

**British Columbia
Youth Health Trends:**



**A Retrospective,
1992-2003**

prepared by Roger S. Tonkin



The McCreary Centre Society

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3552 East Hastings Street
Vancouver, BC V5K 2A7
Tel: 604-291-1996
Fax: 604-291-7308
E-mail: mccreary@mcs.bc.ca
www.mcs.bc.ca

The McCreary Centre Society is a non-government, non-profit organization committed to improving the health of BC youth through research, education and community-based projects. Founded in 1977, the Society sponsors and promotes a wide range of activities and research to address unmet health needs of young people.

Areas of interest include:

- Health promotion
- Health risk behaviours
- Youth participation and leadership skills development

Project Team

Roger Tonkin
Director & Founder

Aileen Murphy
Managing Director

Zina Lee
Research Associate

Elizabeth Saewyc
Research Director

Alison Liebel
Communications Coordinator

Dodie Katzenstein
Communications Consultant

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Executive Summary

Most BC teenagers have good physical and emotional health and do not engage in risky behaviours. Survey data collected over a decade by The McCreary Centre Society contradict many popular misconceptions about increases in drug use, violence, sexual activity and obesity in this age group. The past decade has seen many improvements, including reductions in smoking, sexual activity, physical and sexual abuse, and fighting. However, some indicators of youth health remain troubling, notably the percentage of youth who consider, plan or attempt suicide, which has not declined. Binge drinking by some youth and higher rates of heavy or frequent marijuana use are also cause for concern. Other troubling issues relate to particular population groups, including Aboriginal youth, youth with chronic health conditions or mental health problems, those who mature early or look older than their peers, and youth who have been abused.

These are the key messages in this report, *British Columbia Youth Health Trends: A Retrospective, 1992-2003*. The report provides an overview of adolescent health trends in BC identified in results from the Adolescent Health Survey (AHS), a large-scale survey conducted in grades 7-12 in 1992, 1998 and 2003. The AHS covers a range of topics on the physical and emotional health of BC students, and on risk and protective factors affecting health in adolescence and in later life. The report tracks what has improved in youth health status, and what challenges remain. It offers additional commentary on factors influencing health in selected groups within the BC school population, and a

comparison of BC's youth health status with that in other jurisdictions.

Overall, the survey results show a marked stability in most trends. The data reveal no large or alarming shifts in health status or in the prevalence of risky behaviours over the decade. Progress towards improving youth health has been steady, and even those youth in circumstances of high risk demonstrate remarkable resilience.

Positive trends

The report cites many examples of positive trends, including a decline in risky sexual behaviours. Overall, adolescents are delaying the start of sexual activity. While early or unprotected sex remains a health risk factor for some in this age group, the percentage of students who reported having engaged in sexual intercourse declined overall between 1992 and 2003. Despite common perceptions that youth violence has increased, all age groups showed decreases in physical fighting between 1992 and 2003. The percentage of BC students who report experience of physical abuse has declined steadily, and those reporting sexual abuse also declined.

The most positive trend in substance use is a dramatic reduction in cigarette smoking. The percentage of students who had ever smoked fell from 60% in 1992 to 34% in 2003. The proportion of smokers who are frequent smokers also fell.

Stability in patterns of physical growth and weight also contradicts current concern that there is an epidemic of obesity among youth. The BC trends

indicate only a slight increase in overweight and obesity among students.

Adolescents who report feeling strongly connected to families and to school, and those who have high educational aspirations consistently report better health and lower rates of risk taking.

Negative trends

Mental health issues, especially teen suicide, continue to be a major concern. To date, policies and prevention programs appear to have had no impact on the suicide attempt rate among students. There has been no change in the percentage of BC students who reported considering suicide in the 1992 AHS and those who did so in 2003.

The use of marijuana by BC students escalated in the 1990's and only moderated slightly in the early 2000's. In 1992 a higher percentage of students reported smoking cigarettes than trying marijuana (60% vs. 25%), but in 2003 the gap had narrowed considerably (34% vs. 37%). Among users, heavier and more frequent use of marijuana increased during the decade, raising concerns about the addictive nature of marijuana use in this age group. Although regular use of alcohol by BC students decreased from 1992 to 2003, binge drinking among students who drink increased during this same period.

Special focus topics

The AHS data help to identify groups within the larger school population that face higher than average levels of risk. Students who mature early or look older than they are, have a chronic health condition or mental health problem, those who have been abused, and Aboriginal students all report less favourable results. Region of residence, gender, age and developmental stage also were identified as factors that influence health status in a variety of ways.

National and international comparisons

A comparable survey of American youth reports higher prevalence of smoking than did the AHS for BC youth in each of the three survey periods. In two of the periods, the US study reports a lower prevalence of binge drinking than did the AHS. In both BC and the US, marijuana use peaked in 1998-99 and declined in 2003, but in those years, a greater percentage of BC youth used marijuana than did youth in the US. Use of other drugs such as cocaine also peaked in 1998-99, but the prevalence of its use was higher in the US than in BC in 1992-93 and 2003. Fewer BC youth smoked cigarettes as compared to the Canadian average.

BC adolescents reported less violence (physical fighting and coercive sex) than did the US students nationally, but compared less favourably to students in Washington State in terms of physical and sexual abuse. Among BC adolescents, there was less prevalence of sexual intercourse than among the US students.

The percentage of BC students who have made a suicide attempt is similar to that for US students. Trends related to suicide in both of these jurisdictions showed no significant improvement over time.

The data suggest that a smaller proportion of BC youth are sexually active compared with Canadian national survey results. Comparable prevalence of sexual activity and self-protection in BC and selected European countries was more variable.

McCreary plans to conduct a fourth BC survey (AHS IV) in 2008 that will provide further opportunities to track youth health trends in the province.

Introduction

This special report outlines trends in adolescent health and risky behaviors in British Columbia. It represents over 15 years of collaborative efforts by the McCreary Centre Society (MCS) to provide evidence on which to base youth health policy and programs in our province.

The report provides an overview of the trends identified in three large-scale studies conducted over a decade. The studies are based on results from the Adolescent Health Survey (AHS), conducted in 1992, 1998, and 2003 in grades 7-12 in BC. This report tracks what has improved in the health status of our school population, and what challenges remain. It also offers a comparison of adolescent health status in BC with that in other jurisdictions, and provides additional commentary on factors influencing health in selected groups within the BC school population.

Successive cohorts of student respondents have engaged in the AHS process and contributed to its success. The voices of these youth, as the anonymous contributors of the data, are heard throughout this report.

McCreary's priority in these studies has been to get data back into the hands of students, families and communities as quickly as possible and in reader-friendly formats, while remaining mindful of the needs of the wider academic audience. Community-based research can and should maintain academic research standards, withstand peer review and attain publication in peer-reviewed journals. We anticipate publishing follow-ups to this report that will signal new beginnings towards a more academic phase of our work.

A number of important lessons have been learned from a decade of AHS research. We have learned that asking questions, even sensitive questions, of our youth has many positive benefits and few negative outcomes. We have learned that community-based population health research by a small non-profit organization can be sustainable, cost-effective and exciting. We have also learned that there is considerable appetite for user-friendly, credible, current, and accessible data about our own young people.

This opportunity to tell the AHS story and to celebrate more than a decade of efforts by The McCreary Centre Society would not be possible without the generous initial support of the Vancouver Foundation, BC Health Research Foundation, Lions Gate Medical Research Foundation and the BC Children's Hospital Foundation. The survey activities also owe much to the continuing financial contributions of the BC Ministry of Children and Family Development as well as other provincial and federal ministries, and to the dedicated in-kind support of BC's public health nurses in conducting the surveys in classrooms across the province.

At times we have felt like "the little engine that could," on a track that climbed steadily uphill. We have had to overcome the negative reputation of our student questionnaire after it was dubbed "that sex and drugs survey" by the media. We have struggled for sufficient funding to complete the survey process and the publication of results. Throughout these times, we have been sustained by the spirit of the

young people who participated in the survey and who consistently demonstrated their appreciation of the opportunity to share their views. We also acknowledge the hard work and dedication of Aileen Murphy and her research staff. They have all taken their roles seriously and made an invaluable contribution to these efforts.



