

# Student health in BC:

## Provincial and regional highlights

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# Executive summary

Healthy Schools BC (HSBC), a key initiative of the Healthy Families BC strategy, aims to support improvements in students' health and learning. The *Student Health in BC* report presents provincial and regional student health data for seven priority areas identified by the Healthy Schools BC initiative: healthy eating, physical activity, tobacco use, healthy weight, mental health, learning to stay healthy at school, and school connectedness. The report presents changes in provincial data over time and highlights the most recent regional student health data for the 16 regional health service delivery areas (HSDAs) of British Columbia (B.C.). This information can be used to identify provincial and regional priorities and inform healthy school policies and programs.

## Data sources

The *Student Health in BC* report presents data from the Ministry of Education's *Satisfaction Survey* and the McCreary Centre Society's *BC Adolescent Health Survey*.

- The Ministry of Education's *Satisfaction Survey* is an annual survey of B.C. students in Grades 3/4,<sup>1</sup> 7, 10, and 12, and it has been administered in B.C. public schools since 2002. The Ministry of Education reports survey results at the school district level, and this data was aggregated to the corresponding HSDAs. This report presents historical *Satisfaction Survey* data at provincial level over time, and highlights HSDA level data from the most recent survey (2014).<sup>2</sup>
- The McCreary Centre Society administers the *BC Adolescent Health Survey* every five years to B.C. students in Grades 7 through 12. Participation rates have increased steadily, from 45 districts in 2003, to 50 districts in 2008, to 56 districts in 2013. Over 29,000 students (70% of those sampled) participated in the survey in 2013. The sampling design was created to represent population-based estimates at the HSDA level. This report only presents data from the most recent cycle (2013) of the *BC Adolescent Health Survey*.

The *Student Health in BC* report is limited by the data sources available on student health. Due to different sampling methodologies, data from the *Satisfaction Survey* cannot be compared with data from the *BC Adolescent Health Survey*. The *Satisfaction Survey* is implemented annually and data is available at the school district and HSDA levels, but it does not include questions on mental health or healthy weight. *Satisfaction Survey* data from 2012<sup>2</sup> should be interpreted with caution due to low response rates (see Appendix A: Technical notes). The *BC Adolescent Health Survey* includes questions on all seven priority areas of Healthy Schools BC, but is implemented less frequently than the *Satisfaction Survey* (every five years) and data is not publically available at the school district level.

<sup>1</sup> Students in Grade 4 are surveyed. If the school does not have any students in Grade 4, Grade 3 students are surveyed instead.

<sup>2</sup> The *Satisfaction Survey* is administered between January and April each year. The dates in this report represent the year the data was collected. For example, data for the 2013/2014 school year is presented as 2014, because the data was collected between January and April 2014.

## Highlights

### Healthy eating:

- Student fruit and vegetable consumption (five or more servings per day) in Grades 3/4, 7, 10, and 12 increased between 2006 and 2014.
- Younger grades (Grades 3/4 and 7) reported eating fruit and vegetables and eating breakfast more often than older grades (Grades 10 and 12).
- Males reported “always” eating breakfast on school days more than females (61% versus 48%, respectively in 2013).
- The proportion of students who reported going to bed hungry because there is not enough money for food at home varied by geography – fewer students in the Lower Mainland reported going to bed hungry.

### Physical activity:<sup>3</sup>

- The proportion of students who reported that they get exercise in school “many times” or “all of the time” declined from 2009 to 2014, most notably among Grade 10 students (14% decline) and Grade 12 students (9% decline).
- The majority of students in younger grades get exercise in school “many times” or “all of the time” (88% in Grade 3/4 and 80% in Grade 7 in 2014), while fewer students in older grades reported getting exercise in school “many times” or “all of the time” (59% in Grade 10 and 36% in Grade 12 in 2014).
- Only 44% of Grade 3/4 students and 33% of Grade 7 students reported meeting the Daily Physical Activity (DPA) requirement of 30 minutes of physical activity per day during school hours in 2014. The proportion of Grade 3/4 and 7 students meeting the DPA requirement has decreased slightly (2% and 3%, respectively) since the question was added to the survey in 2010.
- Similarly, in 2014, 44% of Grade 10 students and 40% of Grade 12 students reported meeting the DPA requirement for their age group - 150 minutes of exercise per week (inside or outside of school). The proportion of Grade 10 and 12 students meeting the DPA requirement has remained relatively static since 2010.
- Grade 7 students reported the lowest percentage of students meeting the Daily Physical Activity requirement in 2014 (33%, compared to 40-44% in other grades).

### Tobacco use:

- Since 2010, an increasing proportion of students reported that they do not smoke cigarettes. In 2014, 97% of Grade 7 students reported that they do not smoke, dropping to 88% in Grade 10 and 85% in Grade 12.

<sup>3</sup> In the *Satisfaction Survey*, student physical activity is measured in two ways. First, the survey reports the percent of B.C. students who get physical activity at school “many times” or “all of the time”. Second, the survey measures the amount of physical activity student get, inside or outside of school. This second measure can be used to assess whether or not students are meeting the Daily Physical Activity (DPA) requirements set by the BC Ministry of Education ([www.bced.gov.bc.ca/dpa/dpa\\_requirement.htm](http://www.bced.gov.bc.ca/dpa/dpa_requirement.htm)).

## Learning about how to stay healthy:

- The proportion of students who reported that, at school, they are learning about how to stay healthy “many times” or “all of the time” has declined between 2009 and 2014, most notably in Grades 10 and 12 (10% decline each).
- In 2014, a greater proportion of students in younger grades reported that they are learning about how to stay healthy in school (62% in Grade 3/4 and 54% in Grade 7) compared to students in older grades (39% in Grade 10 and 28% in Grade 12).

## Healthy weight:

- In 2013, the proportion of students considered overweight or obese, based on self-reported measures, was higher among males (26%) than females (17%) and higher in the northern regions of the province (28-34%).
- In 2013, a greater proportion of males (73%) than females (64%) believed they were the right weight, and more females (59%) than males (50%) were trying to change their weight.

## Mental health:

- In 2013, more males reported “good” or “excellent” mental health than females (87% versus 76%, respectively). Fifteen percent (15%) of females reported having a mental health or emotional condition and 17% had seriously considered suicide in the past year. Overall, 12% of B.C. students had seriously considered suicide in the last year.
- In the three mental health indicators included in this report (self-reported mental health, having a mental health or emotional condition, and suicide ideation), Grade 7 students demonstrated higher positive mental health than Grade 10 or 12 students.

## School connectedness:

- In 2013, 68% of B.C. students appear to feel connected to their school, based on the Ministry of Health’s newly developed school connectedness measure derived from the B.C. public schools’ *Satisfaction Survey*. The new school connectedness measure assesses student responses to questions about liking school, feeling welcome and safe at school, having two or more adults at school who care about them, and wanting to go to a different school.

## Summary

B.C. student health indicators related to healthy eating, physical activity, tobacco use, mental health, healthy weight, learning to staying healthy, and school connectedness were examined across grades, sex, and geography. Most student health measures have improved over time; however, some measures show a decline in healthy behaviours in recent years. Student health indicators tend to vary by grade, with a greater proportion of younger students reporting positive health behaviours and outcomes.

# 1.0 Introduction

Children with healthy behaviours and exposure to healthy environments early in life have better health and social outcomes as adults.<sup>4</sup> Healthy Schools BC (HSBC), a key initiative of the Healthy Families BC strategy, aims to support improvements in students' health and learning. The initiative builds the capacity of the health and education sectors to effectively implement healthy schools initiatives using a Comprehensive School Health approach.<sup>5</sup> To monitor provincial progress on student health, HSBC has identified indicators of student health and well-being in seven priority areas: healthy eating, physical activity, tobacco use, healthy weight, mental health, learning to stay healthy at school, and school connectedness.

The *Student Health in BC* report presents student health data for the seven priority areas identified. The report presents changes in provincial data over time and highlights regional differences in the most recent student health data for the 16 health service delivery areas (HSDAs) of British Columbia. Healthy Schools BC partners and stakeholders can use this information to identify provincial and regional priorities and inform healthy school policies and programs.

## Data sources

The *Student Health in BC* report presents data from two provincial student surveys: the BC Ministry of Education's *Satisfaction Survey*<sup>i</sup> and the McCreary Centre Society's *BC Adolescent Health Survey*.<sup>ii</sup>

- The Ministry of Education's *Satisfaction Survey* is an annual survey of B.C. students in Grades 3/4<sup>6</sup>, 7, 10, and 12, and it has been administered in B.C. public schools since 2002. The Ministry of Education reports survey results at the school district level, and this data was aggregated to the corresponding HSDAs. This report presents historical *Satisfaction Survey* data at provincial level over time, and highlights HSDA level data from the most recent survey (2014).<sup>7</sup>
- The McCreary Centre Society administers the *BC Adolescent Health Survey* every five years to B.C. students in Grades 7 through 12. Participation rates have increased steadily, from 45 districts in 2003, to 50 districts in 2008, to 56 districts in 2013. Over 29,000 students (70% of those sampled) participated in the survey in 2013. The sampling design was created to represent population-based estimates at the HSDA level. This report only presents data from the most recent cycle (2013) of the *BC Adolescent Health Survey*.

The *Student Health in BC* report is limited by the data sources available on student health. Due to different sampling methodologies, data from the *Satisfaction Survey* cannot be compared with data from the *BC Adolescent Health Survey*. The *Satisfaction Survey* is implemented annually and data is available at the school district and HSDA levels, but it does not include questions on mental health or healthy weight. *Satisfaction Survey* data from 2012<sup>7</sup> should be interpreted with caution due to low response rates (see Appendix A: Technical Notes). The *BC Adolescent Health Survey* includes questions on all seven priority

4 Ben-Shlomo & Kuh (2002). A life course approach to chronic disease epidemiology: conceptual models, empirical challenges and interdisciplinary perspectives. *International Epidemiological Association*, 31, 285-293.

5 For information on Comprehensive School Health, visit: [www.healthyschoolsbc.ca/about/comprehensive-school-health](http://www.healthyschoolsbc.ca/about/comprehensive-school-health)

6 Students in Grade 4 are surveyed. If the school does not have any students in Grade 4, Grade 3 students are surveyed instead.

7 The *Satisfaction Survey* is administered between January and April each year. The dates in this report represent the year the data was collected. For example, data for the 2013/2014 school year is presented as 2014, because the data was collected between January and April 2014.

areas of Healthy Schools BC, but is implemented less frequently than the *Satisfaction Survey* (every five years) and data is not publically available at the school district level.

This report presents a high level summary of health data for the students in British Columbia. In depth analysis and interpretation of the data is beyond the scope of this report.



## 2.0 Provincial highlights

Improvements in health behaviour occur slowly over many years. To monitor changes in student health behaviour over time at the provincial level, multiple cycles of the Ministry of Education's cross-sectional *Satisfaction Survey* were examined. Some indicators are available since the initiation of the survey in 2002, while others were added to the survey in later years. Data were collected between January and April of each year. The charts in this section present provincial rates over time (in years). Comparisons highlighted in the descriptions of the charts showed statistical difference at the 5% significance level.

### 2.1 Fruit and vegetable consumption

Canada's Food Guide recommends between five and eight servings of fruit and vegetables per day for school age children and teens (Table 1).

