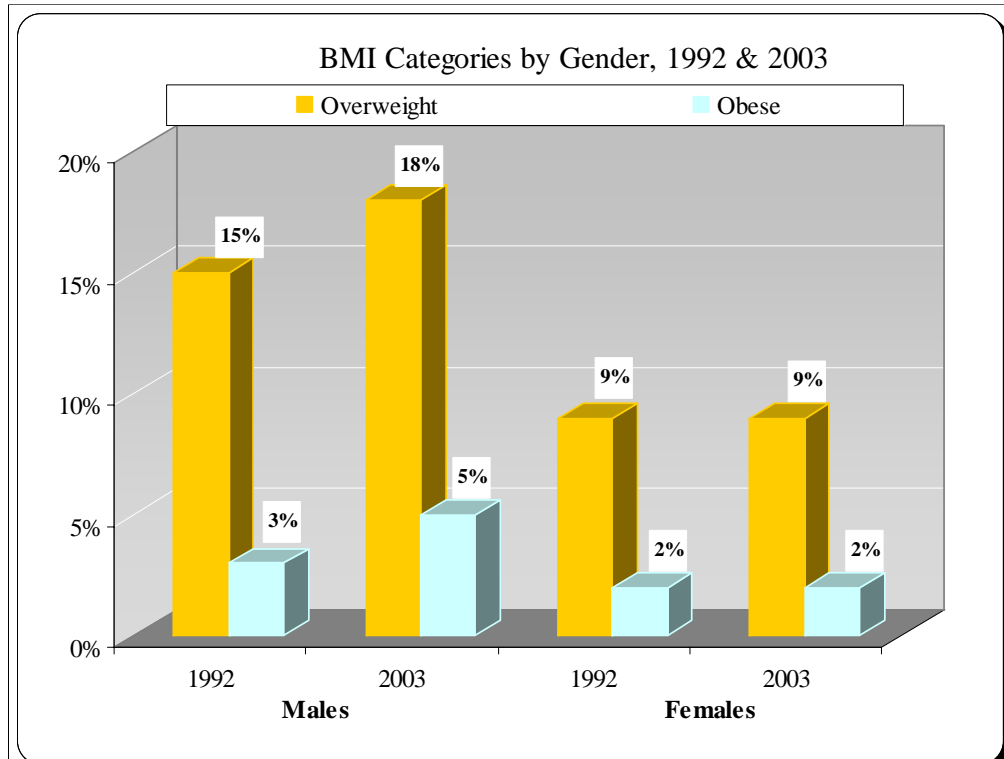
Source of Chart Insert: McCreary Centre Society, *“Raven’s Children II: Aboriginal Youth Health in B.C.”* page 26, 2005.

- 22% of aboriginal youths are overweight / obese compared to 17% of the non-aboriginal youths.

Information Box

Body mass index (BMI) provides a way to estimate the effect of weight on health. The higher the BMI, the greater the risk of some diseases, including high blood pressure, coronary artery disease, stroke, osteoarthritis, some cancers, and type 2 diabetes.

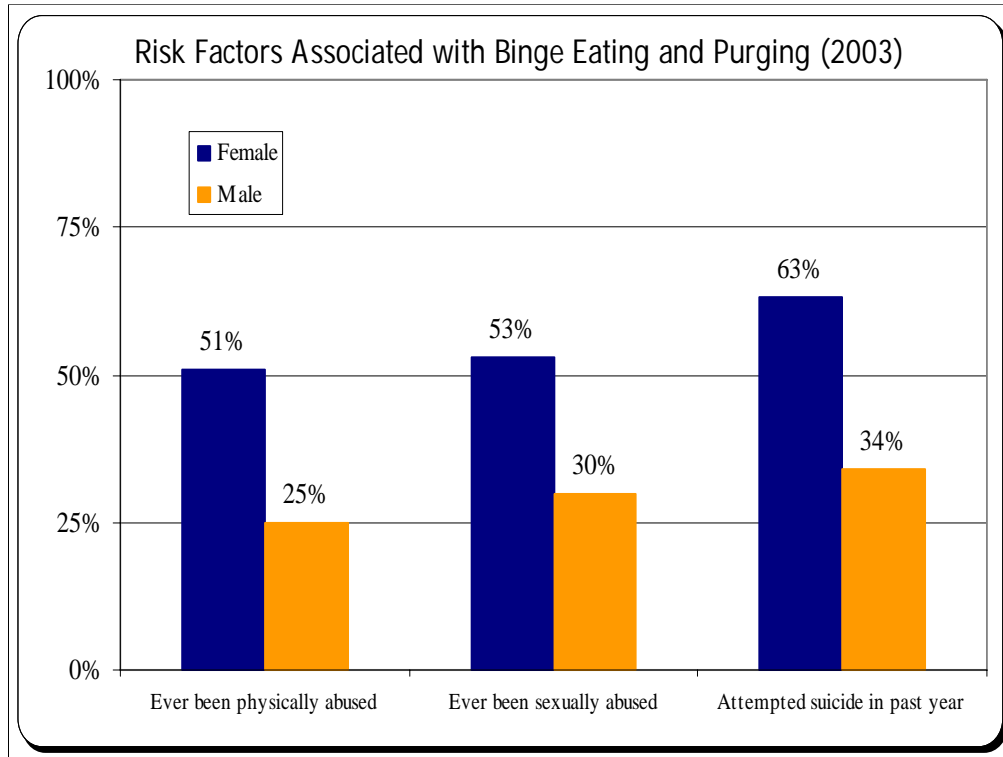
Body Mass Index (BMI) was calculated using the height and weight data youth provided in the AHS survey, combined with their gender and age. Using the BMI, students were grouped into four categories: underweight, healthy weight, overweight or obese.