Roger S. Tonkin
Director and Founder
The McCreary Centre Society

May, 2005

About the Adolescent Health Survey

The Adolescent Health Survey (AHS) comprises a series of studies on the physical and emotional health of BC youth, and on risk and protective factors affecting health in adolescence and in later life. The survey, the largest of its kind in Canada, is designed to track trends in the health status of BC students and to identify new issues in youth health. The survey is conducted by The McCreary Centre Society (MCS), a non-profit, non-government research organization based in Vancouver.

MCS conducted the first Adolescent Health Survey (AHS I) in 1992, the second (AHS II) in 1998, and the most recent (AHS III) in 2003. In total, over 72,000 students have completed the surveys. Plans are underway for the next survey (AHS IV) to be conducted in 2008.

Content

The survey is conducted with an anonymous, confidential paper-and-pencil questionnaire which asks questions on various topics; the questions (140 items on the 2003 survey) solicit information on many factors that influence both present and future health. The survey assesses physical and mental health status, and risky and health-promoting behaviours. It also measures the impact on youth of broader social determinants of health. In addition, the 2003 and 1998 surveys looked at students' feelings of connectedness with family and school; high levels of connectedness have been identified as protective factors for this age group.

Participation

Not every student in BC is asked to participate in the survey. Public school classes are randomly selected to provide a representative sample of all regions in the province. Public health nurses and trained administrators conduct the survey in classrooms in grades 7-12. Students take about 45 minutes to complete the questionnaire and are given contact information if they have concerns or questions about the survey. Participation is voluntary, and parents' consent is arranged through each school district. Some school districts in each survey year have chosen for various reasons not to participate, and no data from those districts is included in the reported results.

Results of the surveys are widely distributed in published reports and on the Internet. A wide range of government agencies, health professionals, schools and community organizations use the survey information in planning programs, policies and services for youth. The survey data also provide the basis for academic inquiry on various topics related to adolescent health and development.

For more information about survey methodology and results, and about future activities related to the Adolescent Health Survey, please contact:

The McCreary Centre Society
3552 East Hastings Street
Vancouver, BC V5K 2A7
Tel: 604-291-1996 / Fax: 604-291-7308
Email: mccreary@mcs.bc.ca
www.mcs.bc.ca

Some Background on Youth Health Surveys

Systematic surveying of adolescent health status and risky behaviours is a relatively recent endeavor. Its origins date back to the early 1980's with the initiatives of researchers at the US Centers for Disease Control (CDC) in Atlanta and the University of Minnesota in Minneapolis. McCreary's work in BC has benefited greatly from the advice and support of these two US research teams.

The use of large-scale, school-based surveys of school-aged children is well-established although not universal. The World Health Organization conducts cross-national surveys of health behavior. A recent Health Canada report, *Young People in Canada: Their health and well-being* (Boyce, W., 2004) is an example of Canada's contribution to this body of work*. Other national studies of child and youth health have been undertaken in Canada including the National Longitudinal Study of Children and Youth (NLSCY). These Canadian surveys are limited in that their sampling frame does not permit generation of province-specific regional results.

Today McCreary is but one of a handful of organizations that continue to undertake this type of population-based research with this age group. McCreary's Adolescent Health Survey (AHS) has now been conducted three times, and a fourth survey is planned for 2008. (See About the Adolescent Health Survey, p. 8)

*All noted references are detailed on page 34 or listed with McCreary Centre Society publications, p. 35

Surveys are time-consuming and costly undertakings. The first AHS in 1992 was funded by private BC foundations; AHS II and III were underwritten by a mixture of provincial and federal contracts. While AHS I was largely the effort of two persons, AHS III benefited from having a larger team of researchers and consultants to draw upon. To be successful, such surveys require considerable input and feedback from a myriad of governmental and non-governmental advisors, including youth themselves. The AHS now draws on the talents of a large and complex supporting cast of advisors, volunteers and local administrators.

Over 70,000 adolescents have participated in the three major AHS surveys and in various smaller surveys of special youth populations. AHS participation rates of students and school districts has, for surveys of this type, been high. The quality of survey responses and questionnaire completion rates are also high; less than 1% of all student questionnaires had to be rejected because of incomplete or obvious false answers.

Numerous Canadian surveys have been conducted on specific topics or population groups. These include the Ontario Student Alcohol and Drug Use Survey (Adlaf, E.M., Paglia, A. & Centre for Addition and Mental Health, 2003) and the Canadian Youth, Sexual Health and HIV/AIDS Study (Boyce, W., Doherty, M., Fortin, C., & MacKinnon, D., 2003). Common limitations of such surveys include a narrow focus on specific problems or behaviours, small sample size or low participation rates. To be understood, adolescent

behaviours must be viewed in context. That context must reflect the multiple determinants of adolescent health and risky behaviours which can be better assessed with an omnibus survey instrument like the AHS. One of the strengths of the AHS lies in its employment of an anonymous, confidential questionnaire. Assurance of confidentiality and an in-class administration process has enabled the MCS research team to ask students about sensitive issues such as sexual activity or abuse. When students feel assured that no one will know their individual responses, they are more likely to provide candid and reliable answers to questions on such topics.

It is important to sustain this research effort during the years between surveys. McCreary's strategy has been to ensure that demonstrable value-added activities such as the Next Step process and our special populations surveys continue to be undertaken. Next Step consists of community based, youth participatory workshops that promote discussion of the latest AHS findings and their implications. Special population surveys are non-randomized convenience sample studies of not-in-school adolescents such as street involved youth, youth in custody, and young sex trade workers. These specially adapted versions of AHS allow comparisons with mainstream youth. The mainstream data set is also large enough to enable secondary analysis of special sub-populations such as Aboriginal youth and youth with chronic health conditions, or on specific topics such as sexual health or youth violence. McCreary has published many reports based on this type of secondary analysis (see publications list, p. 35).

Surveys like the AHS collect considerable amounts of data and results that are well-suited for publication as academic papers in peer-reviewed professional journals or in government reports. Most results of surveys do not make it into the hands of the community or get reported in the media. MCS has pioneered the process in Canada of prompt data release and has encouraged public feedback on the data. MCS places a high priority on providing accessible, user-friendly electronic and hard copy versions of its published reports as soon as possible after the completion of the surveys. For example, the interval between collecting the final set of questionnaires and public release of the provincial report for AHS III was ten months. Major media outlets provided same-day coverage of the report, which was then distributed widely.

Traditionally, adolescents are thought of as problems and their needs as issues to be addressed with a firm hand. MCS has aimed for balance in its data reporting (see *Accenting the Positive* and *Healthy Youth Development: the opportunity of early adolescence*). This report notes improvements in several aspects of health and behaviour that were of concern in the late 1980's; it also identifies emerging new issues. We believe that this approach is the best way to help policy makers and the media reflect the positive qualities and potential of youth while not ignoring the challenges that remain. In keeping with this approach, this trends report is intended to document the strengths and resilience of youth, rather than to create an inventory of their deficits or of the risks they face.

Overall Trends

The stability of trends in key areas of adolescent growth and development is noteworthy and very encouraging. The survey results show no large or alarming shifts in health status or in the prevalence of risky behaviors over the past decade. Progress towards improving youth health has been steady, and even those youth who are in circumstances of high risk demonstrate remarkable resilience. This report does also point out some ways in which the health of young people has not improved.

Improvements in adolescent health and risks tend to cross a range of behaviours. The survey results show significant advances in important areas such as reductions in violence, smoking and physical and sexual abuse. However, not all students share equally in the noted improvements. Regional and ethnic differences continue to impact on youth health status. The population of BC students includes a minority who engage in multiple risky behaviours and are at greater risk than those who report engaging in no risky behaviours or in only one. Some risky behaviour patterns can also be observed among the mainstream student population. These are: the frequent use of marijuana, engagement in binge drinking and suicide attempts. The prevalence of these behaviours among BC adolescents has not shown improvement.

