

Moving in the right direction

Physical Activity Among BC Youth



McCreary
Centre Society

Moving in the right direction: Physical activity among BC youth

A report of the 2008 British Columbia Adolescent Health Survey

The McCreary Centre Society is a non-government not-for-profit committed to improving the health of BC youth through research, education and community based projects. Founded in 1977, the Society sponsors and promotes a wide range of activities and research to identify and address the health needs of young people in the province.

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Special thanks are also due to the youth who completed the survey, and whose participation, honesty and thoughtful insights are greatly appreciated. Quotes from some of these youth are included throughout this report.

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Foreword



Dr. David Cox is one of Canada's leading sports psychologists, an Associate Professor in the Department of Psychology at Simon Fraser University and has been a McCreary Centre Society board member for 30 years.

A report of this kind is important at any time but is particularly timely now given the positive impact of the recently completed Winter Olympics and Paralympics held here in British Columbia.

As a member of the Mission Staff Health Team for the Olympics I was overwhelmed by the response of Canadians to this event. There has been an increase in youth participation in sports as a result of having the Olympics and Paralympics here in British Columbia, and this report has given us an opportunity to systematically identify many of the benefits for youth derived from an involvement in sport.

I was encouraged, though not surprised to read in the report that involvement in organized sports such as those seen at the Olympics leads to youth reporting better physical and emotional health. The finding that playing sports on a regular basis is associated with lower rates of smoking and using drugs is particularly encouraging to those of us who work in the field and also to all of us who are parents as well.

This report clearly indicates that sport can play an important role in the positive development of character and interpersonal skills. However, this does not occur automatically and it is important to look at the specific factors that allow this to happen, such as the influence of coaches and other adults who provide a listening ear and support and encouragement that extends well beyond the sports arenas and playing fields.

Using the information provided here, it should be possible to develop programs to enhance youth participation in sport. The results of this study have identified the importance of protective factors in reducing the likelihood that youth will engage in health risk behaviours. This is true for even the most vulnerable youth in our province such as those who have come from an unsafe or chaotic family background, and surely provides us with all the incentive we need to continue the progress we have made to date and to develop programs that are accessible to those youth who are not yet engaged in sports and exercise.

Key Findings



- Most BC youth participate in some form of physical activity every week. Eighty-eight percent of males and 81% of females participated in at least one type of activity including organised sports, informal sports and dance/aerobics.
- The percentage of students who exercised daily or almost daily rose from 22% in 1998 to 26% in 2008. Participation in sports and dance/aerobics classes also increased, and the percentage of youth who played organized sports four or more times a week rose from 25% to 30%.
- There were some regional differences in sports and exercise participation. Youth living in rural areas were more likely than urban based students to take part in informal sports opportunities (such as hiking and road hockey). Rural females were also more likely than their urban counterparts to be engaged in organised sports and dance/aerobics.
- Some groups were at greater risk of not being involved in sports and exercise, including youth who went to bed hungry because there was not enough money for food at home, youth with an unstable home life, immigrant youth and youth who identified as lesbian, gay or bisexual.
- Youth involved in sports and exercise were less likely to use a range of substances, but older youth heavily involved in sports were more likely to have tried alcohol and to have drunk at risky levels than youth with more moderate levels of sports participation.
- Involvement in physical activity was associated with better nutritional behaviours such as eating breakfast and eating healthy foods. For example, 59% of youth who exercised daily or almost daily in the past week ate breakfast compared to 43% of those who did not exercise.
- In general, physical activity was associated with a lower rate of self-harm, suicidal ideation and suicide attempts. Also, the more youth exercised or played sports, the more likely they were to report higher self-esteem.
- There was a link between dance/aerobics and health risks such as unhealthy eating behaviours and amphetamine use, particularly for males. However, this type of exercise offered an outlet for youth experiencing other challenges in their lives who were not engaged in any other form of physical activity.
- Having skills and competencies can be an important protective factor for youth. Students who said they were good at sports were less likely to report extreme stress, to have considered suicide or attempted suicide in the past year.
- Youth who felt that they had input into their activities, and that their ideas were listened to and acted upon were more likely to be engaged in physical activities. Equally, being involved in sports and exercise was linked to reduced risky behaviours and improved health among even the most vulnerable youth.

Introduction



Youth sports and exercise involvement is an important health priority, and this report reflects a growing interest in the topic among government departments, educators, health care professionals, parents and young people themselves. With rising obesity rates, concerns about levels of physical inactivity, and increased interest in some sports as a result of the 2010 Olympic and Paralympic Winter Games, there has never been a better time to look in detail at physical activity behaviours of BC youth.

About the report

This report is based on the responses of over 29,000 students in Grades 7 through 12 who completed the 2008 BC Adolescent Health Survey (AHS). The survey was delivered in 1,760 classrooms in 50 of BC's 59 school districts between February and June of 2008.

The report aims to identify the benefits associated with young people's participation in sports and other physical activities. It is hoped that the results will be used to support the development of policy and programs which enhance youths' participation in physical activities.

The report looks at the prevalence of organised and informal sports and exercise participation among BC youth, as well as trends in participation. It compares the health promoting and health risk behaviours of those youth who are engaged in physical activity with those who are not. It also includes a look at the effects of the 2010 Olympic and Paralympic Winter Games, particularly its impact on sports involvement.

Definitions:

- *Exercise* is defined as at least 20 minutes of strenuous physical exercise sufficient to cause breathing hard or sweating.
- *Organised sports* are those which involved a coach or instructor, such as school teams and swimming lessons, but do not include mandated school gym classes.
- *Informal sports* are defined as sports or physical activities performed without a coach or instructor, such as road hockey or skateboarding.
- *Dance and aerobics* participation refers to organised classes of these activities.

For the purpose of this report:

- *Less than weekly participation* includes not participating in an activity as well as participating less than once a week over the past year.
- *Weekly participation* refers to doing an activity at least once per week in the past year.
- *Very frequent participation* is defined as doing six or seven days of strenuous exercise in the past week or doing sports or dance/aerobics four or more times a week over the past year.
- If the level of participation is not specified in the text, it relates to weekly participation (e.g., "*participated in organised sports*" refers to participation at least once per week).

“ This survey has opened my eyes that I’m extremely lucky with my life (i.e. sports, family and friends). ”

The survey

The AHS has been conducted every five years since 1992 and provides the most current and comprehensive data available on BC youth health, including risk and protective factors. The survey asks youth a series of questions about actions that promote healthy development and about behaviours that may negatively affect health. Question topics include common health problems, illness and disabilities, nutrition, fitness and body image, injury prevention behaviour, sexual behaviour, mental health and experiences of violence and abuse.

A detailed methodology fact sheet for the survey is available at www.mcs.bc.ca. This fact sheet includes the source and rationale for the questions used in the AHS.

The analysis

Statistics Canada weighted the data from the survey to ensure it was representative of youth in Grades 7 through 12 in every region of the province, and analyses used statistical adjustments for the complex sampling and design of the survey. All comparisons and associations reported in this study have been tested and are statistically significant (at $p < .01$ within the 2008 survey, and at $p < .05$ when comparing against earlier surveys). This means that there is a 1% likelihood that the results presented for 2008 occurred by chance and a 5% likelihood that any trends seen over time occurred by chance.

Graphs and charts show frequencies that are not necessarily statistically significant at every point. Where this is not obvious it is indicated in the text below the graph.

All graphs and charts relate to youth in Grades 7-12 (aged 12-19) unless otherwise stated.

Limitations

As with all surveys, this one had limitations, as it only captures the physical activities of youth who are in school. It also may not capture some of the informal activities that youth do, such as walking to and from school, or performing manual labour.

The World Health Organisation (WHO) guidelines state that youth should get at least 60 minutes of exercise every day. A limitation of the AHS was that it only asked about strenuous exercise for 20 minutes per day. It is therefore unknown how many youth are achieving the 60 minute target recommended in BC.

“ I think you should ask how many hours a week you do physical activities instead of just saying how many times you did over 20 minutes. ”

Where an asterisk (*) appears beside a percentage this figure should be interpreted with caution as the margin of error is higher than expected but still within an acceptable range.



BC Youth and Physical Activity



WHO global recommendations on physical activity for health

Children and young people aged 5-17 years old should accumulate at least 60 minutes of moderate- to vigorous-intensity physical activity daily.

- Physical activity of amounts greater than 60 minutes daily will provide additional health benefits.
- Most daily physical activity should be aerobic. Vigorous-intensity activities should be incorporated, including those that strengthen muscle and bone, at least 3 times per week.

Adults aged 18-64 years should do at least 150 minutes of moderate-intensity aerobic physical activity throughout the week, or do at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week, or an equivalent combination of moderate- and vigorous-intensity activity.

Source: World Health Organization (2010). *Global recommendations on physical activity for health* (p. 7-8). Geneva: WHO.

“ I am a very active person, I exercise lots either going for a run to the gym or on my soccer team. I work lots and I work hard in school. I still somehow manage to find time for myself and my friends. ”

Exercise

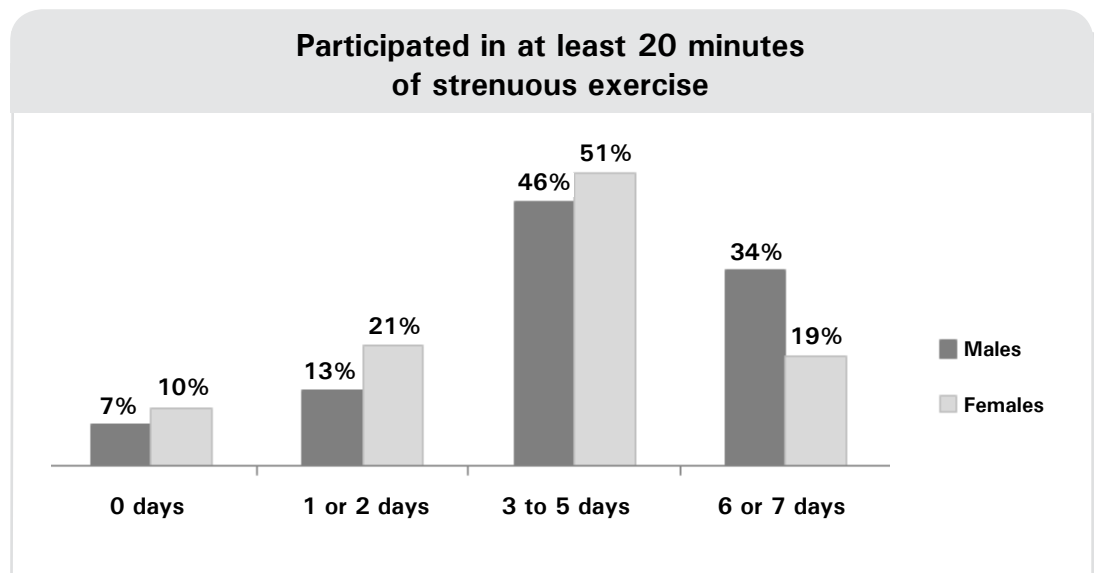
Ninety-two percent of youth who completed the AHS reported that in the past week they had taken part in at least 20 minutes of exercise sufficient to make them sweat and breathe hard. This figure was consistent with the AHS results in 1998 and 2003.

In total, 17% of BC youth exercised for at least 20 minutes on one or two days in the week before they took the survey and 48% exercised on three to five days. About a quarter of youth (26%) exercised on six or seven days, which was unchanged from 2003, but a rise from a decade earlier when only 22% had exercised daily or almost daily.



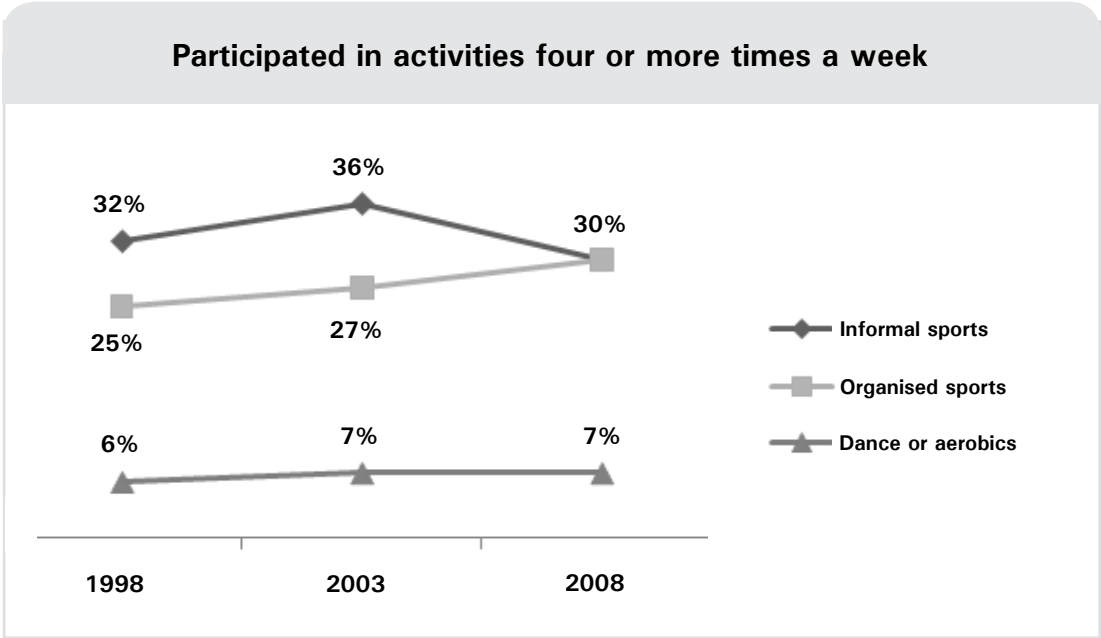
Consistent with findings since 1998, females were more likely than males to have not exercised at all in the past week (10% vs. 7%), while males were more likely to have exercised on six or seven days (34% vs. 19% of females).

As youth got older, they were less likely to exercise. For example, 12% of 18-year-olds had not exercised in the past week compared to 5% of 13-year-olds. Similarly, 32% of 13-year-olds had exercised on six or seven days, compared to only 19% of 18-year-old students.



Other Types of Physical Activity

In addition to being asked about exercising during the week before completing the survey, youth were asked about their involvement in other types of physical activity during the past year: informal sports, organised sports and dance/aerobics. Eighty-five percent of BC youth participated weekly in at least one of these activities (88% of males and 81% of females).



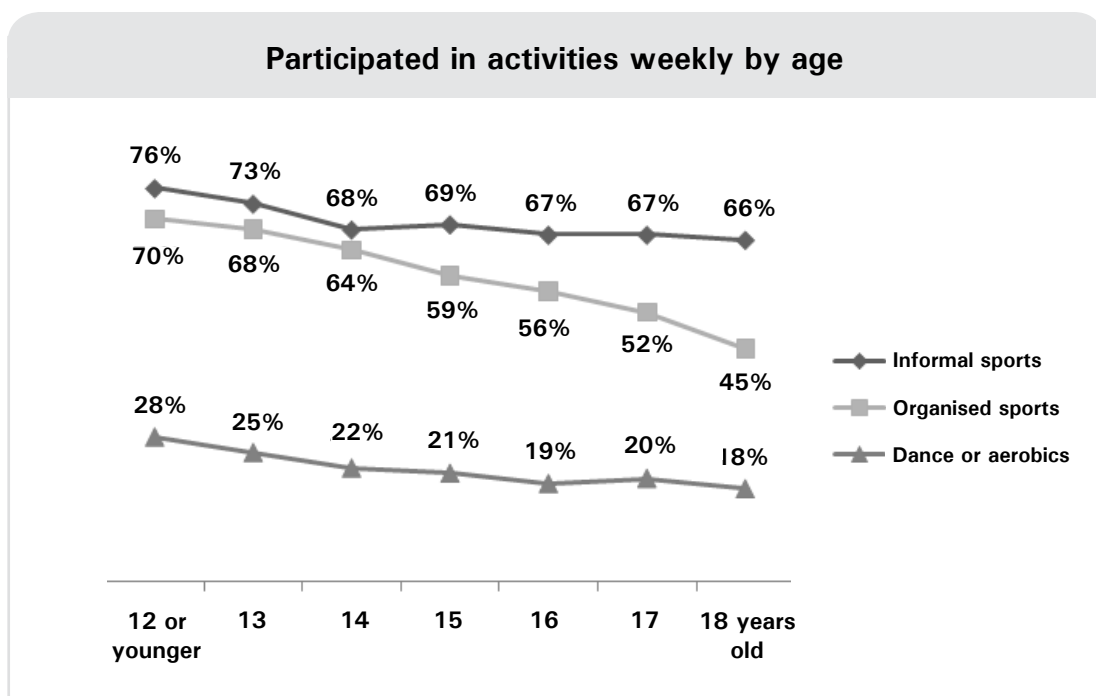
Informal sports

In 2008, 69% of youth participated weekly in informal sports (such as biking, skateboarding or road hockey), which was a slight increase from 67% in 1998. Males were more likely than females to have played informal sports. Seventy-eight percent of males had done so at least weekly, compared to 60% of females.

Thirty percent of youth took part in these activities four or more times a week, which was a decrease from 36% in 2003 and lower than the rate a decade earlier (32%). More than twice as many males as females participated in informal sports four or more times a week (43% vs. 20%).

Although there was an increase in overall participation in informal sports, when youth were asked specifically about bike riding, the percentage who cycled at all in the past year decreased from 80% in 1998 to 71% in 2008 (80% of males vs. 63% of females).

As youth got older, very frequent participation in informal sports decreased for both males and females. However, more moderate involvement (one to three times per week) remained stable for females (at about 4 in 10 students) and increased for males (31% of 13-year-olds vs. 39% of 18-year-olds).