Source: McCreary Centre Society, *“Promoting healthy bodies: Physical activity, weight, and tobacco use among B.C. youth,”* pg. 42, 2006.

- The proportion of overweight or obese male youth has increased since 1992, but stayed the same for overweight or obese female youth.
- Boys were twice as likely as girls to be overweight (18% compared to 9%) or obese (5% to 2%).
- In addition, the likelihood of being overweight or obese did not vary much by age.

Abuse is a Risk Factor for Problem Weight Control Behaviours



Source: The McCreary Centre Society, “*Adolescent Health Survey III Fact Sheet, Body Weight Issues Among BC Youth,*” page 4, 2004.

<http://www.mcs.bc.ca/>

- Binge eating was a more common behaviour in youth at 28%, than vomiting purging at 5%.
- More than half of female youth who have been physically abused (51%) or sexually abused (53%) have weight control behaviours (binge eating or purging). In addition, 63% of females who have attempted suicide have binged or purged.
- 25% of males who have been physically abused, 30% of males who have been sexually abused, and 34% of males who attempted suicide have binged or purged.

Information Box

Binge Eating is defined as eating so much food in a short period of time that you feel out of control and would be embarrassed if others saw you.

Purging is defined as vomiting (throwing up) on purpose after eating.

What are the Risks Associated with Poor Diet?

Poor Diet

- An unhealthy diet in childhood may promote DNA damage that may emerge as cancer later in life (Willet, 2005)
- Even with a healthy adult weight, a high calorie intake in childhood has been associated with an increased risk of cancer (Frankel et al, 1998)

The Case for Healthy Eating

- Cancer: prevention from diet alone:
 - Approx. one third of all cancers could be avoided by eating more fruits, vegetables and whole grains, minimizing saturated and trans fats and exercising regularly **throughout the entire life-span** (Key, 2002) (American Institute for Cancer Research and the World Cancer Research Fund, 1997)
 - 50% of breast cancer
 - 75% of stomach cancer
 - 75% of colorectal cancer
- Healthy weights and reduced risk of diabetes
- Improved academic and cognitive performance

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Source: Van Duyn MA, Pivonka E. Overview of the health benefits of fruit and vegetable consumption for the dietetics professional: selected literature. *J Am Diet Assoc.* 2000 Dec;100(12):1511-21.

- Dark-green leafy, cruciferous (e.g. cauliflower, broccoli, cabbage and brussel sprouts), and deep-yellow-orange vegetables (e.g. red, yellow, orange peppers; squash; pumpkins; yams) along with citrus and deep-yellow-orange fruits (e.g. peaches, mangos, papayas, apples, oranges, etc.) can play a protective role in prevention of coronary heart disease.
- There is also accumulating evidence that these fruits and vegetables may also provide a protective role for strokes.
- In addition, a new scientific base is emerging for the role of fruits and vegetables in preventing cataract formation, chronic obstructive pulmonary disease, diverticulosis and possibly hypertension.

Why should we be physically active?