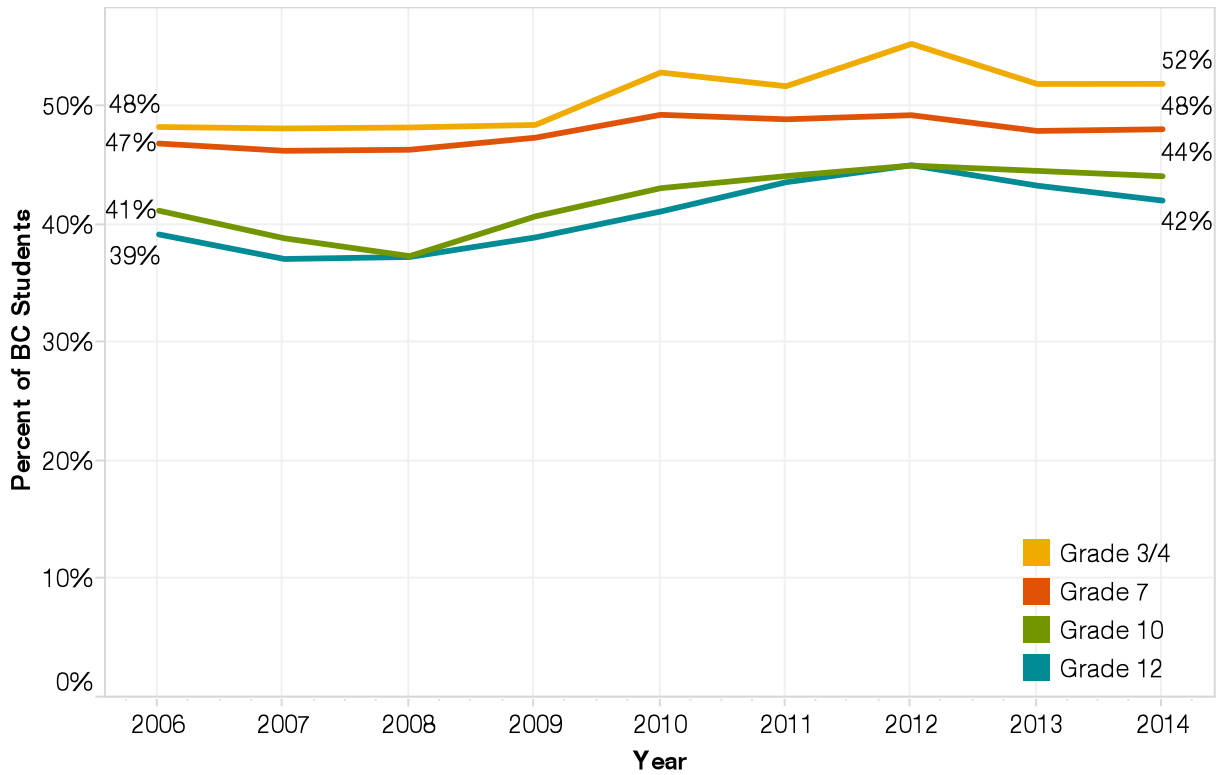
**Table 1: Recommended number of servings of vegetables and fruit per day, by age and sex**

	Children			Teens		Adults			
	2-3	4-8	9-13	14-18 Years		19-50 Years		51+ Years	
	Girls and Boys			Female	Male	Female	Male	Female	Male
Recommended servings of vegetables and fruit	4	5	6	7	8	7-8	8-10	7	7

Canada's Food Guide, Health Canada. Retrieved from <http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/basics-base/quantit-eng.php>

The B.C. public schools' *Satisfaction Survey* asked students how many servings of fruit and vegetables they ate in the past 24 hours, and reports the percent of B.C. students who ate five or more servings. Examples of serving sizes were included in the survey for reference.

**Chart 1. Percent of B.C. students eating five or more servings of fruit and vegetables in the past 24 hours. Satisfaction Survey, 2006-2014.**



Satisfaction Survey, BC Ministry of Education.

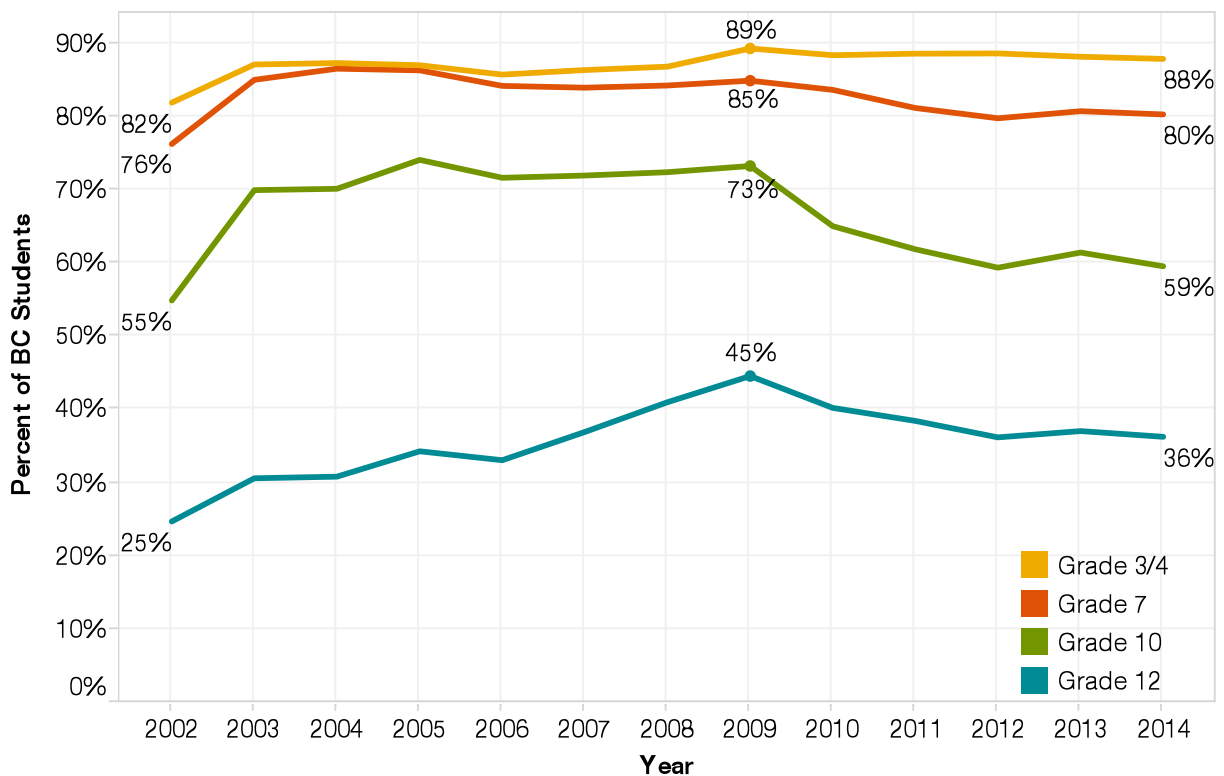
Between 2006 and 2014, fruit and vegetable consumption increased in each grade level, with the most improvement occurring since 2008. Students in younger grades consistently reported eating more servings of fruit and vegetables than students in older grades. Grade 7 had the smallest increase in the percent of students eating five or more servings of fruit and vegetables during this period, from 47% in 2006 to 48% in 2014.

## 2.2 Physical activity

### 2.2.1 Physical activity at school

Since 2002, all students responding to the B.C. public schools' *Satisfaction Survey* have been asked if they "get exercise (for example, physical activity or sports) at school". Response categories were "at no time", "a few times", "sometimes", "many times", and "all of the time". The graph below shows the proportion of students who reported getting exercise at school "many times" or "all of the time" since 2002.

**Chart 2. Percent of B.C. students getting exercise at school "many times" or "all of the time." *Satisfaction Survey, 2002-2014.***



*Satisfaction Survey, BC Ministry of Education.*

Between 2002 and 2014, the percent of students getting exercise in school "many times" or "all of the time" increased in all grade levels. However, between 2009 and 2014 this percentage decreased substantially in Grades 7, 10, and 12. The percent of Grade 3/4 students getting exercise in school "many times" or "all of the time" remained relatively constant during this same time period (89% in 2009 versus 88% in 2014).

## 2.2.2 Daily physical activity

The BC Ministry of Education implemented the Daily Physical Activity (DPA) initiative in September 2008. The initiative requires all students in B.C. to participate in exercise or physical activity either in school (as part of the educational program) or on their own time. Table 2 summarizes the DPA requirements by grade.

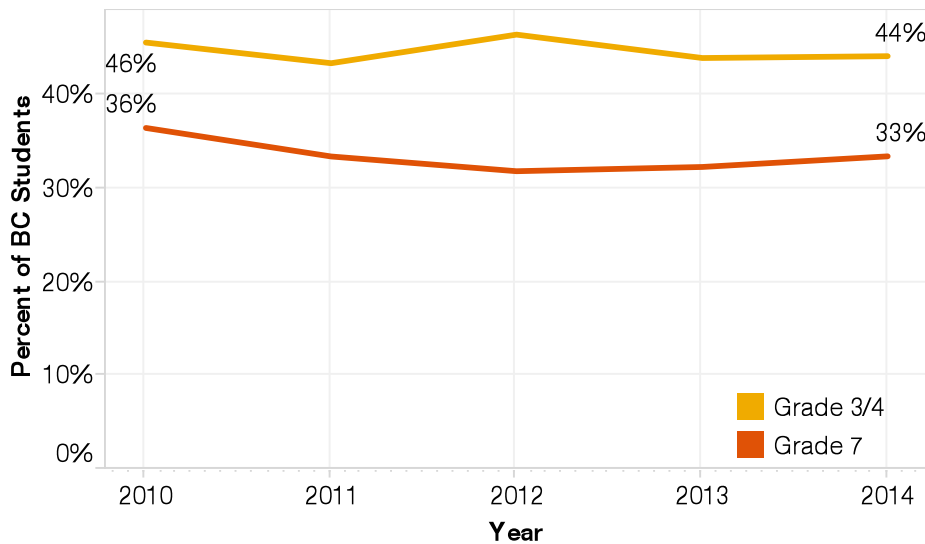
**Table 2: BC Ministry of Education’s Daily Physical Activity requirement by grade**

Kindergarten	Grades 1 to 7	Grades 8 to 9	Grades 10 to 12
Schools offer 15 minutes of physical activity per day for half-day kindergarten; or 30 minutes of physical activity per day for full day kindergarten	Schools offer 30 minutes of physical activity during school hours	Schools have the option to provide 30 minutes of physical activity per day, or require students to document and report 150 minutes of moderate to vigorous activity per week	Students must document and report 150 minutes of moderate to vigorous physical activity per week

BC Ministry of Education, Daily Physical Activity requirement. Retrieved from [http://www.bced.gov.bc.ca/dpa/dpa\\_requirement.htm](http://www.bced.gov.bc.ca/dpa/dpa_requirement.htm)

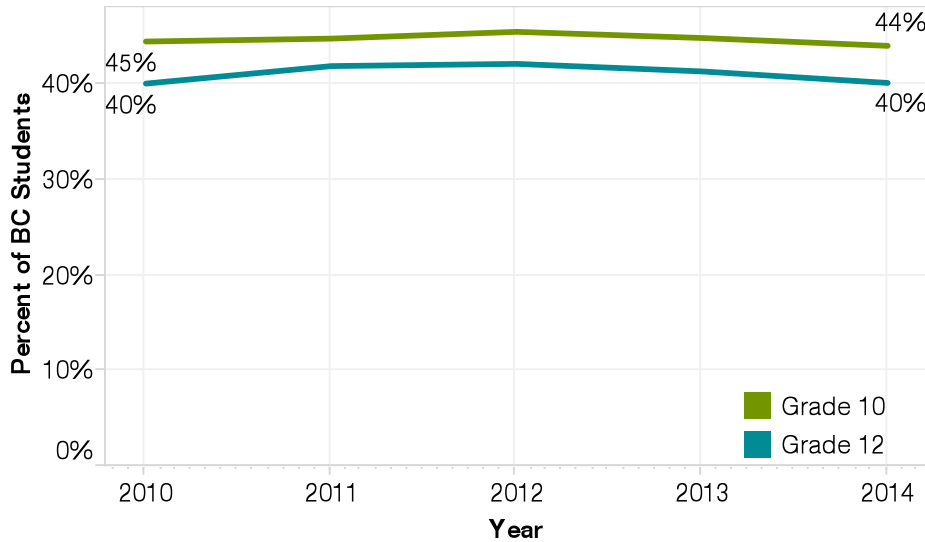
To reflect this new provincial policy, additional physical activity questions were added to the B.C. public schools’ *Satisfaction Survey* in 2010. Students in Grades 3/4 and 7 were asked how many days of the last five school days they got 30 minutes of exercise or physical activity during school hours. Students in Grades 10 and 12 were asked how many minutes they exercised or participated in physical activity in the past week (seven days). Both questions asked students to consider those activities that made them “sweat or breathe hard”. Student responses are displayed in the following two figures.

**Chart 3. Percent of Grade 3/4 and 7 students in B.C. participating in physical activity for at least 30 minutes every day during school hours for the last five schools days. *Satisfaction Survey*, 2010-2014.**



Satisfaction Survey, BC Ministry of Education.