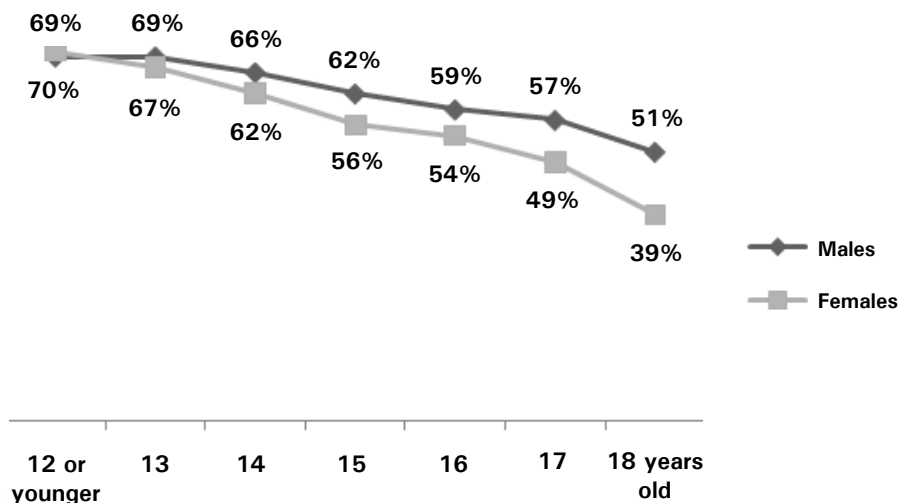
Organised sports

More youth took part in organised sports (with a coach) on a weekly basis, than a decade earlier (59% vs. 55%). The percentage of youth doing so four or more days a week also rose from 25% in 1998 to 30% in 2008.

Unlike in 2003 when there was no significant gender difference, in 2008 males were more likely than females to play organised sports weekly (62% vs. 57%). Consistent with results since 1998, males were also more likely to have participated four or more times a week (33% vs. 27%).

Although participation decreased as youth got older, the decline was more pronounced for females. In fact, similar rates of male and female students at younger ages played organised sports. However, by the time youth reached 18 years of age, these rates had dropped to 51% for males compared to 39% for females.

Participated in organised sports weekly by gender





“ I am active and play lacrosse for an hour a week and skate 14 hours a week. ”

Dance or aerobics

Dance and aerobics classes gained popularity between 1998 and 2008. Twenty-two percent of youth took part in dance or aerobics at least once a week, up from 18% a decade ago, and 20% in 2003.

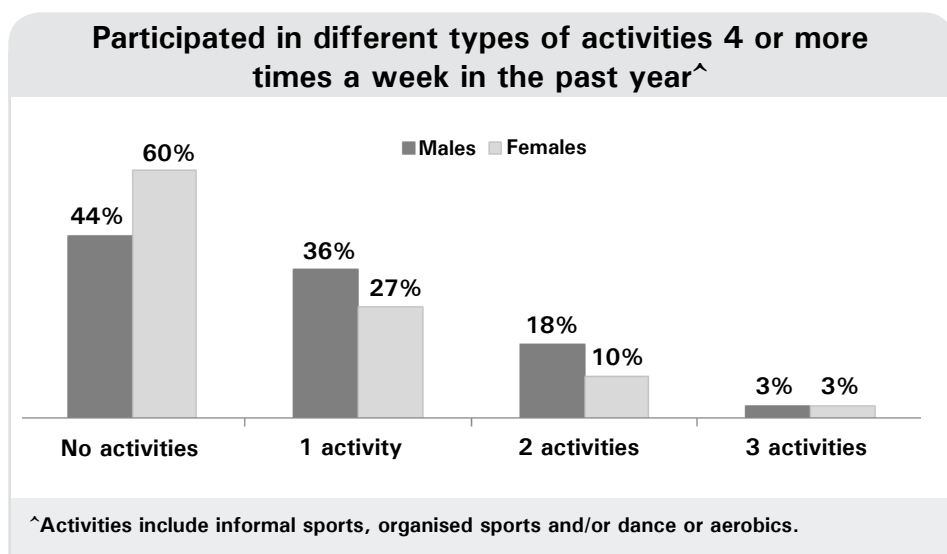
Females were more likely to have participated in dance or aerobics both on a weekly basis (31% vs. 11%), and at the highest frequency of participation (four or more times a week; 10% vs. 4%).

As was the case with the other types of physical activity, participation in dance or aerobics decreased as youth got older. For females, the decline in weekly participation was steady. For males, on the other hand, there was a sharp decrease in participation from 15% at 13 years old to 9% at 15 years old, at which point the rate plateaued.

Multiple types of participation

If youth were engaged in any level of physical activity, males were more likely to be involved in both organised and informal sports than they were to be involved in just one of these. Females were more likely to be involved in all three activities than they were to be involved in any one of these or a combination of two. For example, 35% of females took part in both sorts of sports and dance (including less than once a week), whereas only 3% did organised sports on its own.

Furthermore, 21% of male students took part in two or more physical activities at least four times a week, compared to 13% of females.

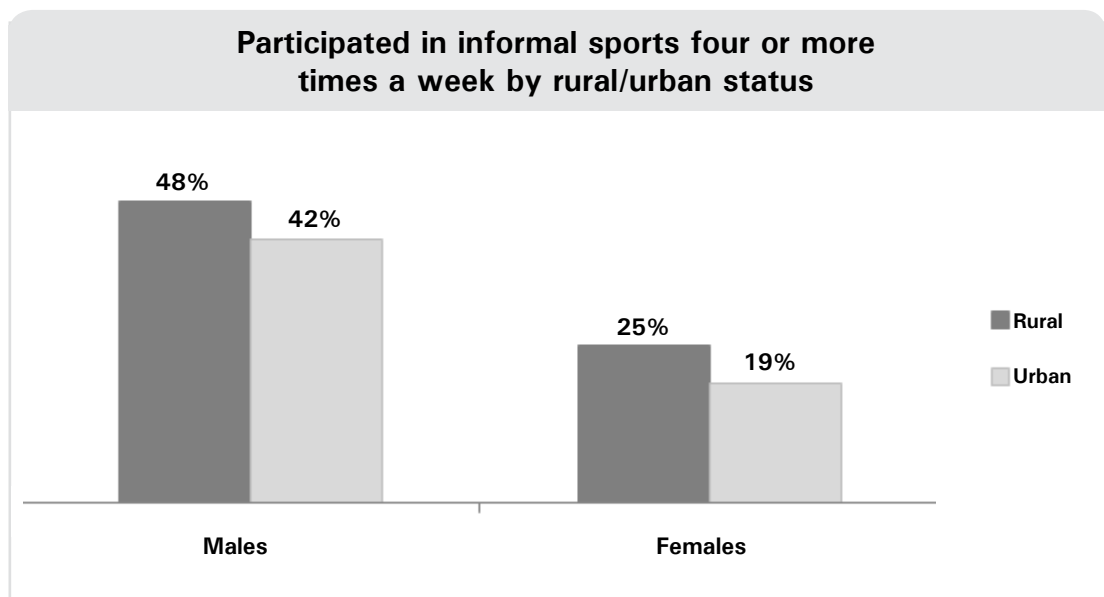


“ I have always grown up in a very active environment. Since [my town] is in the mountains, it is a very active little town, so I feel I have been very encouraged to do physical activity. ”

Regional differences

There were few regional differences in the rates of youth participating in sports, dance and aerobic classes or exercising. However, youth in the North Shore/Coast Garibaldi region were more likely than youth in any other region of BC to have played organised sports. In contrast, youth in the Vancouver (76%) and Richmond (77%) areas were the least likely to have participated in any type of sports or dance/aerobic activities. (The other Health Service Delivery Area participation rates ranged from 84% to 89%). This finding was similar to 2003, when these two regions also had lower participation rates than most areas of the province.

There were no differences in exercise rates between rural and urban areas of the province. However, youth in rural areas were more likely to have participated in informal sports four or more times a week (36% vs. 30% in urban areas). Rural females were also more likely than urban females to have participated weekly in any type of sports or dance or aerobics (85% vs. 81% of urban females).



Barriers to Physical Activity



Sedentary activities

The rise in popularity and availability of technology which encourages sedentary activities (such as video games) has been seen as contributing to a rise in obesity rates and decreased physical activity among young people. In 2008, 4% of males and 5% of females had not taken part in any sports or dance/aerobic activity over the past year.

In terms of regular participation, 15% had not done any of these activities on a weekly basis (19% of females vs. 12% of males), which was similar to the rate in 2003, but an overall decrease from 18% in 1998, meaning slightly fewer youth were inactive than a decade ago.

Most youth spent some of their leisure time on a typical school day on the Internet (for purposes other than school work), watching TV or playing video games. Eleven percent spent four or more hours daily watching TV, 15% spent at least four hours using Facebook, emailing and such, and 8% played video games for four hours or more each day.

Females were more likely than males to be on the Internet in their spare time, while males were more likely to play video games (14% of males played video games for four or more hours vs. 3% of females). As students got older, they were more likely to be on the Internet, and less likely to play video games.

“ I am not healthy because I play too much X- box. ”

Youth who live in urban areas were also more likely to spend their leisure time doing sedentary activities such as being on the Internet (89% vs. 84%) and watching TV (90% vs. 88%) on a school day. Fifteen percent of urban based youth spent four or more hours a day on the Internet compared to 11% of rural based youth.

Moderate amounts of TV watching were associated with higher rates of participation in physical activity. For example, 61% of youth who spent up to two hours in front of the TV each day took part in organised sports, compared to 55% of those who watched TV for four or more hours or did not watch TV at all.

Online time had a greater impact on sports and exercise involvement than TV watching or playing video games. A quarter of male and female students who spent four or more hours online on a school day did not participate in sports or dance/aerobic activities over the past year, which was higher than the 15% who did not spend any of their free time on the Internet.

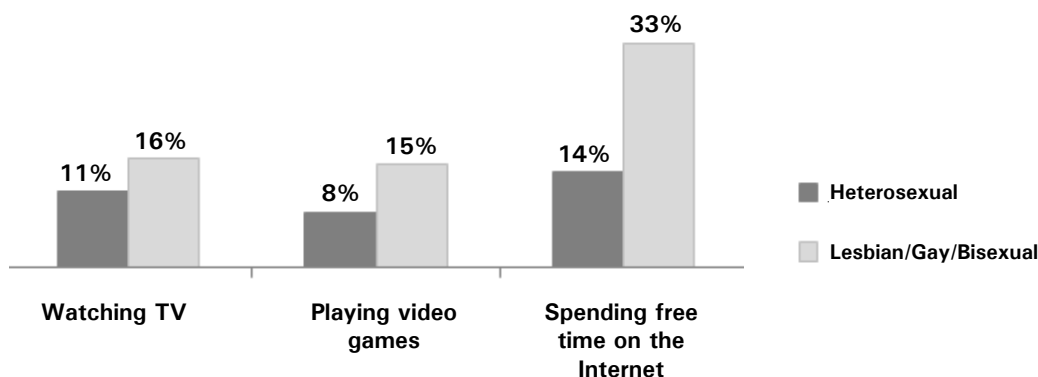
“ I don’t like exercising. I’m always on the computer playing games for hours (more than 5 hours each day). My parents always try to tell me to get off the computer and that it’s bad for your health. I understand that but I can’t stop because there’s nothing to do at home. I feel really unhealthy. ”

Sexual orientation

Students who identified as lesbian, gay or bisexual (LGB) were more likely than their heterosexual peers to engage in four or more hours of screen time a day. LGB youth were also less likely to participate in physical activities. For example, 21% of LGB youth had not exercised in the past week compared to 7% of heterosexual youth. Only half of LGB students had taken part in informal sports, compared to 71% of heterosexual students. Thirty-nine percent had played organised sports (vs. 61% of heterosexual youth). Gay or bisexual males were more likely than heterosexual males to have taken part in dance or aerobics at least weekly (20% vs. 11%), whereas the reverse was seen among females (32% of heterosexual females vs. 25% of lesbian or bisexual females).



Four or more hours of screen time on a typical school day by sexual orientation



New Canadians

Immigrant students were less likely than Canadian-born students to have exercised at least once in the past week (86% vs. 93%), and were less likely to have exercised daily or almost daily (20% vs. 28%). Students born outside of Canada were also less likely to take part in organised sports (49% vs. 62%) and informal sports (58% vs. 71%). They were just as likely as Canadian-born youth to have taken dance or aerobics classes over the past year.

The longer immigrant students lived in Canada, the more likely they were to have exercised regularly or played sports. For example, 54% of youth who had lived in Canada five years or less took part weekly in informal sports, compared to 71% who had lived here all their lives. There was no relationship between the length of time youth had lived in Canada and doing dance or aerobics.

Youth born outside of Canada were less likely to be engaged in sedentary activities such as playing video games or watching TV compared to their Canadian-born peers, but were more likely to be on the Internet.

Work

The more hours youth worked, the less likely they were to take part in regular physical activities. For example, among youth who worked less than five hours a week, 69% took part in organised sports, compared to 58% of those who were working between five and 19 hours a week, and 51% of those who were working 20 or more hours a week.



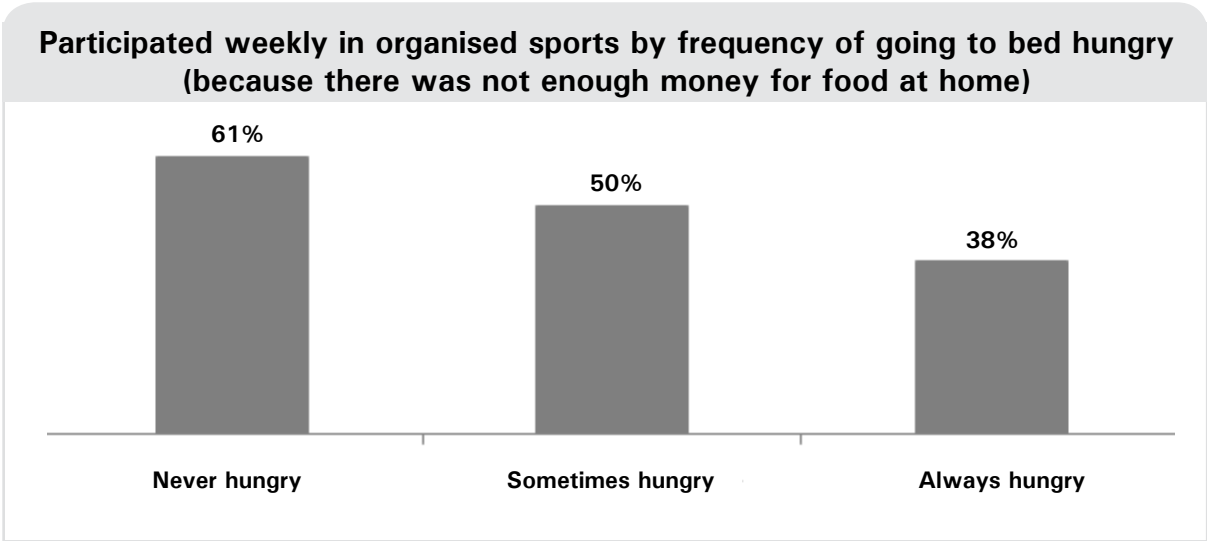
Poverty

Youth who went to bed hungry because there was not enough money for food at home were less likely to take part in sports or exercise. For example, 54% of youth who always experienced this type of poverty participated in informal sports compared to 70% of youth who did not go hungry. Thirty percent of youth who always went to bed hungry had not exercised in the past week, above the 10% of youth who sometimes experienced hunger and the 8% who never did.

There was no relation between taking dance/aerobics classes and this type of poverty for females. Perhaps more surprisingly, males who reported always going to bed hungry because there was not

enough money for food were almost twice as likely to take part in dance or aerobics classes as those who never went to bed hungry (21% vs. 11%).

Although it is not necessarily an indicator of poverty, youth who lived with only one parent were less likely to have participated in sports or exercise than students in two-parent households. Seventy-one percent of youth who lived in a house with two parents participated in informal sports, above the 66% of those with one parent at home. Similarly, 63% of youth with two parents at home took part in organised sports, compared to only 53% of those who lived in a single-parent household.



Housing instability

Housing instability affected youths' participation in sports and exercise. The more frequently youth had moved from one home to another in the past year, the less likely they were to have exercised in the past week. Ninety-three percent of youth who had lived in the same place over the past year exercised at least once in the week prior to completing the survey, compared to 90% who had moved once, and 86% who had moved three or more times. However, there was no difference in very frequent (daily or almost daily) exercise between those students who had moved a lot (three or more times) and those who had not moved in the past year.

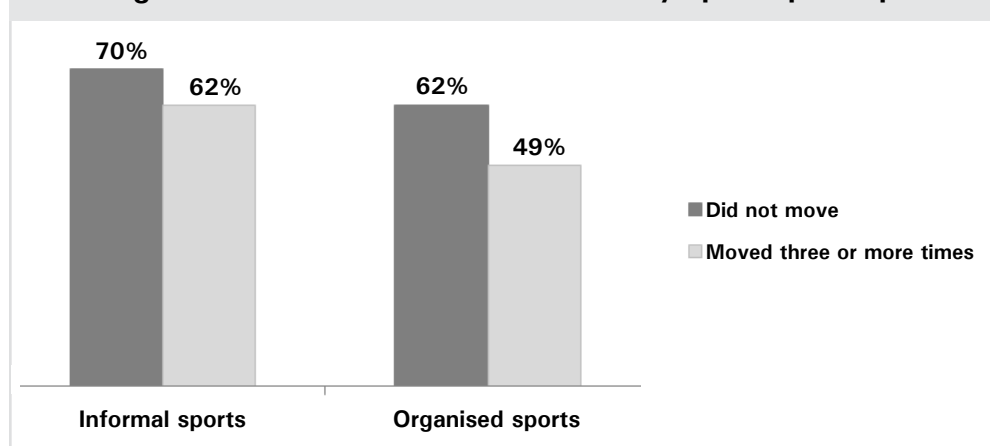
This pattern was replicated for unstable housing and regular participation in organised and informal sports, but for males the opposite trend was seen for dance or aerobics. Males who moved three or more times in the past year were more likely to

have taken dance or aerobics four or more times a week than males who did not move to a new home (8% vs. 4%).

Youth who had ever lived in government care were less likely to have exercised than youth who had not been in care. Eighty-one percent of youth with experience of government care had exercised in the week before they took the survey compared to 92% of those with no care experience. Recent care experience had an even greater impact on exercise, as 77% of youth who had been in care in the past year had exercised in the past week.