**Regular exercise can prevent
chronic disease conditions,
improve moods and help to better
manage stress**

The Case for Physical Activity

Immediate Benefits

- A healthier heart
- Increased endurance & more energy
- Healthy muscles, bones, & joints
- Improved burning of calories
- Better ability to cope with stress & depression
- A sense of well-being
- Improved ability to fall asleep & sleep well

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Source: Pace, B. and Glass, R. JAMA Patient Page, JAMA, June 14, 2000
– Vol 283, No.22

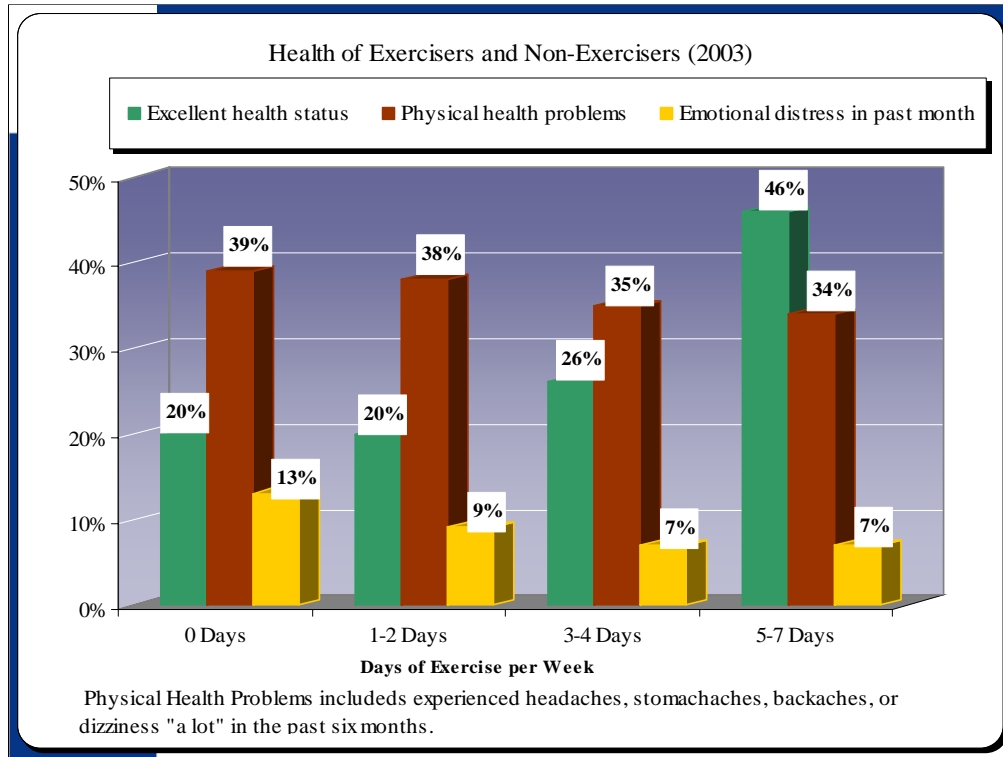
The McCreary Centre Society, “*Adolescent Health Survey III Fact Sheet, Physical Fitness Among BC Youth,*” page 3, 2004. <http://www.mcs.bc.ca/>

- Exercise can decrease ‘stress hormones’ like cortisol, and increase endorphins, your body’s ‘feel-good’ chemicals, giving your mood a natural boost.

Information Box

Cortisol is an hormone in the body that is secreted in high levels during the body’s response to stress. While small increases of cortisol have some positive effect (e.g. heightened memory functions, quick burst of energy, etc.), higher and more prolonged levels of cortisol in the bloodstream have been shown to have negative effects, such as impaired cognitive performance, higher blood pressure, lowered immunity etc..

Endorphins are neurotransmitters that transmit pain-relieving properties from the brain to the rest of the body. Besides behaving as a pain regulator, endorphins are also thought to be connected to physiological processes including euphoric feelings. Prolonged, continuous exercise contributes to an increased production and release of endorphins, resulting in a sense of euphoria that has been popularly labelled “runner’s high.”



Source: The McCreary Centre Society, "Adolescent Health Survey III Fact Sheet, Physical Fitness Among BC Youth," page 3, 2004.

<http://www.mcs.bc.ca/>

- Adolescents who exercise regularly are more likely to rate their health status as excellent than inactive youth.
- 46% of youth who exercised five or more days in the past week reported excellent health status, compared to 20% of those who did not exercise at all.
- Youth who exercised five or more times a week were less likely to experience physical health problems, such as headaches, stomachaches, backaches, or dizziness, "a lot" in the past six months
- Youth who exercised five or more times a week were also less likely to experience severe emotional distress in the past month. Physical activity promotes the release of endorphins which helps to relieve depression and stress which contributes to emotional distress.

Source: Simon HB (2003). Diet and exercise. In DC Dale, DD Federman, eds., *Scientific American Medicine*, vol. 1, Clinical Essentials, chap. 4. New York: WebMD.