**Chart 4. Percent of Grade 10 and 12 students in B.C. participating in physical activity for more than 150 minutes in the past week (inside and/or outside of school). Satisfaction Survey, 2010-2014.**



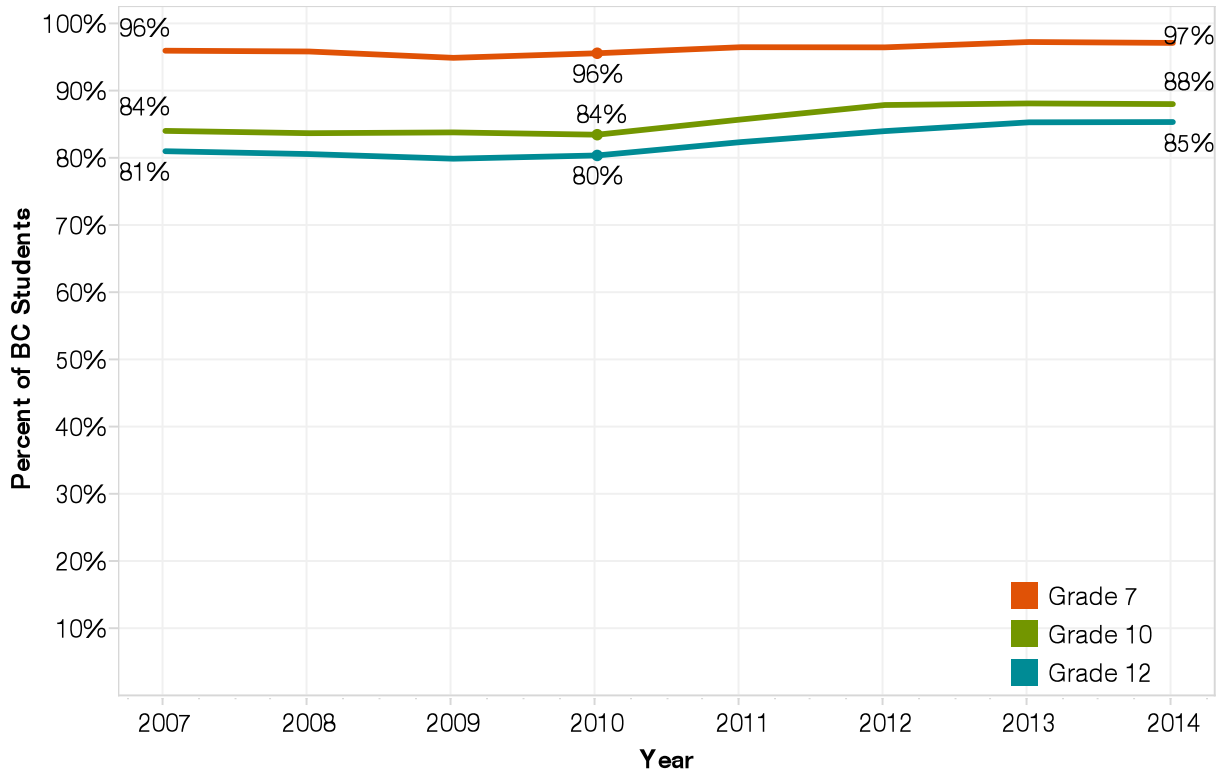
Satisfaction Survey, BC Ministry of Education.

The percent of students meeting the DPA requirements between 2010 and 2014 has decreased slightly in Grades 3/4 and 7 (Chart 3). There has been relatively little change in the percent of Grade 10 and 12 students meeting DPA guidelines during this time period (Chart 4). In 2014, the proportion of Grade 7 students meeting DPA requirements (33%) was much lower than students in Grades 3/4, 10, and 12 (44%, 44% and 40%, respectively).

## 2.3 Tobacco use

Students in Grades 7, 10, and 12 were asked if, at the present time, they “smoke cigarettes every day, occasionally, or not at all”. The graph below presents the proportion of students who responded “not at all”.

**Chart 5. Percent of B.C. student who do not smoke cigarettes. Satisfaction Survey, 2007-2014.**



*Satisfaction Survey, BC Ministry of Education.*

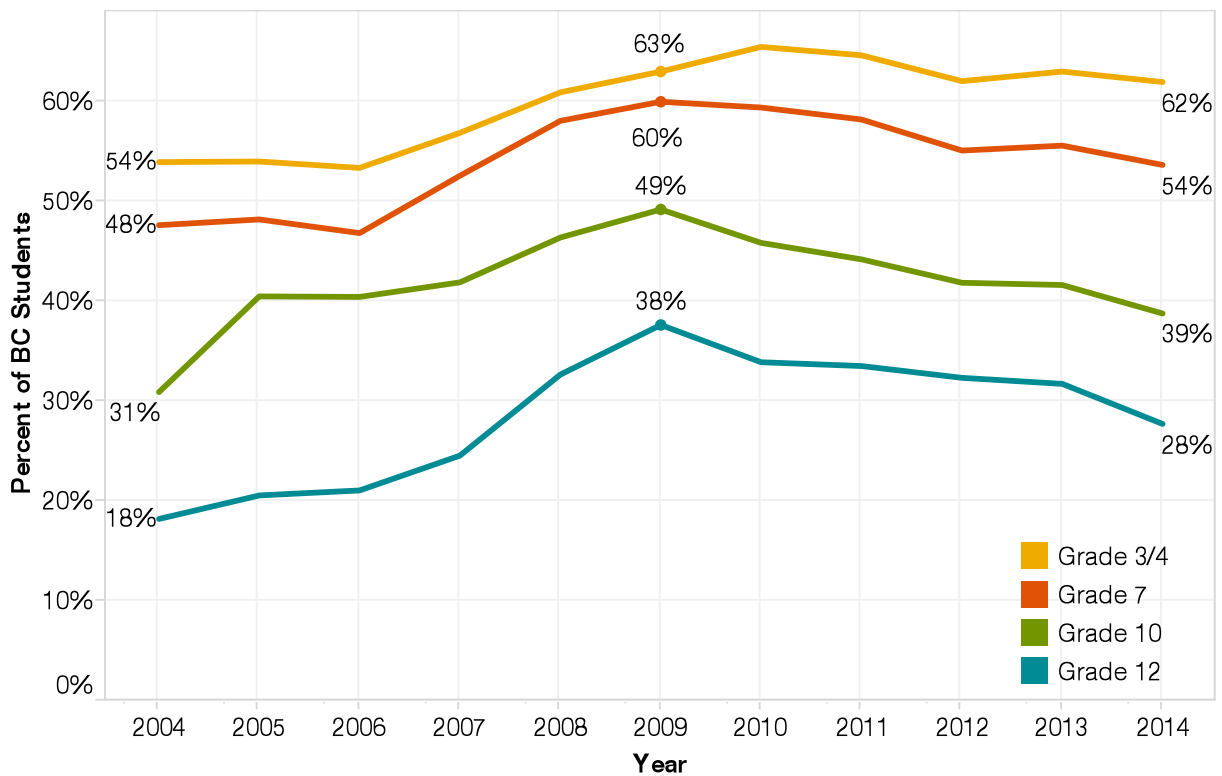
The proportion of students who do not smoke remained relatively constant for all grades between 2007 and 2010. In recent years (2010 to 2014), there has been an increase in the percent of Grade 10 and 12 students who do not smoke. Grade 7 students reported the highest non-smoking rates every year (2007 to 2014).

## 2.4 Learning how to stay healthy

The B.C. public schools' *Satisfaction Survey* asked students if, at school, they were learning about how to stay healthy. Response categories were "at no time", "a few times", "sometimes", "many times", and "all of the time".

*Note: From 2004 to 2009, Grade 3/4 students were asked, "At school, are you learning about healthy food and exercise?" From 2010 to 2014, Grade 3/4 students were asked the same question as students in Grades 7, 10, and 12: "At school, are you learning about how to stay healthy?"*

**Chart 6. Percent of B.C. students who, at school, are learning about how to stay healthy "many times" or "all of the time". *Satisfaction Survey, 2004-2014.***



*Satisfaction Survey, BC Ministry of Education.*

In all grades, the proportion of students learning how to stay healthy in school has increased since 2004. However, between 2009 and 2014 rates have decreased in all grades; the largest decrease (10%) occurred in Grades 10 and 12.

## 3.0 Regional highlights

Regional planning and priority setting should be informed by regional data whenever possible. The most recent regional level data is presented to highlight variations within the province and to inform local decision-making. Data from the *BC Adolescent Health Survey* and the *Satisfaction Survey* are presented for the 16 health service delivery areas in B.C.

The *BC Adolescent Health Survey* regional HSDA estimates are presented in highlight tables and are disaggregated by sex (female, male, total). The HSDA estimates include all grades sampled (Grades 7 through 12). Provincial averages for Grades 7, 10, and 12 are presented in a bar graph; the survey does not sample Grade 3/4 students.

The B.C. public schools' *Satisfaction Survey* regional HSDA estimates are presented in highlight tables and are disaggregated by grade (3/4, 7, 10, and 12). Sex disaggregated data is not available for this survey. Provincial averages for Grades 3/4, 7, 10, and 12 are presented in a bar graph.

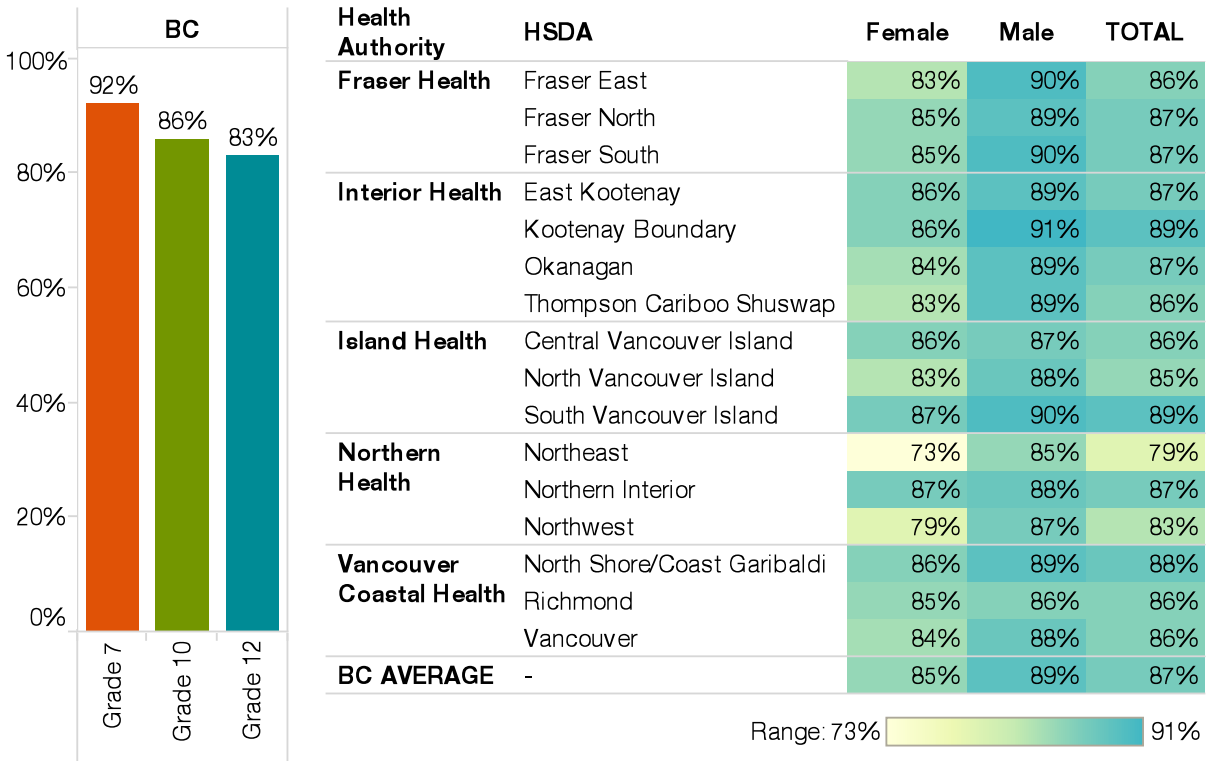
For both *Satisfaction Survey* and *BC Adolescent Health Survey* data, differences highlighted in the chart descriptions showed statistical difference at the 5% significance level.



### 3.1 General health

The BC Adolescent Health Survey asked students to rate their health as “poor”, “fair”, “good”, or “excellent”. The graph and highlight table below show the proportion of students who rated their health as “good” or “excellent”.