The AHS data help to identify populations that face higher than average levels of risk. Students who mature early or look older than they are, have a chronic health condition, or have been

abused all report less favourable results. These youth represent a minority of BC students, but trends in these populations highlight their greater need for early identification and intervention.

Because of the large volume of available data, McCreary has been somewhat selective in its choice of which indicators and supporting data to present in this and other reports. Some limitations of the data are related to the survey itself. A survey instrument is not a static tool. While much of the AHS questionnaire has been retained in its three versions, some new items have been added and some wording changed. This evolution is necessary to ensure that the surveys remain current and to seek information about new issues. One such example is an item added to the 2003 survey about time spent on the Internet, which has come into widespread use since the first survey in 1992. As a consequence, three-point trend data is not always available.

The report attempts to achieve a balance between the timeliness of an issue and the need to avoid overstating the evidence at hand. For example, items on body weight and height were not included in AHS II. However, given the current interest in weight, obesity and physical activity, these data are included although they are not available for all three surveys. Two points on a graph, ten years apart, are insufficient evidence to claim to show a trend, but the reader may find them more helpful than if this information had been omitted entirely.

Not all BC youth are represented in this report; a few school districts, especially in the Fraser Valley, have consistently refused to allow their students to participate in the surveys, and data from students in these districts is not reflected in the AHS results. Securing permission to include these unrepresented students remains a challenge for future surveys.

Violence

The media often rushes to cover incidents of youth violence or court proceedings about the aftermath of violence. This frequent and sometimes sensationalist coverage implies that violence among adolescents in BC is on the rise. The accumulated evidence from a decade of AHS data, however, contradicts this perception. A 2002 McCreary report, *Violence in Adolescence: injury, suicide and criminal violence in the lives of BC youth*, makes the case that, mortality, morbidity, and violence-related disorder has decreased in the past 20 years.

Our society has little tolerance for violence involving adolescents. A certain level of physical fighting can, in most instances, be considered within the scope of normal behaviour in this age group; it does not usually result in serious physical or emotional injury and only very rarely in death. Only the most isolated and serious incidents are likely to be indicators of a significant disorder. However, physical fighting among mainstream, non-street involved adolescents remains a reasonable indicator of the extent of violence in schools and in communities, and the progressive decrease shown in Figure 1 is encouraging*.

*All differences are statistically significant except where noted.

Figure 1
Physical Fighting in the Past Year

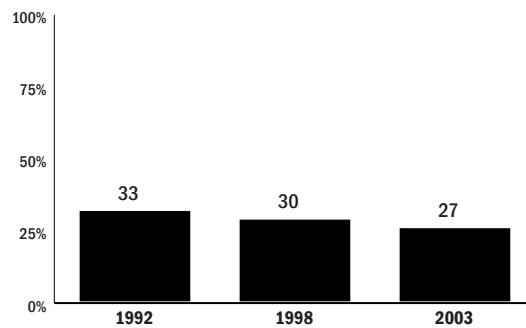


Table 1
Determinants of Fighting

	1992	2003
Gender		
Male	45%	36%
Female	21%	18%
Age Group		
Early adolescence (12-14 yrs)	36%	30%
Late adolescence (17+ yrs)	27%	22%
Region		
Urban (Greater Vancouver region)	29% ⁱ	25% ⁱ
Rural (Kootenays region)	37%	29%

i) Difference between 1992 and 2003 urban data is not statistically significant.

Gender and age influence the prevalence of violence in adolescence. More boys than girls report having been in a fight, but the percentage so involved also decreased more in boys than in girls (Table 1). Each adolescent developmental period (early, middle, late) showed decreases in physical fighting between 1992 and 2003. In 2003 30% of early adolescents were involved in a fight compared with only 22% of late adolescents.

A number of correlates or determinants are associated with fighting behaviour among students. These include: presence of a chronic physical or

Increases Likelihood of Fighting:

- having a chronic physical or emotional health condition
- looking older than same age peers
- problem substance use
- being victimized

Decreases Likelihood of Fighting:

- feeling safe at school
- family connectedness
- school connectedness

Table 2
Bullying, Harassment, Feelings of Safety & Discrimination (2003)

	Male	Female
Harassment (verbal) in the past year	30%	39%
Excluded purposely by peers at school in the past year	25%	38%
Always feel safe at school	41%	39%
Felt unsafe on Internet	7%	23%
Discriminated against in the past year due to:		
Race	14%	11%
Appearance (physical)	18%	22%
Sexual orientation	4% ⁱ	3% ⁱ

i) Difference between male and female sexual orientation data is not statistically significant.

emotional condition, looking older, being victimized, and substance use. Trends among some of these student populations are not encouraging. Youth with a chronic illness or disability and those that look older than their peers did not report a decrease in physical fights between 1998 and 2003, although among substance users fighting did decrease between 1992 and 2003.

Physical fighting is one of a cluster of questions the AHS asks about adolescent violence. Responses to questions about carrying a weapon, being injured during a fight, and physical assault also showed modest improvements over the decade. Discrimination and bullying, especially at school (Table 2), are other issues of contemporary concern assessed in the survey. Between 1998 and 2003, the proportion of students reporting racial discrimination increased, while discrimination based on appearance decreased and discrimination due to sexual orientation remained the same. Feelings of safety at school declined since 1998. Students who always feel safe at school are less likely to be involved in physical fights than those who rarely or never feel safe (21% vs. 47% in 2003), and they are less likely to carry a weapon to school (5% vs. 23% in 2003).

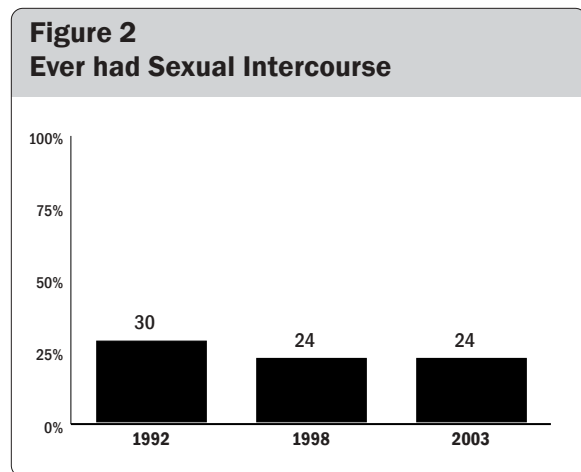
Sexual Health

Development of a sexual identity and experimentation with sexual activity are part of the normal challenges of adolescence. Adolescents, their peers, families and community must balance a complex mix of individual, religious and social values and attitudes when confronting this most personal of human behaviours. Adolescent sexual development must now occur in a world burdened by HIV/AIDS and other sexually-transmitted infections, and by the risk of sexual exploitation.

Most adolescents are inundated by provocative images and information through the media and the Internet. However, young people also have broader access to a range of preventive and protective strategies such as a variety of contraceptive options, including emergency contraception, and to antibiotics and condoms. Today's students generally can find reliable and available information about sex in schools and in the community, if not at home.

Adolescence remains a learning process, and the early stages of sexual development often are more influenced by peers and personal experimentation than by educational and health promotion efforts. However, the data show encouraging trends towards a decline in risky sexual behaviours. Overall, adolescents are delaying the start of sexual activity. While early or unprotected sex remains a health risk factor for some in this age group, the percentage of students who reported having engaged in sexual intercourse declined overall from 30% to 24% (Figure 2) between 1992 and 2003.

Among boys the percentage reporting having had sex dropped from 33% in 1992 to 23% in 2003. Girls showed a less marked decrease (from 28% to 24%). By 2003, the percentage of sexually-active



adolescents using condoms had risen to 64% from 58% in 1992, while 42% used oral contraceptives. Between 1998 and 2003, the percentage who used no reliable method of contraception did not change, with 21% of boys in 1998 and 2003 using no method, and 26% of girls in 1998 and 25% in 2003 using no method.

