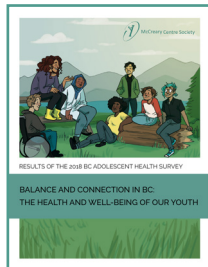


# 2018 BC ADOLESCENT HEALTH SURVEY METHODOLOGY FACT SHEET



## BACKGROUND



The BC Adolescent Health Survey (BC AHS) has been conducted in BC public schools approximately every five years since 1992. The 2018 BC AHS was the sixth wave of the survey.

The survey monitors the health promoting and health risk behaviours of youth in Grades 7–12 (12–19-year-olds), and is used to inform policies and programs for young people. It was administered in pencil and paper format to over 38,000 youth in 58 of BC’s 60 school districts.



## SURVEY DEVELOPMENT



The survey instrument was based on earlier cycles of the BC AHS, and included many questions which have been asked previously to capture trends over time. It also included new questions about emerging health issues which were identified in partnership with youth, parents, schools, health care providers, and other experts in youth health.

Examples of new topics included on the 2018 BC AHS were questions about quality of life, internal resiliency, time management, sleep quality, and deprivation. The questions were primarily drawn from existing measures that had been validated in other surveys with youth and are described in a fact sheet entitled *Question Rationale & Sources* available at [www.mcs.bc.ca/about\\_bcahs](http://www.mcs.bc.ca/about_bcahs).

A Youth Deprivation Index was developed specifically for the survey. Details about the Index and more detailed information on the psychometric properties of this and other questions included on the 2018 BC AHS can be requested at [mccreary@mcs.bc.ca](mailto:mccreary@mcs.bc.ca).

Before being administered, the questionnaire was pilot-tested in diverse communities across BC. The pilots included over 800 youth from a range of backgrounds, ages, and life experiences. Piloting ensured the survey could be completed in a single 45-minute class period and that questions were clear and understandable to young people.

Fact sheets were created to share information about the 2018 BC AHS with school districts, parents/guardians, and students.

## TARGET POPULATION AND SAMPLE

The final target population for the 2018 BC AHS consisted of 999 public schools and included all 255,146 students enrolled in Grades 7–12 in the 2017/18 school year. It excluded students enrolled in private schools, alternative education programs, custody centres, provincial resource centres, distance education, continuing education, electronic delivery schools, and those being home schooled.

The sample design for the 2018 BC AHS was similar in scope to that used for previous waves of the survey. The sampling frame was essentially the 2017/18 BC Ministry of Education’s list of all BC public school classrooms stratified by geography and by grade.

The 2018 BC AHS was designed to produce statistically reliable estimates at each grade level, for each of the province’s 16 Health Service Delivery Areas (HSDA). Independent random samples of classrooms were selected in each region by grade. All students enrolled in each selected classroom, fell into the sample. As in previous cycles, ungraded students (1.2% of the population) were prorated across the graded enrolments to produce the final target population numbers.

For each HSDA and grade, the required sample size (number of respondents) was allocated proportionately to the school districts in that HSDA. Three school districts were split across HSDA boundaries and this was accounted for in the calculations.

The required number of respondents in each region/grade was then increased to account for expected non-response based on the 2013 BC AHS response rates. The resulting sample of students was translated into classes to be sampled. A sampling rate of approximately every third class was used in most school districts, whilst smaller districts in HSDA 11 (North Shore/Coast Garibaldi) opted for a census of students.

Sample sizes were calculated to ensure resulting regional estimates by grade would have maximum standard errors ranging from 3% in larger HSDA/grades to around 4% for smaller ones. It was determined that an approximate overall sample of 28,400 would meet the precision requirements. The actual sample of 38,015 exceeded expectations with most estimated standard errors being below 3%, and only a small handful being over 3.5%.

The design effects were calculated to look at the effects of the complex sample design compared to simple random sampling. Provincially, the overall design effect was around 1.5, with HSDA level variance from just below 1.0 to 2.1 with all but 1 HSDA being below 2.0.