**Chart 7. Percent of B.C. students reporting “good” or “excellent” health. BC Adolescent Health Survey, 2013.**



2013 BC Adolescent Health Survey. McCreary Centre Society.

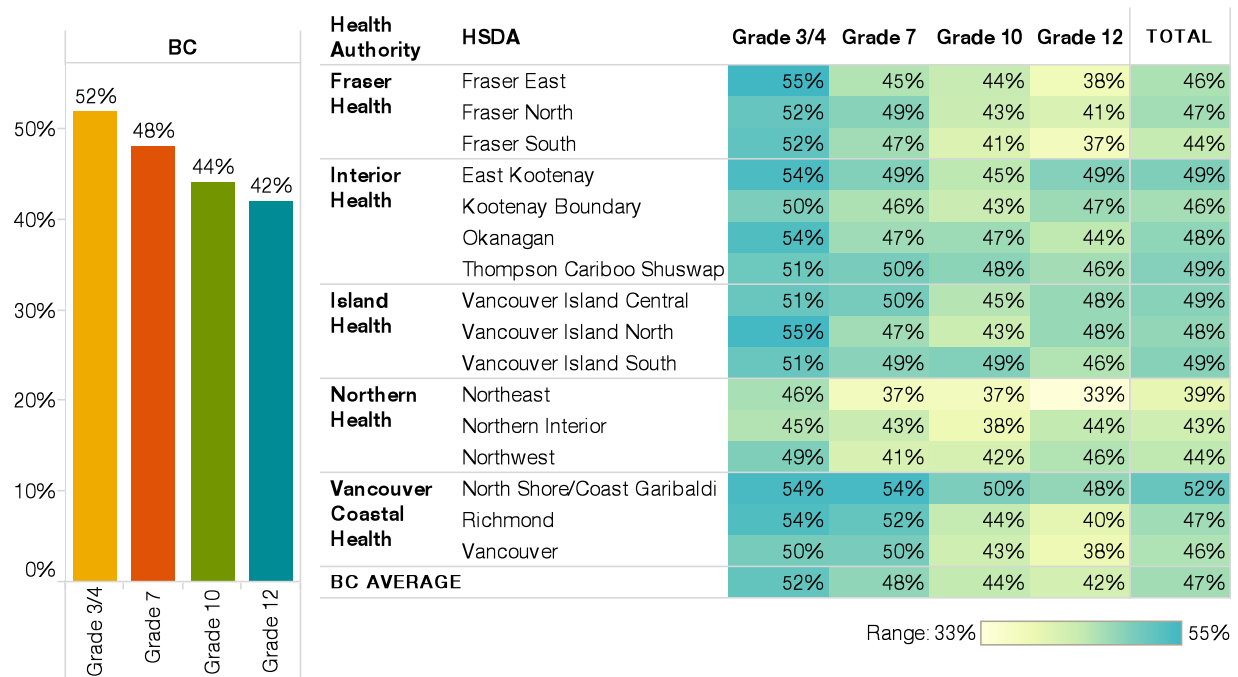
At the provincial level, the majority (87%) of B.C. students in Grades 7 through 12 reported “good” or “excellent” health. The rate of positive self-reported health was lower among students in older grades (83% in Grade 12 versus 92% in Grade 7), and lower among females (85%) than males (89%).

## 3.2 Healthy eating

### 3.2.1 Fruit and vegetable consumption

The percent of B.C. students who reported in the B.C. public schools' *Satisfaction Survey* that they ate five or more servings of fruit and vegetables in the past 24 hours is shown below.

**Chart 8. Percent of B.C. students eating five or more servings of fruit and vegetables in the past 24 hours. *Satisfaction Survey*, 2014.**



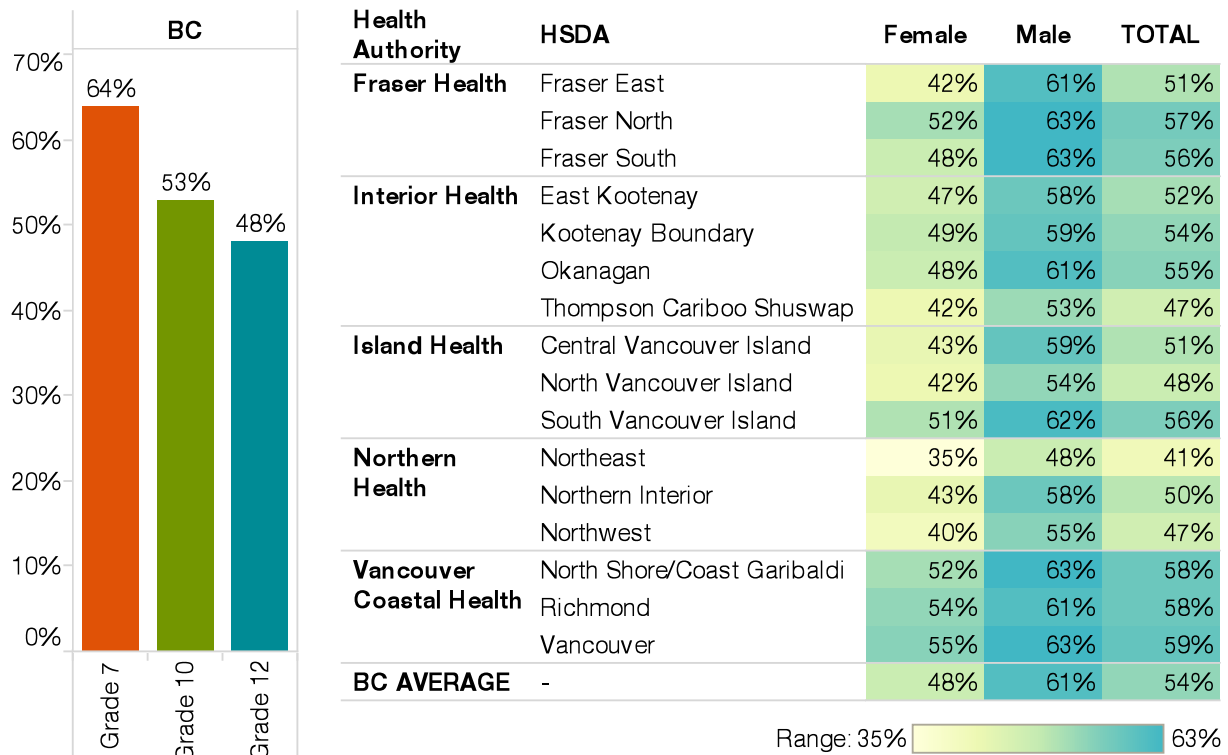
*Satisfaction Survey*, BC Ministry of Education.

On average in 2014, 47% of B.C. students in Grades 3/4, 7, 10, and 12 reported eating five or more servings of fruit and vegetables in the past 24 hours. Fruit and vegetable consumption was lower among older grades; the percent decreased with every increase in grade. Averaging all grades, only one HSDA reported more than 50% of students eating five or more servings of fruit and vegetables per day (North Shore/Coast Garibaldi, 52%).

### 3.2.2 Eat breakfast on school days

Eating breakfast is important for student health and learning. The *BC Adolescent Health Survey* asked students if they “never”, “sometimes”, “often”, or “always” eat breakfast on school days. The proportion of students who reported they “always” eat breakfast on school days is shown in the bar graph and highlight table below.

**Chart 9. Percent of B.C. students who “always” eat breakfast on school days. *BC Adolescent Health Survey, 2013.***



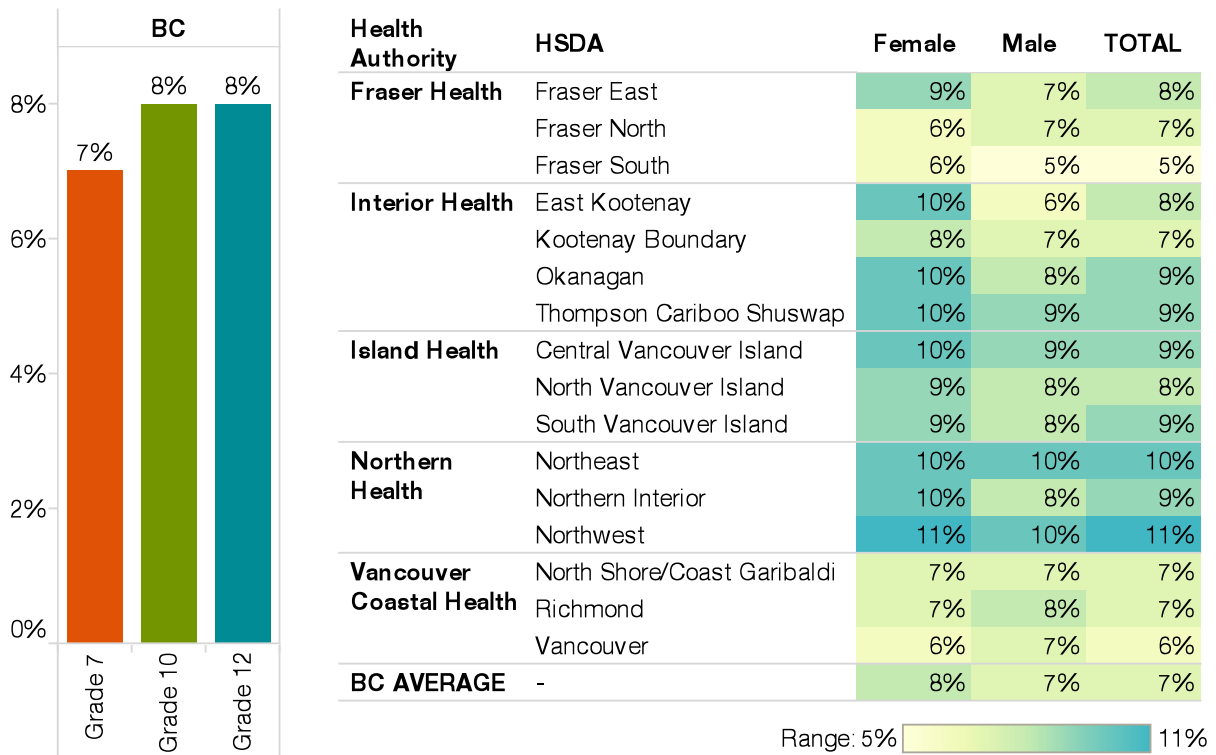
2013 *BC Adolescent Health Survey*. McCreary Centre Society.

At the provincial level, the proportion of students who always eat breakfast on school days is lower in the older grades. In every HSDA in the province, a higher proportion of males reported always eating breakfast compared to females (on average, 61% of males versus 48% of females).

### 3.2.3 Go to bed hungry

The BC Adolescent Health Survey asked students if they “never”, “sometimes”, “often”, or “always” go to bed hungry because there is not enough money for food at home. The proportion of students who indicated any level of food insecurity – that is, they responded that they “sometimes”, “often”, or “always” go to bed hungry – is shown below.

**Chart 10. Percent of B.C. students who go to bed hungry because there is not enough money for food at home. BC Adolescent Health Survey, 2013.**



2013 BC Adolescent Health Survey. McCreary Centre Society.

The proportion of students going to bed hungry varied by geographic location. Students in the Lower Mainland had lower rates of going to bed hungry than students in other regions. Unlike other indicators, there was no significant difference by grade in the proportion of students going to bed hungry.

