



The Manitoba Youth Health Survey 2009: Technical Report

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Preface

The first implementation of the Manitoba Youth Health Survey (YHS; see glossary of acronyms in Appendix C) was conducted between November 2005 and October 2008. The survey was a collaborative effort between the Manitoba Regional Health Authorities, CancerCare Manitoba, CancerCare Manitoba Foundation, Canadian Cancer Society Manitoba Division, Heart and Stroke Foundation of Manitoba, Manitoba Health and Healthy Living (MHHL), Manitoba Education, Citizenship and Youth (MECY), Healthy Child Manitoba Office, Frontier School Division, Public Health Agency of Canada Manitoba/Saskatchewan Regional Office, Health in Common and other partners belonging to Partners in Planning for Healthy Living (PPHL).

Manitoba RHAs assumed responsibility for data collection within their regions as well as the dissemination of feedback reports (for schools, school divisions and regions) and findings. The Interlake RHA, NOR-MAN RHA and CancerCare Manitoba shared responsibility for scanning of the completed surveys. The Epidemiology Unit at CancerCare Manitoba took responsibility for data analysis, data interpretation and report generation.

Implementation of the YHS was overseen by Partners in Planning for Healthy Living (PPHL), which is a unique, Manitoba-based community of practice. PPHL consists of members learning and working together to build local capacity in using evidence and developing a province-wide integrated knowledge system, which reflects the unique context of Manitoba. Members of PPHL share a common mandate for the prevention of chronic diseases and work together in a collegial manner to support the use of evidence in planning interventions that will promote healthy living in communities across Manitoba.

This *Manitoba Youth Health Survey: Technical Report* provides a detailed overview of the background, design and methods used in the first Manitoba YHS as well as the results presented in the *Youth Health Survey Report 2009*. The *Youth Health Survey Report 2009* includes the results of all participating students in Manitoba in grades 9 to 12 and is available on the PPHL website (1). RHAs own the data collected within their regions along with the respective reports and findings. Public access to the provincial dataset can be obtained through the completion of a Data Access Request form (2).

Results of the YHS are used differently across health regions, schools and communities; uses include informing community health planning, programming and policy, evaluation, and health promotion at the school, community, regional and provincial levels. The data from the YHS will be used as baseline data for assessing the impact of the 2008/2009 implementation of the Grades 11 and 12 Active Healthy Lifestyles: Physical Education/Health Education curriculum.

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1 Introduction

1.1 Provincial Initiatives and History of the Youth Health Survey

The Youth Health Survey (YHS) initiative resulted from the Manitoba Regional Health Authorities' (RHAs) recognition that there was a lack of local-level data available for planning purposes and that provincial and national level data did not meet the needs of local communities, schools and regions. While data from other surveillance systems provides some data at the health region level for Manitoba, the data are not specific to the local-level. Other national health surveys such as the Youth Smoking Survey (YSS) and the Canadian Tobacco Use Monitoring Survey (CTUMS) are related to specific content areas such as tobacco and are therefore not applicable across all health behaviours.

In response to this need for local-level data, the initial YHS tool was developed by the Interlake Health Promotion Working Group in 2005. This survey was piloted with grade 6-12 students in the Interlake RHA in 2005-2006. Implementation of the YHS has been the primary risk factor surveillance activity in Manitoba to date.

These YHS results are useful for guiding school and local level planning as well as providing a baseline for evaluating the new Grades 11 and 12 Active Healthy Lifestyles: Physical/Health Education Curriculum. The policy mandates compulsory Physical Education/Health Education for all grade 11 and 12 students in Manitoba and is designed to create environments where healthy choices are easier to make. By the end of the 2007-2008 school year, students in all RHAs were contacted to fill out the YHS. Most regions surveyed students in grades 6-12, while all regions surveyed students in grades 9-12.

The purpose of collecting the YHS data is to provide schools, school divisions and RHAs with current school and community specific information on youth health with a particular focus on risk factors for chronic disease. The data from the 2007-2008 YHS will be used as baseline data for:

- i) Community health planning, health promotion and programming at the school, school division and RHA levels
- ii) Policy evaluation at the school, community and regional levels
- iii) Policy evaluation at the provincial level for the 2008-2009 Grades 11 and 12 Active Healthy Lifestyles: Physical/Health Education curriculum

The second cycle of the YHS is anticipated to take place in the fall of 2012. Future surveys will be used to determine changes in risk factor behaviours over time and to monitor the impact of the new physical education/health education curriculum on the activity level of students in Manitoba.

1.2 Epidemiological Overview

1.2.1 *The Importance of Targeting Youth and the Classroom Setting*

Research has shown that both positive and negative health behaviours are initiated during childhood and interventions should be promoted to people of all ages. The World Health Organization's report on diet, nutrition and the prevention of chronic disease (2003) stated:

“There is increasing evidence that chronic disease risks begin in fetal life and continue into old age. Adult chronic disease, therefore, reflects cumulative differential lifetime exposures to damaging physical and social environments” (3).

In addition, inadequate exercise and activities such as poor dietary habits, smoking, and drug and alcohol misuse tend to begin in adolescence and rise to a peak in high school (4).

“The common environmental stresses and behaviour patterns experienced or learned in childhood and adolescence contribute significantly to the incidence and prevalence of disease later in life, and conversely, learned patterns of healthy behaviour and stress management contribute to health throughout life” (4).

The World Health Organization defines settings for health as “the place or social context in which people engage in daily activities in which environmental, organizational and personal factors interact to affect health and wellbeing” (5). As a primary setting for youth, schools are in a unique position to have a positive impact on the health of adolescents and their families.

“The concept of health-promoting schools emerges from a global movement that recognizes two key ideas: healthy children are better able to learn and schools can directly influence the health of students. A health-promoting school embraces the view that promoting children's health is a shared responsibility with parents, the health sector, and the community. It strives to be a healthy setting for learning and working. Schools, in partnership with parents and the greater community, can provide an ideal setting for practices that enhance both health and learning”(6).

Schools can have a significant protective influence on the health of children and youth through policy (nutrition, tobacco and physical activity policies) as well as through school culture. It has been found that adolescents who feel connected to their school communities are less likely to engage in risky activities than those who do not feel connected to their school (7). Research also shows that early and sustained efforts are considered the most beneficial to the health of youth and that school health promotion is effective in influencing the knowledge, attitudes and behaviours of students of all ages (4).

In particular, “supportive school environments that foster resilience and focus on asset development, protective factors and social connectedness reduce the risk of health-related problems and support the healthy growth and development of children and youth” (8). A comprehensive study in Europe estimated the following cost-benefit of school health programs (9):

- One dollar spent on preventing tobacco use can save \$19 in treatment costs for the consequences of smoking.
- One dollar spent on preventing alcohol and drug abuse can save \$6 in treatment costs related to the consequences of these behaviours.
- For the integrated education program as a whole, nearly \$14 can be saved for every dollar spent.

In 1998, the World Health Organization stated:

“Health is directly linked to educational achievement, quality of life and economic productivity. Research demonstrates that school health programs can simultaneously reduce common health problems, increase the efficiency of the education system and advance public health, education and social and economic development in each nation (10).”

It is important to note that even though schools are ideally positioned to influence the health of children, they cannot do it alone. The health of children is a shared responsibility. There is a role to play for families, health authorities, health service providers, non-government organizations and the community, in partnership with the school, students and staff.

1.2.2 Chronic Disease in Youth

Globally, the number of cases of chronic diseases such as diabetes, cancer and heart disease is rising and this increase is predicted to continue with an ageing and expanding worldwide population. It is important to understand that much of the burden imposed by these diseases is preventable and often driven by external, lifestyle factors. In addition, research has shown that risk factors for chronic disease can co-occur in youth, with adolescents often reporting more than one unhealthy behaviour at a time (11). This provides a strong argument for influencing modifiable risk factors and health behaviours involved in the development of chronic disease as well as for targeting clusters of risk factors.

According to projections, almost 10,000 Canadians aged 20-44 are diagnosed with cancer each year. Based on data from 2003, it is estimated that over 150,000 Canadians were survivors of a cancer that had been diagnosed during young adulthood (12). Research has shown that in adults risk behaviours such as physical inactivity, poor diet, smoking and excessive alcohol consumption may increase the risk of developing certain cancers (13).

The Manitoba YHS focuses on gathering information on modifiable lifestyle behaviours in youth that have been proven to decrease the risk for diseases including diabetes, cancer, and heart disease. This information is essential to reducing the burden of chronic disease among this population.

Chronic Disease Statistics

By 2010, the number of Canadians with diabetes is expected to reach three million (14). The increase in prevalence of type II diabetes in youth is attributed to unhealthy lifestyle behaviours such as physical inactivity, improper nutrition, and increasing obesity. In 2005, the WHO estimated that approximately 1.6 billion adults worldwide (aged 15+) were overweight and at least 400 million adults were obese (15). In addition, it has been predicted that a North American child born in 2000 has a one in three chance of being diagnosed with type II diabetes in his or her lifetime (16).

Cardiovascular disease accounts for 31% of all deaths in Canada (17). In general, cardiovascular diseases such as heart attack, stroke and peripheral vascular disease are caused by an atherosclerotic process (fatty plaque build-up in the arteries). Although these cardiovascular diseases tend to present later in adulthood, recent studies have found that youth are demonstrating fatty build-up in the arteries indicating that the atherosclerotic process can begin in childhood (18). A major compounding factor for cardiovascular disease is obesity. As children become more obese, they show earlier signs of high blood pressure, cholesterol, diabetes, and other risk factors for cardiovascular disease (19).

2 Design and Methods

2.1 Overview of the Survey Tool

The YHS is a four page, machine-scannable questionnaire consisting of 51 multiple choice questions. The survey takes approximately 20-30 minutes to complete and includes questions on physical activity, nutrition, tobacco, drugs and alcohol and school connectedness. Participation by students is voluntary, and the survey is anonymous and confidential.

The survey tool was developed by the Interlake Health Promotion Working Group using input from the local level as well as validated questions adapted from national and international surveys. These surveys are explored in more detail in section 2.1.2 of this report and include the University of Waterloo's School Health Action, Planning and Evaluation System (SHAPES) Youth Survey Modules and Youth Smoking Survey (YSS), Health Canada's Canadian Community Health Survey (CCHS), the Adolescent Health Survey of the McCreary Centre Society BC, and the Youth Risk Behavior Survey (YRBS) from the Centers for Disease Control and Prevention (CDC).

2.1.1 Self-Report

Self-report questionnaires are the most common and sometimes only tool used to gather information on risk factor behaviour in large epidemiological studies. Self-report questionnaires are a relatively low-cost, easy to administer, and practical alternative to direct measures of risk factors for chronic disease. The questions for the YHS were chosen to meet the local-level needs of the RHAs as well as to ensure the best possible validity and reliability of data. However, caution should be taken when interpreting some results as the reliability and validity of self-report methodology varies by content area. The following subsections describe trends in reliability and validity in students' responses for specific topics.

Physical activity

The majority of the physical activity data collected for the YHS was based on questions from the SHAPES physical activity module. A study conducted to review the SHAPES tool found that when tested against accelerometer-measured data, the one-week test-retest reliability for the physical activity items had a kappa/weighted kappa coefficient of 0.60 +/- 0.10 (20). This represents a conservative estimate of reliability as student physical activity levels can vary from one week to the next (20).

Additionally, the self-reported and accelerometer-measured average daily time spent performing moderate to vigorous physical activity were significantly correlated (Spearman $r=0.44$, $P < 0.001$) (20). However, it should be noted that the general trend was for students to over-report physical activity in comparison with objectively measured physical activity (22). As such, the module may not be suitable for assessing physical activity at the individual level. Nonetheless, this tool was found to have acceptable levels of validity and reliability for measuring physical activity and BMI in large-scale, school-based data collections for child and adolescent populations (20).

In 2008, researchers from the University of Manitoba began conducting a longitudinal study on the validity of self-reported physical activity of students in Manitoba. As part of the study, a

sample of students throughout Manitoba wear an accelerometer for one week every year for 4 years to collect objective physical activity data. After wearing the accelerometer for one week, the students complete the YHS physical activity questions. Preliminary results of the study were not available at the time of this report publication.

Nutrition

The food frequency questions of the YHS were adapted from the CCHS, which uses a validated system on food and nutrition from the United States Department of Agriculture. Some controversy has arisen over whether Food Frequency Questionnaires (FFQs) over or underreport dietary intake of nutrients and/or energy. Validation of short FFQs on fruit and vegetable consumption, similar to those used in the YHS, show a tendency for respondents to underreport intake (21). The consensus among professionals in the field is that FFQs are best used as a tool for ranking subjects according to food or nutrient intake rather than for estimating the levels of intake (22).

Body Mass Index (BMI)

Caution should be used when interpreting BMI (Kg/m^2) values from self-report. It has been well documented that when compared to objective height and weight measurements, adolescents tend to over-report height and under-report weight (23;24). As a result, when calculating BMI from self-reported height and weight, the BMI values are generally lower than objectively measured BMI values. As such, trends show that the prevalence of obesity in a population is likely underestimated by this measure.

Tobacco, Alcohol and Drug Use

Epidemiological studies have found that youth report their substance use histories including tobacco, alcohol and illegal drug use consistently over time (25;26). Methodology from the University of Waterloo SHAPES smoking module was used to define YHS smoking categories among students. These questions have previously been found to have a test-retest reliability kappa/weighted kappa coefficient of 0.80 +/- 0.06 (20).

Another study looked at the test-retest reliability of the CDC Youth Risk Behavior Survey from which many of the YHS smoking, alcohol and drug questions were adapted. The researchers calculated a kappa statistic for each of the 53 self-report items on the survey as well as compared group prevalence estimates across two testing occasions (23). Results showed that 72% of the items had kappa values between 61-100%, indicating moderate to high reliability. In addition, no significant differences were found between the prevalence estimates for the two testing times (23).

A similar study exploring the factor structure and psychometric properties of the Adolescent Health Risk Behavior instrument found a 13-factor solution with acceptable model fit statistics. It also found that the measures were consistent across adolescent sub demographic categories (27). Taken together, these studies suggest that substance abuse questions similar to those used for the YHS are reliable tools for measuring youth tobacco, alcohol and drug use.

School Connectedness, Self-Perception and Feelings of Helplessness

Research consistently suggests that there is an inverse relationship between supportive social relationships in the school setting and youth risk behaviour (28;29). The school connectedness and self-perception questions used in the YHS were based on the SHAPES youth survey modules as well as the YRBS. The YRBS has been implemented across the United States since 1990 and has been found to be a valid and reliable tool over time, specifically among students in Grades 8 and above (23;27).

According to the literature on reporting of depressive symptoms, males tend to report fewer symptoms than their female counterparts (30). It is hypothesized that this response bias is due to culturally-dictated gender roles. It is important to note that in any case where the YHS data on “feelings of helplessness” is not stratified by gender, the results may be subject to this bias.

2.1.2 Question Sources

The following section describes the sources used in developing the Manitoba YHS and provides a specific reference for each question. It should be noted that many of the questions from the YHS appear in more than one of the source surveys, indicating that they have been widely used in youth questionnaires. Please see Appendix B for further information on question sources.

Interlake Health Promotion Working Group

Local level input on survey content was provided by the Interlake Health Promotion Working Group, comprised of Interlake RHA staff as well as community partners.

School Health Action, Planning and Evaluation System Modules

The School Health Action, Planning and Evaluation System (SHAPES) was developed by the Canadian Cancer Society’s Centre for Behavioural Research and Program Evaluation in partnership with the University of Waterloo. As of 2009, SHAPES had four youth survey modules in use across Canada including tobacco, physical activity, healthy eating and mental fitness. The data collected with these modules is used to create health profiles for students and school environments (31).

Youth Smoking Survey

The Youth Smoking Survey (YSS) is a Health Canada-sponsored, biennial survey that collects data on youth smoking rates as well as attitudes and behaviours of Canadian youth with respect to tobacco (32).

Canadian Community Health Survey

The Canadian Community Health Survey (CCHS) is a cross-sectional survey that collects information related to health status, health care utilization and health determinants for the Canadian population. The CCHS operates on a two-year collection cycle with a general population-health survey administered to a large sample in the first year and a specific health topic survey administered to a smaller sample in the second year (33).

McCreary Centre Society Adolescent Health Survey

The Adolescent Health Survey is a provincial questionnaire developed by the McCreary Centre Society and used to collect information about youth health in British Columbia. It has been implemented four times since 1992 and covers a vast array of topics relating to both health-promoting and health-compromising behaviours by youth (34).

CDC Youth Risk Behavior Survey

The Youth Risk Behavior Survey (YRBS) is a national, school-based survey that monitors priority health-risk behaviours in the United States as a part of the Youth Risk Behavior Surveillance System. The survey is conducted by the CDC in partnership with state, territorial and local education and health agencies, as well as tribal governments (35).

2.2 Survey Implementation and Sample

The Manitoba YHS was completed between 2005 and 2008. In 2007-2008, the YHS implementation was accelerated by a joint letter of support from the Minister of Education, Citizenship and Youth (MECY) and the Minister of Healthy Living/Chair of the Healthy Child Committee of Cabinet. RHAs approached all schools in their regions with the opportunity to participate in the survey. This included independent, Colony, First Nations and Francophone schools as well as all school divisions in the province.

The census-style methodology used for the survey eliminated study design and weighting issues during analysis. More information about these results can be found in section 3.1 of this technical report.

2.3 Data Management and Analysis

All data were analyzed by biostatisticians at CancerCare Manitoba.