Age plays an influential role in the prevalence of sexual intercourse and self-protective practices among students. The percentage of late adolescents who had become sexually active dropped from 55% in 1992 to 46% in 1998, then remained the same at 47% in 2003. A very encouraging trend was observed among early adolescents, where the percentage, while predictably lower than for older students, dropped from 15% in 1992 to 10% in 1998 and to 8% in 2003 (Table 3).

Correlates or determinants of sexual behaviour are similar to those affecting other forms of risky adolescent behaviour. They include: history of abuse, looking older than peers, and involvement

Table 3
Determinants of Ever Having Had Sexual Intercourse

	1992	2003
Gender		
Male	33%	23% ⁱ
Female	28%	24% ⁱ
Age Group		
Early adolescence (12-14 yrs)	15%	8%
Late adolescence (17+ yrs)	55%	47%
Region		
Urban (Greater Vancouver region)	20% ⁱⁱ	18% ⁱⁱ
Rural (Kootenays region)	34% ⁱⁱⁱ	31% ⁱⁱⁱ

i) Difference between 2003 male and female data is not statistically significant.

ii) Difference between 1992 and 2003 urban data is not statistically significant.

iii) Difference between 1992 and 2003 rural data is not statistically significant.

in alcohol and marijuana use. Trends in sexual behaviours among some sub-populations of students differed from the mainstream, but, with a few exceptions, they too have improved between 1992 and 2003. Some improvements in this indicator were quite marked. For example, the proportion of Aboriginal students who are sexually active decreased from 52% in 1992 to 36% in 2003. However, gay, lesbian and bisexual youth showed no decrease in sexual activity between 1992 and 2003.

Negative experiences such as sexual abuse and experiencing coercive sex have a significant impact on the lives of adolescents. Youth with a history of sexual abuse are more likely to become sexually active at an early age. In 2003, 47% of youth who had been sexually abused had engaged in sexual intercourse, compared to 22% of youth who did not report abuse. However, even in these population groups, the trend does offer some hope. Among youth reporting sexual abuse, the proportion who are sexually active declined from 55% in 1992 to 47% in 2003.

Increases Likelihood of Becoming Sexually Active:

- alcohol use
- marijuana use
- sexual abuse
- date rape
- emotional distress
- looking older than same age peers

Decreases Likelihood of Becoming Sexually Active:

- family connectedness
- school connectedness
- having educational aspirations

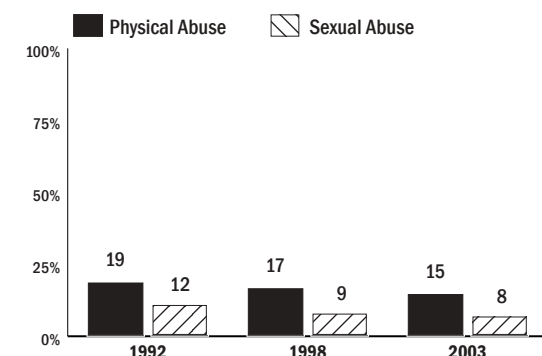
Abuse

Adolescents are very conscious of their personal boundaries and may become distressed when these boundaries are violated. They value privacy in their own room, confidentiality in their contacts with professionals, and freedom from exploitation on the Internet or in the workplace. The AHS surveys included various measures of self-reported sense of safety in school, in the community and on the Internet.

One of the strongest indicators of risks to youth safety is their reporting of experiencing physical or sexual abuse. The percentage of BC students reporting physical abuse has declined steadily from 19% in 1992 to 15% in 2003, while those reporting sexual abuse also declined (from 12% in 1992 to 8% in 2003). These are very encouraging trends and reflect well on the prevention efforts of families, schools, communities and government programs in recent years (Figure 3).

These two indicators provide us with abuse prevalence data for BC and as such are a unique feature of the AHS trend data. However, the data is based on the students' perceptions and do not reveal when the abuse occurred, at whose hands it occurred, or whether or not the abusive experience

Figure 3
Ever Physically and Sexually Abused



was reported to any protective authorities. Certainly the self-report abuse rates from the confidential survey are larger than the actual provincial caseloads for youth services. This is not surprising, as decades of research have shown that youth are reluctant to disclose incidents of abuse.

Female students experience more physical and sexual abuse than do male students. Both genders report a consistent trend towards a decrease in abusive experiences (Table 4). In 2003, a lower percentage of students living in urban regions such as Greater Vancouver had experienced abuse, compared with those in rural regions such as the Kootenays. Ethnic differences in experiences of abuse continue to occur but demonstrate overall improvements. Aboriginal students were more likely to report abusive experiences than other students, but they too experienced significant improvement.

Younger adolescents report less physical and/or sexual abuse than do older adolescents. The findings reinforce the importance of providing preventive services to all adolescents, regardless of age. The relationship between age, physical appearance, sexual abuse, and experience of forced sexual intercourse is demonstrated by findings from the 2003 AHS. While 3% of early adolescents and 6% of late adolescents reported having been forced to have sexual intercourse, these percentages were higher for students who reported that they looked older than others their own age; 11% of students who looked older than same-aged peers reported experience of sexual abuse and 6% of forced sexual intercourse, compared with 6% and 3% for those who looked the same age as their peers.

Students with mental health conditions were more likely to report both physical abuse and sexual abuse than did students without these challenges (Table 5). Similarly, gay, lesbian or bisexual youth

Table 4
Determinants of Physical and Sexual Abuse

Physical Abuse	1992	2003
Gender		
Male	15%	12%
Female	24%	18%
Age Group		
Early adolescence (12-14 yrs)	17%	14%
Late adolescence (17+ yrs)	21%	16%
Region		
Urban (Greater Vancouver region)	18% ⁱ	14%
Rural (Kootenays region)	17% ^{i,ii}	18% ⁱⁱ

i) Difference between 1992 urban and 1992 rural data is not statistically significant.

ii) Difference between 1992 and 2003 rural data is not statistically significant.

Sexual Abuse	1992	2003
Gender		
Male	4%	2%
Female	21%	13%
Age Group		
Early adolescence (12-14 yrs)	9%	6%
Late adolescence (17+ yrs)	17%	10%
Region		
Urban (Greater Vancouver region)	10% ⁱ	6% ⁱ
Rural (Kootenays region)	13% ⁱⁱ	10% ⁱⁱ

i) Difference between 1992 and 2003 urban data is not statistically significant.

ii) Difference between 1992 and 2003 rural data is not statistically significant.

Table 5
Mental Health, Sexual Orientation & Abuse (2003)

	Physical Abuse	Sexual Abuse
Severe emotional distress in the past month	37%	21%
Mental/emotional condition	39%	26%
Gay, lesbian and bisexual	32%	28%

were more likely to report a history of abuse as compared to heterosexual teens. The overall trends toward improvement in indicators of abuse were not evident in these vulnerable sub-populations.

Physical or sexual abuse can occur within the presumably protective environments of family and school. A low level of connectedness to family and school may reflect dysfunctional family life or inadequate schools. Those who have been physically or sexually abused generally reported lower connectedness to family and school. In 2003, only 29% of students who had been physically abused always felt safe at school, compared to 42% of non-abused students. Similarly, only 30% of sexually abused students always felt safe at school. Among students who had been forced to have sexual intercourse, only 28% reported always feeling safe at school. Between 1998 and 2003, the proportion of abused youth who always felt safe at school decreased. These troubling data point out the need for effective strategies to provide adequate levels of safety and protection for youth within their family, schools, communities and relationships.

Mental Health

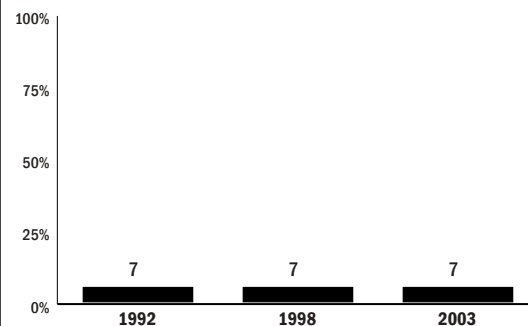
Mental health issues, especially teen suicide, continue to be a major concern in BC. To date, policies and prevention programs have had no impact on the suicide attempt rate among students (Figure 4). There has also been no change in the percentage of students who reported considering suicide in the 1992 AHS and those who did so in 2003 (16% in both years). Over this same period, adolescent suicide mortality rates have fluctuated (British Columbia Vital Statistics Agency, 2002) and do not show a consistent trend.