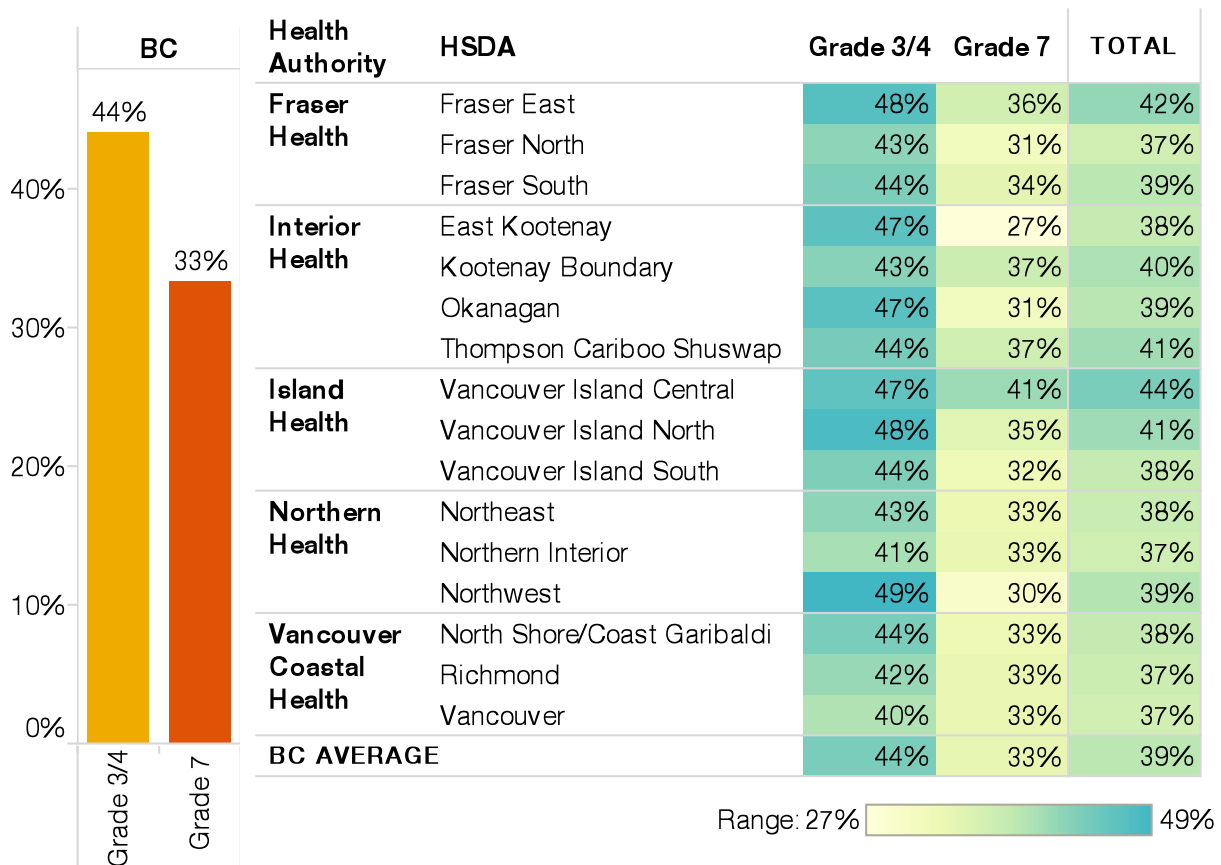
### 3.3 Physical activity

#### 3.3.1 Physical activity in Grades 3/4 and 7

Since September 2008, the B.C. Ministry of Education requires all students in kindergarten to Grade 12 to participate in Daily Physical Activity. Students in Grades 1 to 7 are expected to participate in physical activity during school hours for 30 minutes every day to fulfill the DPA requirement for this age group.

The B.C. public schools' *Satisfaction Survey* asked students in Grades 3/4 and 7 how many days of the last five school days they got 30 minutes of exercise or physical activity during school hours. Students were asked to only report on activities that made them “sweat and breathe hard”.

**Chart 11. Percent of B.C. students in Grades 3/4 or 7 participating in physical activity for at least 30 minutes every day during school hours for the least five school days. *Satisfaction Survey*, 2014.**



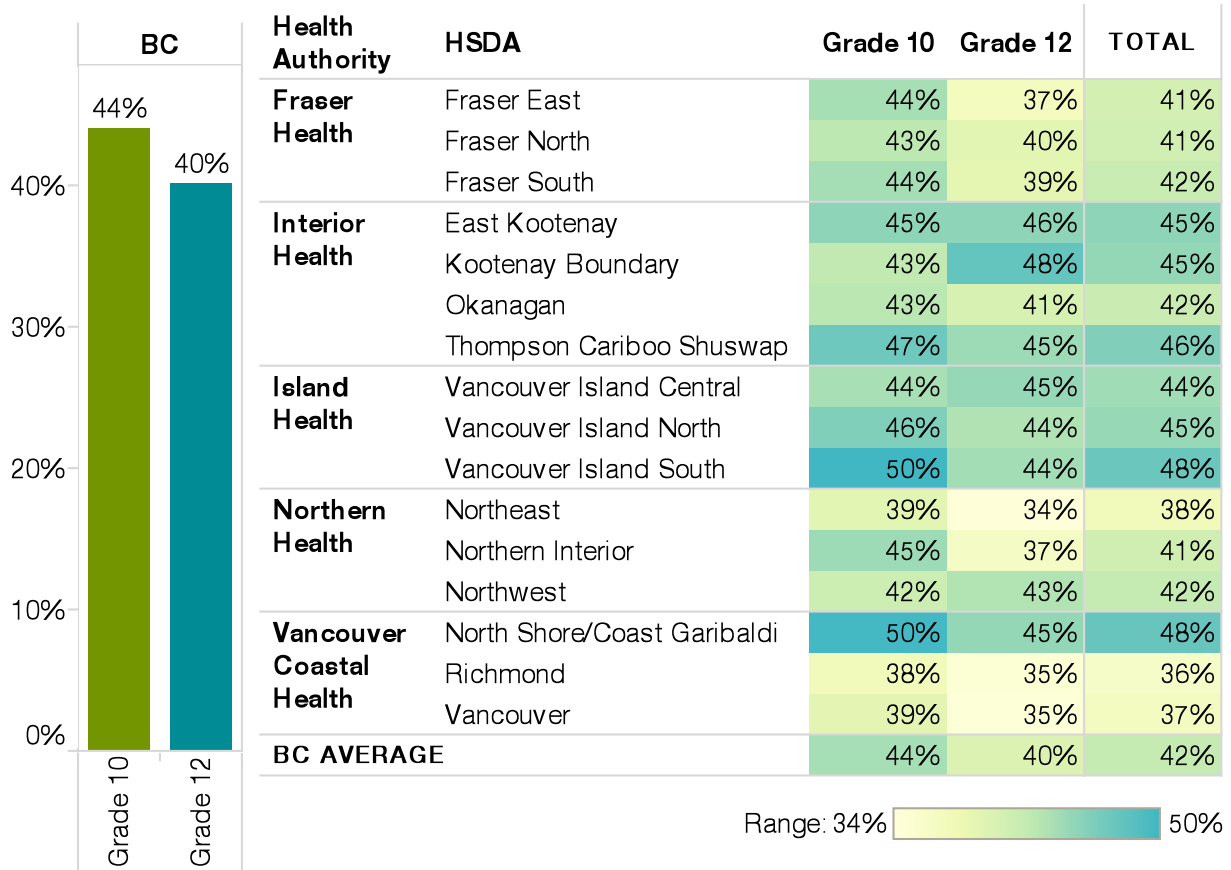
*Satisfaction Survey*, BC Ministry of Education.

In 2014, the proportion of students who reported 30 minutes of daily physical activity in the last five school days was much lower in Grade 7 students than in Grade 3/4 students in every HSDA in the province. At the provincial level, 44% of Grade 3/4 students reported 30 minutes of daily physical activity versus 33% of Grade 7 students.

### 3.3.2 Physical activity in Grades 10 and 12

B.C. students in Grades 10 to 12 are required to document and report a minimum of 150 minutes of physical activity per week (inside and/or out of school) to fulfill the Daily Physical Activity requirement. In the *Satisfaction Survey*, students in Grades 10 and 12 were asked how many minutes they exercised or participated in physical activity that made them “sweat and breathe hard” in the past week (seven days).

**Chart 12. Percent of B.C. students in Grades 10 and 12 participating in physical activity for more than 150 minutes in the past week. *Satisfaction Survey*, 2014.**



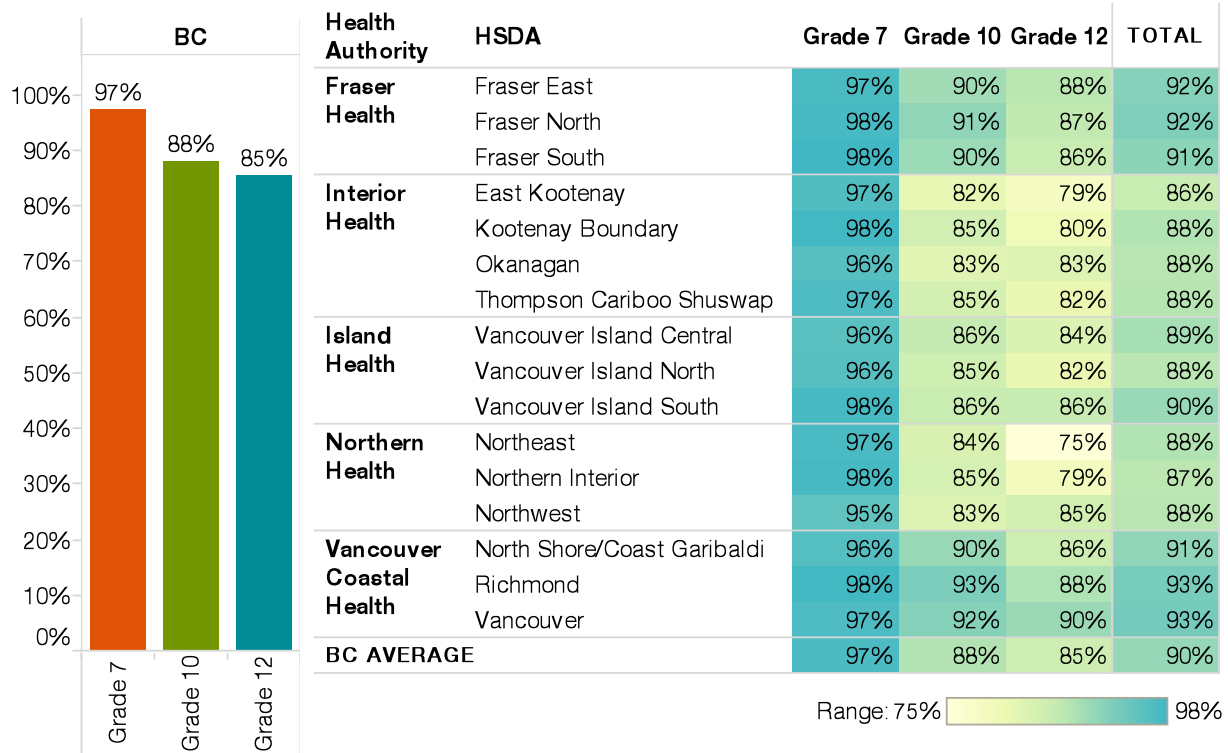
*Satisfaction Survey*, BC Ministry of Education.

On average in B.C., a higher percent of Grade 10 students reported getting more than 150 minutes of physical activity than Grade 12 students (44% versus 40%, respectively). However, the HSDA level data shows that in a few areas, a higher proportion of Grade 12 students were meeting the DPA requirement than Grade 10 students.

### 3.4 Tobacco use

The B.C. public schools' *Satisfaction Survey* asked students in Grades 7, 10, and 12 if, at the present time, they “smoke cigarettes every day, occasionally, or not at all”. The graph and table below show the proportion of students who responded “not at all”.