2.3.1 Ethical Considerations

Precautions were taken during analysis and reporting to ensure that individual students could not be identified through the feedback reports. This was of particular importance during analysis of schools with a small number of respondents. For these schools, a cell size < five responses or <5% of total respondents to a particular question was used as a cutoff for reporting student data. Additionally, no reports were written for schools that were too small to protect the confidentiality of their students.

2.3.2 Response Rates

Where possible, survey response rates were calculated based on the total number of completed surveys in a school divided by the school enrolment (of surveyed grades) as of September of the year of participation. However for many schools, only total school enrolments were available without information on the breakdown of enrolment by grade. For schools where accurate numbers were unavailable, no response rate was reported. For this reason, no response rate was calculated for the *Youth Health Survey Report 2009*.

2.3.3 Data Storage and Sharing

All survey data are owned by the RHAs and stored in a secure repository within the Department of Epidemiology and Cancer Registry at CancerCare Manitoba. Each RHA has signed a data sharing agreement with CancerCare Manitoba in accordance with The Personal Health Information Act (Manitoba), The Freedom of Information and Protection of Privacy Act (Manitoba) and all other applicable Federal and Provincial legislative acts governing the use of anonymized electronic data (36;37). The agreements outline the conditions for the storage, use and release of the data to any parties outside of the applicable RHA. School names, RHA information and any other identifying information are removed from this file to maintain anonymity and confidentiality. External parties can request use of these data through the completion of a Data Access Request form available on the PPHL website (2).

2.4 Limitations

Although the survey is a census of Manitoba students in grade 6-12, not all schools and enrolled students participated in the YHS. Additionally, not all RHAs opted to survey students in grade 6-8. Therefore, there is only a complete provincial baseline database on students in grade 9-12. These results are not age- or sex- standardized and therefore comparisons between RHAs, school divisions and schools are not valid.

It should be noted that differing BMI guidelines were used during the classification of youth BMI in the feedback reports. Adult guidelines for weight classification were used in feedback reports until the CDC released sex- and age- specific guidelines to categorize youth's weight midway through the YHS process. Therefore, some RHAs' feedback reports were produced using adult guidelines while the remaining RHAs' feedback reports and the *Youth Health Survey Report 2009* used the CDC's youth-specific BMI guidelines.

The Canadian Food Guidelines were also updated during the time of the feedback report generation. Again, some RHAs' feedback reports used the 1992 Canadian Food Guidelines, while other RHAs and the *Youth Health Survey Report 2009* used the 2007 Canadian Food Guidelines.

One of the strengths of the YHS is that the results have not been interpreted by the report writers. The reports reflect the responses of the youth themselves. Each feedback report gives baseline data or a snapshot on certain health behaviours in youth.

3 Youth Health Survey Report 2009: Provincial Results

3.1 Age and Gender Distribution of Sample

In order to assess whether the adolescents surveyed for the *Youth Health Survey Report 2009* were representative of Manitoba youth, the distribution of respondent’s ages 14-17 years were compared to the distribution of youth ages 14-17 years of the Manitoba population for the year 2007.

Figure 1 indicates that the percentage of students at each age included in the Youth Health Survey was roughly equivalent to the percentage of youth at each corresponding age in Manitoba at the time of the survey. Figure 2 represents this same age comparison, further broken down by gender. Again, the age and gender distribution of the YHS respondents match the age and gender distribution of the Manitoba population in 2007. Note: Figures 1 & 2 do not appear in the *Youth Health Survey Report 2009*.

Figure 1- Age Distribution of YHS Respondents Compared to the Manitoba Population

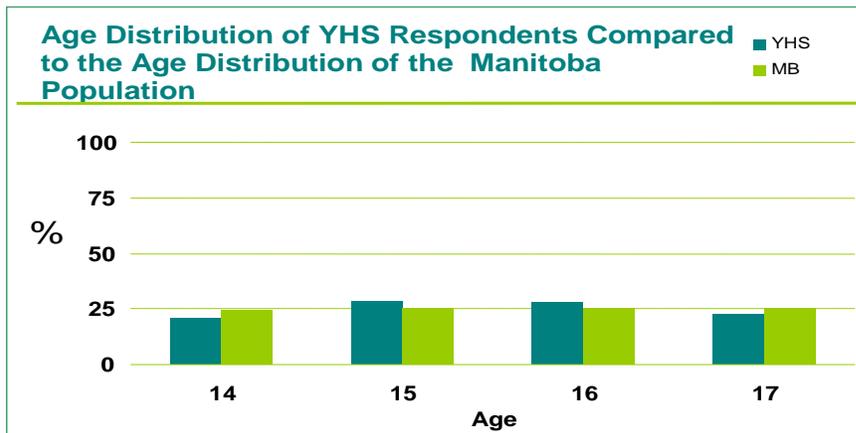
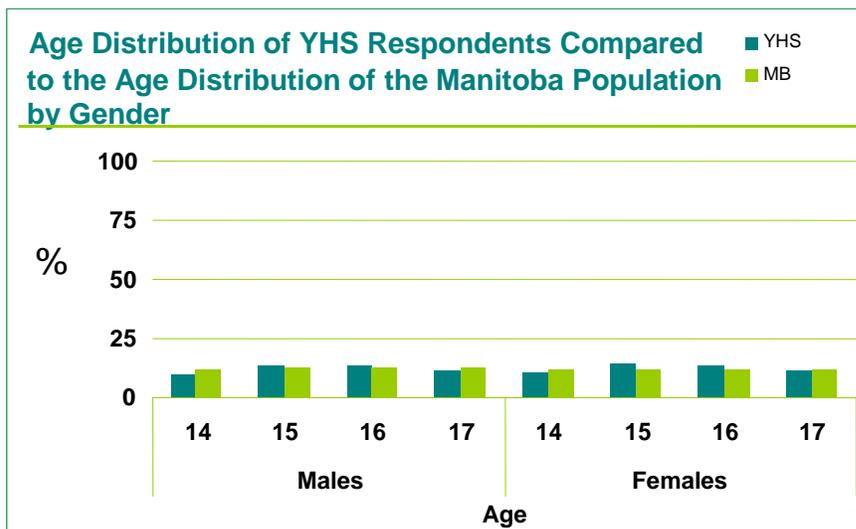


Figure 2- Age Distribution of YHS Respondents Compared to the MB Population, by Gender



3.2 Physical Activity (Pages 7-12 of the *Youth Health Survey Report 2009*)

3.2.1 Background

Physical activity is an important modifiable risk factor for chronic disease. There is overwhelming evidence that regular physical activity can have a protective influence on several chronic diseases such as diabetes, hypertension, obesity, cardiovascular disease, depression, and osteoporosis (38). With the increase in urbanization and industrialization, populations across the world, specifically those of higher-income countries, are adopting more and more sedentary behaviours. Canada is no exception and although research shows convincing evidence for physical activity in the prevention of many chronic diseases, many Canadian youth and adults remain physically inactive.

The CCHS reported that approximately 51% of adult Canadians are not active enough to receive health benefits (39). Canada's Physical Activity Guide for Youth recommends that youth ages 10-14 accumulate at least 90 minutes of physical activity each day through a combination of moderate and vigorous activities (MVPA) in five to ten minute periods (40). In 2004, the CCHS estimated that only 41% of Canadian children ages 6-11 years participated in the 7-13 hours of PA a week required to meet these guidelines (41). In addition, the same survey found that among Canadian youth ages 12-17 years, 11% reported participating in 40 or more hours of sedentary activities each week (42).

A Canadian study of physical activity levels of over 10 000 randomly selected youth ages 5-19 reported that 87% of these youth were not achieving the recommended number of daily pedometer steps associated with meeting the Canadian guidelines (approximately 16 500 steps per day) (43). However, due to small sample sizes and issues with methodology, there remains a relative lack of data and understanding of the true levels and correlates of physical activity among Canadian youth, specifically in Manitoba and among adolescents ages 15-19.

Physical inactivity affects both the quality of life and the health status of a population. In Canada the direct and indirect costs associated with physical inactivity were estimated at \$5.3 billion in 2001 (44). Developing healthy physical activity habits in youth is undoubtedly an important place to begin making changes and promoting health. A multi-faceted approach in terms of policy, programming and infrastructure must be taken to make physical activity more accessible and part of everyday life for all Canadians. The YHS's approach to gathering local-level evidence surrounding physical activity and physical inactivity is a necessary and important step to informing policy and creating positive change.

3.2.2 Physical Activity Levels

Students were asked to report the frequency (days) and time (minutes per day) that they performed at least 15 minutes of hard (Q.12) and moderate (Q.15) physical activity.

Q. 12 Preamble: *Hard physical activities increase your heart rate and make you breathe hard and sweat. They include jogging, team sports, fast dancing, jump-rope.*

Q.12: *Mark how many minutes of **hard** physical activity you did for each day last week. Include activities that lasted for at least 15 minutes at one time during physical education class, lunch, recess, after school, evenings, and spare time.*

Q.15 Preamble: *Moderate physical activities are easier activities such as walking, biking and recreational swimming.*

Q.15: *Mark how many minutes of **moderate** physical activity you did for each day last week. Include activities that lasted for at least 15 minutes at one time during physical education class, lunch, recess, after school, evenings, and spare time.*

These physical activity items were designed to enable comparisons with results from previous national physical activity surveys that classified physical activity levels by energy expenditure (45). Methods for calculating energy expenditure were also adopted from the SHAPES school-based physical activity questionnaire model (20).

Daily energy expenditure from physical activity was expressed as an estimate of kilocalories per kilogram per day (KKD) using the information collected in Q.12 and Q.15. Metabolic Equivalents (METs) are commonly used to express the intensity of physical activities (i.e.- vigorous or moderate) by estimating the amount of oxygen used by the body during physical activity (46;47). The MET is the ratio of a person's working metabolic rate relative to their resting metabolic rate. One MET is defined as the energy cost of sitting quietly at rest and is equivalent to a caloric consumption of 1kcal/kg/hour (20).

It is estimated that compared with sitting quietly, a person's caloric consumption is three to six times higher when being moderately active (3-6 METs) and more than six times higher when being vigorously active (> 6 METs) (50;51). For this population, KKD was derived by multiplying the respective total hours of activity with the MET value of vigorous activity (MET = 6.0) and moderate activity (MET = 3.0), before adding these and dividing by seven (days in a week) as per the following formula (20):

$$\text{KKD} = (\text{Hard} * 6 \text{ METs} + \text{Moderate} * 3 \text{ METs}) / 7 \text{ days}$$

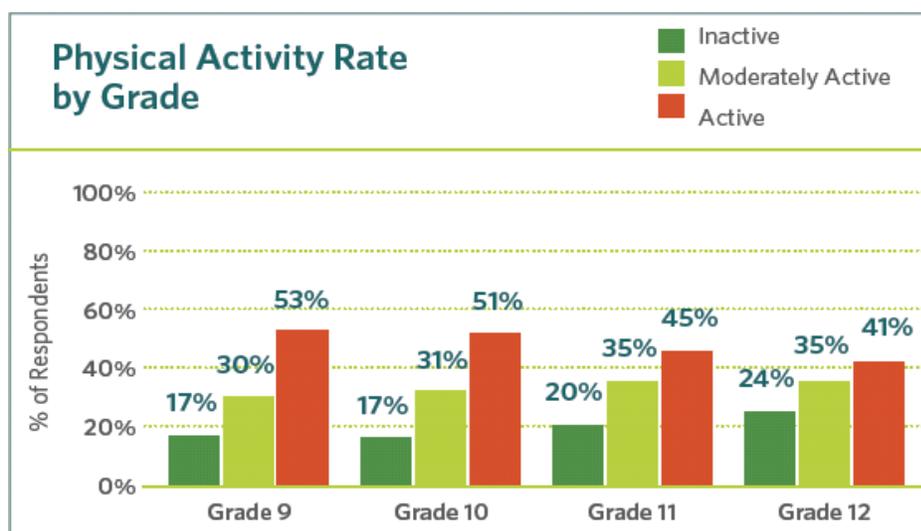
According to this formula, 3 KKD would be roughly equivalent to 1 hour of moderate activity or 30 minutes of vigorous activity in a day while a total of 6 KKD would be

equivalent to 1 hour of vigorous activity or 2 hours of moderate activity in a day (47). As such, 6KKD would classify a student as active according to the recommended 90 minutes of daily physical activity required by the Canadian Physical Activity Guide for Youth (48). However, based on the knowledge that youth consistently over-report physical activity, participants were classified as **Inactive** if they expended < 3 KKD, **Moderately Active** if they expended 3-8 KKD or **Active** if they expended > 8 KKD (20). Using this adjustment for over-reporting, placement in the **Active** category for PA (> 8 MET-hours) would meet the Canadian Physical Activity guidelines while placement in the **Moderately Active** group would indicate an activity level approximately just below these recommendations (40).

Physical Activity Rate by Grade

On Page 8, the *Youth Health Survey Report 2009* presents physical activity rates by grade and activity category (Figure 3).

Figure 3 Physical Activity Rate by Grade



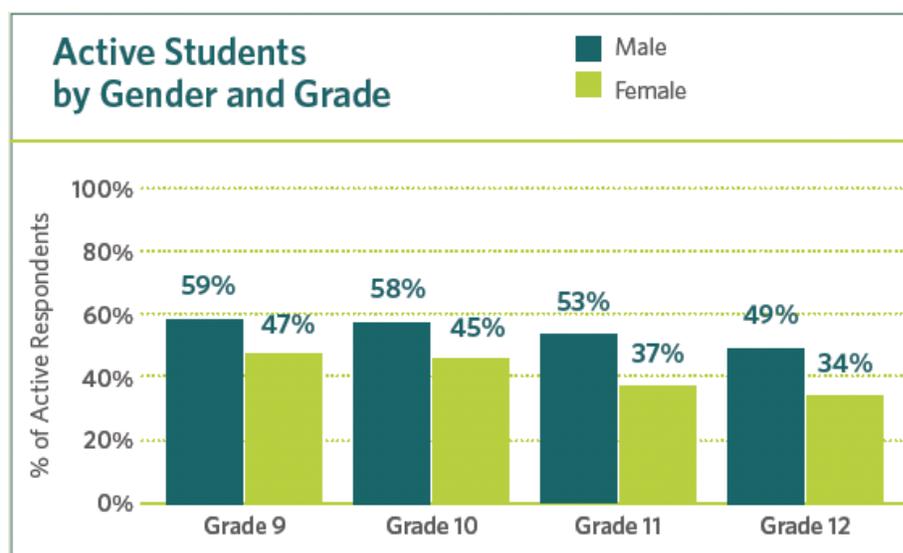
The following table provides a description of numerators and denominators used for the rate calculations in Figure 3.

	Grade 9	Grade 10	Grade 11	Grade 12
	N = 9,153	N = 9,340	N = 8,530	N = 6,954
	n (%)	n (%)	n (%)	n (%)
Inactive	1,559 (17)	1,611 (17)	1,735 (20)	1,644 (24)
Moderately Active	2,702 (30)	2,935 (31)	2,965 (35)	2,428 (35)
Active	4,892 (53)	4,794 (51)	3,830 (45)	2,882 (41)

Note: Column percentages may not sum to 100 due to rounding.

Active Students by Gender and Grade

Also on Page 8, the *Youth Health Survey Report 2009* presents the percentage of students in the **Active** category by gender and grade (Figure 4).

Figure 4 Active Students by Gender and Grade

The following table provides a description of numerators and denominators used for the rate calculations in Figure 4.

	Males	Females
Grade 9	N = 4,631	N = 4,443
	n (%)	n (%)
	2,739 (59)	2,104 (47)
Grade 10	N = 4,580	N = 4,624
	n (%)	n (%)
	2,646 (58)	2,074 (45)
Grade 11	N = 4,189	N = 4,227
	n (%)	n (%)
	2,204 (53)	1,574 (37)
Grade 12	N = 3,328	N = 3,523
	n (%)	n (%)
	1,634 (49)	1,202 (34)

Notes: Male and female numerators and denominators are based on the numbers of students with a non-missing value for gender. Results represent the gender-specific percentage of students in each grade who were classified as Active.

3.2.3 When Students are Active

Students were asked to describe their level of physical activity during different times of the day (Q.5). Students responded to all time categories separately as though they represented four individual questions. If a student selected more than one activity level for a particular time of day (e.g., selected both the **Active** and **Inactive** boxes in the **Before School** category), their response was set to missing for that time of day.

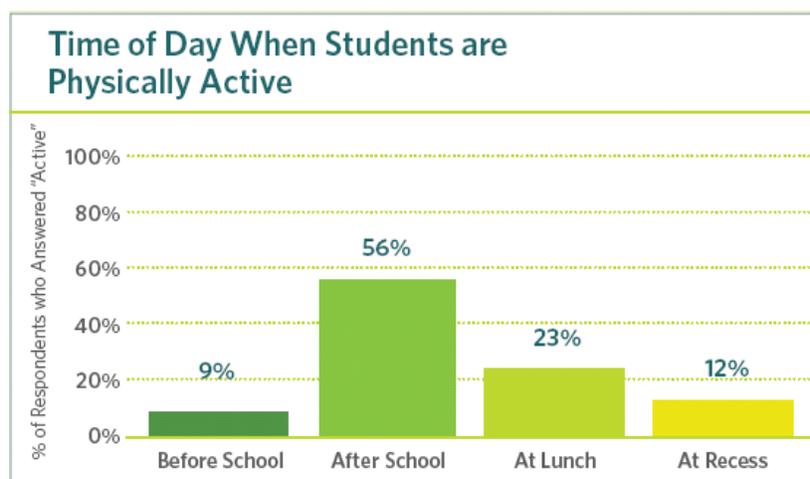
Q.5: How physically active are you at the following times?