Suicide attempts are a useful indicator of mental health status in any age group. A larger proportion of adolescents consider or plan suicide than make an actual attempt. The percentage who make multiple attempts is even lower, and those who “succeed” in a suicide attempt fortunately are relatively few. However, adolescents who attempt suicide often do not come to the attention of parents or health professionals. Those who survive a suicide attempt too often bear the burden of their emotional distress alone or share it only with peers. Their distress, if unresolved, may have a life-long impact on health and well-being.

Males make fewer suicide attempts than do females, but the trends for both genders are unchanged (Table 6). AHS data show no real difference in the actual percentage of students in all age groups who have never made a suicide attempt (92% to 94%).

Some population groups have a higher prevalence of suicide attempts. In 1998 and 2003, Aboriginal students were more likely to report suicide attempts than other ethnic groups, but the rate of suicide attempts among Aboriginal students showed no significant change between 1992 (11%) and 2003 (12%).

Figure 4
Attempted Suicide in the Past Year



The percentage of suicide attempts was much higher and more variable between surveys among several other populations. Only 5% of students who had no chronic health problems or had never been sexually abused reported making a suicide attempt in 1992, 1998, or in 2003. However, in 2003, 10% of students who reported having a long-term illness had made a suicide attempt. Among students with a history of sexual abuse and among youth with a mental/emotional disorder, the percentage was 24% and 34% respectively. Students who identified with a sexual orientation other than heterosexual also reported a higher percentage of suicide attempts (25% in 2003). Among all of these groups, there was no change in the rate of suicide attempts between 1992 and 2003.

Regional differences in suicide attempts exist and vary slightly from survey year to survey year. In 2003 the Capital region had the lowest percentage with 5% of students reporting a suicide attempt, while the percentage in the Kootenays was 9%.

	1992	2003
Gender		
Male	4%	4%
Female	10%	10%
Age Group		
Early adolescence (12-14 yrs)	7%	7%
Middle adolescence (15-16 yrs)	8% ⁱ	7% ⁱ
Late adolescence (17+ yrs)	6%	6%
Region		
Urban (Greater Vancouver region)	5% ⁱⁱ	6%
Rural (Kootenays region)	7% ^{ii,iii}	9% ⁱⁱⁱ

i) Difference between 1992 and 2003 middle adolescence data is not statistically significant.
 ii) Difference between urban 1992 and rural 1992 data is not statistically significant.
 iii) Difference between 1992 and 2003 rural data is not statistically significant.

Protective factors such as family and school connectedness had predictable positive influences on student suicide attempts, but a sense of religiosity or spirituality did not. The percentage of students who reported not being religious and who had made a suicide attempt varied little over the three survey periods and was about the same (6% to 7%) as for students with very high levels of religiosity.

Other measures in the survey present further opportunities to assess the emotional well-being of BC students. These include self-rated health status and emotional distress (Table 7), in which there was little change over the past decade. Between 1992 and 2003, only slight variations occurred in the proportion of BC students reporting fair or poor self-rated physical health status (15% in 1992, 13% in 1998 and 14% in 2003) or severe emotional distress (8% in 1992, 7% in 1998 and 8% in 2003).

	Male	Female
Self-Rated Health Status		
Excellent-good	89%	83%
Fair-poor	11%	17%
Health Problems		
Common ^A	90%	96%
Chronic condition or disability	6%	7%
Emotional Health		
Severe emotional distress in the past month	6%	10%
Mental/emotional condition	2%	4%
Sought professional help in the past year ^B	43%	51%

^AHeadache, stomachache, backache, or dizziness in the past 6 months
^BSchool staff, health professional, or social services

Increases Likelihood of Attempting Suicide:

- binge drinking in past month (youth who binge drink are 2 times more likely vs. non-bingers)
- having a chronic health condition (youth with a chronic health condition are 2 times more likely vs. youth without)
- ever used marijuana (youth who have used marijuana are 3 times more likely vs. non-users)
- history of sexual abuse (youth who have been sexually abused are 6 times more likely vs. youth who have not)
- gay, lesbian or bisexual (GLB youth are 6 times more likely vs. heterosexual youth)
- emotional distress in past month (emotionally distressed youth are 9 times more likely vs. youth who are not)

Decreases Likelihood of Attempting Suicide:

- connected to family (youth who are connected to family are 99% less likely vs. youth who are not connected)
- school connectedness (youth who are connected to school are 98% less likely vs. youth who are not connected)

Substance Use

Experimentation with more adult lifestyles is a normal aspect of adolescent development. However, this process may begin too early, involve practices that compromise health in later life, or be engaged in in dangerous ways. The motivations behind such experimentation are diverse. They include identity formation, mind or mood alteration, enhancement of physical appearance, peer approval and social inclusion, and deliberate risk taking. The extent to which substance use occurs in adolescence ranges from simple experimentation to significant addiction. Trends in these behaviours are influenced by factors such as what substances are readily accessible and on what is fashionable in the peer group. The outcomes of substance misuse are partly dependent on the context of use and can include suspension from school, punitive action from parents or other authorities, or even lethal consequences such as motor vehicle injury or suicide as a result of concomitant risky behaviours.

The folklore or myths surrounding some forms of substance misuse may outpace the actual behaviours. For example, concern is often expressed about the reportedly growing use of crystal methamphetamine and Ecstasy, especially in the context of extreme parties or raves. However, data from the 2003 AHS demonstrate a decline in the percentage of students reporting having used these substances. Other MCS survey data do confirm much higher rates of use among street-involved youth (*Between the Cracks*, 2002).

Trends in substance use by adolescents can be demonstrated using three separate indicators. The levels for use of cigarettes, alcohol, and marijuana show that adolescents do experiment with these substances, and that the extent of regular use has fluctuated over the past decade. Reductions in

tobacco use are particularly encouraging in that they show that patterns of substance use can be modified in a relatively short period of time.

Tobacco

The most positive trend in substance use is the decline in cigarette consumption (Figure 5). The percentage of students who had ever smoked fell from 60% in 1992 to 34% in 2003. Among those who have tried tobacco, frequent smokers (3 or more times in past month) fell from a high of 34% in 1998 to 27% in 2003. In 1992 equal percentages of boys and girls smoked (60%), but by 2003 the percentage had declined more for boys than for girls. AHS results for 2003 showed that 31% of boys and 37% of girls ever smoked, but, among smokers, males and females had similar patterns of use (27% smoked on 3 or more days in past month) (Table 8).

Aboriginal students had a higher prevalence of smoking in all three years as compared to non-Aboriginal students, but use also declined dramati-

cally in this population from 81% in 1992 to 49% in 2003. Urban and early adolescents were less likely to smoke than older adolescents or those in the more rural regions. The overall improvement extended across various determinants of behaviour. However, looking older than peers, having a mental/emotional disorder, or having been abused were associated with higher smoking levels.

Figure 5
Ever Tried Cigarette Smoking

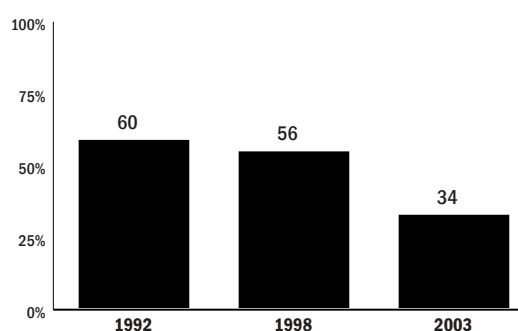
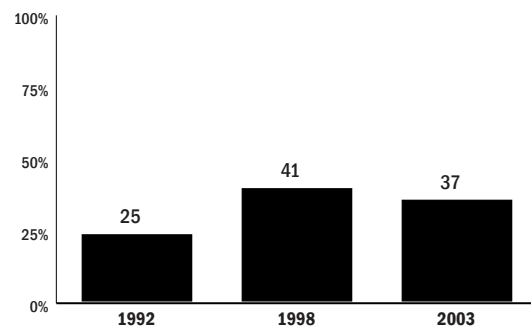


Table 8
Determinants of Smoking, Binge Drinking & Marijuana Use (2003)

	Ever tried smoking	Ever used marijuana	Binge drinking in the past month ^A
Gender			
Male	31%	38% ⁱ	46%
Female	37%	37% ⁱ	43%
Age Group			
Early adolescence (12-14 yrs)	19%	20%	28%
Late adolescence (17+ yrs)	53%	56%	55%
Region			
Urban (Greater Vancouver region)	29%	29%	39%
Rural (Kootenays region)	45%	51%	53%

^AOf those who have tried alcohol
ⁱ) Difference between marijuana use for male and female data is not statistically significant.