Target population: Mainstream Public schools – Sept 2017 enrolment (ungraded prorated)						
GRADE 7	GRADE 8	GRADE 9	GRADE 10	GRADE 11	GRADE 12	Total
39,388	40,766	41,508	43,260	44,659	45,565	255,146

## SURVEY ADMINISTRATION

As in previous waves of the BC AHS, data collection occurred in schools between February and June 2018. The survey procedures were approved by the Behavioural Research Ethics Board of the University of British Columbia (#H17-01307).

In classes selected for the survey, letters were sent home for parents/guardians describing the survey, topics covered, and the voluntary nature of student participation. In many districts, additional notices were sent via the school email system and school newsletters. Parents and students were invited to view a detailed list of the topics and their rationale (without actual question wording), as well as background information on the history of the survey and the uses of the data on the McCreary website. Parents could also review the survey questionnaire at the school office.

School districts opted for either parental notification and student consent, or signed parental consent and student consent for students to participate. In districts with parental and student consent, students in the sampled classrooms were only eligible to participate if they returned a consent form signed by their parent or guardian. In school districts with parental notification, students exclusively made the decision to participate, unless the parent explicitly refused for the student to participate. Initially, one school district chose parental notification for older students, and signed parental consent for younger (Grade 7) students; 10 chose signed parental consent (including four who later switched to parental notification); and 47 chose parental notification.

Participation was completely voluntary, anonymous, and confidential. Student names were not recorded, and students were instructed not to put their names on the questionnaires, which were sealed after completion. In school districts requiring parental consent, consent forms were kept separately from surveys. Students received a card at the end of the survey with information about helplines and other resources, including Kids Help Phone and the McCreary website.

**If you ever need to talk to someone, please contact:**

**Kids Help Phone**  
Tel: 1-800-668-6868 (24/7)  
Live chat: [www.kidshelpline.ca](http://www.kidshelpline.ca)

**Youth Space**  
Text: 1-778-783-0177  
Live chat: [www.youthspace.ca](http://www.youthspace.ca)

**Crisis Centre (1-800-SUICIDE)**  
Tel: 1-800-784-2433 (24/7)

**Youth in BC**  
Live chat: [www.youthinbc.com](http://www.youthinbc.com)

**Kuu-Us Crisis Line-Aboriginal youth**  
Tel: 1-800-588-8717 (24/7)

**Medical advice from a nurse**  
Tel: 811 (24/7)

for taking part in this study!  
will be available at [www.mcs.bc.ca](http://www.mcs.bc.ca).

**McCreary Centre Society**

**? Comments? Contact us!**  
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improve youth health in your community?  
our **Youth Action Grants** and get up to \$500 for  
led project. Visit [www.mcs.bc.ca](http://www.mcs.bc.ca) to apply.

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Students received a card with information and resources after completing the survey.

The survey was administered during regular school hours by a public health nurse, nursing student, or other trained administrator, who was also available to provide instructions for completing the questionnaire, to answer student questions, and to ensure response privacy. Survey administrators were given standardized instructions on how to administer the survey and answer questions. Administrators also collected information on classroom enrolment, absenteeism, and parent or student refusals, for use in calculating response rates and weighting the survey data. Surveys were returned sealed to McCreary, where they were checked individually before data entry.

## SAMPLE REPRESENTATION: Coverage and response rates

The coverage rate is the proportion of the target population covered by participating school districts and that is actually represented by the sample. The coverage of the 2018 BC AHS is considered to be excellent at 95.3% of public-school students in Grades 7–12.

The survey population in 2018 consisted of schools in 58 participating school districts, including Conseil scolaire francophone for the first time. Two of BC’s 60 school districts chose not to participate—Langley and Stikine; and Prince George school district did not allow Grade 7 students to participate. Stikine is a small school district and did not negatively affect coverage in that HSDA region. However, the lack of participation of Langley in Fraser South HSDA resulted in a coverage rate of 81% for that HSDA, and the non-participation of Grade 7’s in Prince George led to an overall coverage rate of 89% in the Northern Interior HSDA (and a coverage rate of 32% among Grade 7’s). Coverage rates were 100% for all other areas of the province.