Youth who had lived in government care were also less likely to have participated in any type of sports. However, experience of government care was not associated with participation in dance or aerobics.

Moving home and reduced rates of weekly sports participation



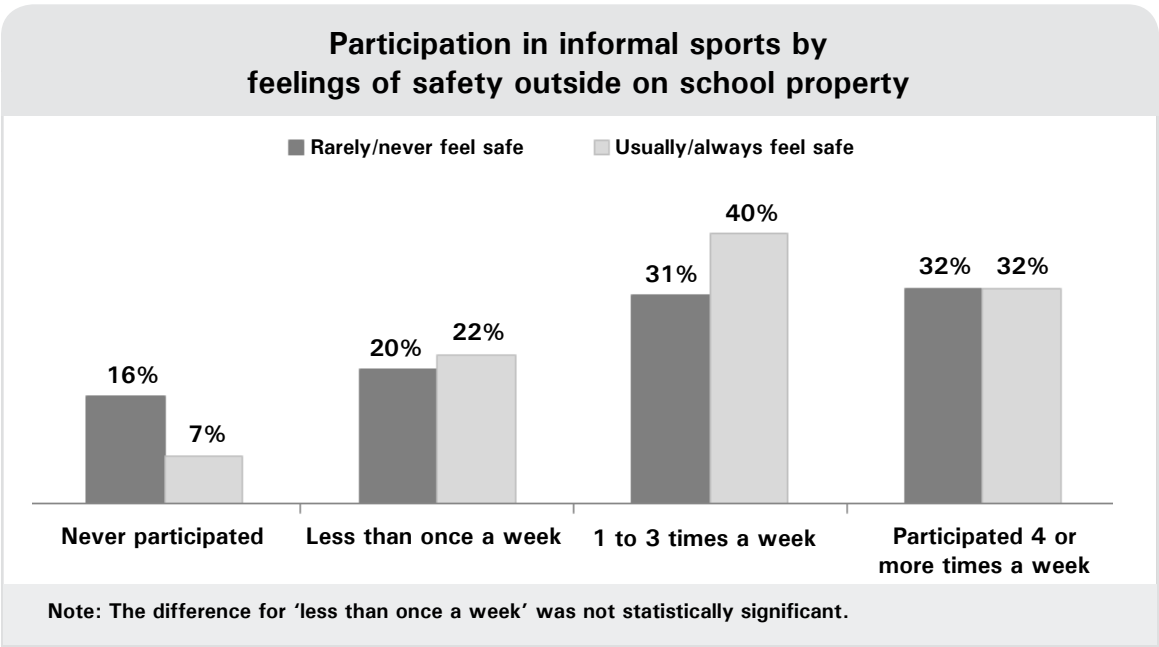
Feeling unsafe

Feeling unsafe may pose a barrier to youth participating in various physical activities, especially if they feel they cannot safely travel to or from a sports facility or do not feel safe in the locations where physical activities occur. Although students were not asked specifically about safety in their neighbourhoods, they were asked about how safe they felt outside on school property.

Youth who rarely or never felt safe were less likely to exercise or play sports compared to those who usually or always felt safe. For example, 71% of those who usually or always felt safe played informal sports compared to 63% of those who rarely or never felt safe. Feeling unsafe seemed to limit moderate (1 to 3 times a week) participation rather

than very frequent (four or more times a week) or infrequent (less than once a week) participation for both males and females. Among rural based youth specifically, not feeling safe was associated with a lower likelihood of both moderate and very frequent participation in informal sports.

Feeling safe was not related to involvement in dance or aerobics among females. For males, a different pattern emerged where those who rarely or never felt safe were actually more likely to take dance or aerobics classes (17% vs. 10% of those who usually or always felt safe).



Health condition or disability

Eighty-two percent of males with a health condition or disability reported participating in any physical activity on at least a weekly basis, below the 89% of males without such a condition or disability. There was no difference among female students.

Although the rate of participation in at least one activity weekly has increased for youth without a disability since 1998, the rate for youth with a disability has stayed constant.

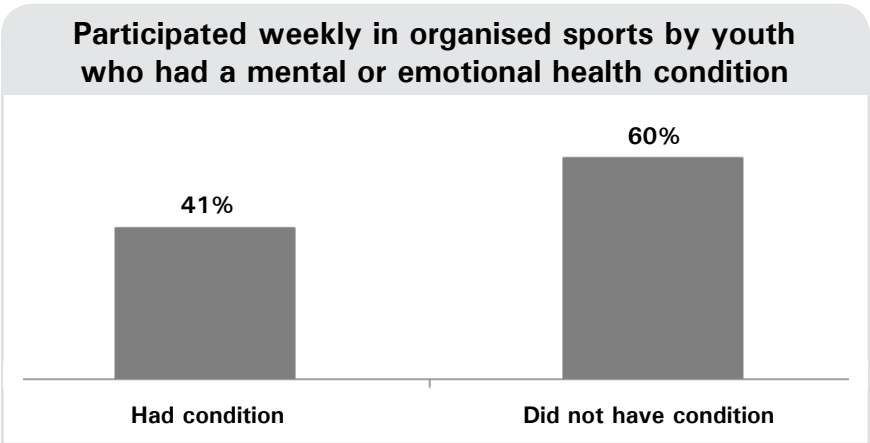
Having any type of health condition or disability affected youths' ability to play organised sports. Twenty-three percent of youth with a health condition or disability took part in organised sports four or more times a week, compared to 30% of youth without a disability. However, having a disability did not affect participation in dance or aerobics.

Engagement in sports and dance/aerobics among youth with a health condition or disability was affected by where youth lived, perhaps because they face additional barriers such as transportation and accessibility. Although there was no difference

provincially between rural and urban areas, youth living with a disability or health condition in the Northern, Interior or Vancouver Island regions were less likely than their peers to have participated in sports or dance/aerobics. This was not the case in the Vancouver Coastal or Fraser regions of BC.

Youth were asked to specify their particular health condition(s) or disability: physical disability, long term illness, mental or emotional condition or overweight/underweight. Particular conditions were associated with lower participation in certain physical activities.

For example, youth who reported a physical disability were less likely to have exercised for 20 minutes at least once in the past week than those without such a disability (86% vs. 92%). Having a physical disability did not affect female students' ability to participate in organised or informal sports opportunities. However, males who reported a physical disability were less likely to have played informal sports (72% with a disability vs. 79% without) or organised sports (49% with a disability vs. 60% without).



There were some differences between youth with a long term illness (such as asthma or diabetes) and those without. Male students with a long term illness were less likely than their peers to take part in organised sports (49% vs. 62%), whereas female students with a long term illness were more likely to take part in informal sports than those without an illness (67% vs. 60%). Additionally, youth who suffered from a chronic illness were more likely to take part in dance or aerobic activities than youth without this condition (27% vs. 21%).

Students who reported a mental or emotional health condition were less likely to report exercising and participation in organised sports (41% vs. 60% without such a condition). A similar association was seen for participation in informal sports, but only for males (61% vs. 79%).

Almost one in five males who reported a limiting weight condition had not exercised in the past week (19% compared to 7% of youth without a weight condition). Males with a weight condition were also less likely to have exercised six or seven days (19% vs. 34% without a weight condition). Females' exercise rates did not appear to be affected by weight problems. Overall, youth with weight problems were also less likely to have played organised sports (41% vs. 60% without a weight condition) or informal sports (56% vs. 69%).

“ I have minor asthma
but it doesn't prevent me
from physical activity. ”



Health and Physical Activity



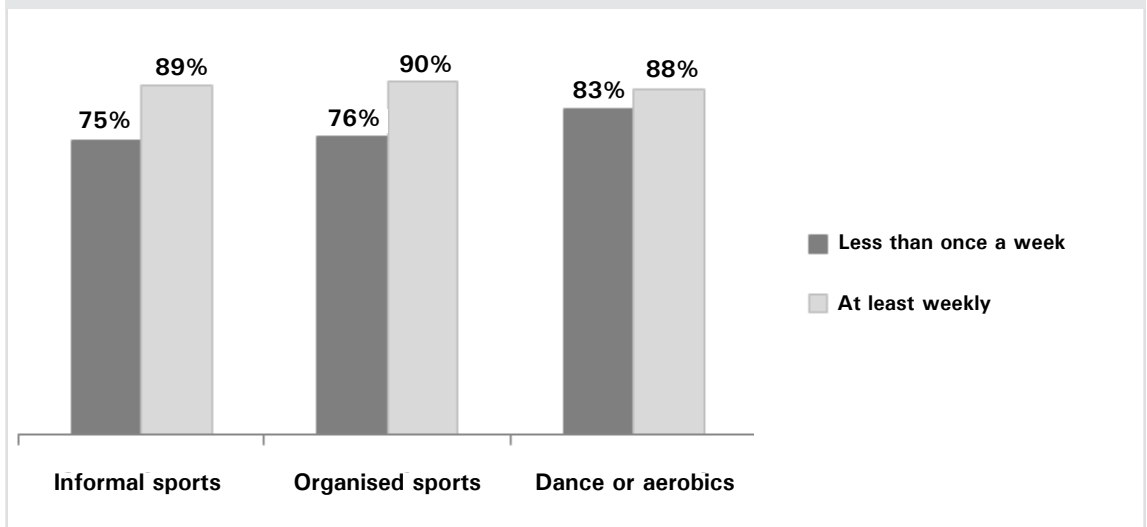
Feeling healthy

Not surprisingly, the AHS showed a link between health and participation in physical activities. Sixty-five percent of youth who had not done any exercise in the past week described their health as good or excellent, compared to 93% of those who had exercised on at least six days in the week prior to filling out the survey.

“ I am a very active person and enjoy exercising very much. ”

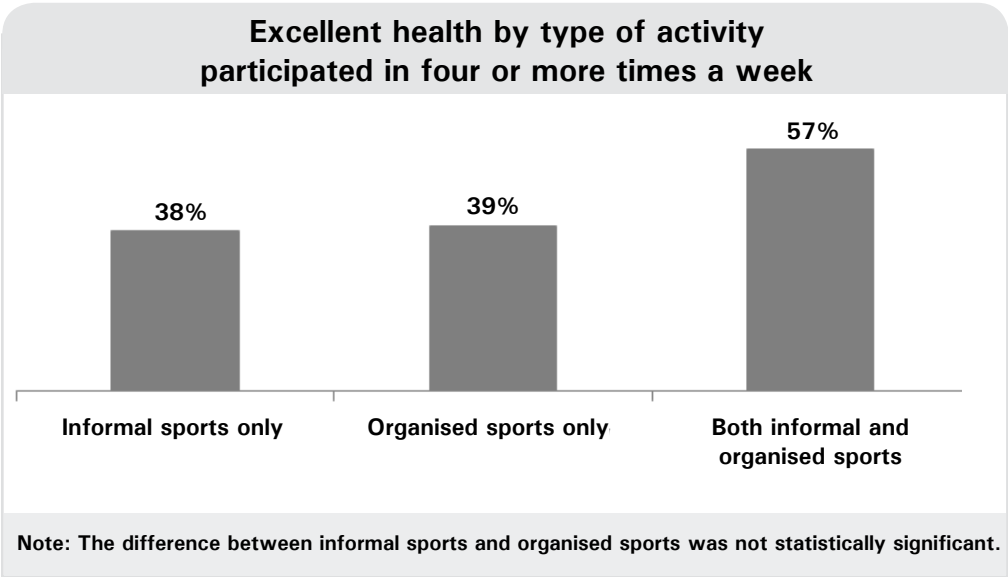


Reported good/excellent health by participation in physical activities



Participating in sports or dance/aerobic classes was also associated with a greater likelihood of youth reporting that they were in good or excellent health. For example, 92% of youth who had participated in organised sports four or more times a week reported their health as good or excellent, compared to 87% who participated one to three times a week and 76% who had participated less than once a week.

Youth who took part in both informal and organised sports four or more times a week were more likely to rate their health as excellent, compared to those who participated in only one of these activities. As well, those youth who took part solely in dance or aerobics four or more times a week were more likely to report good or excellent health compared to youth who did not take part this frequently in any type of sport or dance activity (80% vs. 62%).



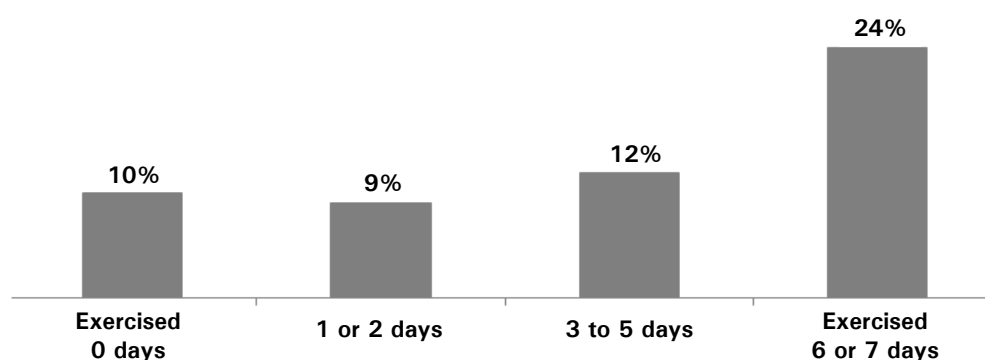
Body weight and body image

Youths' body mass index was calculated from their self-reported height and weight, and they were subsequently classified into underweight, healthy weight, overweight or obese categories. Youth who exercised at least three days in the past week were less likely than non-exercisers to be underweight (5% vs. 8%) or obese (3% vs. 6%). Similar patterns emerged for informal and organised sports, where weekly participation in these activities was associated with a slightly lower likelihood of being underweight, and among males, of being obese. Frequency of taking dance or aerobic classes did not appear to be linked to weight except females who danced or did aerobics weekly were less likely than those who participated less frequently to be obese (2% vs. 3%).

Male and female youth who participated very frequently in any physical activities were most satisfied with how their body looked. For example, youth who took part in organised sports four or more times a week were more likely than those who participated less frequently to be very satisfied with their bodies (21% vs. 12%).



Very satisfied with how body looks by days exercised in past week



Note: The differences between '0 days' and '1 or 2 days' or '0 days' and '3 to 5 days' were not statistically significant.

“ I am mentally unhealthy because I am dieting too much to be thin and this affects everything because I am not confident and I do not eat enough to do well in my sports. ”

Youth who exercised very frequently were least likely to say they were trying to lose weight (32% vs. 43% of youth who exercised less frequently), but males who exercised very frequently were more likely to say they were trying to gain weight (28% vs. 23% of those who exercised less frequently). In addition, youth who exercised three or more days in the past week were more likely than less frequent exercisers to say they were trying to stay the same weight. Similar patterns were seen for sports.

However, the pattern for dance or aerobics was different. Youth who participated in dance/aerobics were more likely than non-participants to say they were trying to lose weight (47% vs. 37%), and those who took part four or more times a week were more likely than non-participants to say they were trying to stay the same weight (21% vs. 17%).

The AHS also asked youth about eating behaviours such as dieting, binge-eating, and vomiting on purpose after eating (purging). There was no association between dieting and exercise or sports for males. For females, 44% who took part weekly in organised sports dieted compared to 49% who participated less frequently. The opposite pattern was seen with informal sports where 48% of female youth who very frequently did informal sports had dieted compared to 41% who never did informal sports.

Youth who did any level of dance or aerobics (including less than once a week) were more likely than those who did not to have dieted. This was the case for both males (19% vs. 15%) and females (48% vs. 44%).

For male and female youth, binge eating was less common among those who played weekly informal sports (25% vs. 33% of less frequent participants) or organised sports (26% vs. 30%). However, any frequency of dance/aerobics participation (including less than once a week) was associated with a higher likelihood of binge eating than no participation (33% vs. 25%).

Differences in purging behaviour were seen among males but not females. For example, 3% of male students who exercised at least 20 minutes per week reported vomiting on purpose after meals compared to 8% who did not exercise at all. Similarly, males who participated in informal sports were less likely than non-participants to purge (3% vs. 9%). The opposite, however, was true of males who were in dance/aerobics: 3% of those who did not take part purged compared to 6% who took dance/aerobic classes. No relationship was found between purging and organised sports.

“ I play soccer just about every day of the week and always eat healthy but don't get why I don't have a 'bikini body.' I'm not fat, but not in a state I would like to be. ”

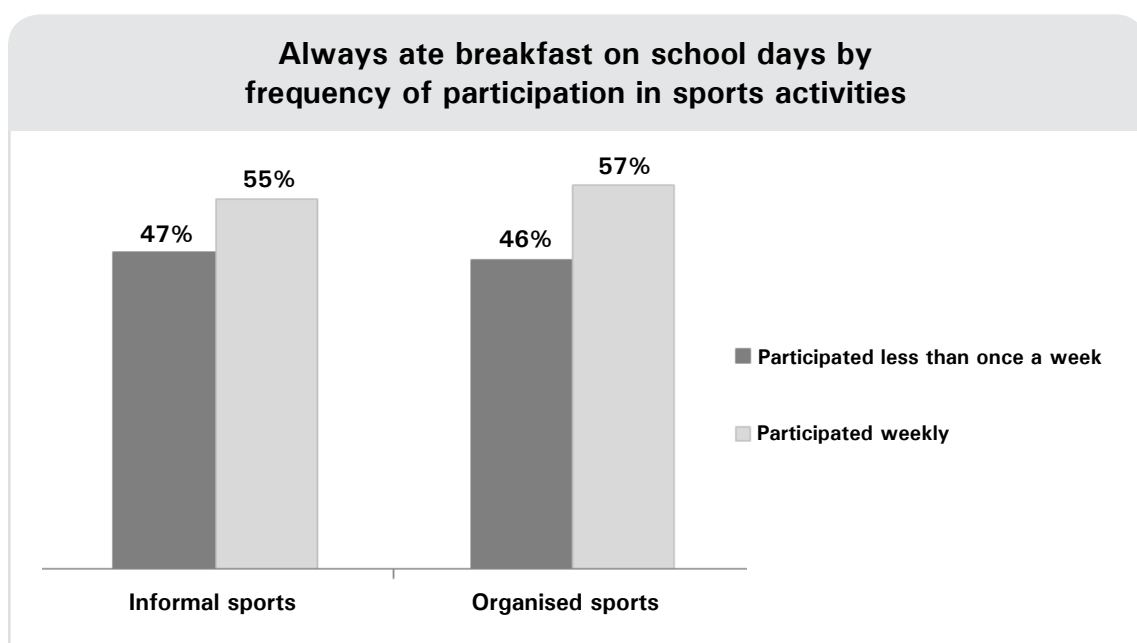
Nutrition

Involvement in physical activity was generally associated with better eating habits such as eating breakfast and eating healthy foods. For example, youth who exercised more frequently were more likely to always eat breakfast on school days, with 43% of non-exercisers reporting always eating breakfast compared to 59% of those who exercised on six or seven days. Youth who participated weekly in sports were also more likely than those who participated less frequently to always eat breakfast. Eating breakfast was not associated with frequency of participation in dance or aerobic classes.