**Figure 6
Ever Used Marijuana**



Marijuana

The use of marijuana by BC students escalated in the 1990's and only moderated slightly in the early 2000's (Figure 6). In 1992 a higher percentage of students reported smoking cigarettes than trying marijuana (60% vs. 25%), but in 2003 the gap had narrowed considerably (34% vs. 37%). Two other features of this use pattern were a drop in age of first marijuana use and an increase in frequency of use among marijuana users. Otherwise, marijuana use shows a similar determinants pattern to that observed with cigarette smoking, with less use in younger vs. older students and in urban vs. rural regions (Table 8).

Among users, frequent marijuana use (3 or more times in past month) was more variable. In 2003

Increases Likelihood of Marijuana Use:

- looking older than same age peers
- being emotionally distressed
- being abused

Decreases Likelihood of Marijuana Use:

- family connectedness
- school connectedness

more boys than girls were frequent users (37% vs. 29% of users). With the exception of the Interior and Kootenays, marijuana users in urban regions were as likely to be frequent users as those in most rural regions. Among marijuana users, heavier use (10+ times in past month) increased over the past decade, especially among boys.

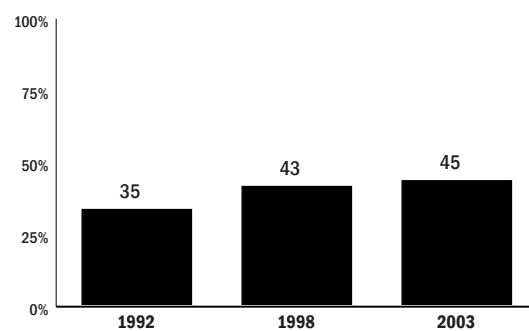
Alcohol

The use of alcohol by BC students has decreased from 68% in 1992 to 58% in 2003. However, among students who drink, binge drinking has increased during this same period (Figure 7).

Binge drinking, defined as 5 or more drinks in a row within a couple of hours, is associated with greater risks such as alcohol poisoning, car crashes, failure to wear safety belts or to use condoms during sex.

Binge drinking is not common. Less than half of students who ever drink reported binge drinking, with once or twice a month as the most commonly-reported frequency. Male and female students were equally likely to report binge drinking (Table 8).

**Figure 7
Binge Drinking in the Past Month^{i,ii}**



i) Binge drinking was defined as 5 or more drinks in a row within a couple of hours

ii) Of adolescents who have ever tried alcohol

Among alcohol users, frequent binge drinking (3 or more times in past month) also increased (from 14% in 1992 to 20% in 2003) and is slightly more common in boys than girls (21% vs. 18%). The Kootenay region has the highest percentage of frequent binge drinking (26%), while Greater Vancouver has the lowest (16%). The overall increase in frequent binge drinking among students who use alcohol is not observed in all regions. Other determinants such as age, looking older than peers and experience of physical or sexual abuse are associated with frequent binge drinking. Contrary to popular belief, in 2003 frequent binge drinking among Aboriginal students was not different from non-Aboriginals.

Obesity & Overweight

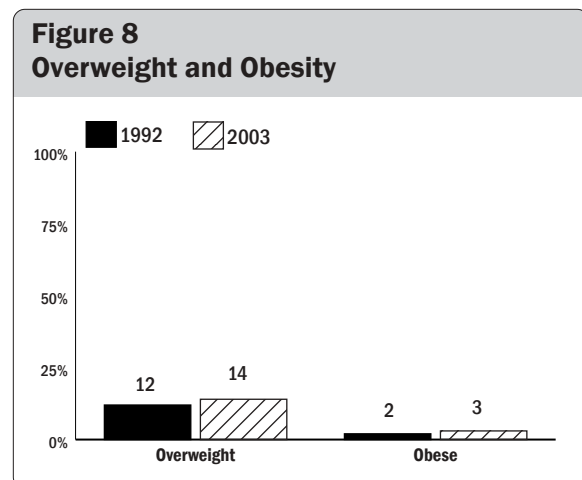
An increase in height and weight is a natural occurrence during the adolescent growth spurt. Similarly, the accumulation of body fat is an essential precursor to the onset of puberty and, in girls, increases as puberty progresses. As these changes proceed, it is not uncommon for adolescents to become preoccupied with their physical appearance and weight. The AHS data reveal important gender differences in how adolescents feel about these changes. Many normal-weight boys think they weigh too little, while normal-weight girls think they weigh too much. Even though their weight goals are in opposite directions, both genders use diet and exercise to change their weight and shape.

Physical activity levels among BC adolescents have not changed much. The percentage of students who said they did not exercise at all was 11% in 1992, dropping slightly to 9% in 2003. The percentage of students who exercised 5 or more days a week rose from 39% in 1992 to 41% in 2003.

Between 1992 and 2003, more girls reported frequent exercise (5 or more times a week). While there was no change in rates of frequent exercise among boys, males remained slightly more active than females. Older adolescents were less likely to exercise five or more days a week, and there was no overall trend towards more frequent exercise among this age group.

Some adolescents push themselves further by exercising obsessively, using anabolic steroids or engaging in disordered eating behaviours. Disordered eating remains relatively uncommon, however. For example, binge eating occurred 2 or more times a week in 3% of both male and female students as reported in the 2003 survey. This percentage is slightly lower than in 1992. A few adolescents with more disturbed body image or more determined drive for thinness may compromise their health and require medical and psychological intervention.

The prevalence of obesity and its associated health consequences have received much attention in recent years. To provide reliable and comparable trend data for overweight and obesity among BC students, analysis of the AHS data employed calculation of the Body Mass Index (BMI) for



each respondent. The data was then grouped according to Canada's national cut-offs for overweight and obesity (Cole, T.J., Bellizzi, M., Flegal, K.M., & Dietz, W.H., 2002). The results of this process are shown in Figure 8.

The mean BMI for BC's adolescents remained relatively constant between 1992 and 2003. Despite considerable individual differences in growth trajectories among BC students, the overall stability of physical growth patterns is reassuring. This stability appears contradictory to current concern that there is an epidemic of obesity among children and youth. The BC trends indicate only a slight increase in overweight and obesity among BC students. The percentage of normal-weight students also changed only slightly. In 2003 it was 79% compared to 77% in 1992.

It is important to note an absence of agreement among youth health experts about the use of self-report data and BMI's as indicators of overweight or obesity in adolescents, and about which cut-off levels should be used. A more accurate assessment could be obtained with actual measurement of students' height, weight and skinfold thickness, but this approach was not practical for such a large-scale, province-wide undertaking. The AHS collected self-report height and weight data and only in 1992 and 2003. Despite these limitations, the data provide a useful basis for understanding these trends.

Overall, female students in 2003 were less likely to be overweight than males and demonstrated no increase in overweight and only a slight increase in obese status when compared with 1992 (Table 9). Older adolescents were more likely to be overweight or obese compared to younger students. When data on overweight and obesity for 2003 were combined, the percentage varied from 12% in Greater Vancouver to 20% in the Northwest region, and was 18% in Aboriginal students. In

view of growing concern about Type 2 diabetes, both the Northwestern and the Aboriginal percentages warrant further examination.