**Chart 13. Percent of B.C. students who, at the present time, do not smoke at all. *Satisfaction Survey*, 2014.**



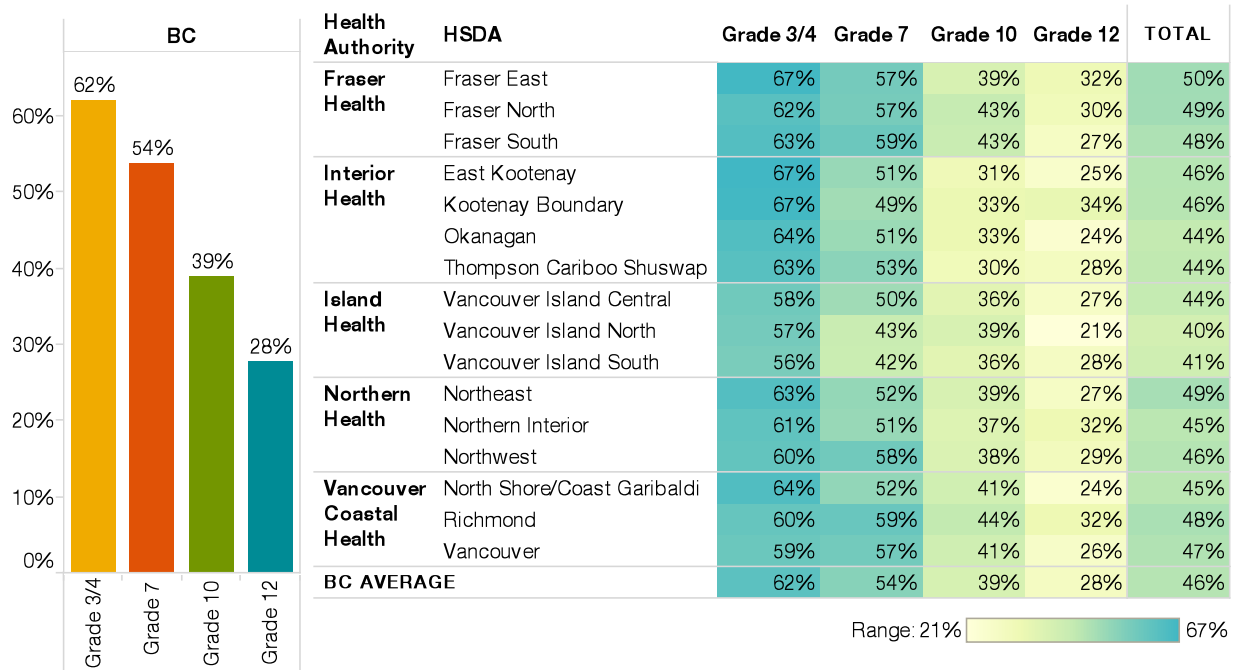
*Satisfaction Survey*, BC Ministry of Education.

At the provincial level, 97% of Grade 7 students reported that they do not smoke cigarettes. The percent of B.C. students who do not smoke dropped to 88% among Grade 10 students and 85% among Grade 12 students. The decrease by grade in the percent of students who do not smoke was generally consistent across the province, with the exception of the Northwest and Okanagan HSDAs.

### 3.5 Learning about how to stay healthy

The *Satisfaction Survey* asked students if, at school, they are learning about how to stay healthy. The percent of B.C. students who reported “many times” or “all of the time” is shown below.

**Chart 14. Percent of B.C. students who, at school, are learning about how to stay healthy “many times” or “all of the time”. *Satisfaction Survey*, 2014.**



*Satisfaction Survey*, BC Ministry of Education.

Provincially and at the HSDA level, the proportion of students learning about how to stay healthy declined as grade level increased. In B.C., 62% of Grade 3/4 students reported learning to stay healthy in school, compared to only 28% of Grade 12 students.

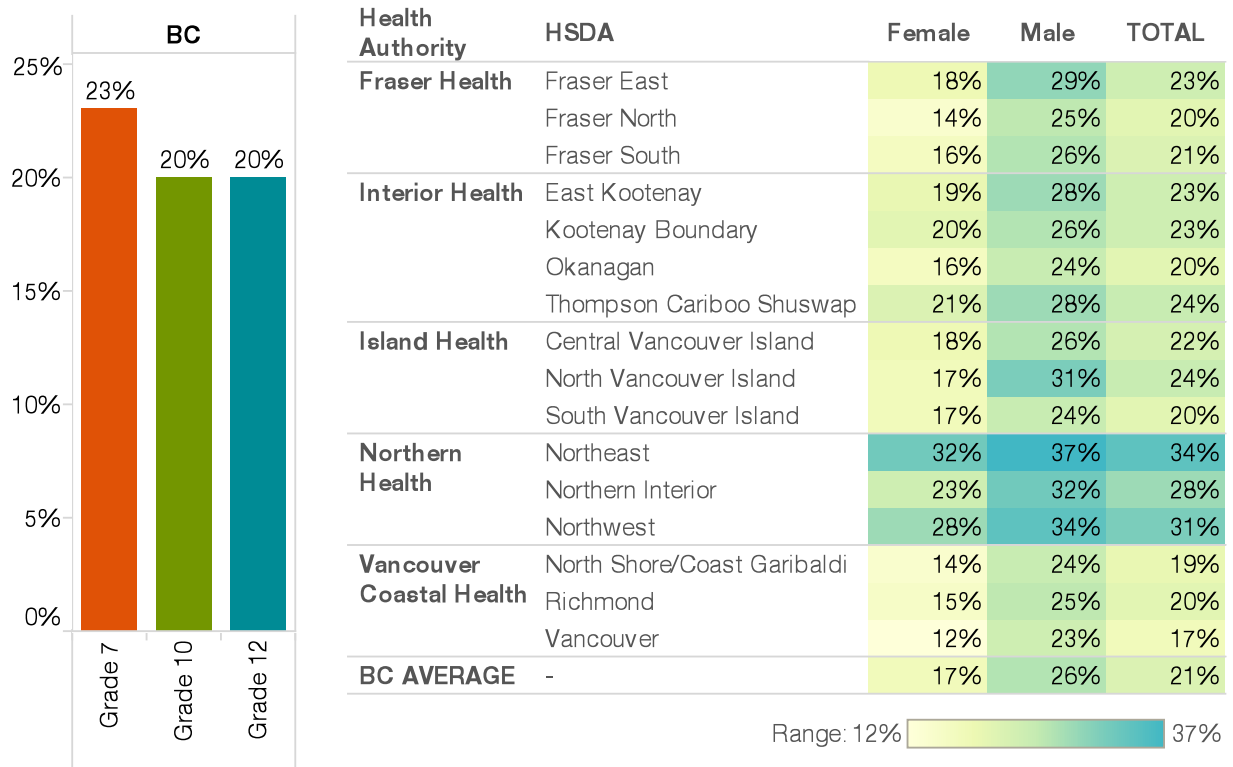


## 3.6 Healthy weight

### 3.6.1 Overweight or obese

Weight is not a complete and inclusive measure of health. Body Mass Index (BMI) is used in this report as a useful screening tool at the population level, although it is not a conclusive indicator of health at the individual level. Self-reported weight and height measures were collected in the *BC Adolescent Health Survey* and used to calculate the proportion of students who are overweight or obese using the BMI measure.<sup>8</sup>

**Chart 15. Percent of B.C. students who are overweight or obese, based on self-reported measures of weight and height. BC Adolescent Health Survey, 2013.**



2013 BC Adolescent Health Survey. McCreary Centre Society.

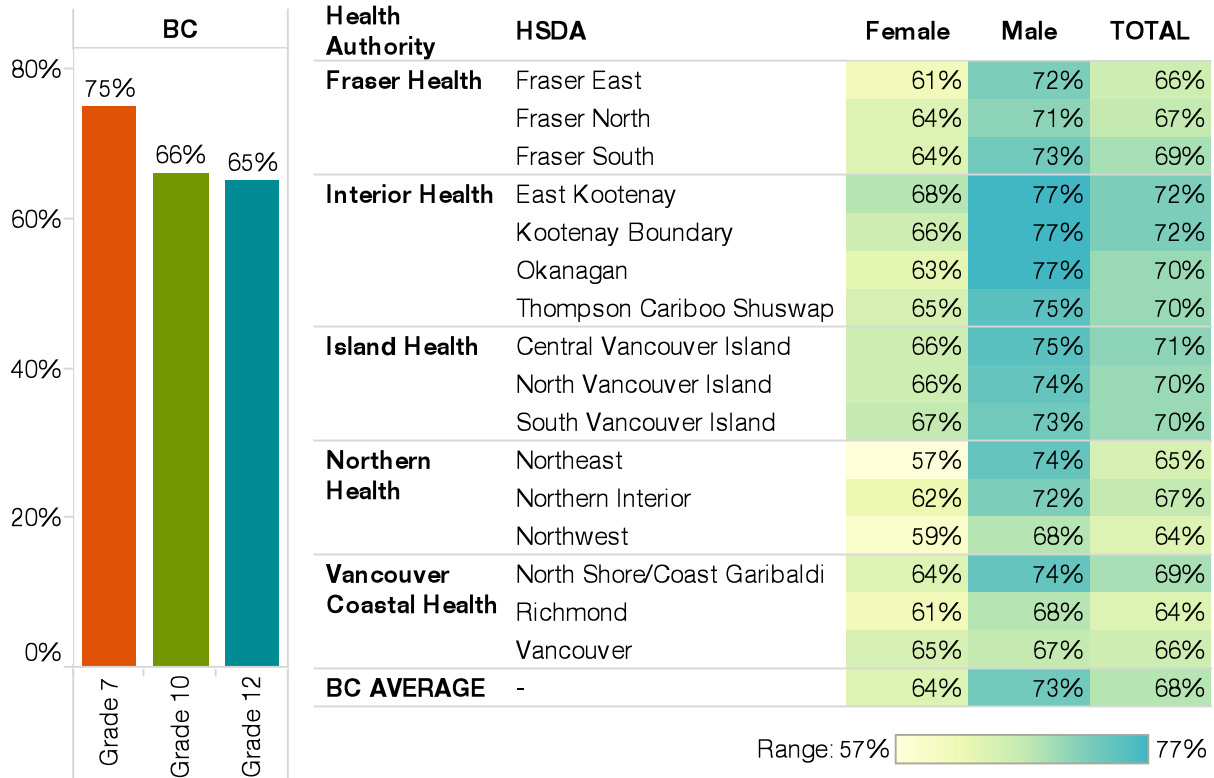
Across the province, the proportion of students considered overweight or obese, based on self-reported measures, was higher among males than females. Northern HSDAs had the highest proportion of overweight and obese students for both males and females.

<sup>8</sup> BMI is the ratio of a person's weight in relation to his/her height (kg/m<sup>2</sup>). The BMI categories of underweight, overweight, and obese were assigned based on WHO (2007) guidelines using z-score cut-offs (approximately the 3rd, 85th, and 97th percentiles, respectively).

### 3.6.2 Perceptions of weight

The BC Adolescent Health Survey asked students if they believed they were “underweight”, “about the right weight”, or “overweight”. The chart below presents the proportion of students who believe they are “about the right weight”.

**Chart 16. Percent of B.C. students who believe they are “about the right weight”. BC Adolescent Health Survey, 2013.**



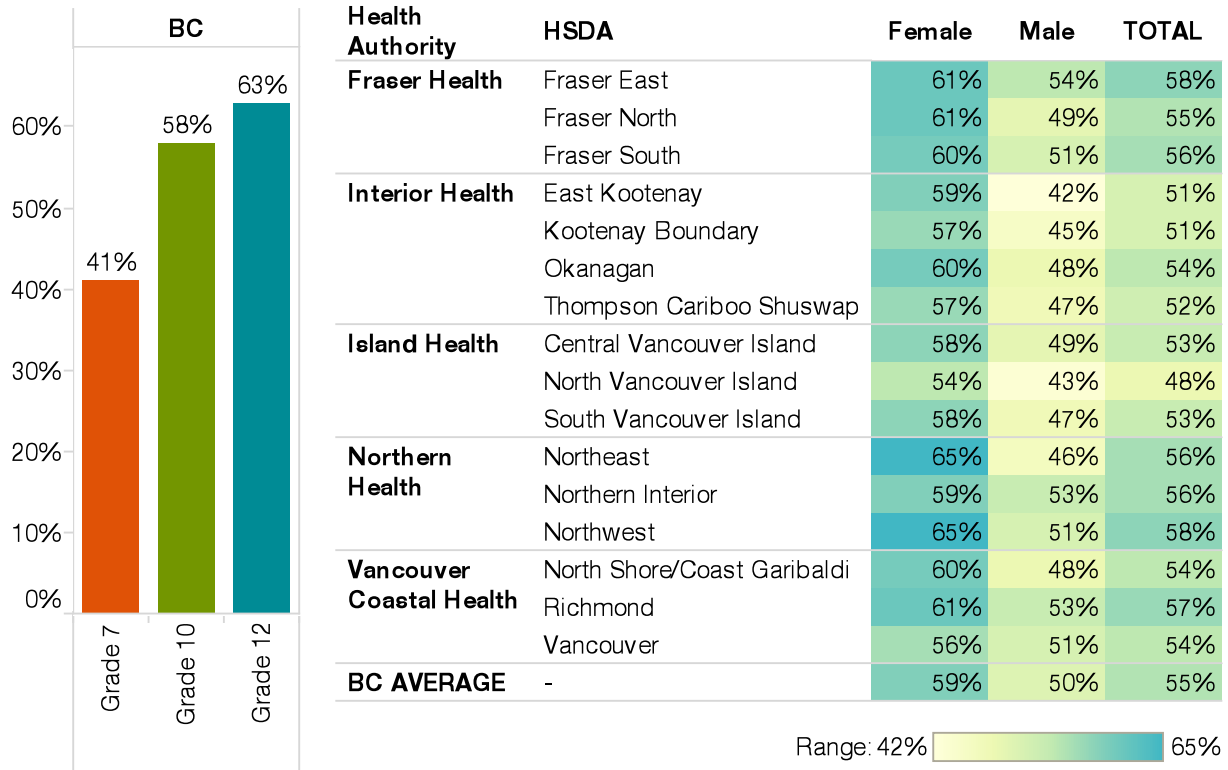
2013 BC Adolescent Health Survey. McCreary Centre Society.