As the frequency of exercise increased, so did the percentage of youth who consumed water, fruit, vegetables or dairy products twice or more on the

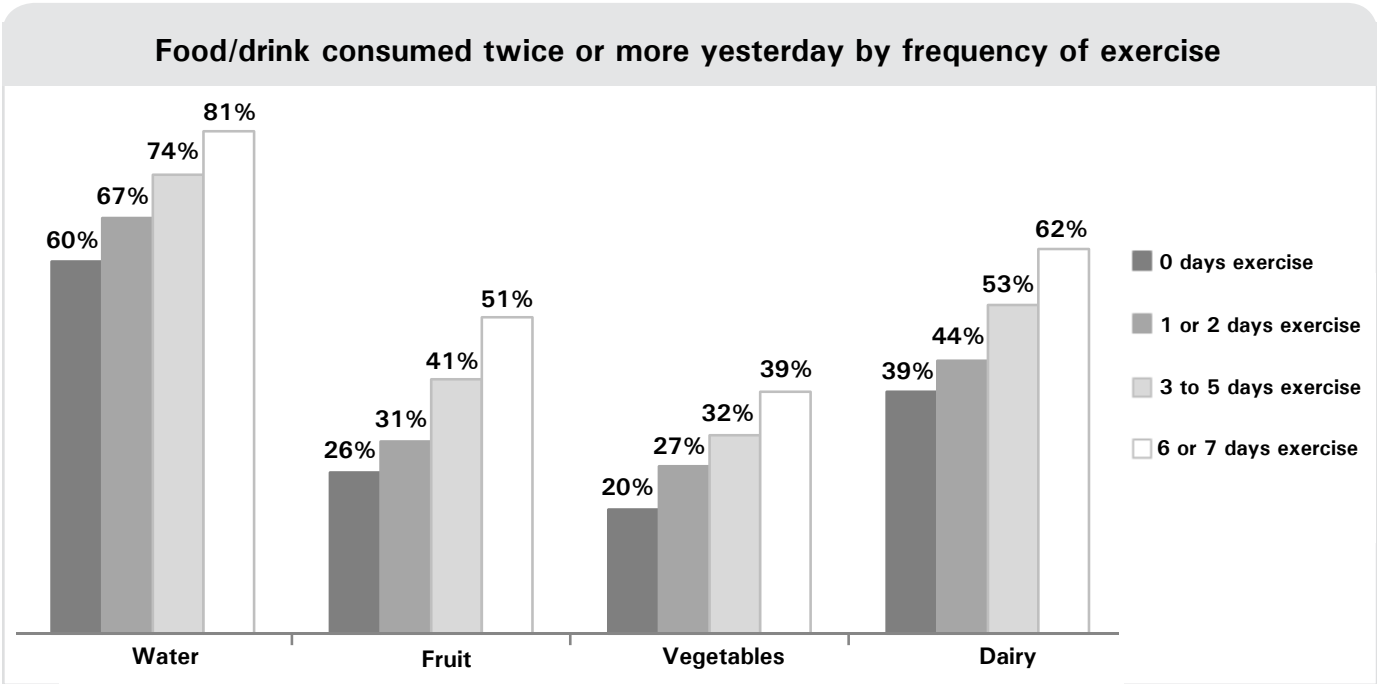
day before taking the survey. Youth who exercised at all were less likely to drink pop twice or more yesterday. Youth who exercised daily or almost daily were the most likely to drink energy drinks, although both this group and the non-exercisers were more likely to drink two or more energy drinks yesterday than groups who exercised moderately. Frequency of exercise was not associated with whether or not youth consumed any sweets, fast food or coffee-based drinks. A similar pattern was seen for frequency of informal sports participation.

“ I eat quite a bit of junk and I keep putting off working out. ”



Youth who played organised sports were more likely than those who did not do these activities to eat sweets (66% vs. 61%) and less likely to drink coffee (25% vs. 29%). Youth who took dance or aerobic classes with any frequency, on the other hand, were more likely than non-participants to drink coffee. Among male dance/aerobic participants coffee consumption may be associated with hunger suppression, as 17% of males who participated four or more times a week and who said they had coffee yesterday had also tried amphetamines, compared to 5% of those who were not involved in dance or aerobics.

Students who took part very frequently in both informal and organised sports were more likely than those who did just one of these sports to have consumed fruits and vegetables the day before completing the survey, and they were also less likely to report dieting in the past year.



“ I work out in order to relieve stress, but I take my workout too far, to a point where my asthma becomes a factor and it is dangerous. ”

Mental health

The association between physical activity and improved mental health has been studied extensively in other research. The AHS results showed that involvement in physical activity was associated with less stress, despair and nervousness and higher self-esteem for youth at all ages.

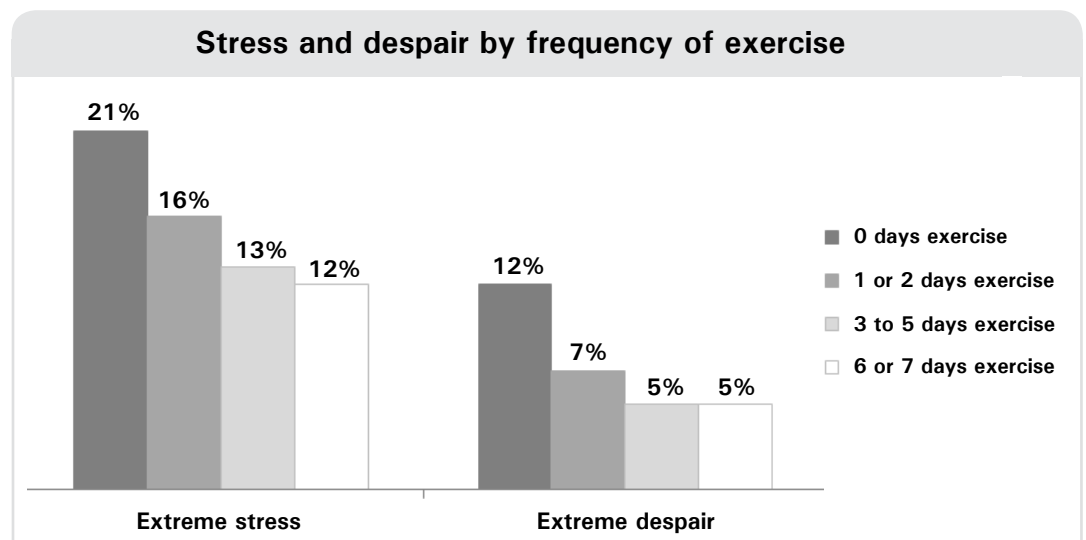
Youth who exercised on six or seven days were the least likely to report stress in the past month (80% vs. 85% among those who exercised less), while those who did not exercise at all were the most likely to report so much stress that it was almost more than they could take.

Similarly, those who exercised daily or almost daily were the least likely to report sadness, discouragement or hopelessness in the past month (38% vs. 51% among those who exercised less) and youth who did not exercise were more likely to report extreme despair, to the point that they could not work or deal with things.

Male students who played weekly informal sports were less likely than those who participated less

frequently to report extreme levels of stress (9% vs. 13%) or despair (3% vs. 6%). These differences were not apparent among female students. However, weekly involvement in organised sports was associated with lower rates of extreme stress and despair for both males and females. In contrast, youth who took part in dance or aerobics at any frequency were more likely to report extreme stress than non-participants (17% vs. 13%), but no more likely to report despair.

Youth who exercised were less likely than non-exercisers to report extreme nervousness in the past month (4% vs. 8%). This was especially true for males. Both male and female students who played organised sports were less likely than those who did not participate to report extreme nervousness (3% vs. 6%); such a relationship also existed for males and informal sports. For males who took part in dance or aerobic classes, those who did so four or more times a week reported extreme nervousness at a higher rate than those who participated less than once a week (7% vs. 3%).



Self-harm

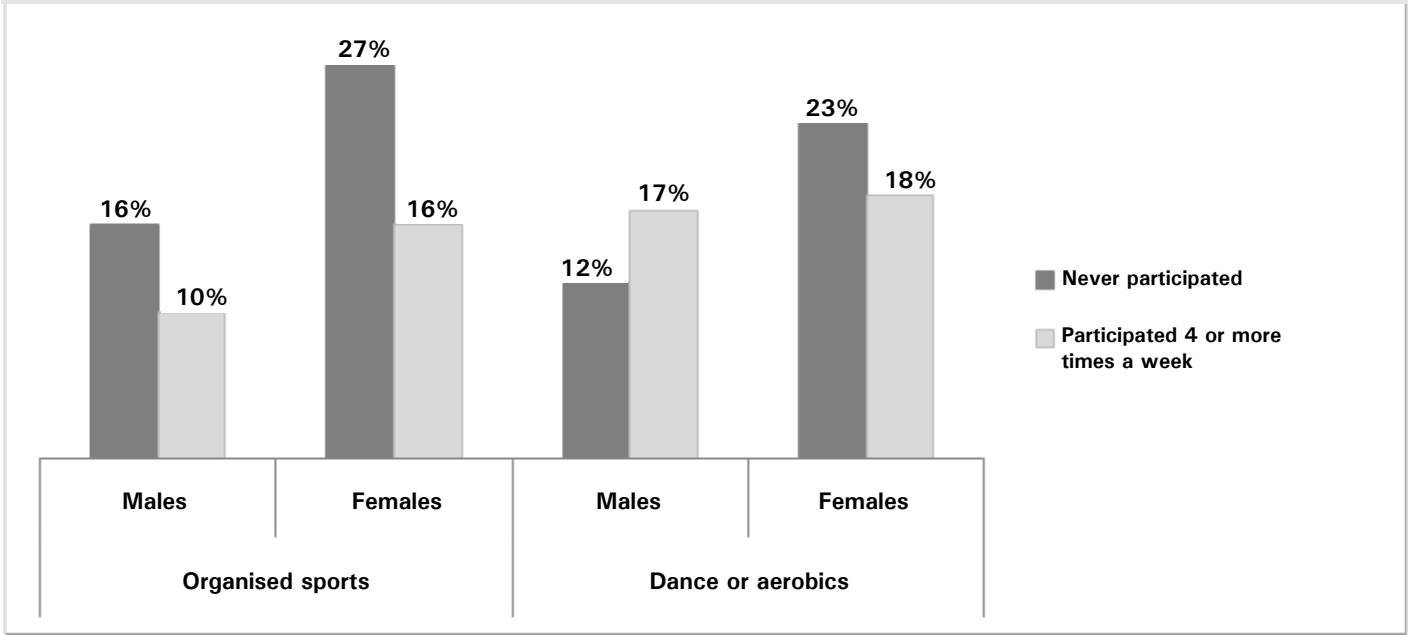
The AHS asked students whether they had purposefully cut or injured themselves without intending to kill themselves. Youth who participated more frequently in any sports were also less likely to report this type of self-harm. Students who exercised three or more days in the past week were less likely to self-harm than youth who exercised less frequently (15% vs. 22%). Furthermore, 11% of youth who did not exercise at all reported deliberately harming themselves three or more times in their lives, compared to only 7% who exercised once or twice a week and 5% who exercised on three or more days.

With regards to dance/aerobic class, the association with self-harm differed by gender. For females, those who took part very frequently were less like-

ly to self-harm than those who did not take part at all. However, the opposite was true for males, with those participating very frequently more likely to self-harm than those who were not involved at all. Additionally, 8% of very frequent male participants had self-harmed three or more times in their lives, compared to 3% of males who were in dance or aerobics classes less than once a week.

“ I am stressed a lot because of all of the clubs, activities and classes that I am a part of. I get under 7 hours of sleep most nights. ”

Self-harmed by frequency of participation in activities

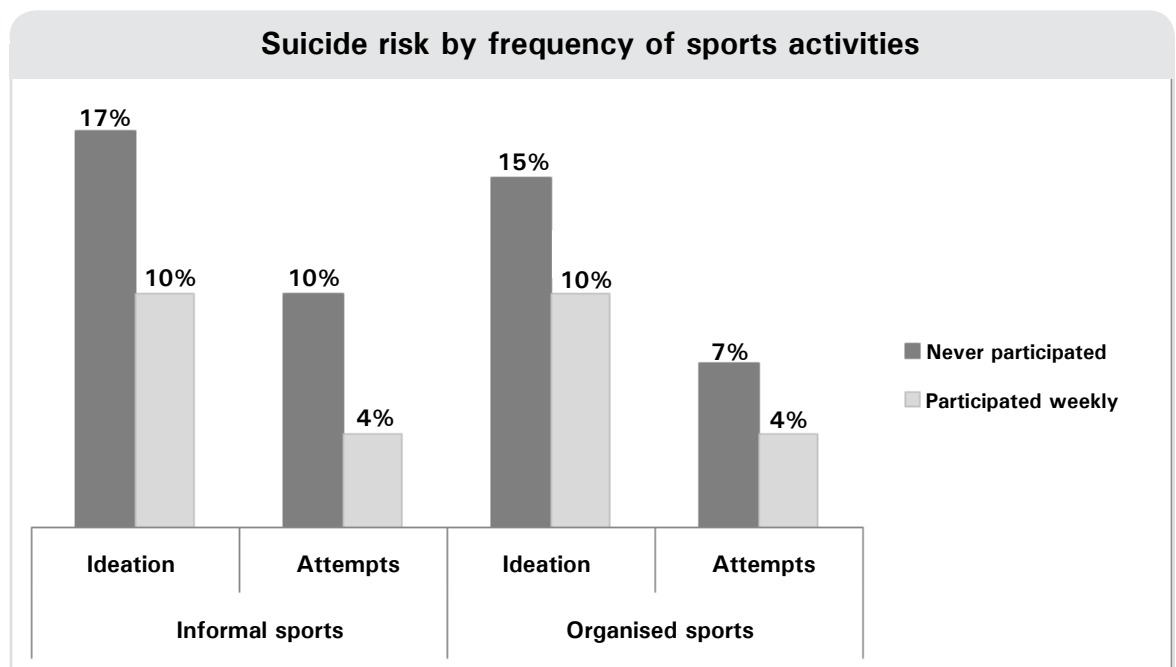


“ I play soccer and practice 3-4 days a week. I also play volleyball 1-3 days a week. Last year sport was pretty much my escape from depression. ”

Suicide

In general, physical activity was associated with a lower rate of suicidal ideation and attempts. For example, 11% of youth who exercised at least three days in the past week reported seriously considering suicide in the past year, compared to 17% who had not exercised at all. Males who exercised with any frequency were also less likely to have attempted suicide in the past year compared to their peers who did not exercise (3% vs. 8%). There was no association between exercise and suicide attempts among female youth.

Youth who played sports were less likely than those who did not to report suicidal ideation or attempts in the past year. Participation in dance or aerobic classes presented a different pattern of results. Males (but not females) who did this activity four or more times a week were more likely than non-participants to have considered suicide (14% vs. 9%) or attempted suicide (9% vs. 3%) in the past year.



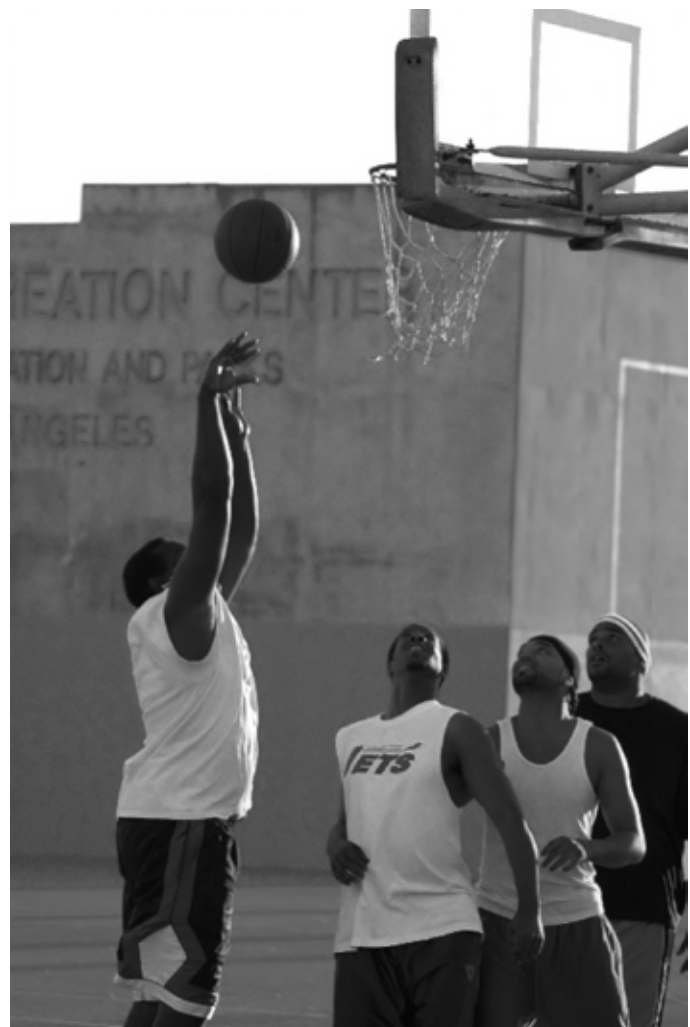
Self-esteem

Youth were asked about their self-esteem, such as whether they felt good about themselves, whether they did things as well as most other people, and whether they were satisfied with themselves on the whole.