	<i>Active</i>	<i>Somewhat Active</i>	<i>Inactive</i>	<i>Does Not Apply</i>
<i>Before School</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>After School</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Recess</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Lunch</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Time of Day When Students are Physically Active

Page 9 of the *Youth Health Survey Report 2009* presents data for students who reported that they were physically active (i.e., checked the **Active** box) by time of day (Figure 5).

Figure 5 Time of Day When Students are Physically Active



The following table provides a description of numerators and denominators used for the percentage calculations in Figure 5.

	N = 33,977	
	n	(%)
Before School	2,956	(9)
After School	19,080	(56)
Lunch	7,844	(23)
Recess	4,088	(12)

Note: Students were asked to respond with their activity levels for each time of day category. Therefore, the fact that column percentages sum to 100 is due to chance.

Students were also asked what means of transport they used to get to and from school (Q.11).

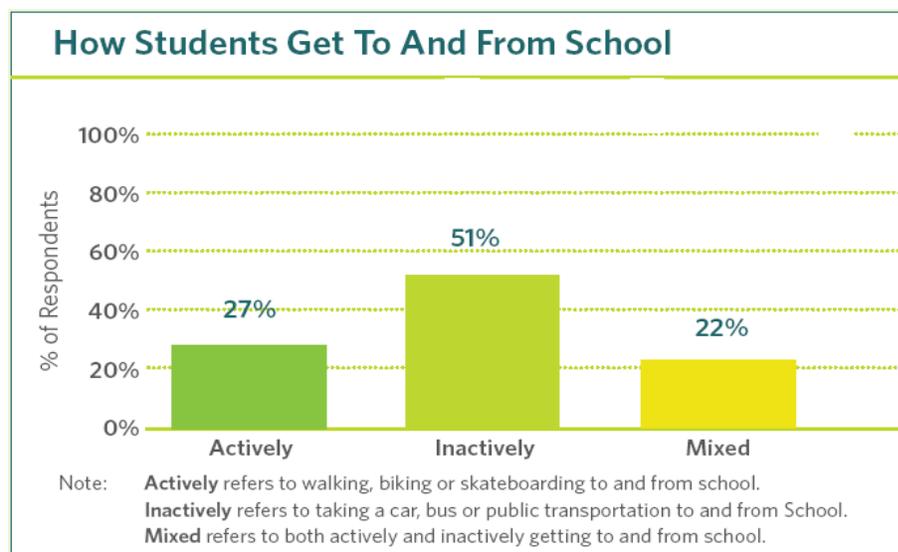
Q.11: *In the last week, how did you usually get to and from school?*

- Actively (e.g. walk, bike, skateboard)
- Inactively (e.g. car, bus, public transit)
- Mixed (actively and inactively)

How Students Get To and From School

Also on Page 9, the *Youth Health Survey Report 2009* presents data on students' method of transportation to school (Figure 6).

Figure 6 How Students Get to and from School



The following table provides a description of numerators and denominators used for the percentage calculations in Figure 6.

	N = 33,977	
	n	(%)
Actively	9,148	(27)
Inactively	17,239	(51)
Mixed	7,341	(22)
Missing Response	249	(1)

Note: Column percentages may not sum to 100 due to rounding.

3.2.4 Non-Active Time

Students were asked how much time they spent reading (Q.19) and how much time they spent doing homework in the last week (Q.20). The responses for Q.19 & Q.20 were collapsed into three categories: **Less than 1 hour**, **1-6 hours** and **7 hours or more**. To do this, counts from the original categories were summed to form the new categories.

Q.19: In the last week, how much total time did you spend reading, not counting at work or at school or homework? (Include books, magazines and newspapers)

- None
- Less than 1 hour
- From 1 to 6 hours
- From 7 to 13 hours
- 14 or more hours

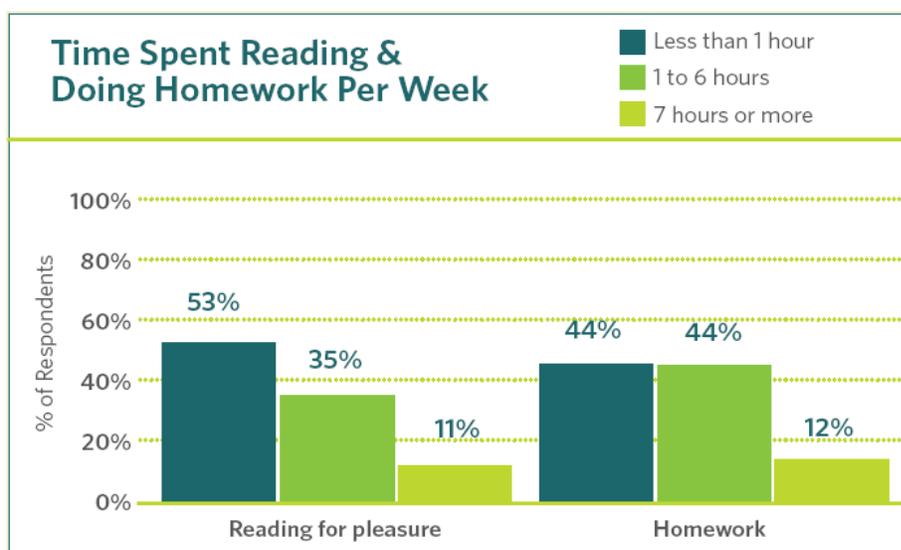
Q.20: In the last week, how much total time did you spend doing homework?

- None
- Less than 1 hour
- From 1 to 6 hours
- From 7 to 13 hours
- 14 or more hours

Time Spent Reading and Doing Homework Per Week

The results for both reading and homework are presented on Page 10 of the *Youth Health Survey Report 2009* (Figure 7).

Figure 7 Time Spent Reading and Doing Homework Per Week



The following table provides a description of numerators and denominators used for the percentage calculations in Figure 7.

	N = 33,977			
	Reading		Homework	
	n	(%)	n	(%)
Less than 1 hour	18,012	(53)	14,788	(44)
1 to 6 hours	11,727	(35)	14,850	(44)
7 or more hours	3,765	(11)	3,933	(12)
Missing Response	473	(1)	406	(1)

Note: Column percentages may not sum to 100 due to rounding.

In addition, students were asked to report the amount of “screen time” they spent each day of the last week (Q.18). Responses for Q.18 were collapsed into three categories: **Less than 1 hour**, **1-2 hours** and **3 hours or more**.

Q.18: Mark how much time you spent watching TV, movies, playing video/computer games, surfing the internet, or talking on the phone for each day last week.

	<i>None</i>	<i>Less than 1 hour</i>	<i>1-2 hours</i>	<i>3-5 hours</i>	<i>6 or more hours</i>
Monday	<input type="checkbox"/>				
Tuesday	<input type="checkbox"/>				
Wednesday	<input type="checkbox"/>				
Thursday	<input type="checkbox"/>				
Friday	<input type="checkbox"/>				
Saturday	<input type="checkbox"/>				
Sunday	<input type="checkbox"/>				

Time Spent on “Screen” Each Day

Screen time results are also presented on Page 10 of the *Youth Health Survey Report 2009* (Table 1).

Table 1 Time Spent on “Screen” by Day of the Week

Time spent on “screen” each day	Less than 1 hour	1-2 hours	3 hours or more
Monday	35%	40%	23%
Tuesday	37%	38%	22%
Wednesday	37%	37%	23%
Thursday	37%	37%	23%
Friday	37%	33%	27%
Saturday	33%	29%	34%
Sunday	32%	30%	35%

The following table provides a description of numerators and denominators used for the percentage calculations in Table 1.

N = 33,977							
	< 1 hour		1-2 hours		≥ 3 hours		Missing Response
	n	(%)	n	(%)	n	(%)	n (%)
Monday	11,765	(35)	13,543	(40)	7,832	(23)	846 (2)
Tuesday	12,431	(37)	12,917	(38)	7,603	(22)	1,026 (3)
Wednesday	12,558	(37)	12,655	(37)	7,667	(23)	1,097 (3)
Thursday	12,580	(37)	12,540	(37)	7,677	(23)	1,180 (3)
Friday	12,430	(37)	11,271	(33)	9,088	(27)	1,268 (4)
Saturday	11,150	(33)	9,947	(29)	11,689	(34)	1,191 (4)
Sunday	10,986	(32)	10,283	(30)	11,743	(35)	965 (3)

Note: Row percentages may not sum to 100 due to rounding.

3.2.5 Factors Supporting Physical Activity

Students were asked to what degree their parents or guardians encouraged them to be physically active (Q.7).

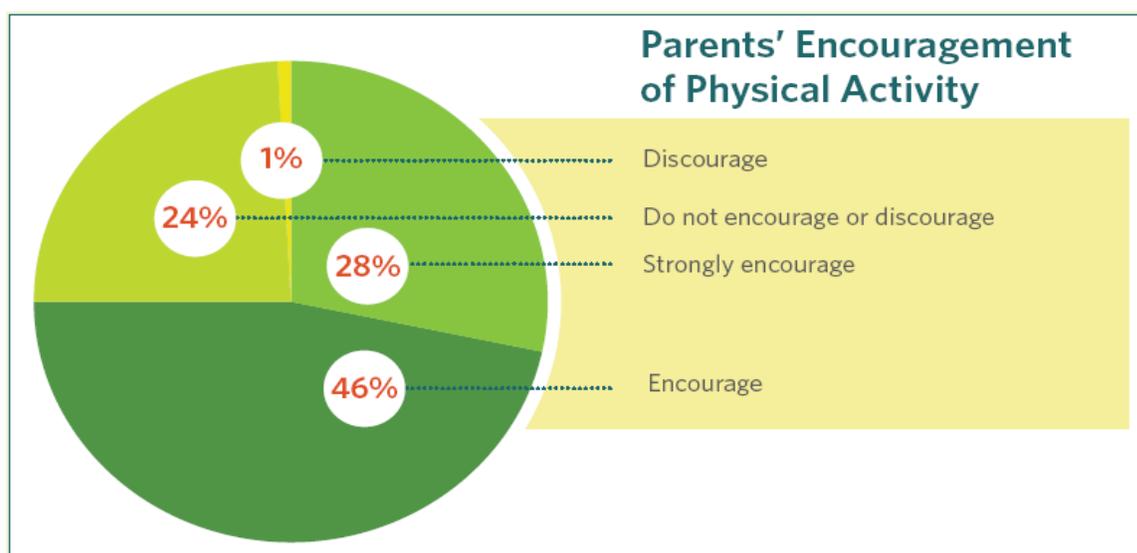
Q.7: How much do your parent(s) or guardian(s) encourage you to be physically active?

- Strongly Encourage
- Encourage
- Do not encourage or discourage
- Discourage

Parents' Encouragement of Physical Activity

Page 11 of the *Youth Health Survey Report 2009* presents the level of parents' encouragement of physical activity for all students (Figure 8).

Figure 8 Parents' Encouragement of Physical Activity



The following table provides a description of numerators and denominators used for the percentage calculations in Figure 8.

	N = 33,977	
	n	(%)
Strongly encourage	9,383	(28)
Encourage	15,750	(46)
Do not encourage or discourage	8,256	(24)
Discourage	389	(1)
Missing Response	199	(1)

Note: Column percentages may not sum to 100 due to rounding.

Students were also asked to what degree their parents or guardians supported them in being physically active (Q.8).

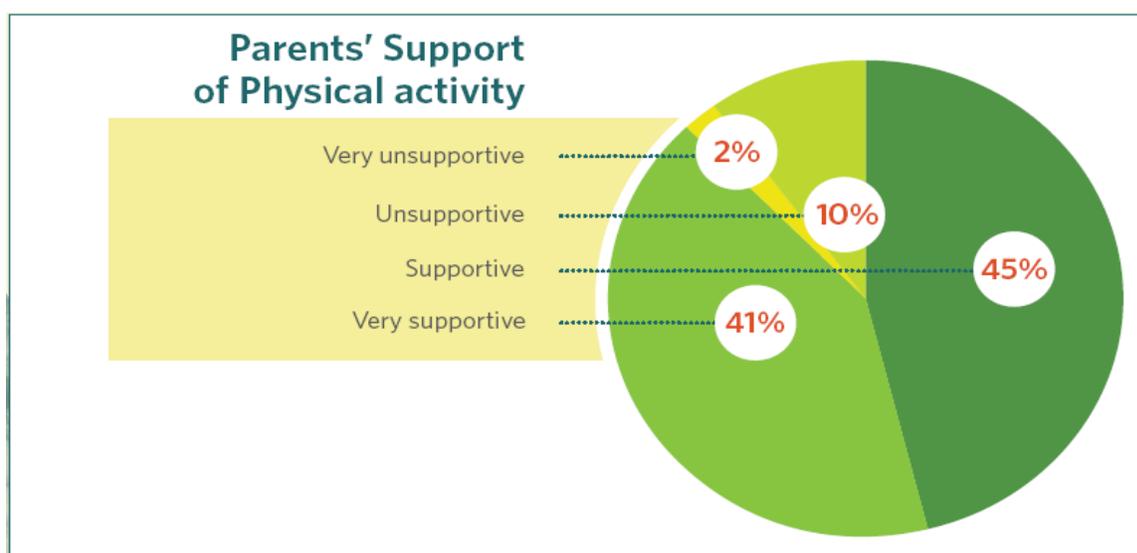
Q.8: How much do your parent(s) or guardian(s) support you in being physically active (help you join or get to activities)?

- Very Supportive
- Supportive
- Unsupportive
- Very unsupportive

Parents' Support of Physical Activity

Page 11 of the *Youth Health Survey Report 2009* also presents the level of parents' support of physical activity for all students (Figure 9).

Figure 9 Parents' Support of Physical Activity



The following table provides a description of numerators and denominators used for the percentage calculations in Figure 9.

	N = 33,977	
	n	(%)
Very supportive	14,049	(41)
Supportive	15,433	(45)
Unsupportive	3,510	(10)
Very unsupportive	622	(2)
Missing Response	363	(1)

Note: Column percentages may not sum to 100 due to rounding.

3.2.6 Satisfaction with Number of School Sports

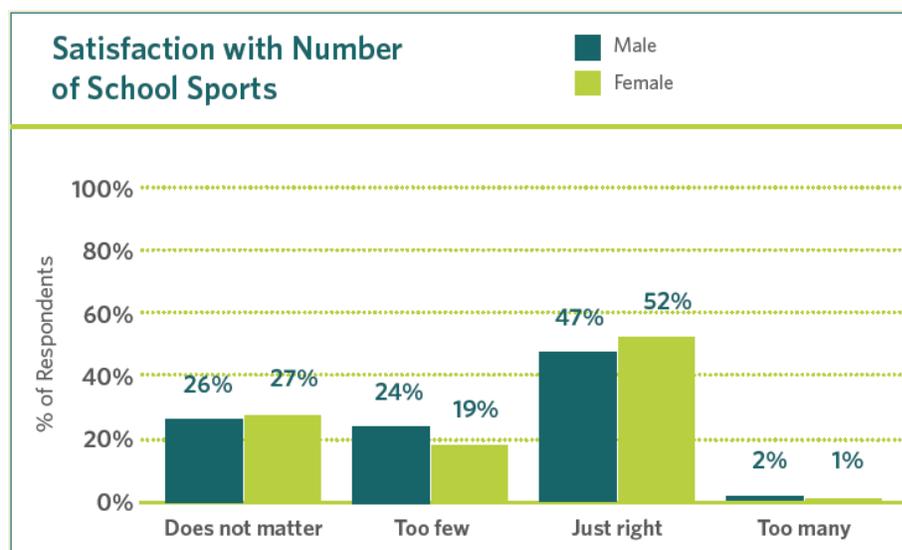
Students were asked their opinion on the number of sports offered at their school (Q.6).

Q.6: *What do you think of the number of sports offered at your school?*

- Does not matter to me
- Too few
- Just Right
- Too many

Page 12 of the *Youth Health Survey Report 2009* presents the level of satisfaction with number of school sports for all students by gender (Figure 10).

Figure 10 Satisfaction with Number of Sports



The following table provides a description of numerators and denominators used for the percentage calculations in Figure 10.

	Males		Females	
	N = 16,728		N = 16,817	
	n	(%)	n	(%)
Does not matter	4,379	(26)	4,523	(27)
Too few	4,084	(24)	3,185	(19)
Just right	7,839	(47)	8,810	(52)
Too many	345	(2)	218	(1)
Missing Response	81	(0)	81	(0)

Notes: Male and female numerators and denominators are based on the numbers of students with a non-missing value for gender. Column percentages may not sum to 100 due to rounding.

3.2.7 Student Perceptions of Physical Activity Education at School

Students were asked their perceptions of which topics surrounding physical activity were taught or offered at their school (Q.21). Students responded to all topic areas separately as though they represented four individual questions.