Provincially, fewer students in Grades 10 and 12 believe they are the right weight compared to students in Grade 7. In most HSDAs,<sup>9</sup> a smaller proportion of females than males believe they are the right weight (on average, 64% of females versus 73% of males).

<sup>9</sup> The difference between females and males is not statistically significant in Vancouver HSDA.

In addition, the survey asked students if they were trying to do anything about their weight (i.e., “gain weight”, “lose weight”, “stay the same weight”, or “not trying to do anything”). The graph and table below shows the proportion of students who reported trying to change their weight by either gaining or losing weight.

**Chart 17. Percent of B.C. students who are trying to change (gain/lose) weight. BC Adolescent Health Survey, 2013.**



2013 BC Adolescent Health Survey. McCreary Centre Society.

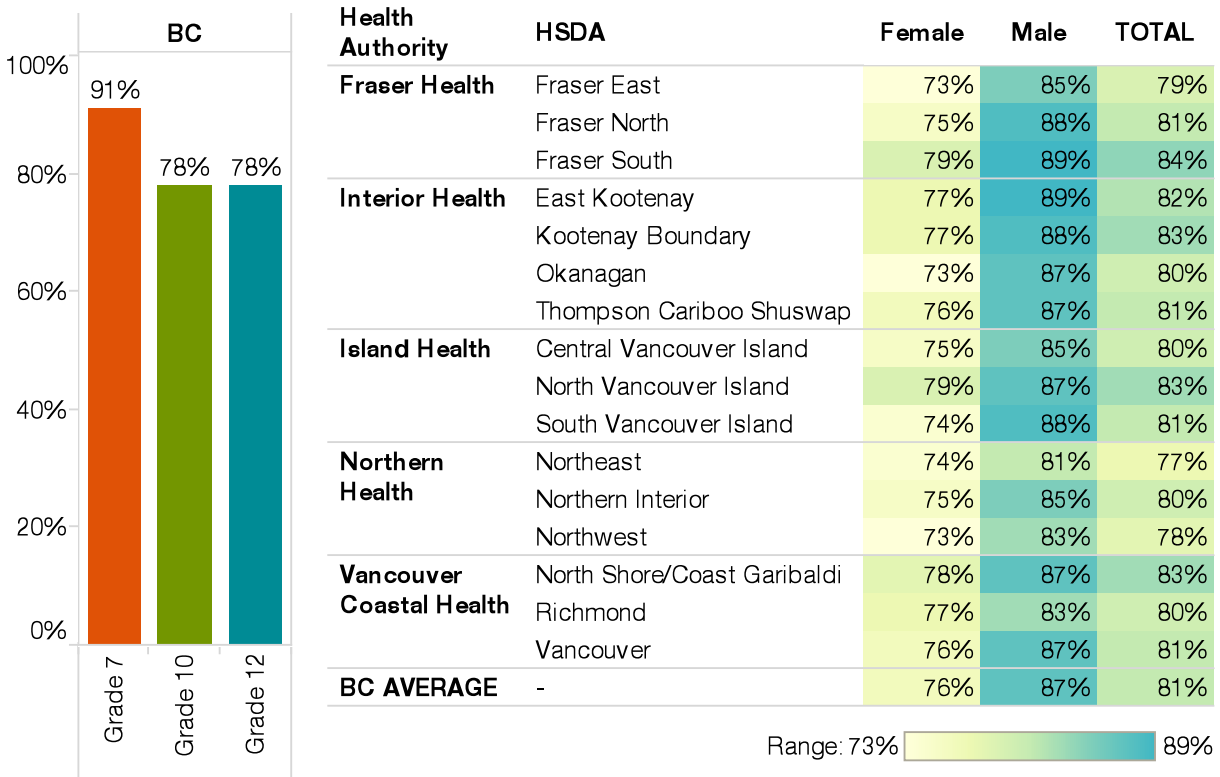
Provincially, the proportion of students trying to change their weight increased in older grades. In every HSDA, more females than males reported trying to change their weight (on average, 59% of females versus 50% of males).

## 3.7 Mental health

### 3.7.1 Self-reported mental health

Student positive mental health is an important component of overall health and well-being. In the *BC Adolescent Health Survey*, students were asked to rate their mental health as “poor”, “fair”, “good”, or “excellent”.

**Chart 18. Percent of students reporting “good” or “excellent” mental health. *BC Adolescent Health Survey, 2013.***



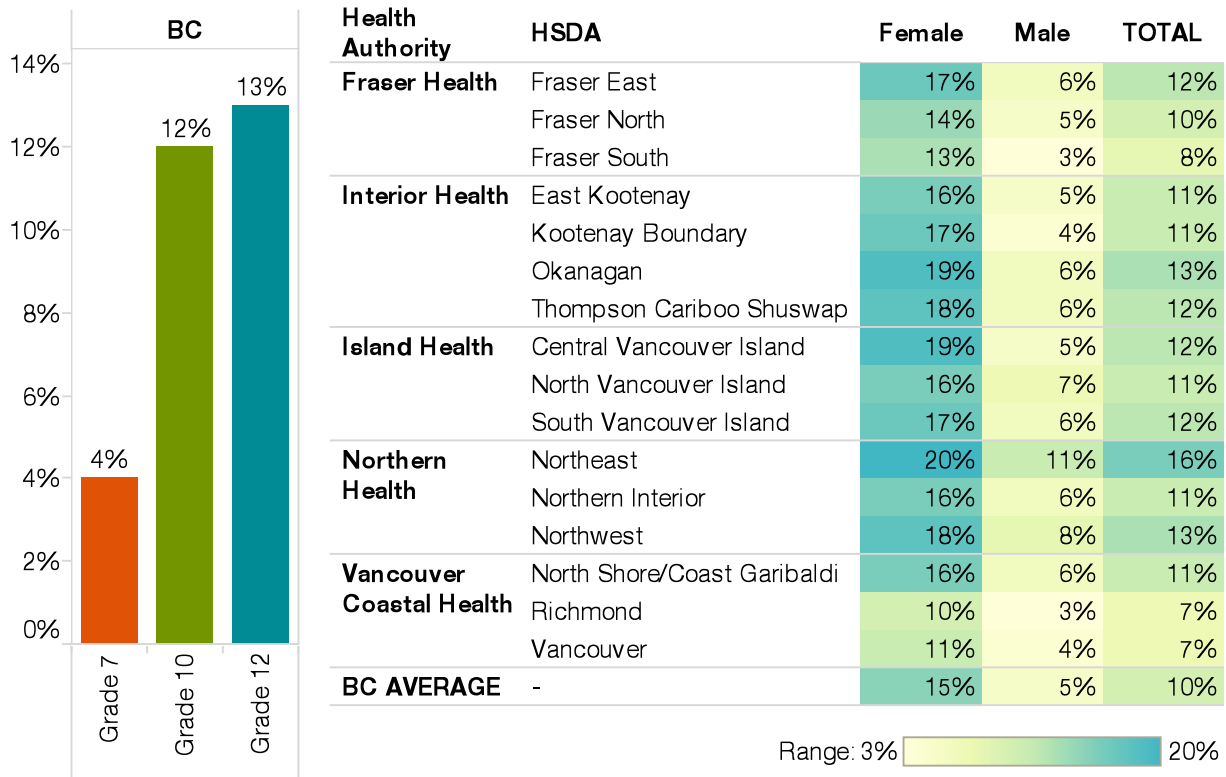
2013 *BC Adolescent Health Survey*. McCreary Centre Society.

A greater percentage of students in Grade 7 reported good or excellent mental health than students in Grades 10 and 12. In every HSDA, a greater proportion of males reported good or excellent mental health than females (on average, 87% of males versus 76% of females).

### 3.7.2 Mental health or emotional condition

The BC Adolescent Health Survey asked students if they have a mental health or emotional condition, such as depression or an eating disorder.

**Chart 19. Percent of students reporting a mental health or emotional condition (e.g., depression, eating disorder). BC Adolescent Health Survey, 2013.**



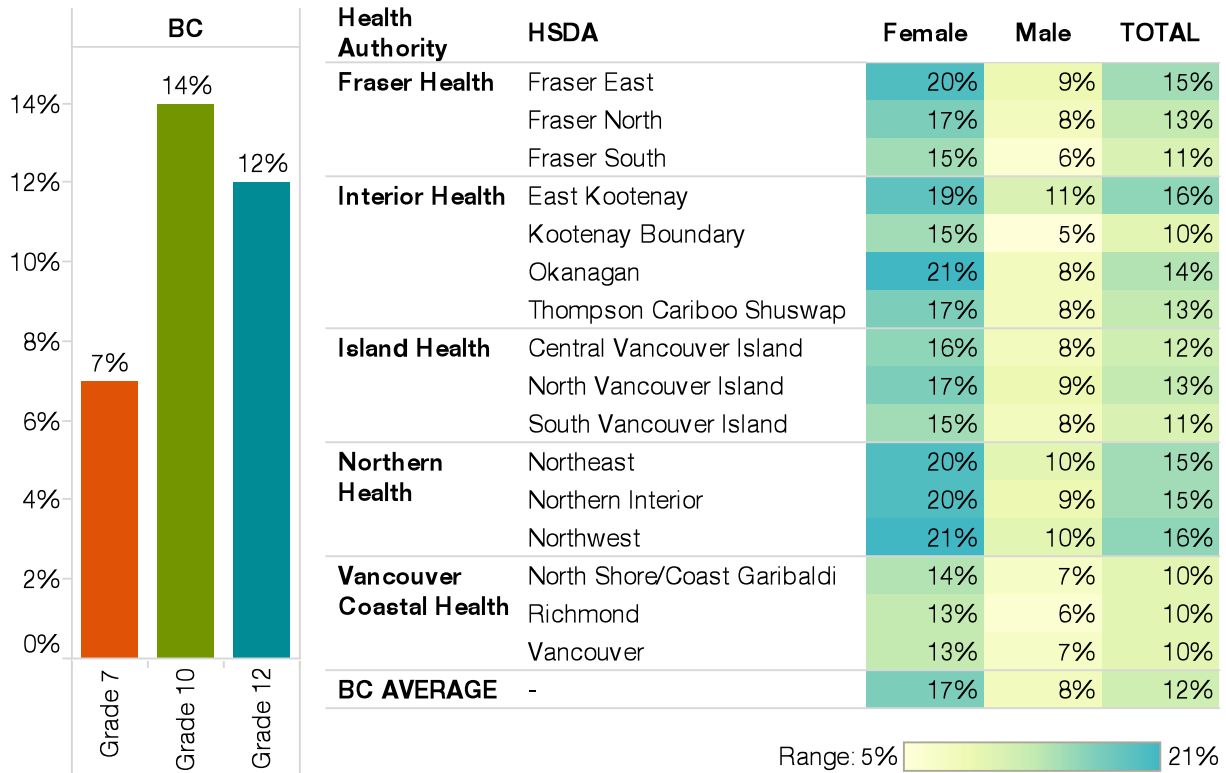
2013 BC Adolescent Health Survey. McCreary Centre Society.

Provincially, 10% of B.C. students indicated that they had a mental health or emotional condition. The proportion of students reporting a mental health or emotional condition was three times higher in females (15%) than in males (5%). This pattern was consistent in most HSDAs. The proportion of students reporting a mental health or emotional condition increased from 4% in Grade 7 to 12% in Grade 10.

### 3.7.3 Suicide ideation

The BC Adolescent Health Survey asked students if they have “seriously considered” killing themselves (suicide) in the past 12 months.