The target sample for the 2018 BC AHS consisted of all the students enrolled in the 2,175 classrooms that were randomly selected from among all of the classrooms in the participating school districts. The response rate represents the percentage of students enrolled in the selected classes that completed the survey and provided useable information.

Where the response rate is less than 100%, the difference is generally accounted for by the proportion of enrolled students who did not take the survey because they were absent that day, they did not provide written parental consent to participate (where this was required), or the student themselves did not wish to participate. Absenteeism was the largest source of non-response (13%), followed by failure to return consent forms (8%), parent refusals (2%), and student refusals (1%).

Response rates by consent type and reason for non response

	2017-18 enrolment	Students in sampled classes	Absent	Parent refusals	Consent forms not returned	Student refusals	Incomplete or unusable	Usable	Response rate*
Participating school districts (58/60)									
Parental consent (6/60)‡	48,743	11,805	11%	6%	32%	0%	0%	6,642	56%
Parental notification (51/60)	184,287	36,397	14%	0%	0%	2%	0%	30,206	83%
Combination (1/60)	12,107	1,490	12%	3%	6%	1%	0%	1,167	78%
Total participating SD's	245,137	49,692	13%	2%	8%	1%	0%	38,015	77%
Non-participating school districts (2/60)	10,009								
Provincial total—All school districts	255,146								

\* Other reasons for not completing survey were unknown, and may have included consent form returned but student absent, student had unique educational needs (ESL, special needs), or surveyor miscounted.

‡ Grade 7 students in one school district did not participate in the survey.

The target population's grade structure is well represented by the overall sample, and variation by whether school districts required signed parent and student consent or parental notification and student consent were anticipated at the survey design stage and were oversampled to ensure there would be adequate respondents. Any regional or grade differences in coverage and response rates were accounted for in the weighting.

For operational reasons, the minimum class size for sampling was generally set at 10. The elimination of very small classes added less than 0.4% to the under-coverage rate and was distributed widely across the province.

The overall response rate for the 2018 BC AHS was 76.5%, which continued the steadily improving trend across the BC AHS cycles. The response rates achieved exceed those assumed in the sample size calculations and led to a higher-than-expected sample size. Inaccurate information about class sizes, increases in multi-grade classes, changes in consent procedures during survey administration and a switch to a census in some school districts led to oversampling in each of the 16 HSDAs.

The 2018 BC AHS was completed by 38,164 students. During the data cleaning process 149 surveys (0.3% of students enrolled in the selected classes) were removed due to limited, unusable, or joking responses. This left a final sample of 38,015. More than one in seven public school students in Grades 7 to 12 participated in the 2018 BC AHS.

As with previous versions of the BC AHS, analyses were undertaken to see whether changes in consent procedures and school district participation had a large enough impact on the estimates to warrant a caution about comparability. No concerns were identified at the provincial and Health Authority level, but trends to some previous survey years were not possible for those HSDA's where there were large scale changes in consent procedures. This is due to uncertainty about whether any differences in proportions between the years represent true population changes or were due to the increased diversity of students who completed surveys.

**2018 BC ADOLESCENT HEALTH SURVEY CONSENT PROCEDURES**

**CONSENT PROCEDURES FOR THE BC AHS**  
 The BC Adolescent Health Survey (BC AHS) receives ethics approval from the University of British Columbia's Behavioural Research Ethics Board and is being conducted in line with Tri-Council Policies which govern ethical research in Canada.

Although it is considered a low-risk study, it is very important that no student participates without themselves or their parent/guardian being fully aware of the potential risks and benefits of taking part.

All school districts who participate in the 2018 BC Adolescent Health Survey (BC AHS) can choose what consent process is required for a student to participate. Either parental notification and student consent or signed parental consent and student consent. In both cases students retain the right to choose not to participate.