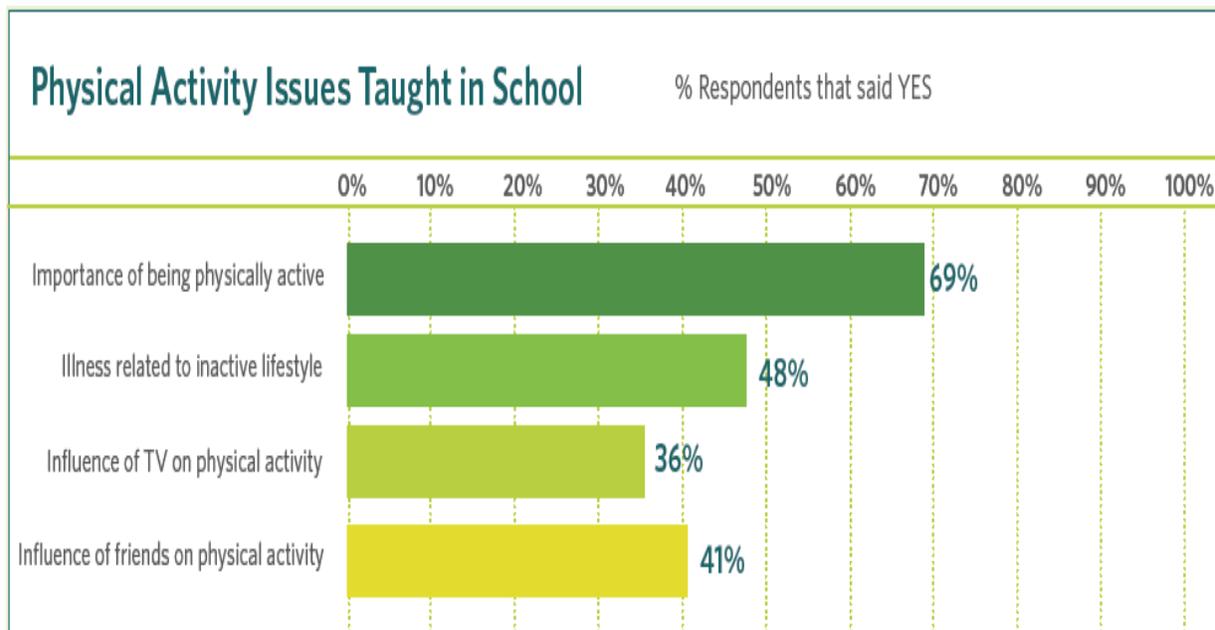
Q.21: *Do the subjects offered in your school teach about:*

	Yes	No	I don't know
a. Why it's important to be physically active?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. How you can get sick if you are not physically active?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. How TV can influence you about physical activity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. How your closest friends can influence you about physical activity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Physical Activity Issues Taught in School

Page 12 of the *Youth Health Survey Report 2009* presents the percentage of students who responded **Yes** to each of the questions in Q. 21 (Figure 11).

Figure 11 Physical Activity Issues Taught in School



3.3 Healthy Eating (Pages 13-16 of the *Youth Health Survey Report 2009*)

3.3.1 Background

Diet and nutrition are well-established modifiable risk factors for chronic diseases such as diabetes, cancer and cardiovascular disease (3). Each of these chronic diseases is affected by excess body mass which in turn is a direct result of unhealthy eating and physical inactivity. In addition to the physical consequences of poor dietary habits, these behaviours can have effects on cognitive ability, growth and behaviour in children and adolescents (48).

Over the past fifty years there has been a shift in North American children's diets with increased portion sizes and consumption of high calorie snacks, carbonated beverages and fast food. The American Academy of Pediatrics reported that the standard serving of a carbonated beverage was 6.5 oz in the 1950s and 20oz by the late 1990s (49). This increase in fat and sugar consumption has been coupled with a decrease in fruit and vegetable consumption. Canada's food guide recommends that children (ages 9-13) consume 6 servings and youth (ages 14-18) consume 7-8 servings of fruit and vegetables daily (50). However, data from the 2004 CCHS reported that 59% of Canadian children and adolescents consume fewer than 5 servings of fruit and vegetables per day (51).

Eating habits are learned very early in life and are influenced by family, friends, schools, marketing and the media (52). Establishing healthy eating at a young age is a critical part of a healthy lifestyle. The Healthy Eating section of the *Youth Health Survey Report 2009* examines the eating patterns of youth in Manitoba in order to gain useful information for promoting healthy dietary behaviours among this population.

3.3.2 Eating Habits of Students

Students were asked to report the number of times they ate and drank certain food items in the past week (Q. 24 – Q.29).

Q.24: *In the past week, how many times did you drink 100% fruit juice?*

Q.25: *In the past week, how many times did you eat fruit (not counting fruit juice)?*

Q.26: *In the past week, how often did you eat green salad?*

Q.27: *In the past week, how often did eat potatoes (Do not count french fries, fried potatoes, or potato chips)?*

Q.28: *In the past week, how often did you eat carrots?*

Q.29: *In the past week, how often did you eat other vegetables (not counting carrots, potatoes, or salad)?*

If any question was left blank it was considered to be zero fruit and vegetable servings. The students' responses were summed and divided by 7 days to obtain an average daily consumption of fruit and vegetables:

$$\text{Average Daily Consumption} = [Q24 + Q25 + Q26 + Q27 + Q28 + Q29] / 7$$

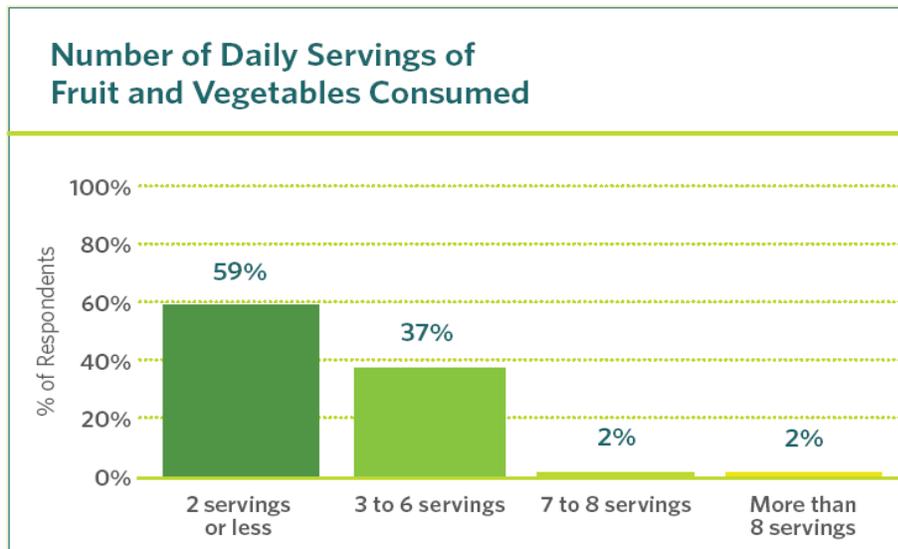
Note: For report output, students were placed into categories of average daily servings of fruits and vegetables. However, during the time feedback reports were being generated, the Canadian Food Guide was updated. Thus, earlier regional feedback reports use the 1992 Canadian Food Guidelines, while reports generated after their release, employ the new 2007 Canadian Food Guidelines (50).

The *Youth Health Survey Report 2009* was developed after the new Canadian Food Guidelines were in place and therefore used these to classify students into four categories of average daily servings of fruit and vegetables: **2 servings or less**, **3 to 6 servings**, **7 to 8 servings** and **More than 8 servings**.

Number of Daily Servings of Fruit and Vegetables Consumed

Page 14 of the Report presents the percentage of all students in each daily consumption category (Figure 12).

Figure 12 Number of Daily Servings of Fruit and Vegetables Consumed



The following table provides a description of numerators and denominators used for the percentage calculations in Figure 12.

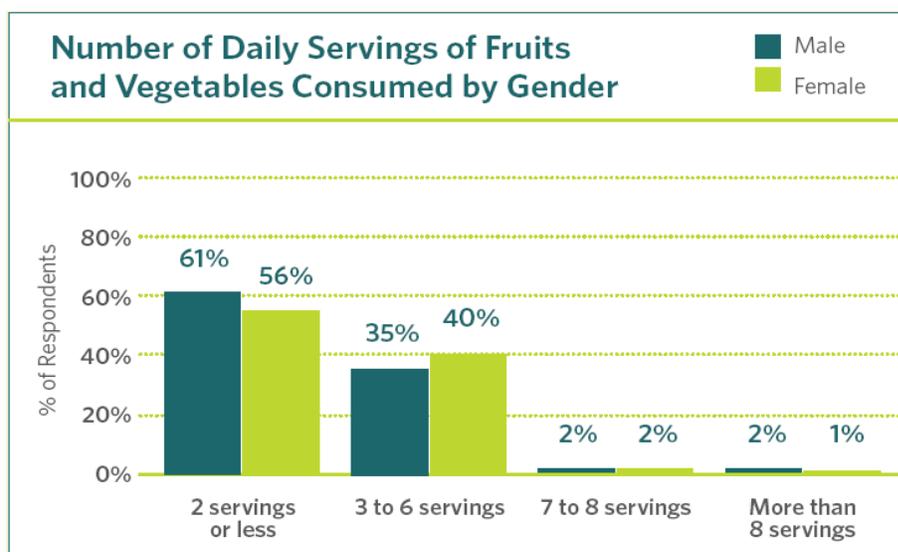
	N = 33,977	
	n	(%)
2 servings or less	19,910	(59)
3 to 6 servings	12,694	(37)
7 to 8 servings	734	(2)
More than 8 servings	639	(2)

Note: Column percentages may not sum to 100 due to rounding.

Number of Daily Servings of Fruits and Vegetables Consumed by Gender

Page 15 of the Report presents the percentage of students in each daily consumption category by gender (Figure 13).

Figure 13 Fruit and Vegetable Consumption by Gender



The following table provides a description of numerators and denominators used for the percentage calculations in Figure 13.

	Males		Females	
	N = 16,728		N = 16,817	
	n	(%)	n	(%)
≤ 2	10,174	(61)	9,475	(56)
3 to 6	5,772	(35)	6,773	(40)
7 to 8	390	(2)	333	(2)
> 8	392	(2)	236	(1)

Notes: Male and female numerators and denominators are based on the numbers of students with a non-missing value for gender. Column percentages may not sum to 100 due to rounding.

3.3.3 Healthy Body Weight

Students were asked to report their weight (Q.30) and height (Q.31). This information was used to compute a student's Body Mass Index (BMI).

Q.30: *How much do you weigh **without** your shoes on?*

My weight is ___ pounds **or** ___ kilograms

Q.31: *How tall are you **without** your shoes on?*

My height is _____ feet ___ inches **or** _____ centimeters

BMI is a ratio of a person's weight relative to his or her height. It is calculated by dividing the weight in kilograms by the height in meters squared (53).

$$\text{BMI} = \text{weight [kg]} / \text{height [m]}^2$$

Only students who provided complete height and weight information that resulted in a valid BMI were included in these calculations. Students who provided incomplete or missing data or who provided data that resulted in physiologically impossible BMI values were not included in report results.

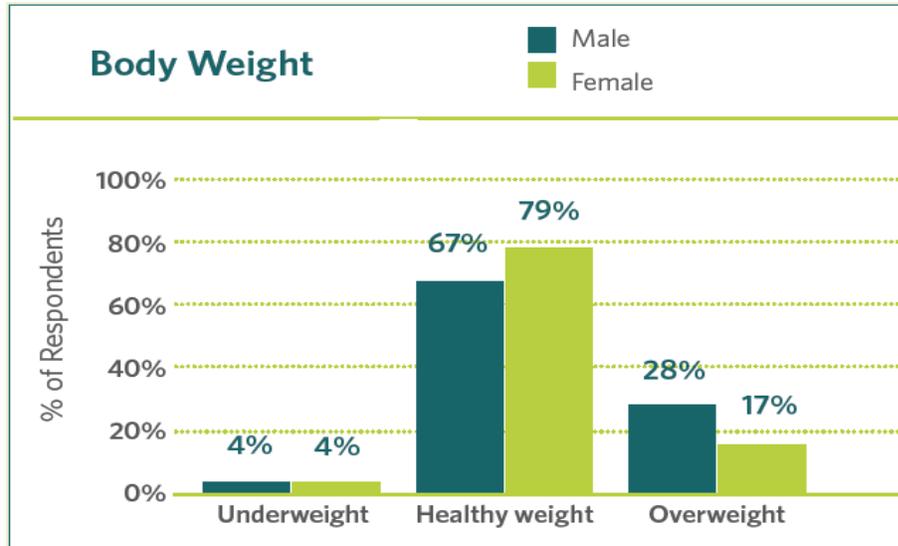
Note: During the time feedback reports were being generated, the CDC released sex- and age- specific guidelines to categorize youth's weight. As such, all regions whose reports were generated before this release used the adult guidelines for BMI classification which placed students into the following categories: **Underweight** (BMI < 18.5), **Normal weight** (BMI 18.5 to 24.9) and **Overweight** (BMI ≥ 25) (53).

However, some RHAs, along with the *Youth Health Survey Report 2009*, used the CDC's new BMI-for-age growth charts (for either girls or boys) which classified students as follows: **Underweight** (< 5th percentile), **Healthy weight** (5th percentile ≤ BMI < 85th percentile), and **Overweight** (≥ 85th percentile) (53).

Body Weight

Page 16 of the *Youth Health Survey Report 2009* presents the percentage of students in each BMI category by gender (Figure 14).

Figure 14 Body Weight



The following table provides a description of numerators and denominators used for the percentage calculations in Figure 14.

	Males		Females	
	N = 14,479		N = 14,075	
	n	(%)	n	(%)
Underweight	619	(4)	557	(4)
Healthy	9,772	(67)	11,097	(79)
Overweight	4,088	(28)	2,421	(17)

Notes: Only individuals with a valid BMI are considered. Male and female numerators and denominators are based on the numbers of students with a non-missing value for gender. Column percentages may not sum to 100 due to rounding.

Perception of Body Weight

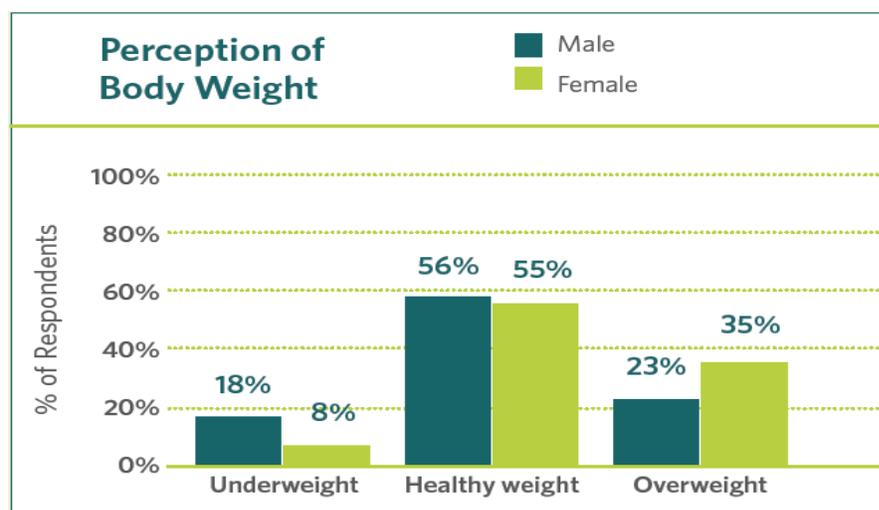
In addition, students were asked how they perceive their own body weight (Q.50).

Q.50: Do you consider yourself:

- Very overweight?
- Slightly overweight?
- About the right weight?
- Slightly underweight?
- Very underweight?

Also on Page 16, the *Youth Health Survey Report 2009* presents students' perception of body weight by gender (Figure 15).

Figure 15 Perception of Body Weight



The following table provides a description of numerators and denominators used for the percentage calculations in Figure 15.

	Males		Females	
	N = 16,728		N = 16,817	
	n	(%)	n	(%)
Very overweight	665	(4)	884	(5)
Slightly overweight	3,193	(19)	4,954	(29)
About the right weight	9,439	(56)	9,179	(55)
Slightly underweight	2,589	(15)	1,244	(7)
Very underweight	377	(2)	144	(1)
Missing Response	465	(3)	412	(2)

Notes: Male and female denominators are based on the numbers of students with a non-missing value for gender. Column percentages may not sum to 100 due to rounding.

3.4 Smoking, Alcohol, and Drug Use (Pages 17-24 of the *Youth Health Survey Report 2009*)

3.4.1 Background

Tobacco

Tobacco can be consumed in many forms, including through cigarettes, pipes, water pipes, and smokeless tobacco. Cigarettes however, remain the most common form of tobacco use for both youth and adults worldwide (54;55). According to the 2008 Canadian Tobacco Use Monitoring Survey (CTUMS), 18% of adults, 2% of youth in grades 5-9, and 11% of youth in grades 10-12 report smoking (56). Although there has been a dramatic decrease in the prevalence of youth smoking since the 1980s when more than 40% of youth were classified as smokers (57), Health Canada has set a youth smoking target rate of 9% by 2011 (58).

It has been reported that 90% of smokers begin smoking before 21 years of age highlighting the importance of targeting youth in tobacco prevention (7). In addition, those who start smoking earlier are less likely to quit and more likely to become heavy smokers (54). This is a major concern because the health consequences for this group of young smokers are the most severe. Those who start smoking before the age of 15 have double the risk of developing lung cancer as compared to those who start smoking when they are older than 20 years of age (59).

Youth smoking is correlated with a variety of other chronic disease risk factors. It has been reported that youth who smoke are less physically active and have less healthy diets than non-smoking youth (60). In addition, youth who smoke are three times more likely than non-smokers to use alcohol, eight times more likely to use marijuana, and 22 times more likely to use cocaine (61). As such, tobacco prevention strategies aimed at youth can impact overall health and prevent future chronic diseases by modifying single (smoking) and multiple risk factor behaviours.

Substance Abuse (Alcohol and Drugs)

Increased consumption of alcohol has been known to cause significant health problems and is linked to a variety of chronic diseases including cancer, Type 2 diabetes, cardiovascular disease and liver cirrhosis (62). According to the 2004 Canadian Addictions Survey (CAS), 79.3% of Canadians ages 15 years and older reported consuming alcohol. Of youth ages 15-17 surveyed, 44% reported drinking one to three times per month and 17.3% of youth reported consuming alcohol once per week (63).