The majority of BC youth reported high self-esteem and it increased as exercise involvement or sports participation increased. For example, youth who played informal or organised sports four or more times a week had an average self-esteem score of 8.2, on a scale ranging from 0-10, compared to 6.8 for those who did not play informal sports and 7.1 for those who did not play organised sports.

With regards to dance or aerobics, self-esteem scores did not significantly increase as participation increased. For females, however, any level of involvement in dance or aerobic classes was associated with higher self-esteem scores than non-participation. Furthermore, students who participated exclusively in dance or aerobics (and not sports) four or more times a week had higher self-esteem scores than youth who did not participate in any type of physical activity.

Engagement in both informal and organised sports activities seemed to have additional mental health benefits. For example, very frequent participation in both informal and organised sports was associated with higher self-esteem scores, a lower rate of extreme despair (3% vs. 5%), self-harm behaviour (11% vs. 15%) and attempted suicide (3% vs. 5%) compared to those who participated exclusively in informal sports on a very frequent basis.



Sexual behaviour

The relationship between physical activity and ever having had sex differed by gender and type of activity. There was no relationship between ever having had sex and playing informal sports. However, female youth who exercised on three or more days in the past week were less likely to have ever had sex compared to their peers who did not exercise (20% vs. 28%). Likewise, the rate of ever having sex was lower among females who took part in organised sports at least once a week than among those who did not participate (19% vs. 27%).

For males, 17% of those who played organised sports one to three times a week had ever had sex, which was lower than the rate for those who did not participate (24%) or those who participated more often (25%). On the other hand, 21% of males who did not do dance or aerobic classes had had sex, which was lower than the rate for males who took part four or more times a week (34%).

Among sexually active youth, those who exercised three or more days in the past week were more likely than less frequent exercisers to use a condom when they last had sex (69% vs. 58%). Condom use was also more common among youth who took part in weekly sports compared to non-participants. There was no association between condom use and dance/aerobics participation.



Injuries and Injury Prevention



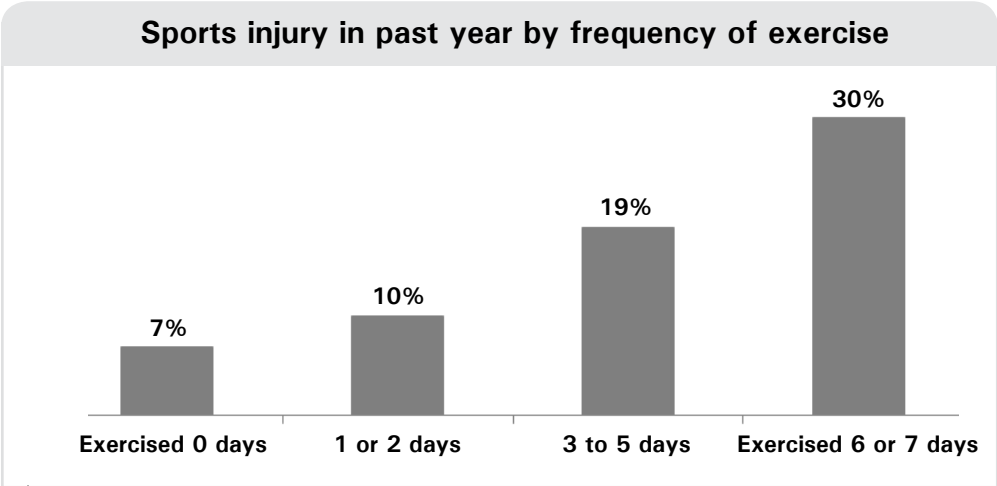
Injury

There has been a decline in injuries among BC youth in the past decade, but the biggest cause of injuries remains training for or playing sports. More than half of youth who were injured seriously enough to require medical attention said they were training for or playing sports when they were hurt (55%). A further 6% of injuries occurred specifically while cycling (9% males vs. 2% of females), 3% while rollerblading or skateboarding (4% males vs. 2% females), and 6% when snowboarding or skiing.

Greater participation in sports was linked with an increased likelihood of a sports related injury. For example, 32% of youth who played organised sports four or more times a week had a sports re-

lated injury in the past year compared to 19% who took part one to three times per week and 10% who participated less often. Similar results were seen for participation in informal sports and exercise.

Thirty-seven percent of youth who did both informal and organised sports four or more times a week reported that they had a related injury in the past year that was serious enough to require medical attention. This rate was higher than that seen for youth who did any activity exclusively or other combinations of two activities, and was even higher than the rate for youth who participated very frequently in dance/aerobics in addition to both types of sports.

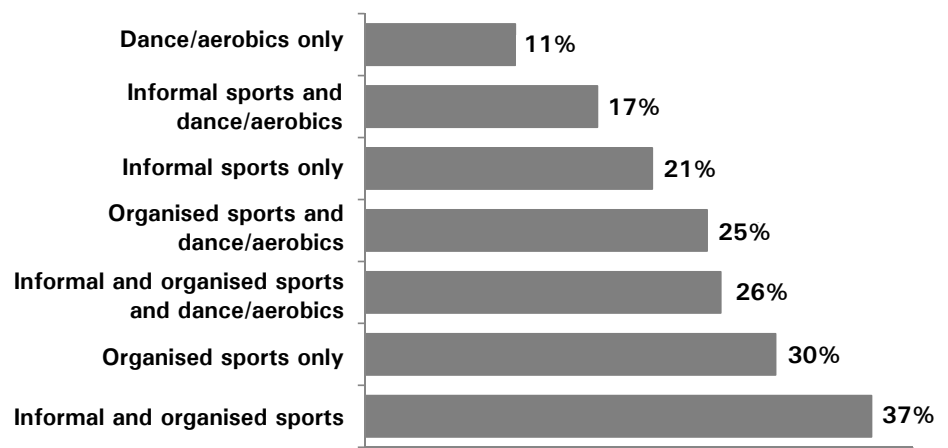


On the other hand, youth who participated exclusively in dance or aerobic activities four or more times a week were less likely than students involved this frequently in other types of physical activities to report a sports related injury.

Involvement in sports decreased with age, yet as male students got older they were generally more likely to suffer an injury while playing or training for sports. In contrast, the rate for this type of injury among females peaked at 15 years old and then went down.

“ I am usually very active but my ACL has been torn for a year and I still haven’t had surgery yet so I can play sports again. ”

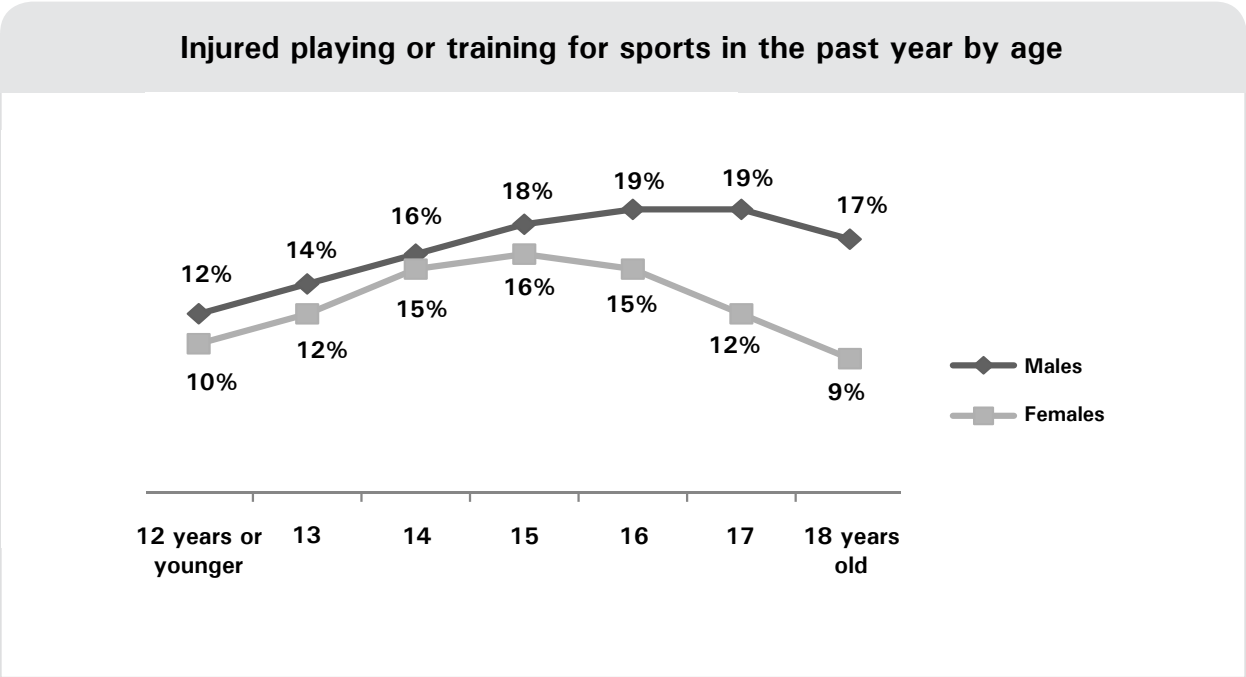
Sports related injury reported for different types of physical activities[^]



[^] Frequency of participation for each activity was four or more times a week.

Note: Youth who participated in 'dance/aerobics only' had the lowest rate of sports injury, although it was not statistically significantly different from participation in 'informal sports and dance/aerobics'.

The location where young people got hurt was related to their level and type of sports and exercise involvement. For example, youth who took part in informal sports, such as road hockey, four or more times a week were more likely to have had their most serious recent injury occur in the street or roadway than those who were comparably involved in organised sports (7% vs. 4%). On the other hand, youth who played organised sports four or more times a week were more likely to have had their injury occur at a sports facility or field than those who played informal sports at the same frequency (57% vs. 43%).



Injury prevention

Many injuries that occur while youth are playing or training for sports are preventable, for example, by the use of protective gear. This section of the report examines the role of physical activity in relation to injury prevention behaviour, and suggests that increased involvement in some forms of physical activities increases the likelihood of youth 'playing it safe.'

Youth who exercised regularly were more likely to have worn a bike helmet when they cycled. Almost half of students who had not exercised in the past week never wore a helmet when they cycled, compared to less than a third of those who exercised on six or more days.

Youth who took part in organised sports at least weekly were more likely to always wear a helmet when they cycled than those who played these sports less than once a week (25% vs. 22%). However, participation in dance or aerobics classes or informal sports was not associated with an increased likelihood of wearing a bike helmet.



“ I have a serious knee injury, preventing me from playing soccer. I am one month away from receiving surgery for said injury. ”

Youth who had been injured when they were cycling were more likely than their peers who had not been injured to always wear a bike helmet (33% vs. 20%). This was not the case for youth who were injured rollerblading or skateboarding. Only 15% of youth who were injured rollerblading or skateboarding always wore a helmet when they cycled, and 45% never wore one.

Other injury prevention behaviours may also have been linked to sports involvement either because of youth not wanting to get injured or because of rules imposed for participation. For example, youth who participated in organised sports were more likely to always wear a seatbelt when riding in a motor vehicle than those who did not participate (67% vs. 64%).

Accessing Health Care

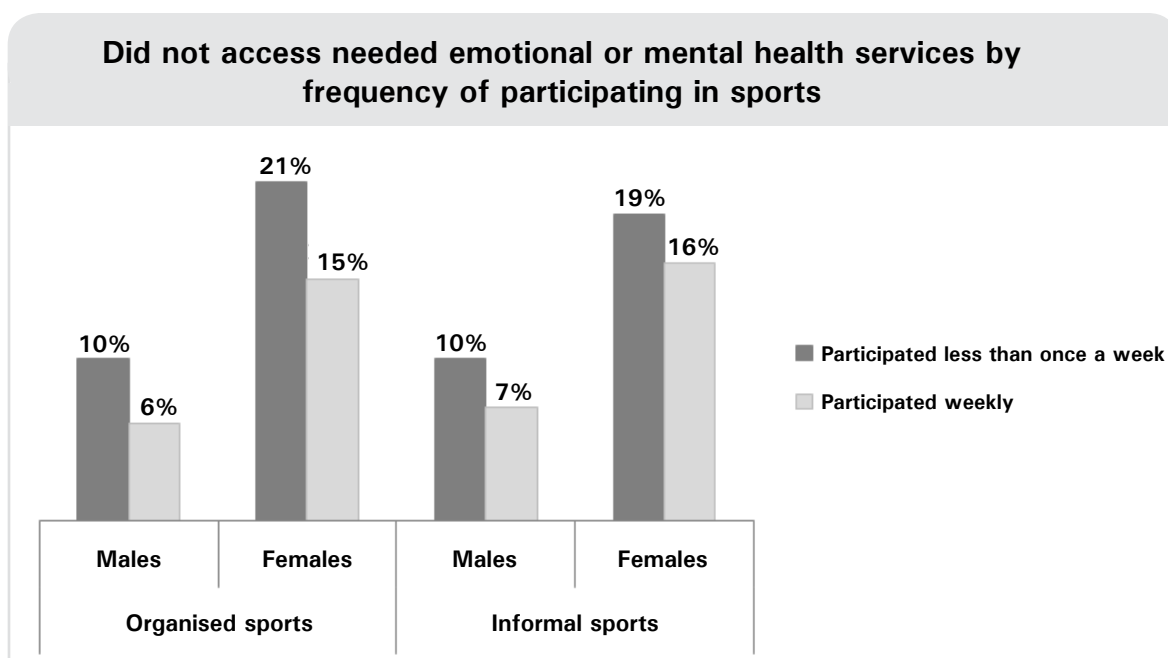


There is concern that youth involved in sports may conceal injuries and other medical problems for fear they will be forced to cease participation until they are recovered. However, in BC, youth who were involved in sports or exercise were no more likely to report they had forgone needed medical treatment than other youth.

Students who were heavily involved in dance or aerobics, on the other hand, were more likely to not access needed medical care than those less involved (16% of those who took classes four or more times a week vs. 13% of those who did so less than once a week). In fact, among those who took part in dance or aerobics four or more times a week, youth who had sustained an injury in the past year were twice as likely as those who had not

been injured, to have forgone needed medical care during that same time period (24% vs. 12%).

There was a link between not accessing needed mental and emotional health services and involvement in exercise and sport, suggesting that either youth involved in these physical activities were less likely to need this care or that they were better able to access services. One in five youth (20%) who had not exercised in the past week reported that they had needed but not accessed mental or emotional services in the previous 12 months, compared to 9% of those who exercised on six or seven days. A similar pattern was seen for youth who played sports (but not for dance or aerobics).



Health Risk Behaviours



Smoking

The more involved youth were in sports, the less likely they were to have tried cigarettes. For example, 24% of youth who played informal sports four or more times a week had tried smoking, which was lower than the 28% who had played less than weekly.

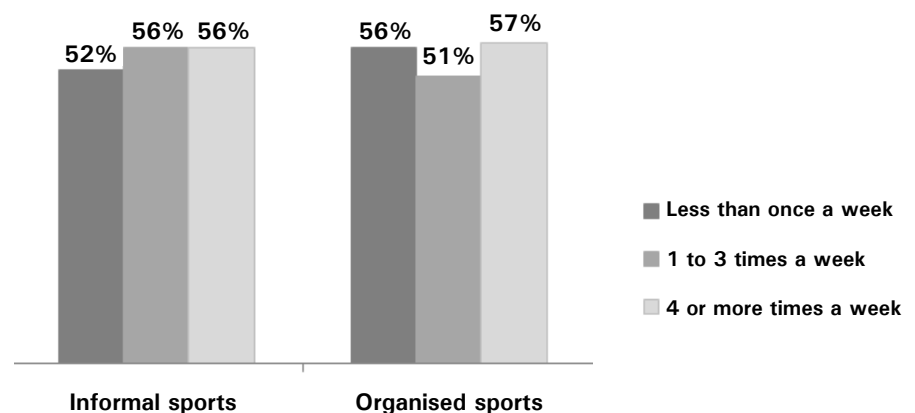
However, those more involved in sports were more likely to have recently used chewing tobacco. This was particularly so for males. For example, 9% of males involved in organised sports at the most frequent level had used chewing tobacco in the past month compared to 5% of those who participated less than weekly.

Alcohol use

Engagement in physical activities was associated with lower rates of a number of health risk behaviours. However, this was not always the case with alcohol. Consistent with results from 1998, youth who played informal sports very frequently were



Ever tried alcohol by frequency of participating in sports



Note: The difference between 'less than once a week' and '4 or more times a week' was not statistically significant for organised sports.

more likely to have tried alcohol than those who participated less than weekly. However, unlike in 1998 males in 2008 who played at more moderate levels (1-3 times per week) were also more likely than non-participants to have tried alcohol.

For organised sports, 56% of youth who had not taken part in any weekly organised sports had tried alcohol, which was similar to the rate for youth who had taken part four or more times a week. However, both of these rates were higher than the 51% of those who were in these sports one to three times a week.