- Parental notification and student consent

This is the recommended consent procedure for the BC AHS and has been used by the majority of school districts since 2003.

A letter is sent to a student's parent or guardian that explains the BC AHS, informs them where they can look at a copy of the survey and encourages them to discuss the decision to participate with their child. If a parent or guardian does not wish their child to participate in the survey they inform the school prior to administration.

- Signed parental consent and student consent

With this type of consent procedure, a parent or guardian must provide signed consent before their child can participate in the BC AHS. A letter is sent home with the student, which includes a form which a parent or guardian is required to sign and return stating whether or not their child can participate.

If the signed form is not returned to the school, students are not able to participate. In 2013, only 3% of parents actually refused their consent, while in those districts where signed parental consent was required, 21% of students did not participate because they either forgot to take the form home or forgot to return it once it had been signed. This drastically affected response rates. For example, the average response rate in school districts that chose signed parental consent and student consent was 53%, whereas in school districts that opted for parental notification and student consent, the average response rate was 62%.

**BENEFITS OF PARENTAL NOTIFICATION AND STUDENT CONSENT**  
 The benefits of parental notification and student consent include the following:

- A greater percentage of students participate in the survey which provides the most accurate and comprehensive picture of youth health. There is also greater representation from more vulnerable students (such as those with chaotic home lives or no parent available to sign a consent form).
- Fewer classrooms are required to be sampled because a much higher response rate is obtained when there is no requirement to return a form.
- Students retain the right not to participate in the survey and to have any concerns addressed before they do participate. In 2013, 2% of students opted out of the survey altogether and others skipped questions they did not feel comfortable answering.
- Research (e.g., Fricker & Gura, 2008) has shown that requiring parental consent for youth health research may confuse students about their personal rights in accessing health care and prevent the participation of youth who are unable to discuss their health with their parents for a variety of reasons.

**IF YOU HAVE QUESTIONS ABOUT THE CONSENT PROCEDURES FOR THE BC AHS, PLEASE CONTACT:**

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School districts received information about the different consent options available for participation in the survey.

## WEIGHTING

Data from each of the 38,015 valid student surveys was weighted and scaled to provide an accurate representation of the 255,146 students in BC's 60 school districts. The weight indicates how many students in the population each respondent represents, and must be applied to the BC AHS sample to ensure accurate results. As has been the case in previous cycles, the BC AHS data was weighted based on the probability of selection, non-response adjustment, and population readjustments.

Usually, all respondents within a school district/grade would have approximately the same weight, and that weight would be approximately equal to the overall weight at the HSDA/grade level. The weights range from 2.5 to 11.4 with a mean weight of 6.7.

### SPECIAL THANKS:

McCreary Centre Society would like to thank Dr. Rita Green who prepared technical notes used in this fact sheet, developed the sampling plan and conducted the statistical weighting for the 2018 BC AHS.

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## RELEASABILITY CRITERIA AND STATISTICAL TESTING

The release of percentage estimates from the BC AHS is governed by the size of their standard errors (SE's). Generally, percentage estimates with SE's less than 5.00 are published without qualification, those with SE's of 5.00–12.49 are published with caution because of potentially high sampling variability (indicated by a \* in community-friendly publications), and those with SE's exceeding 12.50 are suppressed.

Estimates may also be suppressed to guard the anonymity of respondents (e.g., if the number of respondents in a category is so low that deductive disclosure is possible).

Differences in proportions or percentages between groups are tested for statistical significance before they are released.

Because of the large sample for the BC AHS, observed differences between estimates may well be statistically significant, or may even be significant through random chance, but have no program or policy importance. Some significant findings may therefore not be reported if there is no theoretically sound hypothesis for their occurrence. However, any differences that are noted in the reported results have been tested for statistical significance.

In contrast to simple random sampling, the complex sample design of the BC AHS requires that statistical software take factors such as the stratification, cluster sampling, and weighting into account in order to produce accurate standard error estimates and statistical testing. Statistical analyses of the BC AHS have been performed using SPSS Complex Samples software.