Table 9
Determinants of Overweight and Obesity

Overweight	1992	2003
Gender		
Male	15%	18%
Female	9% ⁱ	10% ⁱ
Age Group		
Early adolescence (12-14 yrs)	12% ⁱⁱ	13%
Late adolescence (17+ yrs)	13% ^{ii,iii}	15% ⁱⁱⁱ
Region		
Urban (Greater Vancouver region)	11% ^{v,vii}	12% ^{vi,vii}
Rural (Kootenays region)	13% ^{iv,v}	15% ^{iv,vi}

i) Difference between 1992 and 2003 female data is not statistically significant.

ii) Difference between 1992 early and late adolescence data is not statistically significant.

iii) Difference between 1992 and 2003 late adolescence data is not statistically significant.

iv) Difference between 1992 and 2003 rural data is not statistically significant.

v) Difference between 1992 urban and rural data is not statistically significant.

vi) Difference between 2003 urban and rural data is not statistically significant.

vii) Difference between 1992 and 2003 urban data is not statistically significant.

Obese	1992	2003
Gender		
Male	2%	5%
Female	1%	2%
Age Group		
Early adolescence (12-14 yrs)	2%	3%
Late adolescence (17+ yrs)	2%	4%
Region		
Urban (Greater Vancouver region)	2% ⁱⁱ	3% ⁱⁱⁱ
Rural (Kootenays region)	2% ^{i,ii}	3% ^{i,iii}

i) Difference between 1992 and 2003 rural data is not statistically significant.

ii) Difference between 1992 urban and rural data is not statistically significant.

iii) Difference between 2003 urban and rural data is not statistically significant.

Special Focus Topics:

Health Determinants & Population Groups

The adolescents of BC are not a homogeneous group. Special populations or sub-groups exist within the mainstream of today's youth. Some groups are often referred to as being high risk, vulnerable, special needs, or marginalized. Unfortunately, such characterizations tend to promote a negative image. These young people are too often seen as problems, while their positive, more resilient aspects are ignored or discounted. These sub-groups are found within and outside of the school system. Their characteristics vary over time and reflect the impact of the current determinants of health upon their behaviour and their health profiles.

The following sections present trends in selected indicators for some health determinants and special populations of youth.

Health status

Self-reported assessments of health status are recognized as overall indicators of well-being in all age groups. In 2003 most students (86%) rated their health status as good or excellent. This percentage was unchanged since 1992. Also unchanged from 1998 was the percentage of males (8%) and females (11%) who reported that they had a health condition or disability that limited their activity. Despite their generally good health, students continue to report frequent physical and/or emotional complaints. Close to half of female students (42%) report having "a lot" of physical or emotional complaints (more than males, at 28%).

Age, developmental stage & sexual behaviours

Age and grade level are associated with predictable changes in adolescent health behaviours. Many risky behaviours are more prevalent in older students. For example, initiation of sexual activity increases as adolescence progresses. Other behaviours, such as physical fighting, decrease by the time of late adolescence.

Developmental stage also influences behaviour. The current trend for most children is to reach puberty considerably earlier than did the children of a century ago. However, adolescent development occurs along a variable timetable for different individuals. Differences in maturation levels are often associated with differences in the age of onset of certain behaviours such as sexual activity. These variations are considered to be normal and often are closely associated with pubertal development. Factors other than puberty also can be important influences on the initiation of sexual activity. These factors include: self esteem, personal and family values, religiosity, academic expectations, use and misuse of alcohol and other substances, and exposure to abuse.

As noted earlier, the percentage of students who are sexually active students declined from 30% in 1992 to 24% in 2003. Engagement in sexual intercourse during early adolescence has decreased from 15% of students in 1992 to 8% in 2003. This is an encouraging result, as early initiation of sexual activity has been shown to be a health risk factor.

Table 10
Appearance & Sexual Activity (2003)

	Look younger than peers	Look same age as peers	Look older than peers
Ever had sexual intercourse	18%	20%	33%
Forced sexual intercourse	4%	3%	6%
Sexual abuse	7%	6%	11%
Had sex after using alcohol/drugs ^A	30%	27%	30%
Condom use ^A	62%	65% ⁱ	64% ⁱ

^AThe last time had sex; Of sexually active youth

i) Difference between condom use for look the same age and look older data is not statistically significant.

How adolescents see themselves is another factor affecting behaviour (Table 10). Adolescent females who feel that they look older than their peers are more likely to engage in risky behaviours and are more likely to be sexually victimized. All too often, an adolescent female who has been abused, has low connectedness to family and/or school and who physically looks more mature than her age becomes involved in an escalating pattern of multiple risky behaviours including street involvement and sexual exploitation.

The overall trend for sexual intercourse has declined in all three adolescent age groups (early, middle and late). Among those who are sexually active, use of condoms increased between 1998 and 2003. Half of the early adolescents who are sexually active rely solely on the condom as a pregnancy control device. They are more likely to report using no prevention method and are less likely to use reliable contraception than older youth (25% of early adolescents vs. 14% of late adolescents use no method of contraception; 6% vs 27% use the pill, depo-provera, or a diaphragm).

Gender & weight issues

In adolescence, gender is often expressed through experimentation with differing lifestyles, identities and expectations. Previous sections of this report

have noted various differences between survey results for male and female students in health status and in risk and protective behaviours. Especially for girls, the age of onset of puberty and the rapidity of adolescent maturation influences behaviour. Maturing earlier or later than peers has demonstrable effects. In general, an earlier age of menstruation is associated with increases in total body fat. Eating disorders (such as anorexia nervosa) and obesity are two extreme points on either end of the weight and shape continuum. While considerable attention and concern is directed towards each of these extremes, a much larger segment of the adolescent population for both genders lies within the healthy middle ground (Table 11).

Table 11
Weight, Shape, & Activity by Gender (2003)

	Male	Female
Mean height (in feet and inches)	5' 7"	5' 4"
Mean weight (in pounds)	144	121
Exercise (5+ times in the past week)	49%	33%
Extracurricular activity ^A	68%	76%
Trying to gain weight	26%	4%
Trying to lose weight	22%	55%

^ASports, dance, art, or clubs once a week or more in the past month

Ethnicity and suicide

Use of a survey to assess the influence of ethnicity on youth health status remains problematic. While the AHS includes a question about ethnic identification, the data do not provide a clear picture of the relationship between ethnic background and health. Many students responded to this item in the survey by reporting they were “Canadian” rather than a more specific category reflective of their heritage. Use of ethnicity as a determinant also runs the risk of introducing a cultural bias that undeservedly stereotypes and stigmatizes some adolescents. However, when students do reliably self-identify along ethnic lines, the resulting data can support useful secondary analysis, such as previous McCreary studies on the health of Aboriginal youth and Chinese youth.

Aboriginal students are beginning to be identified as a priority in their own communities. As well, the educational, health, and child welfare systems have endeavored to address particular issues in Aboriginal adolescent development. Substance misuse, addictions and teen pregnancy are important community concerns. Social issues include underachievement in school and lower rates of high school completion among Aboriginal students, higher suicide rates, and disproportionate representation among children and youth in government care.

Each of these concerns is reflected in the broader issue of well-being and mental health among Aboriginal youth. The best available indicator of mental health is having never made a suicide attempt (Table 12). This indicator demonstrates lower rates among Aboriginal students as compared to non-Aboriginal students, but only in 1998 and 2003. School may be protective against suicide as Aboriginal youth who are street-involved appear to have even higher rates of suicide attempts (*Raven's Children*, 2000).

Table 12
Aboriginal Students & Suicide Attempts (2003)

	Male	Female
Considered suicide ^A	14%	29%
Planned suicide ^A	11%	22%
Attempted Suicide^A		
Once	3%	8%
Two or more times	3%	8%

^AIn the past year

When compared with their non-Aboriginal peers, Aboriginal students in 1998 and 2003 were more likely to consider, plan, or attempt suicide. Similar to those for the mainstream youth population, survey results for Aboriginal students showed no improvement in relation to suicide. In both 1992 and 2003, approximately 1 in 5 Aboriginal adolescents considered suicide and 1 in 10 made an actual attempt.