The National Institute on Alcohol Abuse and Alcoholism defines binge drinking as a pattern of drinking that brings the consumers' blood alcohol concentration to 0.08 grams percent or higher (64). On average, this corresponds to the consumption of five or more drinks for men and four or more drinks for women in a two hour period (64). Of the youth surveyed by CAS, 28% reported consuming five or more drinks on a typical drinking day (63).

Cannabis is the most commonly used illegal drug (49). Among youth it has been found to impair cognitive development and memory, increase the risk of developing psychotic disorders and promote further illegal drug use (65). The 2008 Canadian Alcohol and Drug Use

Monitoring Survey found that 11% of Canadians ages 15 years and older reported using cannabis in the past year. In addition, the same survey found that the average age for initiation of use among those ages 15-24 was 15.5 years (66).

A study using data from the American National Survey on Drug Use and Health reported that the age of onset for both alcohol and cannabis use is a significant predictor of developing a substance use disorder with the teenage years being strongly linked to elevated risk (67). In addition, alcohol consumption and drug use increases the risk of further harm in youth. This includes but is not limited to injury, suicide, violence (both physical and sexual), motor vehicle accidents involving substance use and impaired social and physical developmental processes (66;68). The prevalence of alcohol-related harm in adolescents is twice as high as that of the general population (66). As such, targeting substance abuse in youth can not only reduce the risk of chronic disease but can also improve the overall well-being of youth by decreasing alcohol- and drug- related harm and by promoting normal social and physical development.

3.4.2 Students Who Smoke in Manitoba

Students were asked about their smoking history (Q.34 and Q.35).

Q.34 *Have you ever smoked 100 or more whole cigarettes in your life?*

- Yes
- No

Q.35: *Think about the last 30 days. Did you smoke a cigarette, even just a few puffs?*

- Yes - Everyday
 - Almost everyday
 - Some days
 - 1 or 2 days
- No

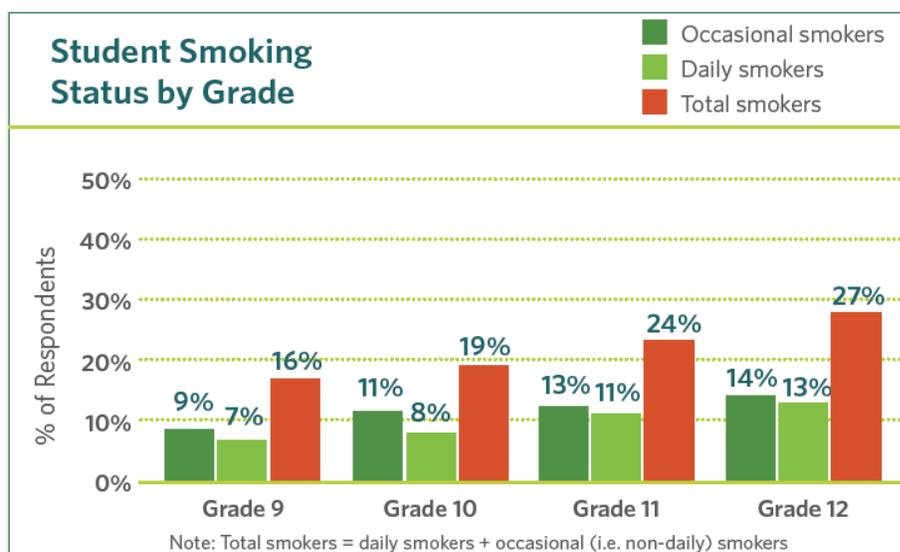
For report output, students were classified into four smoking status categories, based on the SHAPES smoking category guidelines (32). The categories were defined as follows:

- **Daily Smokers** were defined as students who responded *Yes* to Q.35 and who reported smoking *almost everyday* or *everyday* in the last 30 days.
- **Occasional Smokers** were defined as students who either:
 - (a) responded *Yes* to Q.35 and who reported smoking *some days* or *1 or 2 days* in the last 30 days
 - (b) responded *Yes* to Q.35 without clarifying the specific time amount
 - (c) responded *No* to Q.35 or left it blank but answered *Yes* to Q.34.
- **Total Smokers** were defined as the sum of daily and occasional smokers.
- **Non-Smokers** were defined as students who responded *No* to Q.35 or left it blank and who responded *No* to Q.34 or left it blank.

Student Smoking Status by Grade

On Page 18, the *Youth Health Survey Report 2009* presents student smoking status by grade (Figure 16).

Figure 16 Student Smoking Status by Grade



The following table provides descriptions of numerators and denominators used for the percentage calculations in Figure 16.

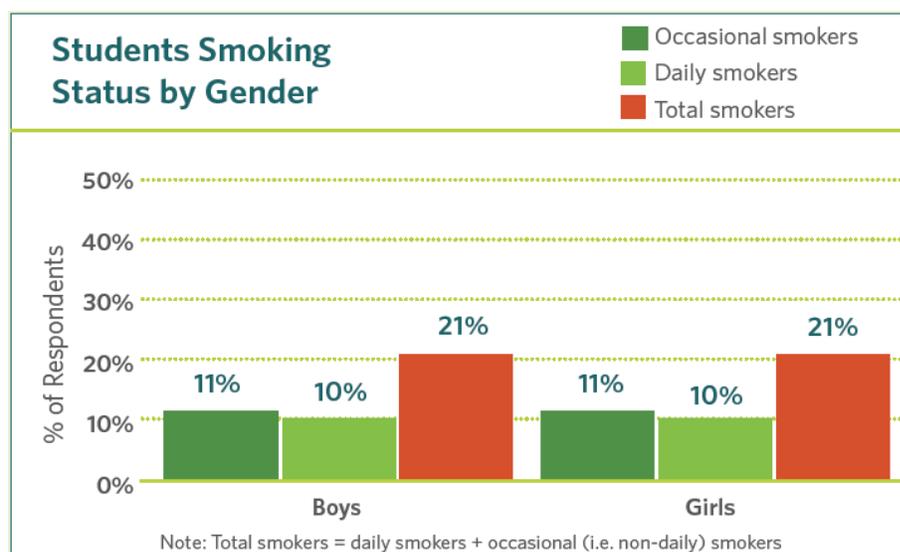
	Grade 9		Grade 10		Grade 11		Grade 12	
	N = 9,153		N = 9,340		N = 8,530		N = 6,954	
	n	(%)	n	%	n	%	n	%
Occasional smokers	797	(9)	1,010	(11)	1,083	(13)	998	(14)
Daily smokers	650	(7)	793	(8)	957	(11)	925	(13)
Total smokers	1,447	(16)	1,803	(19)	2,040	(24)	1,923	(27)
Non-Smokers	7,706	(84)	7,537	(81)	6,490	(76)	5,031	(72)

Note: Column percentages may not sum to 100 due to rounding.

Students Smoking Status by Gender

Also on Page 18, the *Youth Health Survey Report 2009* presents student smoking status by gender (Figure 17).

Figure 17 Students Smoking Status by Gender



The following table provides descriptions of numerators and denominators used for the percentage calculations in Figure 17.

	Males		Females	
	N = 16,728		N = 16,817	
	n	(%)	n	(%)
Occasional smokers	1,921	(11)	1,907	(11)
Daily smokers	1,616	(10)	1,671	(10)
Non-smokers	13,191	(79)	13,239	(79)
Total smokers (Occasional + Daily)	3,537	(21)	3,578	(21)

Notes: Male and female numerators and denominators are based on the numbers of students with a non-missing value for gender. Column percentages may not sum to 100 due to rounding.

3.4.3 Factors that Influence Student Smoking

Students were asked a series of questions about peers, family and school smoking policies (Q. 40, Q. 41 & Q. 43).

Q.40: Your closest friends are the friends you like to spend the most time with. How many of your 5 closest friends smoke cigarettes?

- None 3
 1 4
 2 5

Q.41: Not counting yourself, how many people smoke inside your home every day or almost every day?

- 0 3
 1 4
 2 5 or more

Q.43: Does your school have a clear set of rules about smoking for students to follow?

- Yes
 No
 I don't know

Factors that Influence Student Smoking

Results for these questions are presented on Page 19 of the *Youth Health Survey Report 2009*.

The following table provides a description of the numerators and denominators used for the percentage calculations of peer smoking (Q. 40).

	Daily Smokers N=3,325	Occasional Smokers N = 3,888	Non-Smokers N = 26,764
	n (%)	n (%)	n (%)
0-2 friends who smoke	643 (19)	2137 (55)	6207 (23)
3 or more friends who smoke	2,619 (79)	1,669 (43)	1,338 (5)
Missing Response	63 (2)	82 (2)	19219 (72)

Note: Column percentages may not sum to 100 due to rounding. Due to a survey error, non-smokers were directed to skip this question, leading to a large number of missing responses in the Non-Smoker category. Results should be interpreted with caution.

The following table provides a description of the numerators and denominators used for the percentage calculations of smoking in the home (Q. 41).

	Daily Smokers N=3,325	Occasional Smokers N = 3,888	Non-Smokers N = 26,764
	n (%)	n (%)	n (%)
No one smokes in the home on a daily basis	1182 (36)	2081 (54)	18694 (70)
At least 1 person smokes in the home on a daily basis	2,101 (63)	1,762 (45)	7,291 (27)
Missing Response	42 (1)	45 (1)	779 (3)

Note: Column percentages may not sum to 100 due to rounding.

The following table provides a description of the numerators and denominators used for the percentage calculations of school smoking policies (Q. 43).

	N = 33,977 n (%)
School has a clear set of rules about smoking	22,560 (66)
School does NOT have a clear set of rules about smoking	3,826 (11)
Did not know about school smoking rules	6,757 (20)

Note: Column percentages may not sum to 100 due to rounding.

3.4.4 How Students Obtain Cigarettes

Students who reported smoking were asked a series of question about how and where they obtain cigarettes (Q.37 & Q 38).

Q.37: How do you usually get your cigarettes?

- I buy them
- Someone buys them for me
- I get them from my friends
- I get them from home
- Other: _____

Q.38: If you buy your own cigarettes, where do you buy them? Please fill in all that apply.

- Convenience Store (e.g., 7-11, Macs, Corner Store)
- Gas station
- Grocery store/supermarket
- Restaurant/diner/cafeteria
- Friend or other person
- Other: _____
- I do not buy cigarettes

Students who reported smoking were also asked to recall how often in the past month they were asked their age when purchasing cigarettes (Q. 39).

Q.39: In the past month, when you tried to buy cigarettes, how often were you asked your age?

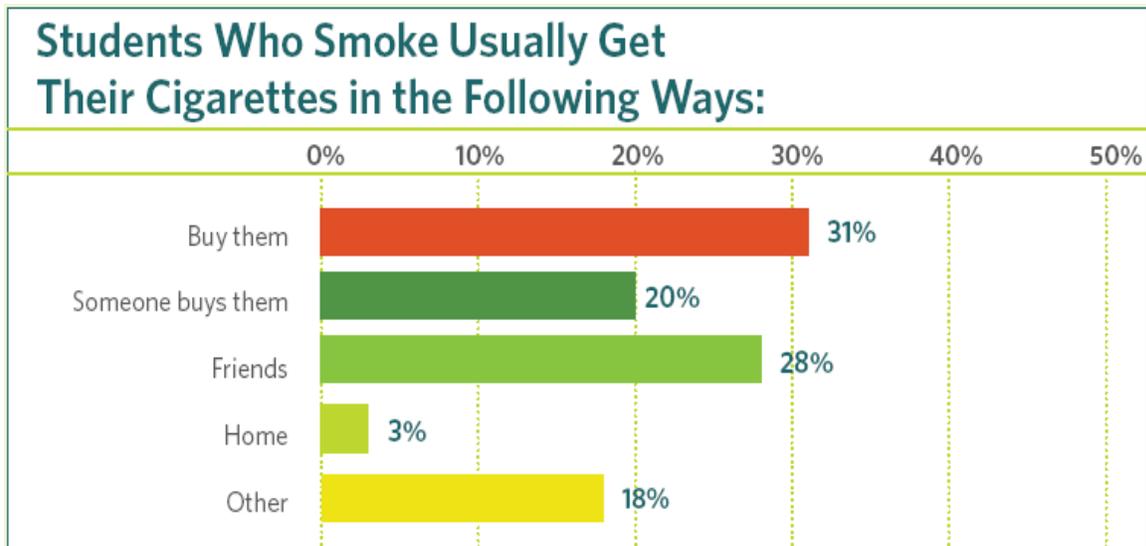
- Never
- Less than half the time
- About half the time
- Always or almost always
- I did not buy cigarettes in the past month

For report output, **Daily Smokers** and **Occasional Smokers** were combined and presented as **Total Smokers**.

Students Who Smoke Usually Get Their Cigarettes in the Following Ways

Page 20 of the *Youth Health Survey Report 2009* presents how students who reported smoking usually get their cigarettes (Figure 18).

Figure 18 Students Who Smoke Usually Get Their Cigarettes in the Following Ways



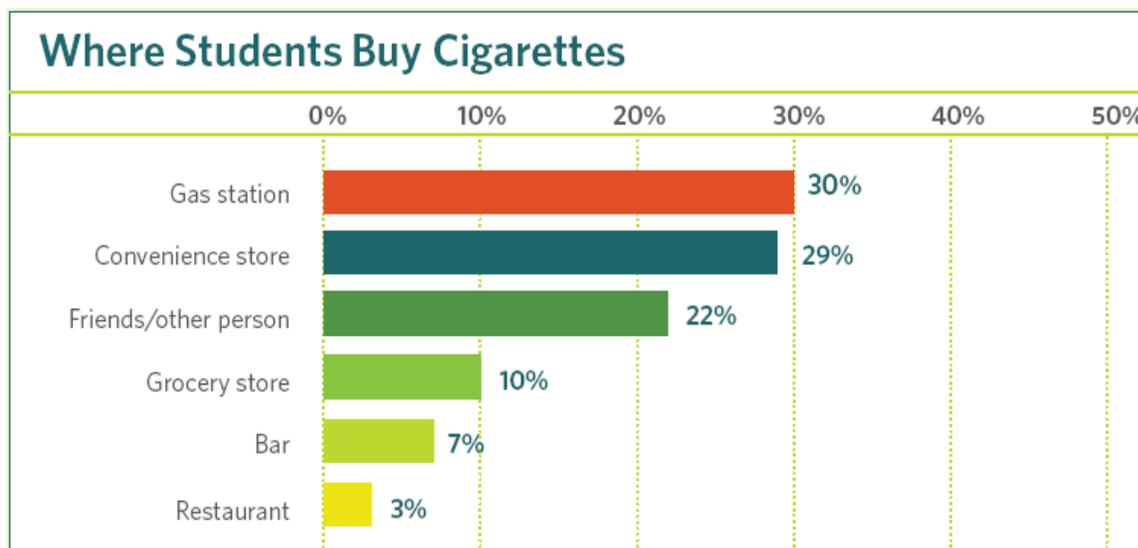
The following table provides a description of numerators and denominators used for the percentage calculations in Figure 18.

	N = 7,213	
	n	(%)
Buy them	2,251	(31)
Someone buys them	1,421	(20)
Friends	2,001	(28)
Home	230	(3)
Other	1,310	(18)

Notes: Numerators and denominator include only **Total Smokers**. Column percentages may not sum to 100 due to rounding.

Where Students Buy Cigarettes

Page 20 of the *Youth Health Survey Report 2009* also presents where students who reported smoking usually get their cigarettes (Figure 19).

Figure 19 Where Students Buy Cigarettes

The following table provides a description of numerators and denominators used for the percentage calculations in Figure 19.

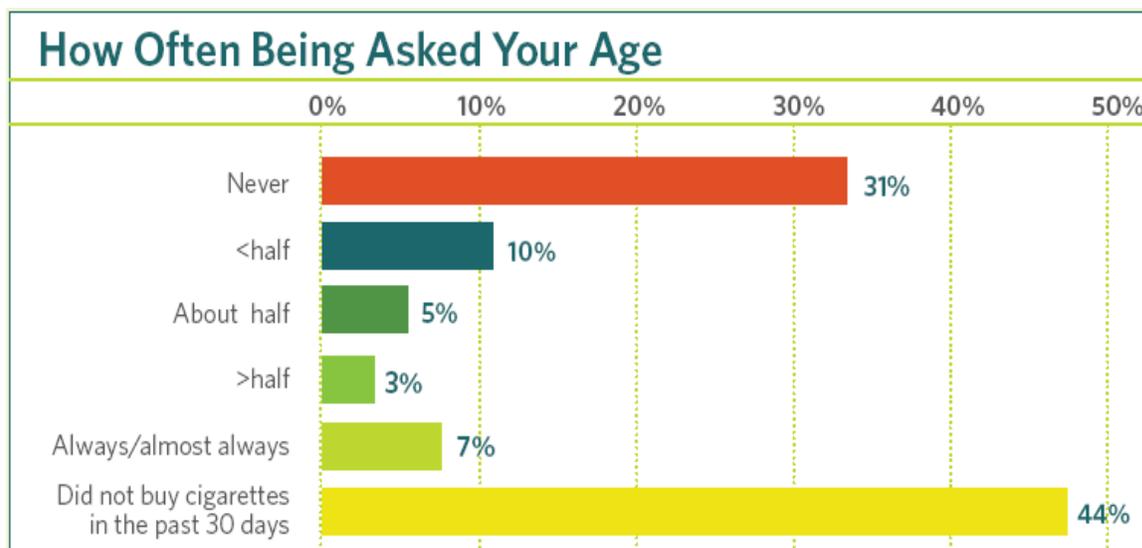
	N = 7,213	
	n	(%)
Gas station	2,153	(30)
Convenience Store	2,057	(29)
Friends/other person	1,613	(22)
Grocery store	746	(10)
Bar	522	(7)
Restaurant	186	(3)
Do not buy	2,183	(3)

Notes: Numerators and denominator include only **Total Smokers**. Students were asked to check all that apply, thus column percentages do not sum to 100.