Long Term Benefits of Physical Activity

Reduced Risk Of:

- Dying prematurely from heart disease and other conditions
- Developing diabetes
- Developing high blood pressure
- Developing osteoporosis
- Becoming obese
- Developing cancers – such as colon, colorectal, lung and breast cancers

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Source: Pace, B. and Glass, R. JAMA Patient Page, JAMA, June 14, 2000
– Vol 283, No.22

References:

Biddle, S.J.H., Fox, K.R., & Boutcher, S.H. (2000). Physical activity and psychological well-being. London: Routledge.

Vainio H, Bianchini F, Eds. Weight control and physical activity. IARC Handbooks of Cancer Prevention. IARC Press Vol 6, 2002.

U.S. Preventive Services Task Force. Guide to Clinical Preventive Services, 2nd ed. Baltimore: Williams and Wilkins, pages 611-624, 1996.

What Can We Do?

The Benefits of Breakfast

- Help kids concentrate
- Better behaviour
- Better school attendance & punctuality
- Do better academically



Source: Kleinman RE et al. Annals of Nutrition and Metabolism 2002; 416; supp1 24-30.

The Importance of Family Meals

Family meals can have a positive effect on:

- Social development
- Academic achievement
- Family togetherness
- Healthy weights & healthy food habits



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- Center on Addiction and Substance Abuse at Columbia University in 2001 completed a landmark study which established that family dinner can have a positive effect on children's social development and togetherness of the family.
- A 1994 Harris and Associates survey of high school seniors concluded that students who regularly ate dinner with their families 4 or more times a week scored better than those who ate family dinners 3 or times fewer.
- A study from Nova Scotia showed students who ate 3 or more family suppers each week were at decreased risk for obesity.

Source: Veugelers – Prevalence of and risk factors for childhood overweight and obesity. CMAJ. 2005 Sep 13;173(6):607-13.

- Compared to children who did not decrease their nutritional risk, students who did decrease their nutritional risk showed significantly greater improvements in:
 - attendance and school breakfast participation
 - decreases in hunger
 - math grades
 - behaviour

Family Meals = Connecting with “Parents”

Parent involvement is a major
influence in avoiding risks such as:

- Smoking
- Drinking
- Drug Use
- Sexual activity
- Violence
- Suicide Attempts



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Source: Tonkin, Roger S. “*British Columbia Youth Health Trends: A Retrospective, 1992-2003*”, pg. 19, 2005.

DeVore ER, Ginsburg KR. “*The Protective Effects of Good Parenting on Adolescents.*” *Curr Opin Pediatr.* 2005 Aug; 17(4):460-5. Review.

- Family mealtimes are markers for other positive family attributes and play an important role in helping teens cope with the stresses of adolescence.
- Having family dinner regularly (at least 4- 5 times a week) strengthens cohesiveness of the family and increases parent interaction with teens.
- Parent involvement is a major influence in helping teens avoid risks such as:
 - Smoking
 - Drinking
 - drug use
 - sexual activity
 - violence and suicide attempts.
- Eating dinner together as a family can be an important way to maintain connection.

Behaviours that Promote Healthy Eating and Physical Activity

- Always eating breakfast before school
- Having meals regularly with parents
- Daughters are influenced by their parent's eating habits
- Feeling connected to family and school
- Being satisfied with their body looks
- Reporting good/excellent health

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Source: Fisher, JO, Mitchell DC, Smiciklas-Wright H, Birch LL. "Parental influences on young girls' fruit and vegetable, micronutrient and fat intakes". *Journal of the American Dietetic Association*. 102(1):58-64, Jan 2002.

McCreary Centre Society, "*Promoting healthy bodies: Physical activity, weight, and tobacco use among B.C. youth*," pg. 64, 2006.

- The behaviours listed in the above slide increased the odds for being physically active, versus the group that was not active enough, for students of the same age and gender.

Healthy Eating Behaviours

- Eat breakfast
- Have fruits and vegetables on hand for snacks.
- Make your first bite of each meal a fruit or a vegetable
- Avoid high sugar foods and drinks
- Meal plan and grocery shop together
- Have family meals at least 4 times a week or more

Physically Active Behaviours

- Regularly engage in physical activity
- Reduce the number hours of your screen time (e.g. TV, computer, video games)
- Walk to places rather drive your car, take the stairs, rather than the elevator, etc.
- Participate with your children in physical activity (e.g. dance, play tag, throw the ball, go for walks / hikes / bike rides, etc.)
- Encourage your children to join organized sports

Resources & Programs

- Heart and Stroke Foundation
(www.heartandstroke.ca) – Healthy Living Link
- Canada's Food Guide to Healthy Eating
- Dial-A-Dietician
- Canada's Physical Activity Guide
- Action Schools BC!
- Check out your local community / recreation centre
- Look on your local health authority website for other programs and resources in your community!