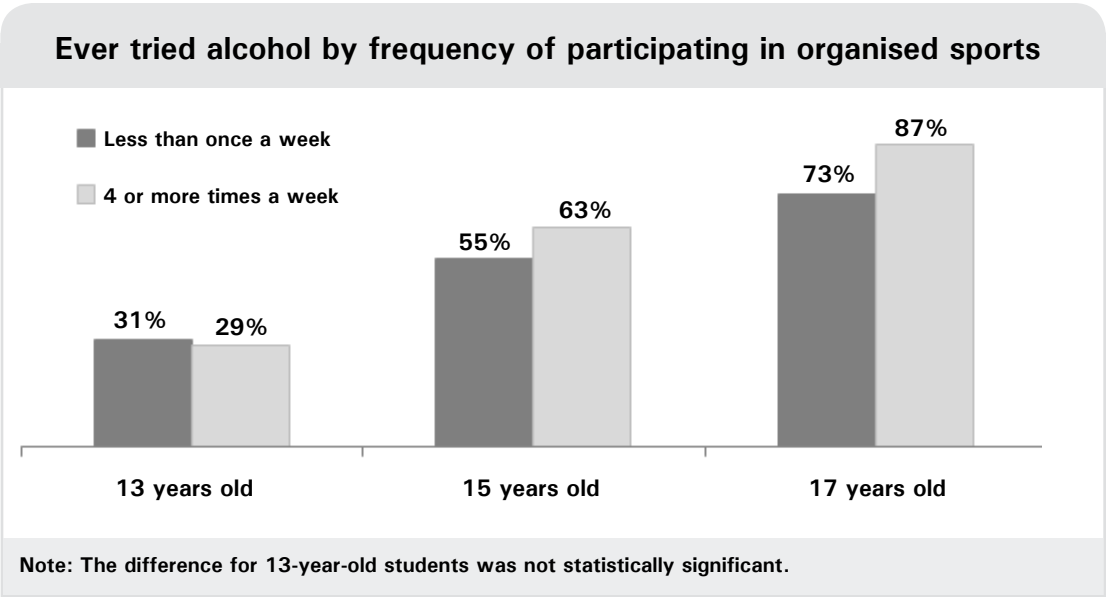
There was no relationship between the number of days that youth had exercised in the past week and whether they had tried alcohol. This was a change

from a decade earlier when exercising daily or almost daily was associated with greater alcohol use than not exercising.

As youth got older, those who were more involved in sports were more likely to have tried alcohol. Among 13-year-old students there was no link between sports and trying alcohol. However, older students who played organised sports four or more times a week were more likely to have tried alcohol than those who took part less than weekly.

This pattern was similar for exercise, but there was no relationship between frequency of participation in dance or aerobics and trying alcohol among older youth.

Among youth who had tried alcohol, older youth who were physically active were more likely to



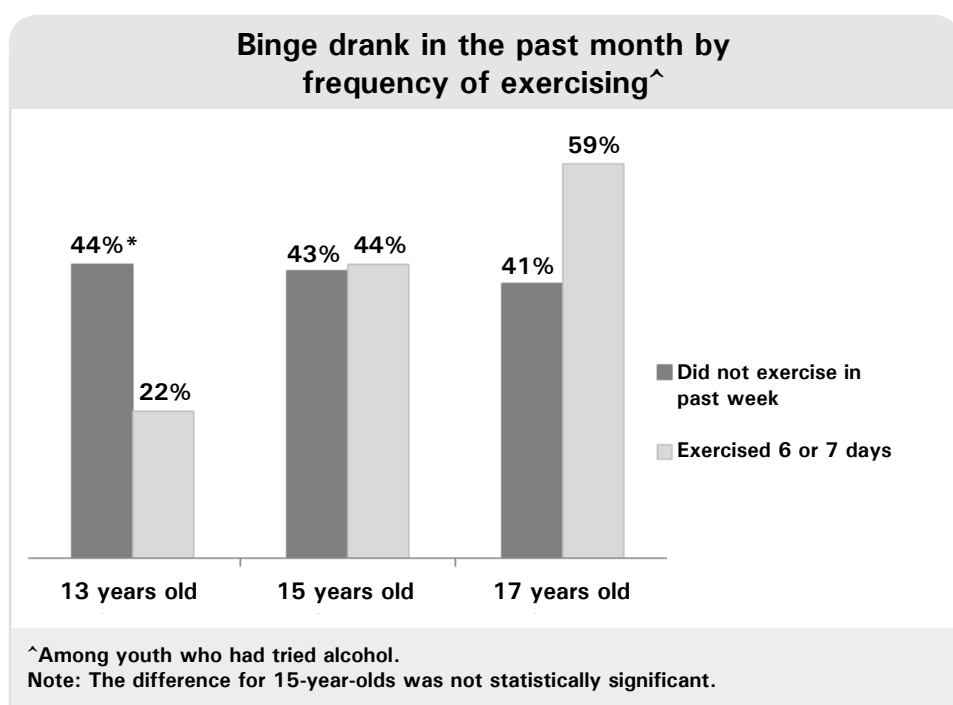
report binge drinking (having 5 or more drinks within a couple of hours) than those who were less active. Among 17-year-old students who had tried alcohol, 61% of those who very frequently played informal sports binge drank in the past month compared to 48% of those who took part less than weekly. Seventeen-year-olds who had tried drinking, and were heavily involved in informal sports were also more likely than their peers who were less involved to have drunk alcohol on the Saturday before they took the survey (61% vs. 47%), to have had ten or more drinks that day (24% vs. 13%) and to have mixed different types of alcohol (42% vs. 31%).

The opposite was seen among younger drinkers, where the highest rates of exercise were associated with lower binge drinking rates for 13-year-olds, and there was no relationship between frequency

of sports participation and drinking behaviours on the Saturday prior to completing the survey.

There was no link between sports and exercise participation and driving after drinking, even among older youth who are more likely to drink and drive in general.

“ I really like playing sports, sports keep kids out of trouble. Usually I play up to three sports a day after school. ”



Marijuana use

There was no association between informal sports and lower marijuana use. However, youth who took part in organised sports at least weekly were less likely to have tried marijuana than those who took part less than weekly (28% vs. 33%), and were also less likely to have used it last Saturday (11% vs. 14%). Similarly, females who had exercised six or seven days in the past week were less likely to have tried marijuana than those who had not exercised at all (24% vs. 33%). Also, males who did dance or aerobics one to three times a week were less likely to have tried marijuana than those who had participated less often (24% vs. 31%).



Other substances

The use of most substances other than alcohol and marijuana among BC students is rare. Nevertheless, a pattern emerged for some substances where youth involved in physical activity at the most frequent level and those with little involvement had higher rates of use than those who participated at more moderate rates. For example, youth who exercised three to five times a week were less likely to use steroids than those who exercised either more or less than this. A similar pattern was seen with informal sports and steroids, crystal meth, and heroin. Furthermore, youth who took part in informal sports one to three times a week were the least likely to have injected a drug.

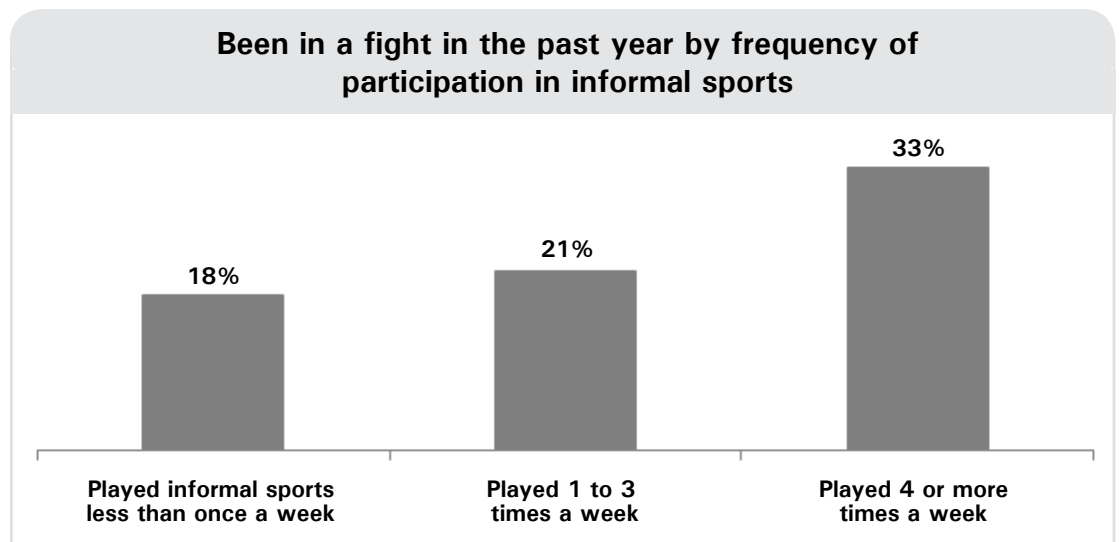
In contrast, other substances were less likely to have been used by youth who participated in sports compared to those who did not participate at all. For example, youth who took part in informal or organised sports were less likely to have used prescription pills without a doctor's consent, cocaine or ecstasy. Playing organised sports was also associated with lower rates of amphetamines, inhalants, mushrooms and hallucinogens.

A different pattern was observed for dance/aerobics. Male students (but not females) who participated in dance or aerobics four or more times a week were more likely than those who were taking part in these activities less than once a week to have tried steroids (8% vs. 2%), amphetamines (7% vs. 2%), cocaine (12% vs. 4%) and ecstasy (14% vs. 6%).

Violence and aggression

Fight involvement

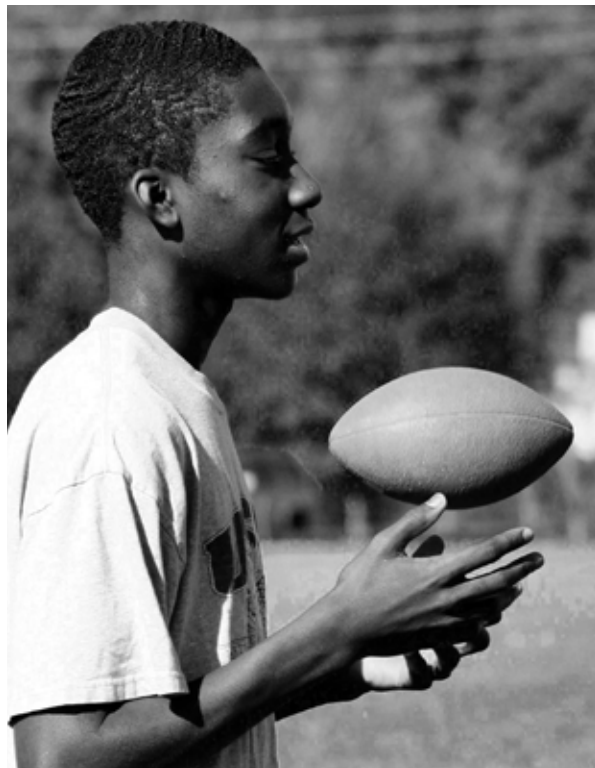
Males and female students who were engaged in physical activities at the highest levels were generally more likely to report having been in a fight in the past year than those who did not participate or took part less frequently. For example, 33% of youth who played informal sports four or more times a week had been in a fight, compared to 18% of those who took part less than weekly. Similarly, males who took part in organised sports very frequently were more likely to have been in a fight than those who had participated three times a week or less (38% vs. 31%). Forty-five percent of males who had participated in dance or aerobics four or more times a week had fought in the past year compared to 33% who did not participate at least weekly. However, females who exercised daily or almost daily were less likely to get into a physical fight (2% vs. 13% of females who had not exercised).



Feeling safe

Despite greater fight involvement, youth who participated more frequently in sports and exercise were more likely to always feel safe at school. For example, 36% of youth who had not exercised in the past week always felt safe at school, which was lower than the 41% of youth who exercised three to five days and the 45% of those who exercised at the highest frequency.

There was no relationship between taking dance or aerobics and always feeling safe at school. However, males who took part very frequently were more likely to report never feeling safe at school.



Bullying and harassment

The AHS asked students about their past year experiences of teasing, purposeful exclusion and physical assaults either at school or on the way to or from school. Youth were also asked whether they had been bullied through the Internet, sexually harassed or discriminated against.

Exercising was not related to experiences of physical assaults or sexual harassment but increased involvement was associated with decreased rates of being teased or purposefully excluded. For example, 15% of students who had not exercised reported being teased two or more times in the past year, compared to 12% of students who exercised three or more days in the past week.

With regards to informal sports, frequency of participation was not related to being teased. However, as with exercise, increased involvement was associated with a lower likelihood of being excluded or ignored over the past year. Twenty-eight percent of youth who had played informal sports four or more times a week reported being purposefully excluded, compared to 33% of those who played less than weekly. On the other hand, youth who very frequently took part in informal sports were more likely to report being assaulted in the past year (11% of those who took part four or more times a week vs. 8% of those who were involved less than weekly).

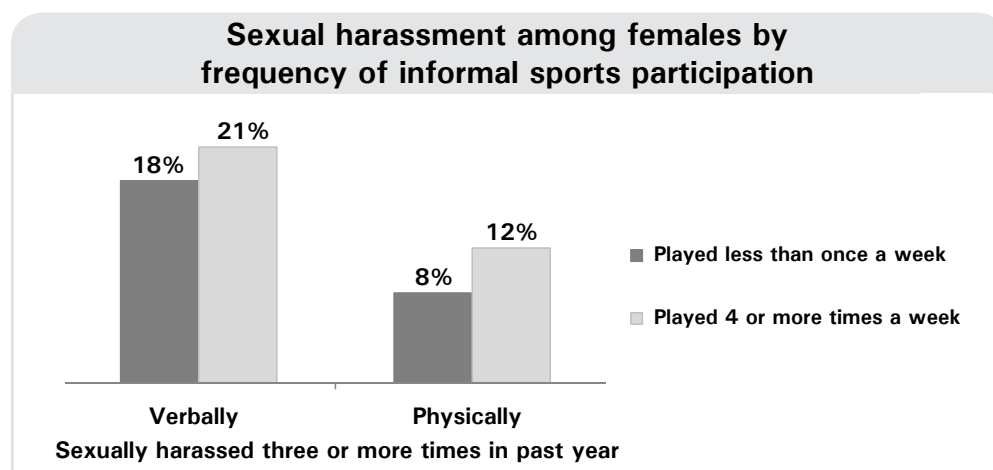
Among female students, higher participation in informal sports was associated with a higher rate of experiencing verbal and physical sexual harassment. There was no such relationship for males.

Males who played organised sports four or more times a week were less likely than those who participated less than weekly to report that in the past year they had been teased (25% vs. 30%), excluded twice or more (7% vs. 10%) or assaulted two or more times (3% vs. 5%). There was no relationship between organised sports and sexual harassment for either males or females.

Both male and female youth who took part in any frequency of dance/aerobics had higher rates of teasing (37% vs. 31%), purposeful exclusion (36% vs. 28%) and being bullied through the Internet (21% vs. 15%) than those who had not participated in dance or aerobics. Students who took dance or aerobics (including less than once a week) were also more likely than those who did not take classes to have been verbally sexually harassed (54% vs. 43%) or physically sexually harassed (35% vs. 22%) in the past year.

In addition males who participated very frequently in dance or aerobics reported higher rates of certain forms of bullying and harassment. For example, males who took dance or aerobics four or more times a week were more likely than those who did not participate to have been cyber-bullied (18% vs. 11%), physically assaulted (20% vs. 11%), and to have been discriminated against based on their race or skin colour (23% vs. 12%) or sexual orientation (9% vs. 5%) in the past year. This was not the case for females.

Bullying and harassment is associated with negative mental health. For example, among males who participated in dance or aerobics, 22% of those who were physically sexually harassed reported extreme stress in the past month, higher than the rate reported by those who were not harassed (8%). Likewise, for males who took dance/aerobics and who had been physically assaulted, 27% had considered suicide in the past year. However, among those who had not been physically assaulted, 7% had considered suicide.

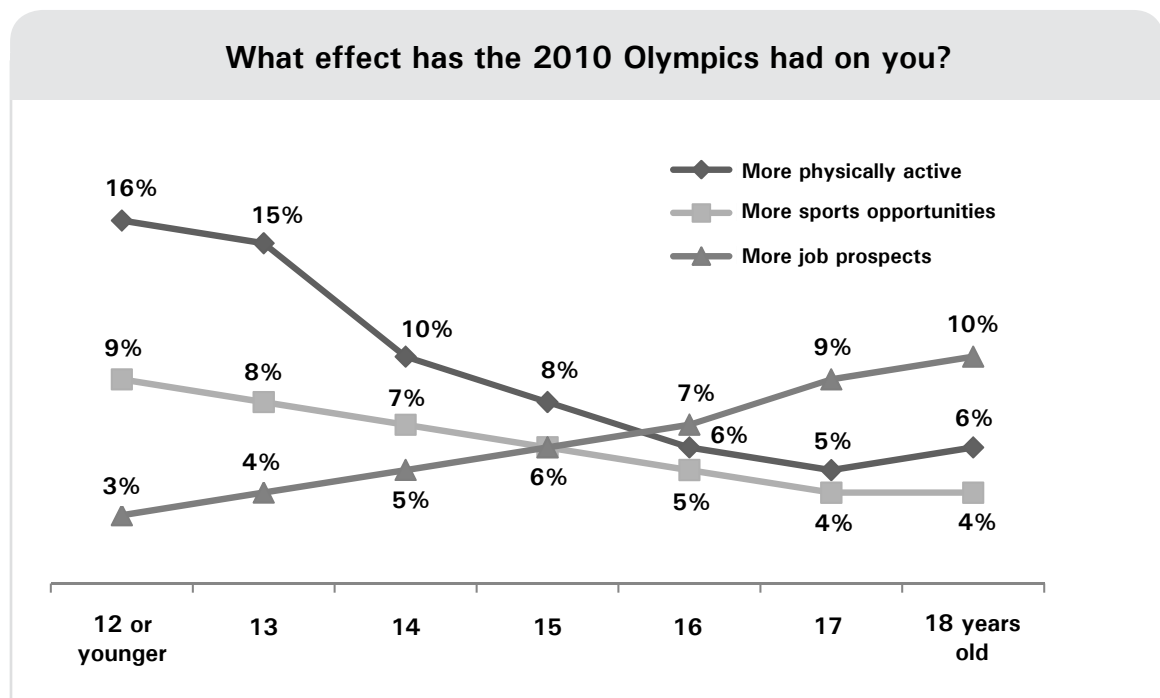


2010 Winter Olympic Games

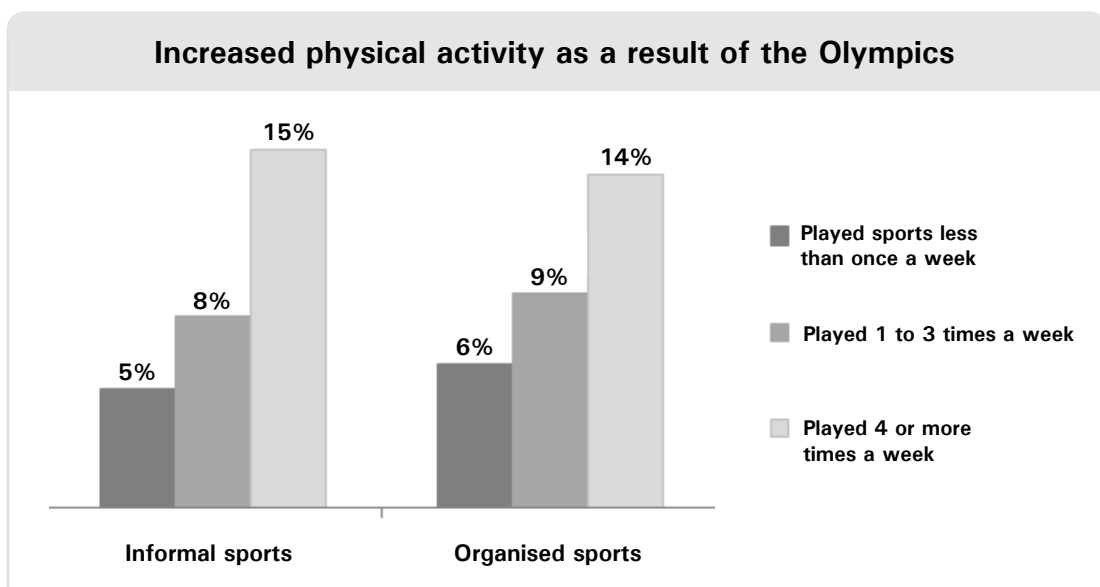


When the AHS was administered in 2008, we asked young people around the province how the preparation for the 2010 Olympic and Paralympic Winter Games in Vancouver had already affected them. Nine percent of youth reported that they were already more active as a result of the Olympics (11% of males vs. 7% of females), and 6% had more sports opportunities (7% of males vs. 5% of females). Furthermore, 6% of youth had more job prospects. In contrast, 46% of youth reported that they had not yet been affected by the Olympics, and 44% had not thought about it (48% of females vs. 39% of males).