How Often Being Asked Your Age

Also on Page 20, the *Youth Health Survey Report 2009* presents how often students who reported smoking were asked their age when buying cigarettes (Figure 20).

Figure 20 How Often Being Asked Your Age



The following table provides a description of numerators and denominators used for the percentage calculations in Figure 20.

	N = 7,213	
	n	(%)
Never	2,243	(31)
Less than half of the time	700	(10)
About half of the time	344	(5)
More than half of the time	217	(3)
Always or almost always	503	(7)
I did not buy cigarettes in the past month	3,206	(44)

Notes: Numerators and denominator include only **Total Smokers**. Column percentages may not sum to 100 due to rounding.

3.4.5 Trying to Quit

Students who reported smoking were asked about their plans to quit (Q.36).

Q.36: *Do you plan to quit smoking cigarettes?*

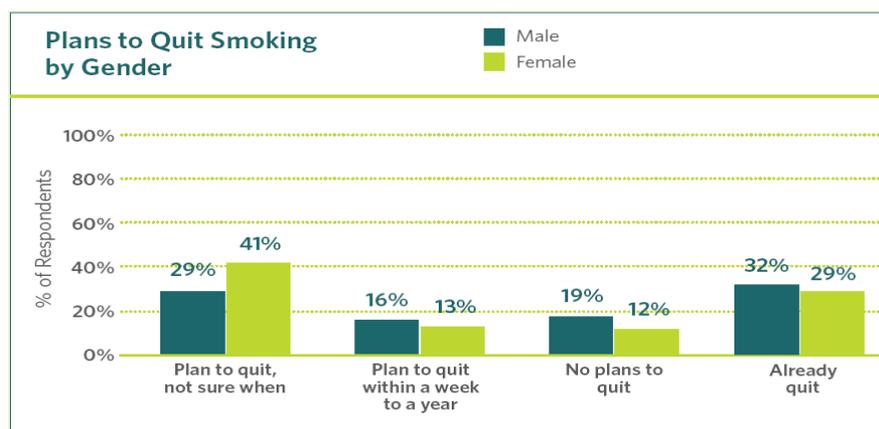
- I have already quit
- Yes, within one week
- Yes, within 30 days
- Yes, within six months
- Yes, within one year
- Yes, but not sure when
- No, I do not plan to quit smoking

For report output, students were classified into four ‘plans to quit’ categories: **Plan to quit, not sure when; Plan to quit within a week to a year; No plans to quit** and **Already quit**.

Plans to Quit Smoking by Gender

Page 21 of the *Youth Health Survey Report 2009* presents student smokers’ plans to quit by gender (Figure 21).

Figure 21 Plans to Quit Smoking by Gender



The following table provides a description of numerators and denominators used for the percentage calculations in Figure 21.

	Males N = 3,537		Females N = 3,578	
	n	(%)	n	(%)
Plan to quit, not sure when	1,041	(29)	1,464	(41)
Plan to quit within a week to a year	579	(16)	483	(13)
No plans to quit	658	(19)	424	(12)
Already quit	1,145	(32)	1,046	(29)
Missing Response	114	(3)	161	(4)

Notes: All numerators and denominators include only **Total Smokers**. Male and female numerators and denominators are based on numbers of students with a non-missing value for gender. Column percentages may not sum to 100 due to rounding.

3.4.6 Alcohol and Drug Use

Students were asked two questions about their alcohol use in the past month (Q.44 & Q. 45).

Q.44: During the past 30 days, on how many days did you have at least one drink of alcohol?

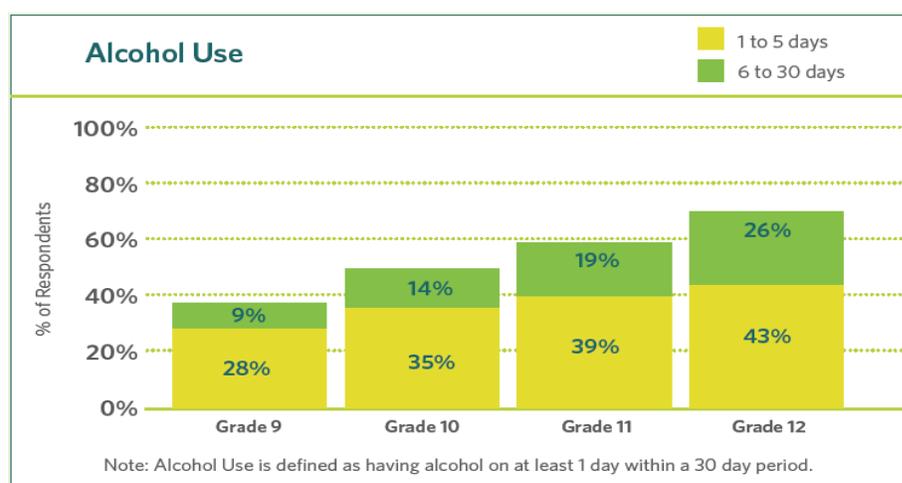
- 0 days
- 1 or 2 days
- 3 to 5 days
- 6 to 9 days
- 10 to 19 days
- 20 to 29 days
- All 30 days

For report output, students were classified into three alcohol use categories: **None, 1 to 5 days** and **6 to 30 days**.

Alcohol Use

On Page 22, the *Youth Health Survey Report 2009* presents student alcohol use by grade (Figure 22).

Figure 22 Alcohol Use



The following table provides a description of numerators and denominators used for the percentage calculations in Figure 22.

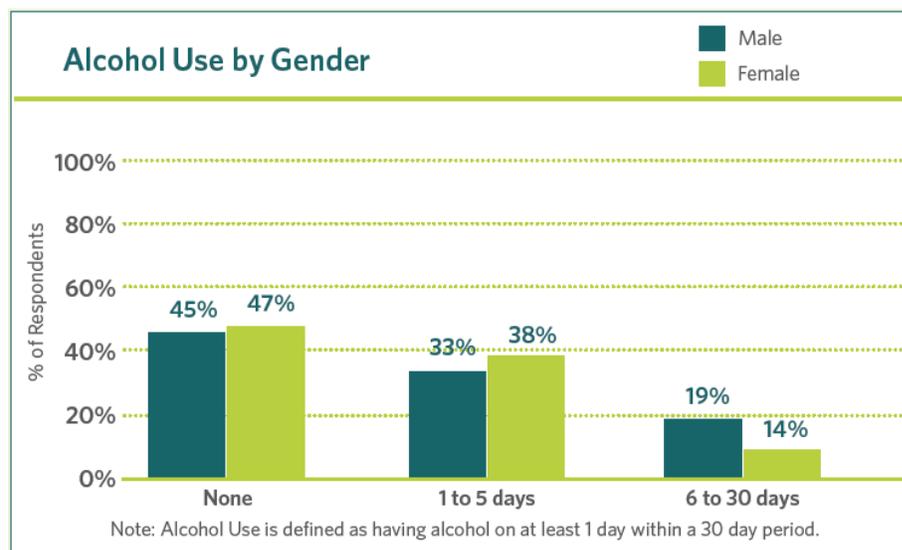
	Grade 9		Grade 10		Grade 11		Grade 12	
	N = 9,153		N = 9,340		N = 8,530		N = 6,954	
	n	(%)	n	(%)	n	(%)	n	(%)
None	5,573	(61)	4,634	(50)	3,361	(39)	2,042	(29)
1 to 5	2,518	(28)	3,252	(35)	3,365	(39)	2,971	(43)
6 to 30	857	(9)	1,279	(14)	1,638	(19)	1,785	(26)
Missing Response	205	(2)	175	(2)	166	(2)	156	(2)

Note: Column percentages may not sum to 100 due to rounding.

Alcohol Use by Gender

Also on Page 22, the *Youth Health Survey Report 2009* presents student alcohol use by gender (Figure 23).

Figure 23 Alcohol Use by Gender



The following table provides a description of numerators and denominators used for the percentage calculations in Figure 23.

	Males N = 16,728	Females N = 16,817
	n (%)	n (%)
None	7,608 (45)	7,821 (47)
1 to 5 days	5,587 (33)	6,380 (38)
6 to 30 days	3,123 (19)	2,337 (14)
Missing Response	410 (3)	279 (2)

Notes: Numerators and denominators are based on students with non-missing values for gender. Column percentages may not sum to 100 due to rounding.

Binge Drinking

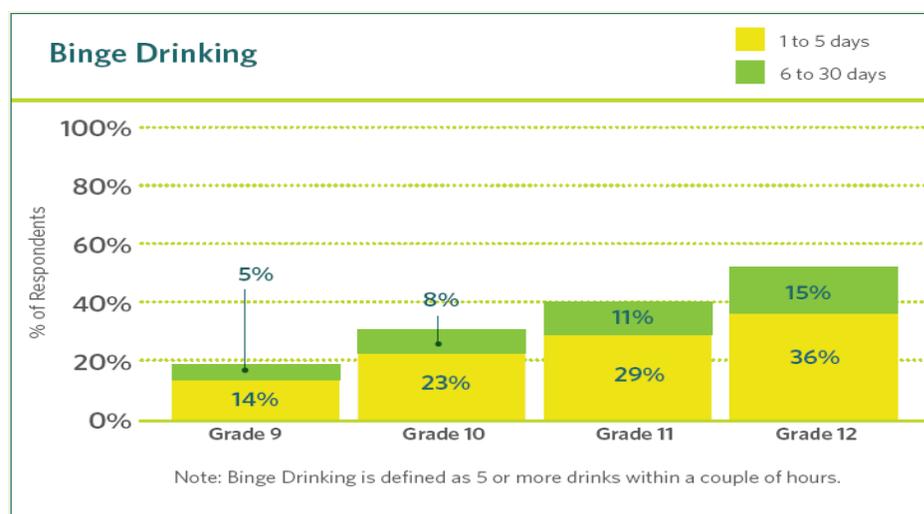
Page 23 of the *Youth Health Survey Report 2009* presents student binge drinking by grade (Figure 24).

Q.45: *During the past 30 days, on how many days did you have 5 or more drinks of alcohol within a couple of hours?*

- 0 days
- 1 or 2 days
- 3 to 5 days
- 6 to 9 days
- 10 to 19 days
- 20 to 29 days
- All 30 days

For report output, students were classified into three binge drinking categories: **None, 1 to 5 days** and **6 to 30 days**.

Figure 24 Binge Drinking



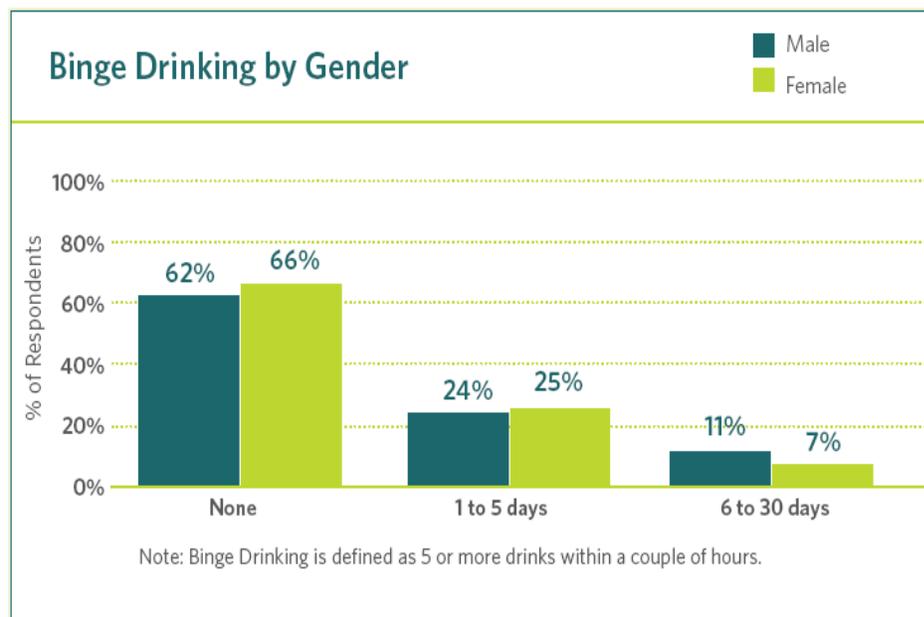
The following table provides a description of numerators and denominators used for the percentage calculations in Figure 24.

	Grade 9 N = 9,153		Grade 10 N = 9,340		Grade 11 N = 8,530		Grade 12 N = 6,954	
	n	(%)	n	(%)	n	(%)	n	(%)
None	7,193	(79)	6,297	(67)	4,895	(57)	3,247	(47)
1 to 5 days	1,321	(14)	2,143	(23)	2,516	(29)	2,487	(36)
6 to 30 days	428	(5)	714	(8)	961	(11)	1,065	(15)
Missing Response	211	(2)	186	(2)	158	(2)	155	(2)

Note: Column percentages may not sum to 100 due to rounding.

Binge Drinking by Gender

Page 23 of the *Youth Health Survey Report 2009* also presents student binge drinking by gender (Figure 25).

Figure 25 Binge Drinking by Gender

The following table provides a description of numerators and denominators used for the percentage calculations in Figure 25.

	Males		Females	
	N = 16,728		N = 16,817	
	n	(%)	n	(%)
None	10,296	(62)	11,097	(66)
1 to 5 days	4,097	(24)	4,259	(25)
6 to 30 days	1,916	(11)	1,182	(7)
Missing Response	419	(3)	279	(2)

Notes: Numerators and denominators are based on students with non-missing values for gender. Column percentages may not sum to 100 due to rounding.

Drug Use by Grade

Page 24 of the *Youth Health Survey Report 2009* presents student drug use by grade (Figure 26).

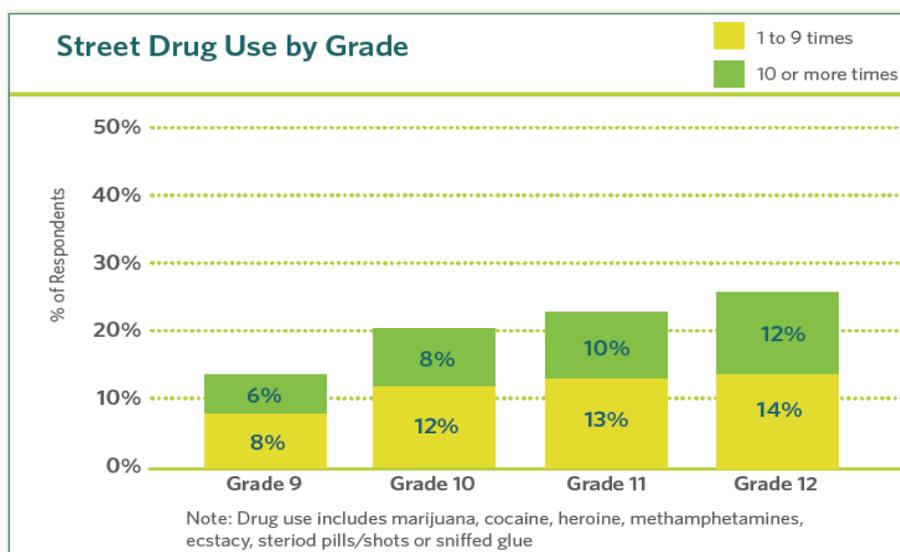
In addition, students were asked about their illegal drug use in the past 30 days (Q.46).

Q.46: During the past 30 days, how many times did you use illegal drugs (e.g. marijuana, cocaine, heroine, methamphetamines, ecstasy, steroid pills/shots, sniffed glue)?

- 0 times
- 1 or 2 times
- 3 to 5 times
- 6 to 9 times
- 10 to 19 times
- 20 to 29 times
- 40 or more times

For report output, students were classified into three drug use categories: **No drug use**, **1 to 9 times** and **10 or more times**.

Figure 26 Street Drug Use by Grade



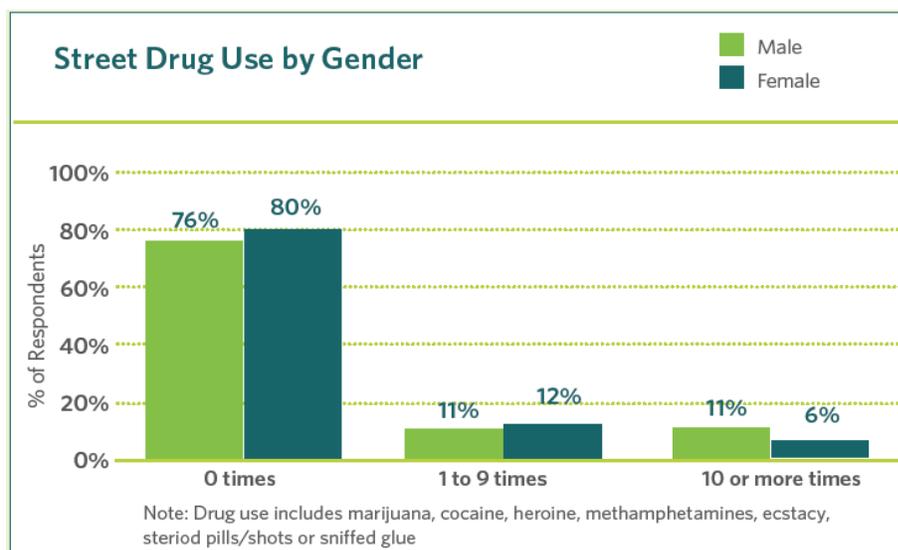
The following table provides a description of numerators and denominators used for the percentage calculations in Figure 26.