**Chart 20. Percent of B.C. students who have seriously considered suicide in the past year. BC Adolescent Health Survey, 2013.**



2013 BC Adolescent Health Survey. McCreary Centre Society.

Provincially, 12% of B.C. students reported that they had seriously considered suicide in the past year. More females than males answered “yes” to this question, with the proportion up to 21% in some HSDAs. The proportion of students who had seriously considered suicide in the past year was higher in Grades 10 and 12 (14% and 12%, respectively) than in Grade 7 (7%).

## 3.8 School connectedness

A newly developed composite measure of school connectedness combines five questions from the Ministry of Education's *Satisfaction Survey* for public schools. The Ministry of Health developed the composite measure in response to the need for more frequent school connectedness data. The *BC Adolescent Health Survey* reports school connectedness every five years, whereas this composite can be calculated every year from the *Satisfaction Survey*. Due to different methods used to calculate school connectedness, these two measures are not comparable. The new school connectedness composite measure includes the following dimensions from the *Satisfaction Survey*:

- Students like school.
- Students feel welcome at school.
- Students feel safe at school.
- Students have two or more adults at school who care about them.
- Students do not want to go to a different school.

For more information on the school connectedness measure, see Appendix A.

**Chart 21. Percent of B.C. students who exhibit school connectedness, based on the composite measure from *Satisfaction Survey* data. *Satisfaction Survey*, 2014.**

Health Authority	HSDA	
<b>Fraser Health</b>	Fraser East	67%
	Fraser North	69%
	Fraser South	68%
<b>Interior Health</b>	East Kootenay	66%
	Kootenay Boundary	68%
	Okanagan	68%
	Thompson Cariboo Shuswap	66%
<b>Island Health</b>	Vancouver Island Central	66%
	Vancouver Island North	66%
	Vancouver Island South	70%
<b>Northern Health</b>	Northeast	64%
	Northern Interior	66%
	Northwest	63%
<b>Vancouver Coastal Health</b>	North Shore/Coast Garibaldi	70%
	Richmond	70%
	Vancouver	68%
<b>BC AVERAGE</b>	-	68%



*Satisfaction Survey*, BC Ministry of Education.

Provincially, 68% of students (Grades 3/4, 7, 10, 12) exhibited school connectedness. The proportion of students who exhibit school connectedness by HSDA ranged from 63% to 70%. School connectedness data disaggregated by grade is currently not available.



## 4.0 Summary

Student health indicators related to healthy eating, physical activity, tobacco use, mental health, healthy weight, learning to staying healthy, and school connectedness in B.C. were examined across grades, sex, and geography. Most student health measures have improved over time; however, some measures show a decline in healthy behaviours in recent years. Student health indicators tend to vary by grade, with a greater proportion of younger students reporting positive health behaviours and outcomes.

Student fruit and vegetable consumption (five or more servings per day) increased between 2006 and 2014 for all grades measured. Younger grades (Grades 3/4 and 7) reported eating fruit and vegetables and eating breakfast more often than older grades (Grades 10 and 12). Males reported “always” eating breakfast on school days more than females (61% versus 48%, respectively). The proportion of students who reported going to bed hungry because there is not enough money for food at home varied by geography – fewer students in the Lower Mainland reported going to bed hungry.

The proportion of students who reported that they get exercise in school “many times” or “all of the time” has declined between 2009 and 2014, most notably among Grade 10 students (14% decline) and Grade 12 students (9% decline). The majority of students in younger grades get exercise in school “many times” or “all of the time” (88% in Grade 3/4 and 80% in Grade 7 in 2014), while fewer students in older grades reported getting exercise in school “many times” or “all of the time” (59% in Grade 10 and 36% in Grade 12 in 2014).

Despite reporting getting exercise in school, only 44% of Grade 3/4 students and 33% of Grade 7 students reported meeting the Daily Physical Activity requirement of 30 minutes of physical activity per day during school hours in 2014. The proportion of Grade 3/4 and 7 students meeting the DPA requirement has decreased slightly (2% and 3%, respectively) since the question was added to the survey in 2010. Similarly, in 2014, 44% of Grade 10 students and 40% of Grade 12 students reported meeting DPA requirement for this age group - 150 minutes of exercise per week (inside or outside of school). The proportion of Grade 10 and 12 students meeting the DPA requirement has remained relatively static since 2010. Grade 7 students reported the lowest percentage of students meeting the Daily Physical Activity requirement in 2014 (33%, compared to 40-44% in other grades).

Since 2010, an increasing proportion of students reported that they do not smoke cigarettes. In 2014, 97% of Grade 7 students reported that they do not smoke, dropping to 88% in Grade 10.

The proportion of students who reported that, at school, they are learning about how to stay healthy has declined since 2009, most notably in Grades 10 and 12 – each grade declined by 10% on this measure between 2009 and 2014. In 2014, a greater proportion of students in younger grades reported that they are learning about how to stay healthy in school (62% in Grade 3/4 and 54% in Grade 7) than in older grades (39% in Grade 10 and 28% in Grade 12).

The proportion of students considered overweight or obese, based on self-reported physical measures, was higher among males (26%) than females (17%) and higher in the northern regions of the province. A greater

proportion of males than females believed they were the “right weight” (73% versus 64%, respectively), and more females than males were trying to change their weight (59% versus 50%, respectively).

More males reported “good” or “excellent” mental health than females (87% versus 76%, respectively). Among females, 15% reported having a mental health or emotional condition and 17% had seriously considered suicide in the past year (versus males at 5% and 8%, respectively). The three mental health indicators included in this report showed a significant difference in positive mental health between Grade 7 students and Grade 10 or 12 students. For example, the proportion of students that reported positive mental health was 91% in Grade 7, compared to 78% in both Grades 10 and 12. Similarly, suicide ideation was more prevalent among Grade 10 and 12 students (14% and 12%, respectively) than Grade 7 students (7%).

The newly developed school connectedness measure enables tracking of school connectedness annually through the Ministry of Education’s *Satisfaction Survey* for public schools. In 2014, 68% of B.C. students appeared to feel connected to their school, based on the new school connectedness measure.

# Appendix A: Technical notes

The data used for the report come from two provincial level surveys conducted in British Columbia, as described below.

## *Satisfaction Survey, BC Ministry of Education*

The B.C. Ministry of Education's *Satisfaction Surveys* are annual surveys of students in Grades 4, 7, 10 and 12, their parents and school staff administered since 2002 in British Columbia public schools. Grade 3 students, their parents or guardians, and staff were included where a school did not have any Grade 4 students. The survey was developed with input from partner groups, experts in educational measurement and special education, and teachers of early grades. Each year feedback from participants is considered in order to improve the survey questions and features.

The survey is available 24/7 over a period of about three months, January to mid-April. The survey is delivered online and it takes about 10 minutes to complete the Ministry questions. If districts or schools have added questions the survey may take longer.

Survey report users should keep in mind that during the 2011/2012 school year (reported as 2012 in the *Student Health in BC* report), survey participation was optional due to labour disputes. Response rates for that one year fell far below typical levels (22% to 34%, varying by grade), and so those responses may not be representative of the school populations. Mandatory surveys in the preceding and following years had much higher response rates, ranging from 54% to 87%. Report users should carefully compare any results for 2011/2012 against trends established in earlier and subsequent years, and consider disregarding the 2011/2012 results if they differ greatly from established trends.

No significance testing of differences between reported percentage estimates was performed. Statistical significance of pair-wise differences in rates at the HSDA level was approximated by comparing respective 95% confidence intervals for population proportions. Using this estimation, all differences highlighted in this report were statistically significant at the 5% significance level.

## *2013 BC Adolescent Health Survey, McCreary Centre Society<sup>iii</sup>*

The 2013 *BC Adolescent Health Survey* was conducted in 56 of 59 B.C. school districts, containing 98.5% of public school students in Grades 7 to 12. The 1.5% of the student population not covered by the survey is too small to have any appreciable effect on provincial estimates. Participation by school districts is voluntary.

The target population for the 2013 *BC Adolescent Health Survey* included all 259,138 students who were enrolled in Grades 7 through 12 in regular public schools during the 2012/13 school year. The sample design was similar in size and scope to that used for previous cycles. The sample frame was, in essence, a list of all classrooms in the province, stratified by geography and by grade (7 through 12). Independent

random samples of classrooms were selected in each region/ grade stratum. All students enrolled in each selected classroom fell into the sample.

The sampling frame used the BC Ministry of Education list of all schools, which included enrolment counts by grade for the 2012/13 school year. The *BC Adolescent Health Survey* is designed to produce statistically reliable estimates at each grade level, for each of 16 health service delivery areas, which aggregate to the larger health authority areas.

The survey response rate for the province was 70%.

No significance testing of differences between reported percentage estimates was performed. Statistical significance of pair-wise differences in rates at the HSDA level was approximated by comparing respective 95% confidence intervals for population proportions. Using this estimation, all differences highlighted in this report were statistically significant at the 5% significance level.

The BMI categories of underweight, overweight, and obese were assigned based on WHO (2007)<sup>iv</sup> guidelines using z-score cut-offs (approximately the 3<sup>rd</sup>, 85<sup>th</sup>, and 97<sup>th</sup> percentiles, respectively).

## School Connectedness Composite, Ministry of Health

The composite includes data from the Ministry of Education’s *Satisfaction Survey*, including responses from Grades 3/4, 7, 10, and 12 students. Five questions from the survey are included in the composite.

### Factors included in School Connectedness Composite

Factor	Included responses	Denominator
Do you like school?	“Many times” or “All of the time”	Non-excluded responses for the question
Do you feel welcome at school?	“Many times” or “All of the time”	Non-excluded responses for the question
Do you feel safe at school?	“Many times” or “All of the time”	Non-excluded responses for the question
I would like to go to a different school.	“Many times” or “All of the time”	Non-excluded responses for the question
How many adults at your school care about you?	“2 adults”, “3 adults”, “4 or more adults”	Sum (“1 adult”, “2 adults”, “3 adults”, “4 or more adults”, “None”)

Calculation:

- For each of the four grades (3/4, 7, 10, and 12) and each of the five questions, the total included responses were divided by their respective denominators. For example, if 400 Grade 10 students answered the question about feeling welcome at school, and 200 responded they feel welcome “many times” or “all the time”, the result would be 0.5. These 20 quotients were summed to generate a composite score. The composite score was divided by 20 to generate a percentage of students who exhibit school connectedness.
- The composite score of each school district is weighted using the proportion of students in the HSDA it contains. These weighted scores are summed to generate the HSDA composite score. This sum is divided by 20 to generate the percentage. And so on for HA and B.C.
- It is assumed that the scores have a normal distribution.
- These scores capture the percentage of students in a given school district or HSDA or HA who feel connected to school, rather than defining school districts with connected students and those without.

Weighting:

- Each factor is assumed to have equal contribution to school connectedness; factors are unweighted.
- Each grade is assumed to have equal importance; grades are unweighted.
- Some school districts within an HSDA are more populous than others. School districts are weighted in the HSDA score.
- Some HSDAs within a health authority are more populous than others. HSDAs are weighted in the health authority score.
- Some health authorities are more populous than others. Health authorities are weighted in the B.C. score.

Suppressed data were counted as 0. The exclusion of masked data caused the inability to report a composite for smaller school districts. Suppressed data in small school districts most often occurred in the “none” response category of the “Adults who care” factor.

A multivariate method called “factor analysis” was carried out to group the variables (factors given in the table above) into a composite index derived as a measure of “school connectedness” using the statistical software SPSS. Prior to this analysis, tests of the internal consistency reliability among the factors were done using Cronbach’s alpha and ordinal alpha.

The conceptual design of composite specifies that factors included in the composite are feelings or perceptions about the environment. The composite does not include behavioural and environmental factors (e.g. bullying behaviour).

# References

- i BC Ministry of Education (2014). *School Satisfaction Survey*. Victoria, B.C.: Ministry of Education, Analysis and Reporting Unit. Accessed on July 30, 2014 via: <http://www.data.gov.bc.ca/dbc/index.page>
- ii McCreary Centre Society (2014). 2013 Adolescent Health Survey. Vancouver, B.C.
- iii Saewyc E., Stewart D. & Green, R. (2014). *Methodology for the 2013 BC Adolescent Health Survey*. [Fact Sheet]. Vancouver, B.C.: McCreary Centre Society. Accessed July 30, 2014 via: [www.mcs.bc.ca](http://www.mcs.bc.ca)
- iv WHO (2007). Geneva, Switzerland: World Health Organization. *Growth reference data for 5-19 years*. Accessed on November 7, 2014 via: <http://www.who.int/growthref/en/>