As youth got older, they were more likely to report having more job opportunities as a result of preparation for the games, but less likely to report being more physically active or having had more sports opportunities. Not surprisingly, youth in the Vancouver Coastal and Fraser regions where the games took place were more likely to report that they had more job prospects.



Two years before the event, youth who were already active and involved in sports, dance/aerobics or exercise were more likely to report that the Olympics had lead to them being more active, having more sports opportunities and more job opportunities. For example, 16% of youth who had exercised six or seven days in the past week reported that they were already more physically active as a result of the Olympics, compared to 5% of those who had not exercised at all.



Protective Factors Associated With Physical Activity



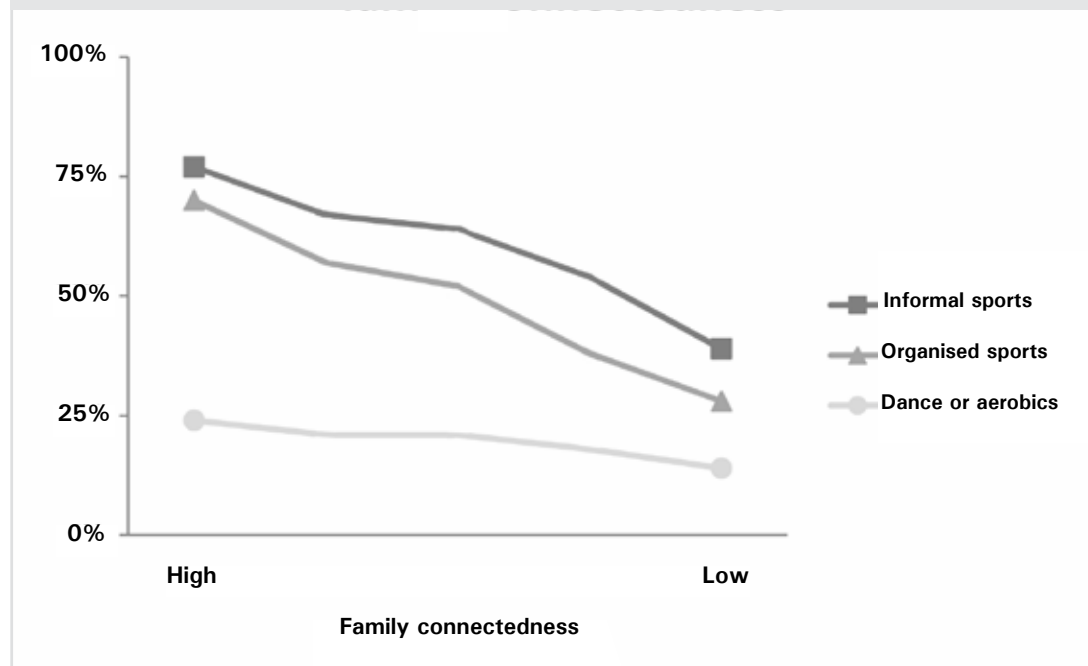
Protective factors such as having strong connections to family, school and community are generally associated with reduced risk behaviour and improved health. This section describes the relationship between these protective factors and involvement in physical activities.

“ I am a very active person and enjoy exercising very much. ”

Family connectedness

Family connectedness refers to youths' relationships with their parents and family. Youth who were more highly connected to their families were more likely to engage in strenuous exercise, and those who reported the highest connectedness also reported exercising most frequently. This was also the case for participation in sports activities, where increasing participation was associated with higher connectedness. With respect to dance or aerobics, those who participated four or more times a week had slightly higher family connectedness scores than those who did not participate, but the difference was not as wide as that seen for the other types of physical activities.

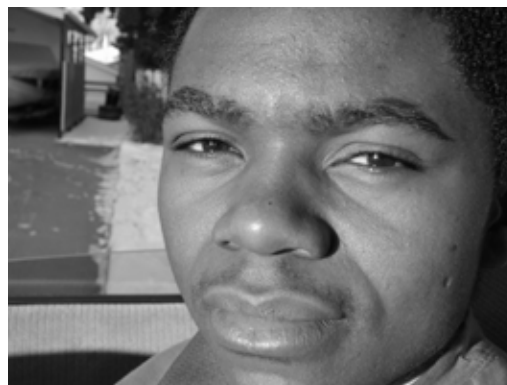
Participation in physical activities by family connectedness



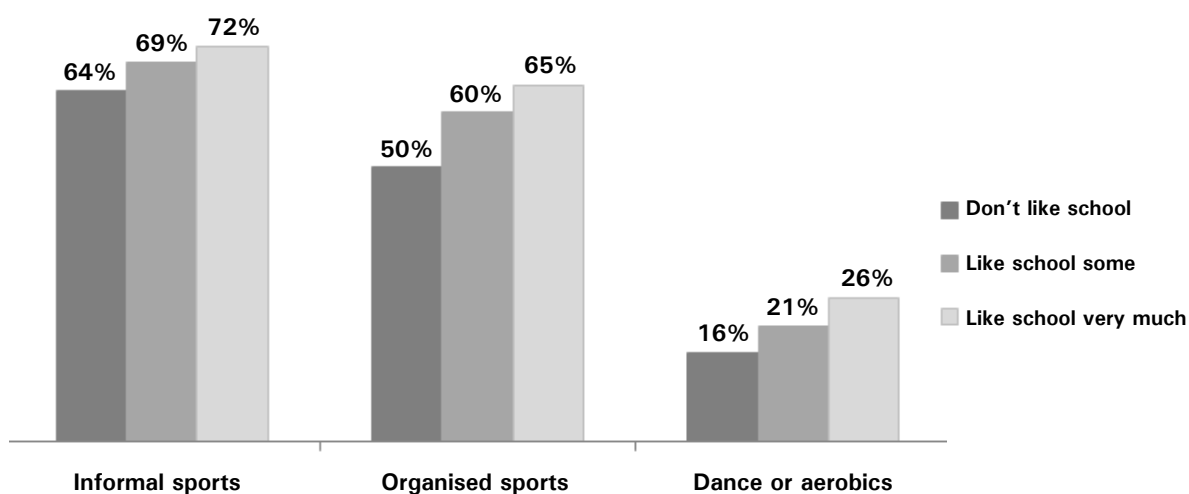
School connectedness

School connectedness measures students' relationships with their teachers and their sense of belonging at school. Youth who exercised three or more days in the past week were more highly connected than those who exercised one or two days, and these youth in turn were more highly connected than those who did not exercise. Similarly, youth who participated weekly in informal and organised sports were more connected to school than those who did so less than once a week, and these youth had higher scores than those who did not do these activities. The findings were not as clear for dance/aerobics, where only those who participated one to three times a week had higher scores than those who did not participate.

In addition, students who said they liked school very much were more likely than those who liked school somewhat or did not like school to exercise on a daily or almost daily basis (31% vs. 25%). Furthermore, the more students liked school, the more likely they were to participate in sports or dance/aerobics.



Weekly participation in activities by attitude towards school



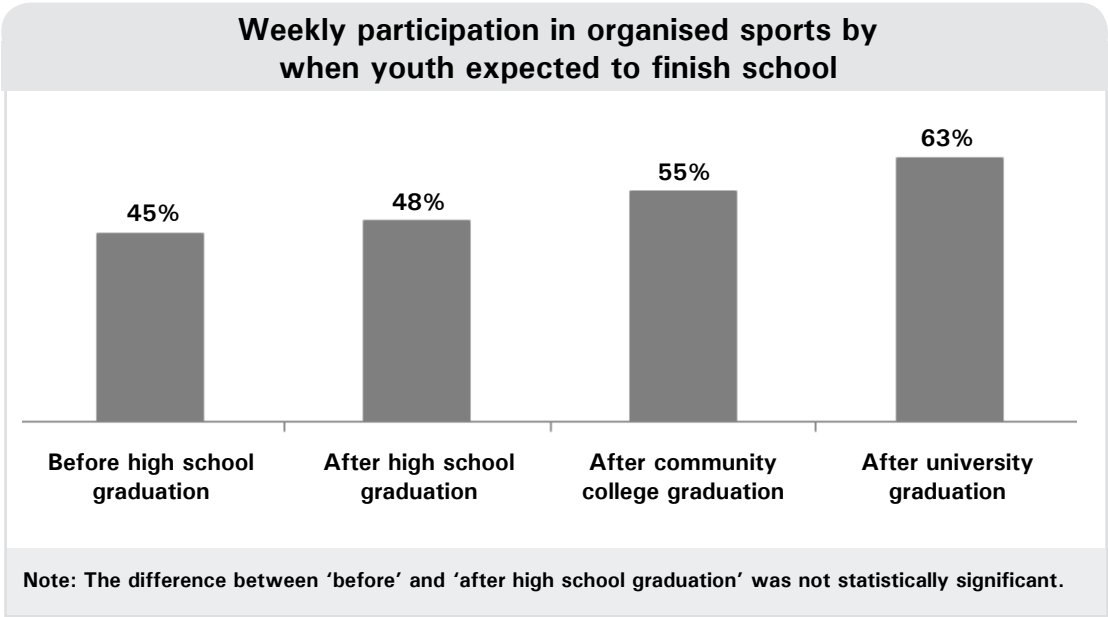
Educational aspirations

There was a relationship between educational aspirations and sports and exercise involvement for both males and females. Ninety-three percent of those who planned on graduating from university had exercised in the past week, compared to 81% of those who did not plan to complete high school. Youth with post-secondary plans were also more likely to report frequent exercise (3 to 5 days; 49% vs. 43%), frequent participation in informal sports (1 to 3 times a week; 40% vs. 32%), and both frequent (30% vs. 23%) and very frequent (4 or more times a week; 31% vs. 25%) participation in organised sports activities.

Females with post-secondary plans were more likely than those who planned to finish their education at high school to be involved in any frequency



of dance/aerobics (48% vs. 41%). For males, post-secondary aspirations were linked to lower rates of very frequent participation. Four percent of males with post-secondary plans participated in dance/aerobics four or more times a week compared to 7% of those who planned to finish their education at the high school level.

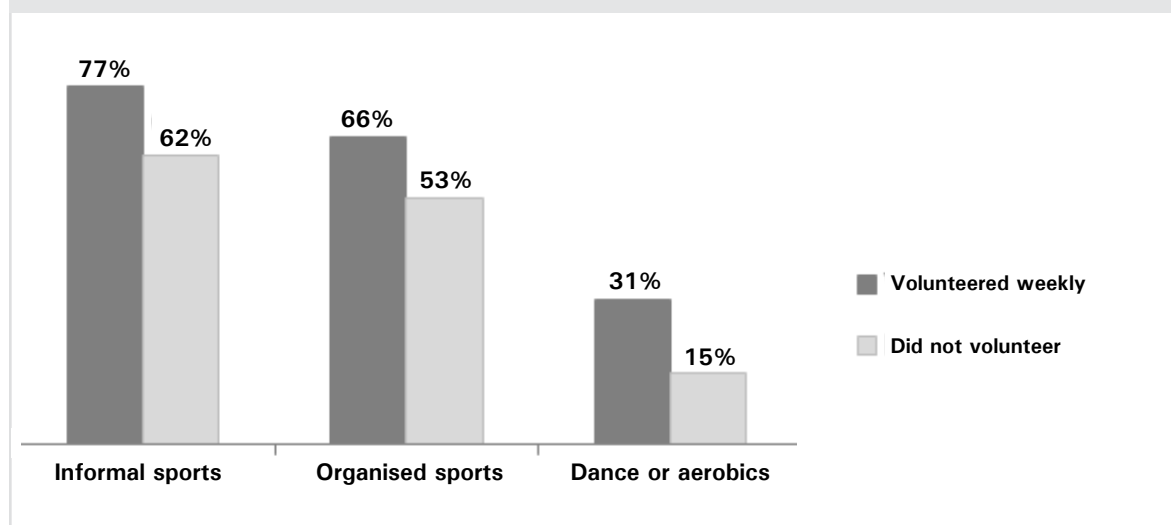


Volunteering

Male and female youth who did volunteer work on a weekly basis were more likely to report participation in all types of physical activities. Thirty-two percent of youth who volunteered weekly exercised six or seven days in the past week, compared to 24% of those who had not volunteered.



Participated weekly in physical activities by frequency of volunteering



Cultural connectedness

Cultural connectedness measures the extent to which youth made efforts to learn about their ethnic or cultural group and how strongly they belonged or felt attached to their group. Youth who reported exercising very frequently were more strongly connected than those who did not exercise at all.

Cultural connectedness was not associated with frequency of participation in sports. However, youth who took part in dance or aerobic classes (including less than once a week) were more connected to their culture than those who did not par-

ticipate (5.7 vs. 5.4 on a scale ranging from 0 to 10). Specifically, with respect to participating in the cultural practices of their ethnic or cultural group (e.g., food, music, customs), those who very frequently took dance/aerobics were more likely to endorse connecting to their groups in this way (23% strongly agreed with the statement compared to 14% of those who did not participate).

Peer relationships

Youth were asked whether their friends would be upset if they engaged in a number of behaviours including getting arrested, beating someone up, getting drunk and using marijuana. Youth who exercised with any frequency were more likely to have friends who would disapprove of these behaviours than those who did not exercise.

Similar results were seen for those who played organised sports or took dance or aerobic classes compared to those who did not participate. However, those who took no part in informal sports and those who participated very frequently (four or more times a week) were less likely to have friends with healthy attitudes about risky behaviours than those who participated moderately.

Having peers who disapprove of them getting drunk, is one of the strongest protective factors against youth binge drinking. As reported earlier, youth who did not take part in organised sports and those who played very frequently were the most likely to drink at high risk levels, and they were also less likely than those who participated at moderate frequency to have friends who would be upset if they got drunk (33% vs. 37%).

Also consistent with the results seen earlier, students who reported any frequency of participation in informal sports were less likely to have friends who would be upset if they got drunk (34% vs. 40%). On the other hand, students who did dance/aerobics on a weekly basis were more likely than those who took part less frequently to have friends who would be upset with them if they got drunk (38% vs. 34%).

Having friends who disapproved of getting drunk was associated with reduced rates of alcohol use and binge drinking even among those who participated in sports activities. For example, among youth who played informal sports four or more times a week, 73% of those who had friends who would not disapprove of getting drunk had tried alcohol, compared to 22% of those who had friends who would be upset.

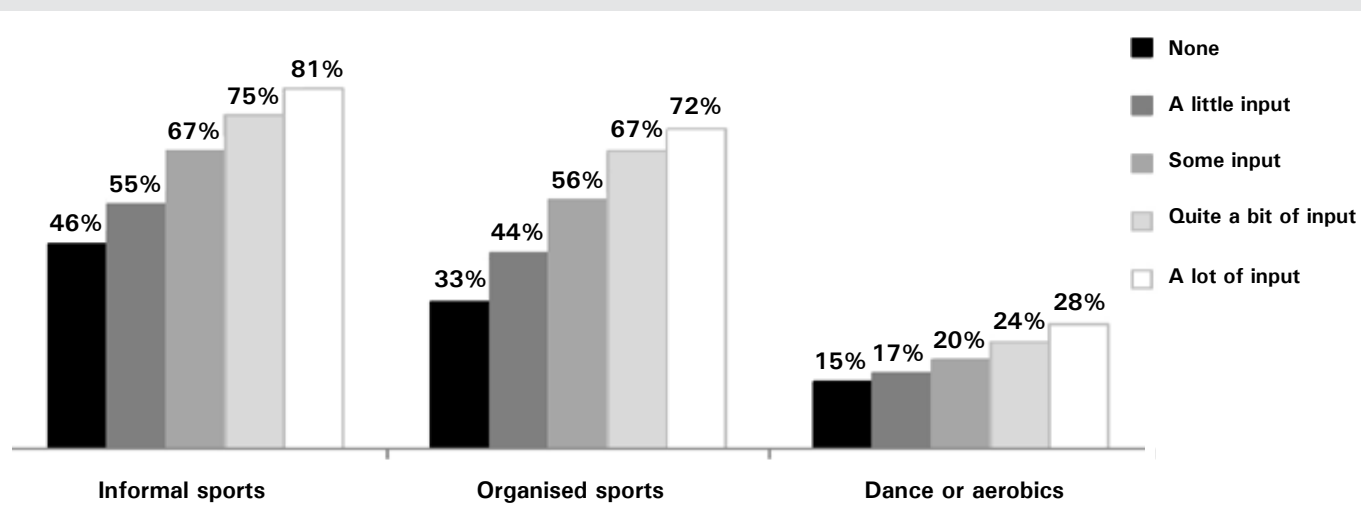


Youth engagement

The AHS asked youth about the meaningfulness of the activities with which they were involved as well as the amount of input they had into these activities. Youth who were involved in activities they rated as having “quite a bit” or “a lot” of personal meaning exercised more frequently than those who said their activities were less meaningful. The same pattern was seen between level of input into activities and exercise. In addition, as youth ratings of their engagement increased, so did the likelihood of doing sports or dance or aerobics on a weekly basis.