	Grade 9		Grade 10		Grade 11		Grade 12	
	N = 9,153		N = 9,340		N = 8,530		N = 6,954	
	n	(%)	n	(%)	n	(%)	n	(%)
No drug use	7,671	(84)	7,281	(78)	6,392	(75)	5,042	(73)
1 to 9 times	739	(8)	1,080	(12)	1,122	(13)	953	(14)
10 or more times	533	(6)	763	(8)	850	(10)	806	(12)
Missing Response	210	(2)	216	(2)	166	(2)	153	(2)

Note: Column percentages may not sum to 100 due to rounding.

Drug Use by Gender

Page 24 of the *Youth Health Survey Report 2009* also presents student drug use by gender (Figure 27).

Figure 27 Street Drug Use by Gender

The following table provides a description of numerators and denominators used for the percentage calculations in Figure 27.

	Males		Females	
	N = 16,728		N = 16,817	
	n	(%)	n	(%)
No drug use	12,679	(76)	13,393	(80)
1 to 9 times	1,783	(11)	2,070	(12)
10 or more times	1,819	(11)	1,071	(6)
Missing Response	447	(3)	283	(2)

Notes: Numerators and denominators are based on students with non-missing values for gender. Column percentages may not sum to 100 due to rounding.

3.5 Well-Being (Pages 25-28 of the *Youth Health Survey Report 2009*)

3.5.1 Background

Youth spend a large portion of their day in the school environment. As such, schools have the potential to significantly influence the social development and health of adolescents. Interventions and prevention strategies aimed at building positive school environments may reduce health risk behaviours and establish positive academic and vocational pathways for youth (4).

Athletic Ability

Promoting skill development and participation in physical activities through the school environment is important to the development of healthy behaviours in youth. Research suggests that perceived physical competence is associated with long-term participation in physical activity, increased self-efficacy, and improved overall psychological well-being (69-71).

School Work

Research has also shown that schools with health promotion programming have better academic outcomes for their youth and that these outcomes are influenced by a combination of individual, familial and community variables (72;73). Additionally, adolescents' and children's self-reported academic achievement has been shown to have a negative relation to BMI and percent body fat (74;75).

School Connectedness

Although school connectedness is not considered to have a direct link to chronic disease, there is increasing evidence that students who feel connected to their school are less likely to participate in risky health behaviours such as alcohol use, smoking, and illegal drug use (11;76). In addition, increased school connectedness is linked to better academic achievement, increased completion rates and a decrease in violence, suicide attempts and bullying (11;77).

Feelings of Hopelessness

Statistics show that the prevalence of depression rises sharply during adolescence and is estimated to double in the transition from childhood to adulthood (78;79). Consequently, adolescents as a group are at significant risk for developing depression and other mental health disorders. As such, programming and surveillance strategies aimed at the prevention, diagnosis and treatment of depression and related symptoms are critical to maintaining the health of Canadian adolescents.

3.5.2 Overall Feelings of Well-being

Students were asked to rate their athletic ability as well as their school work in comparison to their peers (Q.48 & Q. 49).

Q.48: In general, compared to other students your age, how would you rate your athletic ability?

- Excellent
- Good
- Fair
- Poor

Q.49: In general, compared to other students your age, how well are you doing in your school work?

- Above average
- Average
- Below average

Students were also asked about their mental well-being over the past year (Q.51).

Q.51: During the past 12 months, did you ever feel so sad or hopeless that you stopped doing some usual activities for a while?

- Yes
- No

Finally, students were asked a series of questions regarding their level of connectedness with their school (Q.47).

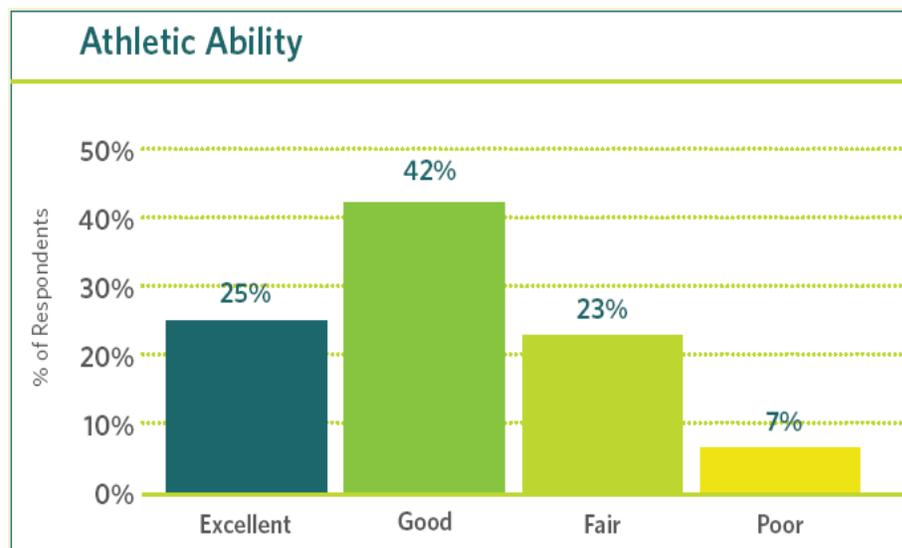
Q.47: How strongly do you agree with each of the following statements:

	<i>Strongly Agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly Disagree</i>
a. I feel close to people at this school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. I feel I am part of this school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. I am happy to be at this school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. I feel safe in my school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

For report output, responses were collapsed into two categories: **Agree/Strongly Agree** and **Disagree/Strongly Disagree**.

Athletic Ability

Page 26 of the *Youth Health Survey Report 2009* presents students' perceptions of their athletic ability (Figure 28).

Figure 28 Athletic Ability

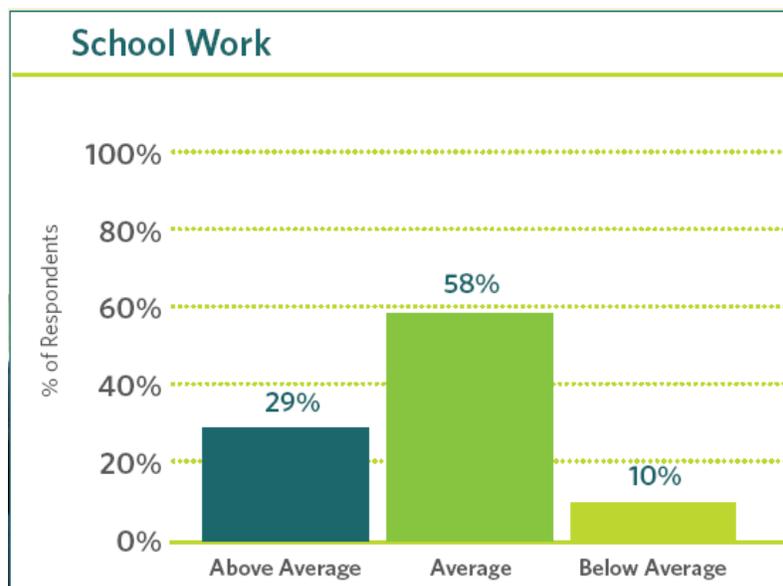
The following table provides a description of numerators and denominators used for percentage calculations in Figure 28.

	N = 33,977	
	n	(%)
Excellent	8,638	(25)
Good	14,332	(42)
Fair	7,767	(23)
Poor	2,463	(7)
Missing Response	777	(2)

Note: Column percentages may not sum to 100 due to rounding.

School Work

Page 26 of the *Youth Health Survey Report 2009* also presents students' perceptions of their school work (Figure 29).

Figure 29 School Work

The following table provides a description of numerators and denominators used for percentage calculations in Figure 29.

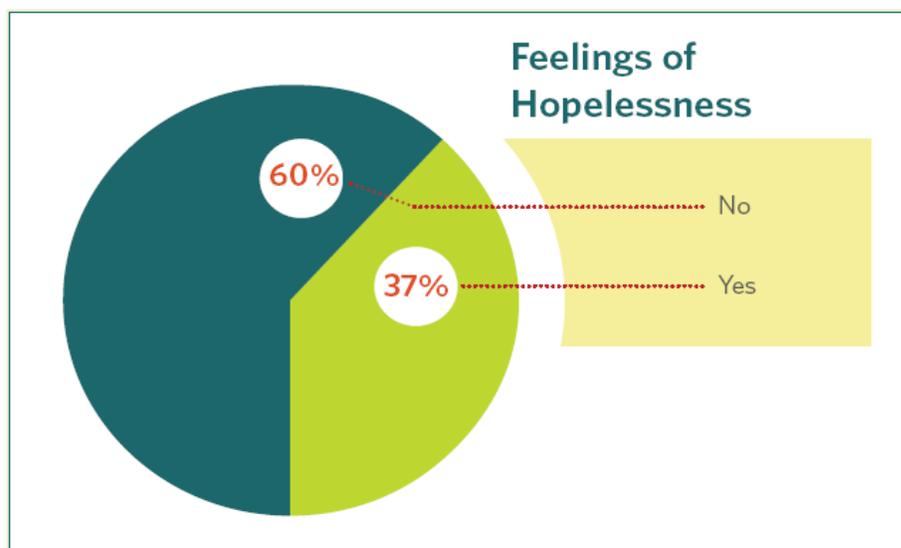
	N = 33,977	
	n	(%)
Above average	9,946	(29)
Average	19,699	(58)
Below average	3,532	(10)
Missing Response	800	(2)

Note: Column percentages may not sum to 100 due to rounding.

Feelings of Hopelessness

Page 27 of the *Youth Health Survey Report 2009* presents students' reported feelings of hopelessness (Figure 30).

Figure 30 Feelings of Hopelessness



The following table provides a description of numerators and denominators used for the percentage calculations in Figure 30.

		N = 33,977	
		n	(%)
Yes		12,712	(37)
No		20,485	(60)
Missing Response		780	(2)

Note: Column percentages may not sum to 100 due to rounding.

School Connectedness

Page 27 of the *Youth Health Survey Report 2009* also presents students' responses about school connectedness (Table 2).

Table 2 School Connectedness

How strongly do you agree or disagree with the following statements?	Agree/ Strongly Agree	Disagree/ Strongly Disagree
I feel close to the people at this school	76%	19%
I feel I am part of this school	76%	18%
I am happy to be at this school	74%	17%
I feel safe in my school	79%	15%

The following table provides a description of numerators and denominators used for the percentage calculations in Table 2.

	Strongly Agree		Agree Disagree		Disagree		Strongly Disagree		Missing Response	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
I feel close to people at this school	8,130	(24)	17,529	(52)	5,377	(16)	1,959	(6)	982	(3)
I feel I am part of this school	7,980	(23)	17,909	(53)	4,879	(14)	2,133	(6)	1,076	(3)
I am happy to be at this school	8,701	(26)	16,582	(49)	4,667	(14)	2,831	(8)	1,196	(4)
I feel safe in my school	8,521	(25)	18,352	(54)	3,756	(11)	2,103	(6)	1,245	(4)

Note: Row percentages may not sum to 100 due to rounding.

4 Supplemental Results

4.1 Overview of Regional Reports

Between 2005 and 2008, school, school division and regional reports were generated across all eleven RHAs in Manitoba based on each region's YHS data. Although a common report template was used among the RHAs, each region adapted their final reports to meet the specific needs of their schools and communities. As such, some reports include data from YHS questions that were not presented in the provincial-level *Youth Health Survey Report 2009*. The following section describes these supplemental graphs and figures along with numerators and denominators used in calculations. It should be noted that the numbers shown here **do not** represent any one region or school. Instead, numbers from the provincial sample have been used to generate the figures.

4.1.1 Physical Activity

In addition to the physical activity questions reported on in the *Youth Health Survey Report 2009*, students were asked questions about the number of active friends they have and their strength training activities (Q. 9 & Q.10).

Q.9: Your closest friends are the friends you like to spend the most time with. How many of your closest friends are physically active?

- | | |
|-------------------------------|----------------------------|
| <input type="checkbox"/> None | <input type="checkbox"/> 3 |
| <input type="checkbox"/> 1 | <input type="checkbox"/> 4 |
| <input type="checkbox"/> 2 | <input type="checkbox"/> 5 |

For regional report output, the number of active friends was presented by physical activity category (**Active**, **Moderately active** or **Inactive**).

Q.10: On how many days in the last week did you do exercises to strengthen or tone your muscles, such as push ups, sit-ups, or weight lifting?

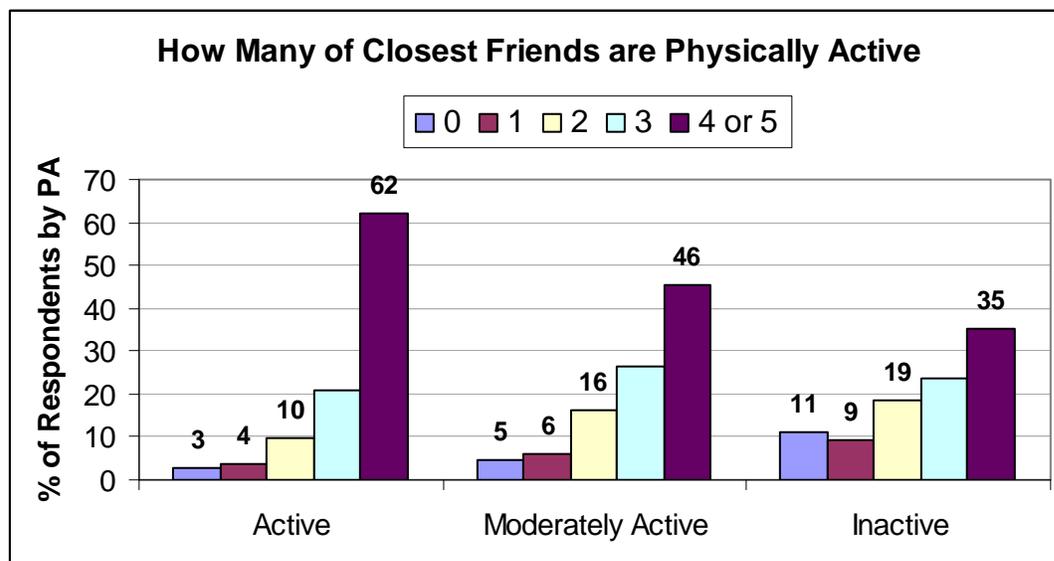
- | | |
|---------------------------------|---------------------------------|
| <input type="checkbox"/> 0 days | <input type="checkbox"/> 4 days |
| <input type="checkbox"/> 1 day | <input type="checkbox"/> 5 days |
| <input type="checkbox"/> 2 days | <input type="checkbox"/> 6 days |
| <input type="checkbox"/> 3 days | <input type="checkbox"/> 7 days |

For regional report output, responses were separated into three categories: **0 days**, **1 or 2 days** and **>=3 days** and presented by gender.

Friends Who Are Active

Regional reports used Figure 31 to present the results for number of active friends.

Figure 31 How Many of Closest Friends are Physically Active



The following table provides a description of the numerators and denominators used for the percentage calculations in Figure 31.

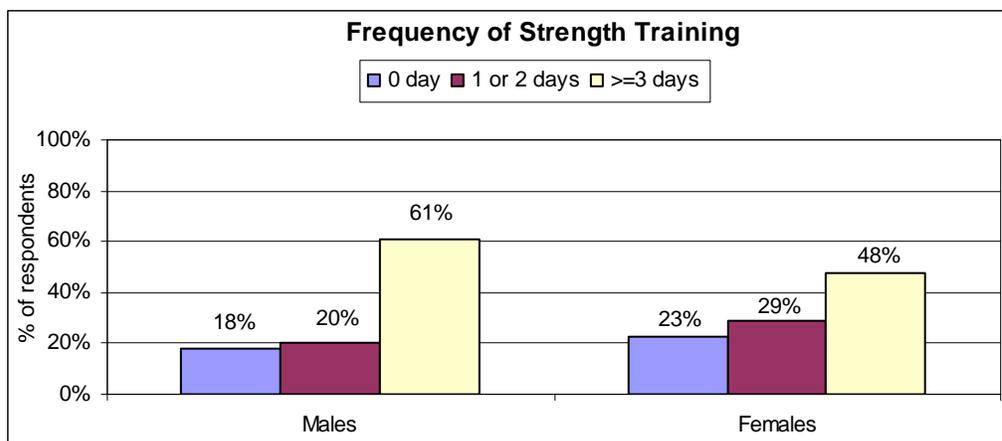
	Active N=16,398	Moderately Active N =11,030	Inactive N = 6,549
	n (%)	n (%)	n (%)
0 active friends	486 (3)	507 (5)	730 (11)
1 active friend	600 (4)	668 (6)	597 (9)
2 active friends	1,618 (10)	1,804 (16)	1,228 (19)
3 active friends	3,398 (21)	2,920 (26)	1,547 (24)
4 or 5 active friends	10,202 (62)	5,028 (46)	2,312 (35)
Missing Response	94 (1)	103 (1)	135 (2)

Note: Column percentages may not sum to 100 due to rounding.

Strength Training

Regional reports used Figure 32 to present the frequency of strength training among students.

Figure 32 Frequency of Strength Training



The following table provides a description of the numerators and denominators used for the percentage calculations in Figure 32.

	Males		Females	
	N = 16,728		N = 16,817	
	n	(%)	n	(%)
0 days	3,037	(18)	3,851	(23)
1 or 2 days	3,382	(20)	4,810	(29)
>= 3 days	10,186	(61)	8,033	(48)
Missing Response	123	(1)	123	(1)

Notes: Numerators and denominators are based on students with non-missing values for gender. Column percentages may not sum to 100 due to rounding.

Recreation Activity Times

Students were also given the opportunity to answer an open-ended question about which activities they would like to see in their community as well as when they would like to participate in these activities (Q.22 & Q.23).

Q.22: List up to 3 recreation activities that you would like to do that are currently not available in your community?

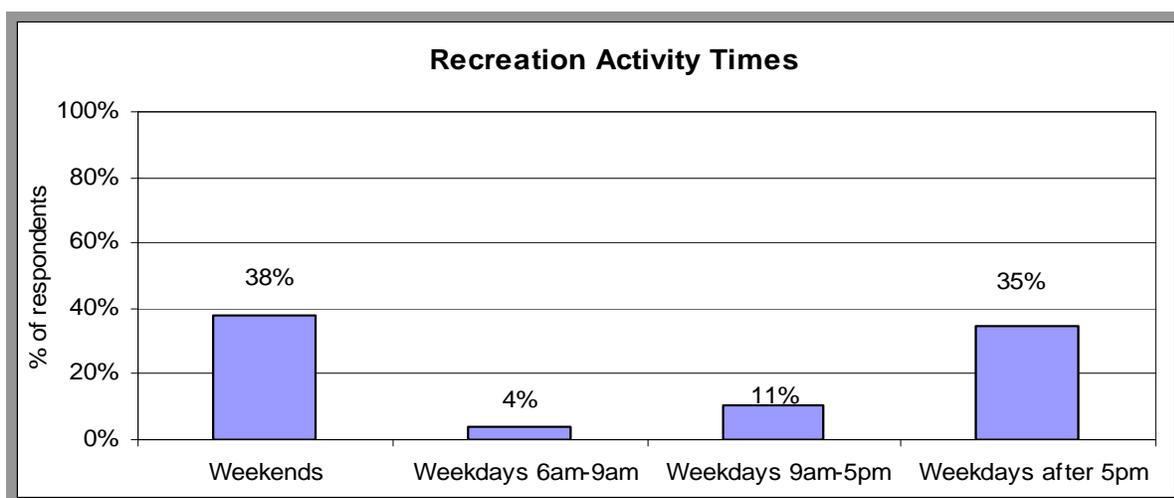
Q.23: For each of the above activities, when would you like to participate in them?

- Weekends
- Weekdays (check time)
 - 6am to 9am
 - 9am to 5pm
 - after 5pm

For report output, this question was analyzed in two parts; **Weekends** and **Weekdays**.

Weekdays was further divided into three time categories: **6am-9am**, **9am-5pm** and **after 5pm** (Figure 33).

Figure 33 Recreation Activity Times



The following table provides a description of the numerators and denominators used for the percentage calculations of students who want to participate in activities on **Weekends** (Figure 33).

	N = 33,977	
	n	(%)
Wants to participate on weekends	12,817	(38)
Other (either missing or prefers weekdays)	21,160	(62)

Note: Column percentages may not sum to 100 due to rounding.

The following table provides a description of the numerators and denominators used for the percentage calculations of students who want to participate in activities on **Weekdays** (Figure 33).

	N = 33,977	
	n	(%)
Wants to participate 6am-9am	1,404	(4)
Wants to participate 9am-5pm	3,600	(11)
Wants to participate after 5pm	11,859	(35)
Other (either missing or prefers weekends)	17,114	(50)

Note: Column percentages may not sum to 100 due to rounding.

4.1.2 Public Smoking Policy

In addition to the smoking questions reported on in the *Youth Health Survey Report 2009*, students were asked about public smoking policies (Q. 42).

Q.42: Do you think that all public places (e.g., restaurants, malls, arcades, etc.) should be smoke-free?

- Definitely yes
- Probably yes
- Probably not
- Definitely not

For regional report output, responses were collapsed into two categories: **Definitely yes/Probably yes** and **Definitely not/Probably not**.

The following table provides a description of the numerators and denominators used for the percentage calculations on public smoking policies.

	N = 33,977	
	n	(%)
Definitely yes/Probably yes	28,335	(83)
Definitely not/Probably not	4,908	(14)
Missing Response	734	(2)

Note: Column percentages may not sum to 100 due to rounding.

Appendix A- Sample Survey



YOUTH HEALTH SURVEY

Your answers are anonymous & confidential

1. The name of my school is:

2. What grade are you in?

- 6 10 (Senior 2)
 7 11 (Senior 3)
 8 12 (Senior 4)
 9 (Senior 1)

3. How old are you?

- 11 or younger 15
 12 16
 13 17
 14 18 or older

4. Are you male or female?

- Male
 Female

The following 18 questions deal with physical activity.

5. How physically active are you at the following times?

	Active	Somewhat active	Inactive	Does not apply
Before school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recess	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lunch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. What do you think of the number of sports offered at your school?

- Does not matter to me
 Too few
 Just right
 Too many

7. How much do your parent(s) or guardian(s) encourage you to be physically active?

- Strongly encourage
 Encourage
 Do not encourage or discourage
 Discourage

8. How much do your parent(s) or guardian(s) support you in being physically active (help you join or get to activities)?

- Very supportive
 Supportive
 Unsupportive
 Very unsupportive

9. Your closest friends are the friends you like to spend the most time with. How many of your 5 closest friends are physically active?

- None 3
 1 4
 2 5

10. On how many days in the last week did you do exercises to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting?

- 0 days 4 days
 1 day 5 days
 2 days 6 days
 3 days 7 days

11. In the last week, how did you usually get to and from school?

- Actively (e.g., walk, bike, skateboard)
 Inactively (e.g., car, bus, public transit)
 Mixed (actively and inactively)

Hard physical activities increase your heart rate and make you breathe hard and sweat. They include jogging, team sports, fast dancing, jump-rope.

12. Mark how many minutes of hard physical activity you did for each day last week. Include activities that lasted for at least 15 minutes at one time during physical education class, lunch, recess, after school, evenings, and spare time.

For example: If you did 1 hour and 15 minutes of hard activity on Monday you would shade:

	Hours					Minutes			
Monday	0	1	2	3	4	0	15	30	45
Monday	0	1	2	3	4	0	15	30	45
Tuesday	0	1	2	3	4	0	15	30	45
Wednesday	0	1	2	3	4	0	15	30	45
Thursday	0	1	2	3	4	0	15	30	45
Friday	0	1	2	3	4	0	15	30	45
Saturday	0	1	2	3	4	0	15	30	45
Sunday	0	1	2	3	4	0	15	30	45

13. Was this a typical week for the amount of hard physical activity that you usually do?

- Yes
 No

14. In the last week, when did you **usually** do **hard** physical activities? (choose all that apply)

- I do not do any **hard** physical activities
- Before school
- During school
- After school
- In the evening
- On weekends

Moderate physical activities are easier activities such as walking, biking and recreational swimming.

15. Mark how many minutes of **moderate** physical activity you did for each day last week. Include activities that lasted for at least 15 minutes at one time during physical education class, lunch, recess, after school, evenings, and spare time.

For example: If you did 1 hour and 15 minutes of moderate activity on Monday you would shade:

	Hours					Minutes				
Monday	0	1	2	3	4	0	15	30	45	
Monday	0	1	2	3	4	0	15	30	45	
Tuesday	0	1	2	3	4	0	15	30	45	
Wednesday	0	1	2	3	4	0	15	30	45	
Thursday	0	1	2	3	4	0	15	30	45	
Friday	0	1	2	3	4	0	15	30	45	
Saturday	0	1	2	3	4	0	15	30	45	
Sunday	0	1	2	3	4	0	15	30	45	

16. Was this a typical week in terms of the amount of **moderate** physical activity that you **usually** do?

- Yes
- No

17. In the last week, when did you **usually** do **moderate** physical activities? (Choose all that apply)

- I do not do any **moderate** physical activities
- Before school
- During school
- After school
- In the evening
- On weekends



18. Mark how much time you spent watching TV, movies, playing video/computer games, surfing the internet, or talking on the phone for each day last week.

	None	Less than 1 hour	1-2 hours	3-5 hours	6 or more hours
Monday	<input type="checkbox"/>				
Tuesday	<input type="checkbox"/>				
Wednesday	<input type="checkbox"/>				
Thursday	<input type="checkbox"/>				
Friday	<input type="checkbox"/>				
Saturday	<input type="checkbox"/>				
Sunday	<input type="checkbox"/>				

19. In the last week, how much total time did you spend reading, not counting at work or at school or homework. (Include books, magazines and newspapers)?

- None
- Less than 1 hour
- From 1 to 6 hours
- From 7 to 13 hours
- 14 or more hours

20. In the last week, how much total time did you spend doing homework?

- None
- Less than 1 hour
- From 1 to 6 hours
- From 7 to 13 hours
- 14 or more hours

21. Do the subjects offered in your school teach about:

- | | Yes | No | I don't know |
|--|--------------------------|--------------------------|--------------------------|
| a. Why it's important to be physically active? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. How you can get sick if you are not physically active? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. How TV can influence you about physical activity? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. How your friends can influence you about physical activity? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

22. List up to 3 recreation activities that you would like to do that are currently not available in your community?

- I am not interested in any recreation activities

23. For the above activities, when would you like to participate in them?

- Weekends
 Weekdays (check time)
 6 am to 9 am
 9 am to 5 pm
 after 5 pm

The following 6 questions deal with what you eat.

24. In the past week, how many times did you drink 100% fruit juice?

(For example: 3 times a week)
 _____ times

25. In the past week, how often did you eat fruit (not counting fruit juice)?

_____ times

26. In the past week, how often did you eat green salad?

_____ times

27. In the past week, how often did you eat potatoes? (Do not count french fries, fried potatoes, or potato chips.)

_____ times

28. In the past week, how often did you eat carrots?

_____ times

29. In the past week, how often did you eat other vegetables (not counting carrots, potatoes, or salad)?

_____ times

The following 2 questions deal with weight and height.

30. How much do you weigh **without** your shoes on?

My weight is _____ pounds or _____ kilograms

31. How tall are you without your shoes on?

My height is _____ feet _____ inches or _____ centimeters

The following 12 questions deal with smoking.

32. Have you ever smoked a cigarette, even just a few puffs?

- Yes
 No (If no, go to question #41)

33. Have you ever smoked a whole cigarette?

- Yes
 No

34. Have you smoked 100 or more whole cigarettes in your life?

- Yes
 No

35. Think about the last 30 days. Did you smoke a cigarette, even just a few puffs?

- Yes - Every day
 Almost every day
 Some days
 1 or 2 days
 No

36. Do you plan to quit smoking cigarettes?

- I have already quit
 Yes, within one week
 Yes, within 30 days
 Yes, within six months
 Yes, within one year
 Yes, but I'm not sure when
 No, I do not plan to quit smoking

37. How do you usually get your cigarettes?

- I buy them
 Someone buys them for me
 I get them from my friends
 I get them from home
 Other: _____

38. If you buy your own cigarettes, where do you buy them? **Please fill in all that apply.**

- Convenience store (e.g. 7-11, Macs, corner store)
 Gas station
 Grocery store/supermarket
 Restaurant/diner/cafeteria
 Bar
 Friend or other person
 Other: _____
 I do not buy cigarettes

39. In the past month, when you tried to buy cigarettes, how often were you asked your age?

- Never
 Less than half of the time
 About half of the time
 More than half of the time
 Always or almost always
 I did not buy cigarettes in the past month

40. Your closest friends are the friends you like to spend the most time with. How many of your 5 closest friends smoke cigarettes?

- None 3
 1 4
 2 5

41. Not counting yourself, how many people smoke inside your home every day or almost every day?

- 0 3
 1 4
 2 5 or more

42. Do you think all public places (e.g., restaurants, malls, arcades, etc.) should be smoke-free?

- Definitely yes
 Probably yes
 Probably not
 Definitely not

43. Does your school have a clear set of rules about smoking for students to follow?

- Yes
 No
 I don't know

The following 2 questions deal with alcohol.

44. During the past 30 days, on how many days did you have at least one drink of alcohol?

- 0 days
 1 or 2 days
 3 to 5 days
 6 to 9 days
 10 to 19 days
 20 to 29 days
 All 30 days

45. During the past 30 days, on how many days did you have 5 or more drinks of alcohol within a couple of hours?

- 0 days
 1 or 2 days
 3 to 5 days
 6 to 9 days
 10 to 19 days
 20 to 29 days
 All 30 days

The following question deals with street drugs.

46. During the past 30 days, how many times did you use illegal drugs, (e.g., marijuana, cocaine, heroine, methamphetamines, ecstasy, steroid pills/shots, sniffed glue)?

- 0 times
 1 or 2 times
 3 to 9 times
 10 to 19 times
 20 to 39 times
 40 or more times

The following 5 questions deal with feelings.

47. How strongly do you agree with each of the following statements?

	Strongly Agree	Agree	Disagree	Strongly Disagree
a. I feel close to people at this school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. I feel I am part of this school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. I am happy to be at this school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. I feel safe in my school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

48. In general, compared to other students your age, how would you rate your athletic ability?

- Excellent
 Good
 Fair
 Poor

49. In general, compared to other students your age, how well are you doing in your school work?

- Above average
 Average
 Below average

50. Do you consider yourself:

- Very overweight?
 Slightly overweight?
 About the right weight?
 Slightly underweight?
 Very underweight?

51. During the past 12 months, did you ever feel so sad or hopeless that you stopped doing some usual activities for a while?

- Yes
 No

***Thank You for
participating
in this
Youth Health
Survey***

Appendix B - Sources of Survey Questions

YHS Question #	SHAPES	McCreary	YRBS	IRHA	CCHS	YSS
2	√					√
3	√	√	√			√
4	√	√	√			√
5				√		
6	√ (revised)					
7	√					
8	√					
9	√					
10	√					
11	√					
12	√					
13	√					
14				√		
15	√					
16	√					
17				√		
18	√		√ (revised)			
19	√					
20	√					
21	√					
22				√		
23				√		
24	√ (revised)					
25					√	
26					√	
27					√	
28					√	
29					√	
30	√	√	√			
31	√		√			
32	√		√			
33	√					
34	√					
YHS Question #	SHAPES	McCreary	YRBS	IRHA	CCHS	YSS

35	√	√ (revised)	√ (revised)			
36	√					
37			√ (revised)			√
38			√		√	
39					√	
40	√					
41					√ (revised)	
42	√					
43	√				√	
44		√	√			
45		√	√			
46				√		
47	√	√				
48	√					
49	√					
50	√	√	√			
51			√		√	

Appendix C – Partners in Planning for Healthy Living

Within Manitoba, a collaborative group of stakeholders called Partners in Planning for Healthy Living (PPHL) have come together to combine mandates, actions, resources and passion to develop and build a provincial primary prevention system. PPHL is a non-incorporated group that works together in a collegial manner to develop organizational, community and regional capacity to use evidence in planning programs for healthy living in communities across Manitoba. Partners to date include:

- Addictions Foundation of Manitoba
- Alliance for the Prevention of Chronic Disease
- Assiniboine Regional Health Authority
- Brandon Regional Health Authority
- Burntwood Regional Health Authority
- Canadian Cancer Society – Manitoba & Saskatchewan Division
- CancerCare Manitoba
- Churchill Regional Health Authority
- Health in Common
- Healthy Child Manitoba
- Healthy Living, Youth and Seniors
- Heart and Stroke Foundation of Manitoba
- Interlake Regional Health Authority
- Manitoba Education, Citizenship & Youth
- Manitoba Health
- Manitoba Physical Education Supervisors Association
- NOR-MAN Regional Health Authority
- North Eastman Regional Health Authority
- Parkland Regional Health Authority
- Public Health Agency of Canada – Manitoba and Saskatchewan Region
- Regional Health Authority- Central Manitoba Inc.
- South Eastman Health
- Winnipeg Regional Health Authority

As a community of practice PPHL is working and learning together to build capacity and use evidence to construct a knowledge system that spans and reflects the unique contexts within Manitoba. This system involves several different activities including:

- Surveillance (data gathering),
- Knowledge exchange (identification and dissemination of effective and best practice),
- Program and policy development, implementation, evaluation and
- Strategic and investigator-driven research.

All activities are integrated as a system to produce practice-based evidence. PPHL supports these activities at both the regional and community level. As the system gains momentum new partners are engaged and the Manitoba collaborative practices ‘learning as we go’ and ‘thinking like a system.’

Appendix D – Glossary of Acronyms

AFM – Addictions Foundation of Manitoba

BMI – Body Mass Index

CAS – Canadian Addictions Survey

CCHS – Canadian Community Health Survey

CDC – Centers for Disease Control and Prevention

CDPI – Chronic Disease Prevention Initiative

CTUMS – Canadian Tobacco Use Monitoring Survey

FFQs – Food Frequency Questionnaires

KKDs – Kilocalorie per Kilogram per Day

MECY – Manitoba Education, Citizenship and Youth

MET – Metabolic Equivalent

MHHL – Manitoba Health and Healthy Living

PHL – Partners in Planning for Healthy Living

RHA – Regional Health Authority

SHAPES – School Health Action, Planning and Evaluation System

YRBS – Youth Risk Behavior Survey

YHS – Youth Health Survey

YSS – Youth Smoking Survey

WHO – World Health Organization

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