Weekly participation in activities by level of input youth had in activities



Note: For dance or aerobics, the differences between ‘a little’ and ‘none’ and between ‘a little’ and ‘some’ were not statistically significant.

Additional Benefits



The results presented in this report have shown that involvement in physical activities is generally associated with reduced risk behaviour and better physical and mental health. It also has additional benefits.

Good at sport

Having skills and competencies can be an important protective factor for youth, and can improve feelings of self worth. The AHS asked students whether they thought they were really good at something. Fifty-two percent of youth reported that they were good at sports, and males were more likely than females to do so (61% vs. 44%).

Students who said they were good at sports were less likely to report extreme stress compared to those who felt they were not good at anything or those who were good at something other than sports (11% vs. 17%). They were also less likely to have considered suicide (9% vs. 15%) or attempted suicide (3% vs. 7%) in the past year. Furthermore, compared to other youth, those who said they were good at sports had higher self-esteem (average score of 8.2, compared to 7.4 for those who were good at something other than sports and 6.4 for those who felt they were not good at anything).

Adult to talk to outside of family

Youth consider having an adult to talk to when faced with a serious problem as one of the most important indicators of youth health (see *Treat us like we matter*, McCreary Centre Society, 2010). When youth do not have a family member they can turn to when they have a serious problem, participation in physical activities may provide them with an opportunity to confide in an adult outside the family. For example, 46% of youth who did not have a family member to confide in but who played organised sports four or more times a week, said they had an adult outside the family they could talk to, compared to 38% of youth who did not play organised sports. Similarly, among students without a family member to confide in, 47% who very frequently took dance or aerobic classes had an adult outside the family they could talk to, compared to 39% of youth who did not take classes.

Being involved in more than one type of physical activity provided youth with greater access to a supportive adult in their lives. For example, youth were more likely to report having an adult outside their family they could talk to about a serious problem if they were very frequently involved in both informal and organised sports compared to informal sports only (61% vs. 56%).

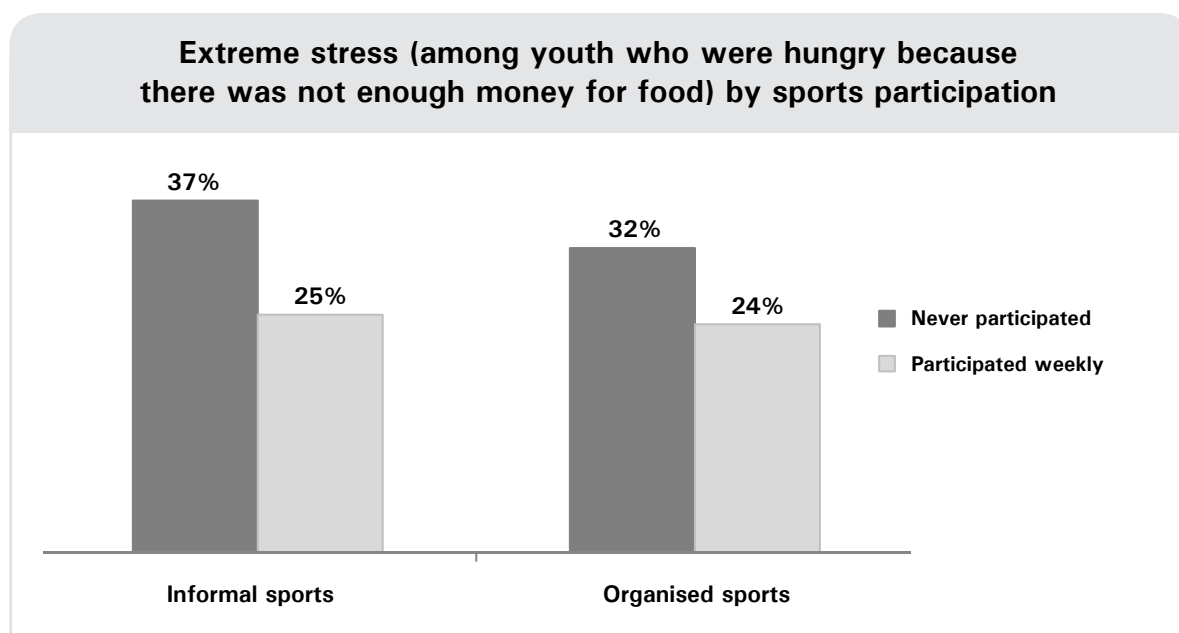
Vulnerable groups

It is important to consider if protective factors are effective with the most vulnerable youth in the province (such as youth who live in poverty or who are in government care). In other words, is involvement in physical activities associated with reduced risk behaviour and improved health, even for these youth?

One vulnerable population of youth are those who reported that they had gone to bed hungry because there was not enough money for food at home. These youth were at greater risk of experiencing extreme stress or despair in the month prior to taking the survey. However, having physical activity in their lives may have helped to reduce this risk. For example, those who exercised three or more days in the past week were less likely than those who did not exercise at all to report extreme stress (26% vs. 38%), and any amount of exercise was protective against extreme despair (14% vs. 27%).

Similarly, among those students who reported being hungry, youth who took part in informal sports were less likely than those who did not to report extreme stress (25% vs. 37%) or despair (13% vs. 26%). A similar association was seen between playing organised sports and extreme stress, but not despair. Dance/aerobics participation was not associated with extreme stress or despair among students who reported hunger.

Another group of vulnerable youth are those who have been abused. Although the rate of suicidal ideation among abused youth is higher than average, the rate differs depending on whether youth are involved in physical activities. For example, compared to youth who did not participate in such activities, suicidal ideation was less common among abused youth who exercised (25% vs. 33%) as well as among those who played informal sports (25% vs. 36%) or organised sports (24% vs. 29%).

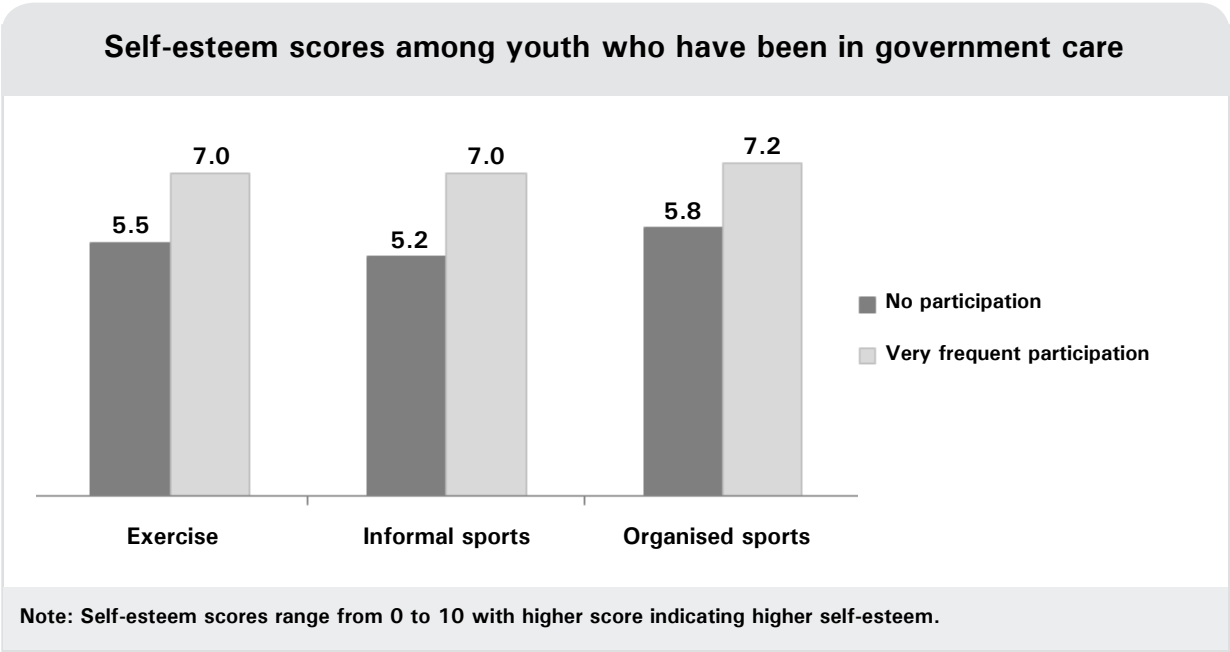


Youth who have experienced government care (those who have been in foster homes, group homes or on youth agreements) are another group of vulnerable youth for whom engagement in sports and physical activities can be protective for reducing risk behaviours and improving health. One of the most prominent risk behaviours among BC youth is binge drinking. Youth who had been in care and who exercised were less likely than those who had not exercised to binge drink on six or more days in the past month (15% vs. 33%*). Similarly, 16% of youth who had been in care and participated weekly in informal sports binge drank at this rate compared to 36%* among those without informal sports in their lives.

Physical activity was also protective of various aspects of mental health among youth with experience of government care. For example, youth in care who took part in strenuous exercise were less

likely to report extreme stress compared to those who did not exercise (25% vs. 40%). In addition, the rate of self-harm behaviour was lower for those who took part weekly in informal sports compared to those who did not participate (29% vs. 49%).

Involvement in physical activities is protective not only for reducing risk behaviour but also for improving positive health. For all three groups of vulnerable youth, involvement in exercise and sports was associated with higher self-esteem scores.



Recap: Activity Profiles



These profiles summarize what has been presented throughout this report.

Exercise

- 8% of youth did not do any strenuous exercise sufficient to make them sweat and breathe hard in the week before completing the AHS.
- About a quarter of youth exercised 6 or 7 days in the week before they took the survey (an increase from 1998).
- Frequent exercise was associated with many positive health indicators and behaviours, including reporting good or excellent health.
- Exercise was also associated with positive mental health. For example, students who exercised frequently were less likely to report extreme stress, despair or nervousness as well as self-harm behaviour and risk for suicide. They were also more likely to report high self-esteem.
- Frequent exercisers were less likely to be underweight or obese, reported better nutritional behaviours such as eating breakfast and consuming water, fruits and vegetables. They also reported greater body satisfaction and lower rates of binge eating, and among males, lower rates of vomiting on purpose after eating.
- Frequent exercise was also linked with behaviours that could negatively impact health such as sports related injuries, and among older youth, binge drinking.
- Exercising at a moderate frequency was associated with lower rates of steroid use than either little or very frequent participation.



Informal sports

- The majority of youth participated in an informal sport in the past year and 30% did so four or more times a week (comparable to the rate seen in 1998).
- The association between regular participation in informal sports and health and risk behaviours was similar to that reported for exercise. For example, those playing informal sports reported higher rates of good/excellent health, higher self-esteem and good nutrition as well as lower rates of suicide risk. They also reported lower rates of binge eating (males and females) and purging (males only).
- A positive link between playing informal sports and lower rates of extreme stress and nervousness were seen in males but not females.
- Frequent participation in informal sports was associated with lower rates of trying cigarettes but higher rates, especially among males, of chewing tobacco. For all youth, moderate participation in informal sports was associated with lower rates of trying steroids, crystal meth or heroin than either very frequent or no participation.
- Youth who were frequently involved in informal sports were less likely to be purposefully excluded but more likely to be physically assaulted, and females were more likely to be sexually harassed.



Organised sports

- Most youth reported playing organised sports in the past year. Three in 10 youth reported that they took part in these types of sports four or more times a week (an increase from 1998).
- Youth who frequently played organised sports had higher rates of good/excellent health and self-esteem as well as lower rates of extreme stress, despair, nervousness or suicide risk. However, these youth were also more likely to sustain sports related injuries.
- Youth in organised sports were more likely than those who were not, to eat sweets but less likely to have consumed coffee-based drinks.
- Youth who were very frequently involved in organised sports were less likely to report binge eating, and reported lower rates of trying cigarettes, marijuana and other drugs such as amphetamines, hallucinogens or cocaine.
- Very frequent participation and no participation were linked to more risky alcohol use than moderate involvement in organised sports.
- Males who took part frequently in organised sports were less likely than males who were less involved to be teased, excluded or assaulted.

Dance or aerobics

- Twenty two percent of youth took part in dance or aerobics classes. An increase from 18% a decade earlier. As in 1998, fewer than 1 in 10 youth took dance or aerobic classes four or more times a week in the past year.
- Like the other types of physical activity, frequent participation in dance or aerobics was associated with good or excellent health and body satisfaction. Among females, participation in dance/aerobics was associated with higher self-esteem.
- Similar to those who frequently played organised sports, those who frequently took dance or aerobics classes were more likely to have a non-related adult to talk to when they had a serious problem, particularly when they did not have an adult in their family they could confide in.
- In many other ways, the pattern of health and risk behaviours for those who participated in dance or aerobics was quite different from other activities.
- Participation was associated with increased rates of disordered eating (purging among males, and dieting and binge eating among both males and females).

“ I suggest you make dance a course in school so people have another elective to choose besides p.e. ”



- Youth who frequently took dance or aerobics classes were more likely to report extreme stress, and males were at higher risk for extreme nervousness as well as suicidal ideation and attempts. Furthermore, males who frequently took part in dance or aerobic activities were more likely to have tried steroids, amphetamines, cocaine and ecstasy.
- Finally, youth who participated in dance or aerobics were more likely to experience many forms of victimization including teasing, purposeful exclusion and sexual harassment, which may partially explain some of the different results seen for this group compared to those who participated in exercise or sports.

Final Thoughts



The findings of this report into physical activity participation among BC youth highlights the need to make these activities more inclusive for vulnerable groups of youth, such as those with a disability, those new to Canada, youth in government care, those who identify as lesbian, gay or bisexual, and those without the family income to pay to take part.

The findings also show that although participation is increasing from a decade ago, there are a number of youth who are not physically active and who risk obesity and other problems as they transition towards adulthood if they cannot be engaged in some form of exercise.

The profile of participants in dance and aerobics classes is very different to that of the other physical activities, and shows that youth who are not involved in traditional sports opportunities can be engaged in other ways of taking exercise. Therefore different creative methods may be needed to attract different groups of youth. For example, youth who are not interested in sports and exercise programs may be encouraged to improve their health and fitness through exposure to activities such as kayaking, physical theatre or yoga.

The report also shows us that for the most part more is better. The more involved youth are in one or more physical activities, the better mental and physical health they report. However, the link between heavy involvement in sports and alcohol and chewing tobacco use is concerning, and shows that role models such as elite players, coaches and others supervising youth sports may have an active



The school gym semester should be changed to all year. Another solution is just to have gym every other day.



role to play in increasing awareness of problems associated with excessive drinking and the use of smokeless tobacco.

The survey was administered between February and June 2008. In September of that year it became a requirement for all students to participate in at least 30 minutes of physical activity per day. It will be important to see what impact this has on youth physical activity levels, and particularly on the health of older youth, many of whom are currently moving away from sports and exercise as they reach their mid to late teens.



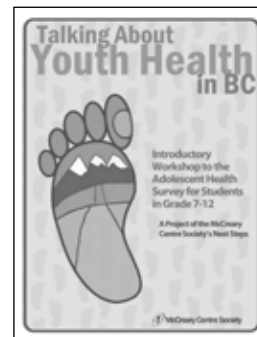
McCreary Resources

For any of these, or other materials by the McCreary Centre Society, visit our website at www.mcs.bc.ca.



A Picture of Health: Highlights from the 2008 Adolescent Health Survey (2009)

This report summarizes the BC Adolescent Health Survey which has been conducted in schools every 5 years since 1992. The 2008 survey asks questions about physical and emotional health, and about factors that can influence health during adolescence or in later life. This report highlights trends in the health status and risk behaviours of BC youth. 14 regional reports are also available.



Talking About Youth Health in BC

This workshop guide introduces the 2008 Adolescent Health Survey and gives step by step instructions on how to present a successful and engaging youth workshop on adolescent health.



What a difference a year can make: Early alcohol and marijuana use among 16 to 18 year old BC students (2010)

This report uses data provided by 16 to 18-year-olds who completed the 2008 BC Adolescent Health Survey. The study examines the different health behaviours and outcomes between those who use alcohol or marijuana at 12 and younger and those who wait longer to try these substances.



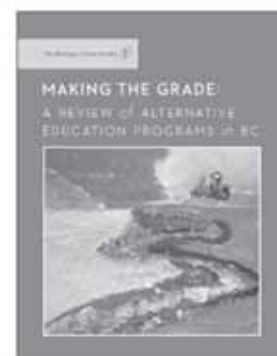
AHS Youth Fact Sheets

Fact sheets offer research results on a variety of topics using the most recent Adolescent Health Survey data. There are fact sheets available on every section of the AHS Report. Fact sheets from other McCreary reports are also available.



A Seat at the Table : A Review of Youth Engagement in Vancouver (2009)

This report focuses on youth engagement in civic and community decision-making. The report aims to offer a better understanding of the continuum of youth engagement and to show the different ways that youth can be involved in decisions that affect their lives.



Making the Grade: A review of alternative education programs in BC (2008)

A review of alternative education programs in BC, involving youth attending alternative education programs for “at-risk” and “high risk” youth across the province, and adult stakeholders. The review documents the positive impact of these programs for youth.



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