Research by Ruth Turner for completion of a Ph.D. thesis at Simon Fraser University, based on the 1992 AHS, determined that while prevalence of suicide attempts was higher in Aboriginal students, risk and protective factors did not differ from non-Aboriginal students (Turner, R.A., 1999).

Region of residence & violence

A rural lifestyle, despite potential health benefits, can be limiting for adolescents in terms of educational options, employment opportunities, and even television and Internet access. Rural regions also are associated with greater risk of injury due to car crashes, fires, and hunting and workplace injuries. As well, the region of residence influences adolescents' exposure to physical fighting, assaults and weapon carrying.

Location of residence within the province affects the range of available health and education services. Beyond the Lower Mainland and Capital regions, many students in both rural and smaller urban communities must spend part of each day on a school bus or live away from home in boarding arrangements. These challenges impact on peer and family relationships and on involvement in sports and other recreational activities. Rural areas may pose additional risks to adolescent health and safety, such as added risks associated with driving after use of alcohol or drugs where there is no access to public transportation.

Youth involvement in violence and the seriousness of that involvement improved in all regions surveyed in 2003 (Table 13). However, urban areas of the province continued to have lower percentages of youth engaged in fighting than rural regions (25% vs. 29%). Weapon carrying in schools varied much less in all regions over time and ranged from 5% to 8% of students.

Table 13
Region of Residence & Violence (2003)

	Urban (Greater Vancouver)	Rural (Kootenay Region)
Carried a weapon^A	7% ⁱ	8% ⁱ
Physical fight^B	25%	29%
Injured in a fight^B	3%	3%
Physically assaulted at school^B	9% ⁱⁱ	11% ⁱⁱ
Never/rarely feel safe at school	7% ⁱⁱⁱ	8% ⁱⁱⁱ

^AIn the past month at school
^BIn the past year
i) Difference between urban and rural carried a weapon data is not statistically significant.
ii) Difference between urban and rural physically assaulted at school data is not statistically significant.
iii) Difference between urban and rural feel safe at school data is not statistically significant.

Trends for physical assault and injury during a fight also improved. While there were more variations among different regions of the province, the usual urban versus rural differences did not appear. About 3% of students were injured during a fight in the urban communities, and the percentages were fairly similar in all regions of BC. Rates of physical assault by peers at school also were fairly similar in all regions.

Youth with chronic health conditions and abuse

In 2003 13% of students with no health problems experienced physical abuse and 7% experienced sexual abuse. The percentages for those students with physical disabilities and mental health problems were considerably higher. While it would be hoped that adolescents with chronic conditions are offered more protection and have most if not all of their needs met, this does not appear to be the case in BC. Nor have they benefited to the same extent from the improvements in physical and sexual abuse trends among their schoolmates. Sexual abuse of adolescents with long-term illness has declined, but, for those adolescents with a physical disability or a mental/emotional condition, rates of reported abuse have not significantly improved (Table 14). Most affected are those with mental conditions. In 2003, among students with mental conditions, 39% reported physical abuse, 26% reported sexual abuse, and 15% reported forced sexual intercourse.

Risk and resilience

Risk taking and sensation seeking can become an important part of identity formation in adolescence. Teens are known for testing the limits—all kinds of limits! The desire to experiment with

Table 14
Chronic Conditions & Abuse

Physical Abuse	1998	2003
Physical disability	23% ^{i,iv}	26% ^{i,v}
Chronic health condition	24% ^{ii,iv}	21% ^{ii,v}
Mental/emotional condition	46% ⁱⁱⁱ	39% ⁱⁱⁱ
No health problems	15%	13%

i) Difference between 1998 and 2003 physical disability data is not statistically significant.

ii) Difference between 1998 and 2003 chronic health condition data is not statistically significant.

iii) Difference between 1998 and 2003 mental/emotional condition data is not statistically significant.

iv) Difference between 1998 physical disability and chronic health condition data is not statistically significant.

v) Difference between 2003 physical disability and chronic health condition data is not statistically significant.

Sexual Abuse	1998	2003
Physical disability	13% ^{i,ii}	14% ⁱ
Chronic health condition	14% ⁱⁱ	9% ⁱⁱⁱ
Mental/emotional condition	31% ^{iv}	26% ^{iv}
No health problems	8%	7% ⁱⁱⁱ

i) Difference between 1998 and 2003 physical disability data is not statistically significant.

ii) Difference between 1998 physical disability and chronic health condition data is not statistically significant.

iii) Difference between 2003 chronic health condition and no health problems data is not statistically significant.

iv) Difference between 1998 and 2003 mental/emotional condition data is not statistically significant.

adult behaviours, to conform to peer values and pressures or to test one's physical limits form part of the normal developmental process for many young people. Often, sensation seeking occurs in an effort to relieve boredom or to please peers. Fortunately, the survey results show that most students do not engage in any risky behaviour or in only one. A small minority indicate that they have engaged in a multiplicity of risky behaviours.

High academic expectations and good to excellent self-rated health status are important protective factors. They are prominent features among students who are not regular users of alcohol, tobacco, or drugs. A sense of connectedness builds resilience and therefore is also a protective factor. Connectedness protects against multiple risks and provides the capacity to bounce back, to get back on track when bad things do happen. For example, adolescents who have been bullied or sexually abused experience less emotional distress and are less likely to consider suicide if they feel connected. As with the 1998 AHS, the 2003 AHS survey assessed the degree to which students felt connected to their family and school, and the relationships between connectedness and engaging in multiple risk behaviours (Table 15).

Earlier in this report the trends in cigarette smoking, alcohol and marijuana use were outlined and the changes over time noted. A minority of students, 10% of males and 11% of females, report engaging in multiple risks in 2003 (Table 16). The

Table 15
Connectedness & Risky Behaviours (2003)

	Non-smoker	Regular smoker
Average family connectedness score ^A	0.57	0.54
Average school connectedness score ^A	0.69	0.57
	No marijuana use in the past month	Marijuana use in the past month
Average family connectedness score ^A	0.56	0.54
Average school connectedness score ^A	0.65	0.59
	Did not use other drugs^B	Ever used other drugs^B
Average family connectedness score ^A	0.57	0.54
Average school connectedness score ^A	0.69	0.60

^ABased on a 0 to 1 scale where 1 refers to high family and school connectedness
^BOther drugs include cocaine, hallucinogens, mushrooms, inhalants, amphetamines, heroin, injection drug use, steroids, and prescription pills without a doctor's consent

size of this group has stayed constant between 1992 and 2003. Multiple risk-takers are defined as having tried other illegal drugs, skipping school in the past month, having been in a physical fight in the past year, and having seriously considered suicide. This group is more likely to be older (14% late adolescents vs. 7% early adolescents), to have run away from home, to have significant physical and emotional health concerns, to have experienced abuse, and to have lower levels of family and school connectedness (Table 16).

Table 16
Determinants of Multiple Risk Takers (2003)

	0 Risks^B	3+ Risks^B
Gender		
Male	40%	10% ⁱ
Female	45%	11% ⁱ
Age Group		
Early Adolescence (12-14 yrs)	52%	7%
Late Adolescence (17+ yrs)	30%	14%
Region		
Urban (Greater Vancouver region)	44%	9%
Rural (Kootenays region)	38%	14%
Average Family Connectedness Score ^A	0.58	0.52
Average School Connectedness Score ^A	0.73	0.54

^ABased on a 0 to 1 scale where 1 refers to high family and school connectedness
^BMultiple risks included ever used hard drugs, skipped school in the past month, physical fight in the past year, and seriously considered suicide in the past year
i) Difference between male and female 3+ risks data is not statistically significant.

National & International Comparisons

A comprehensive comparison of adolescent health status and risky behaviours in BC with those of other jurisdictions is not possible, due to differences in scope and methodology among different surveys. However, it remains useful to review other data sources that can provide some insight on how BC students compare with youth in other provinces and countries. This section draws from other large scale surveys that:

- focus on adolescence and have comparable content
- have been repeated on a regular enough basis to allow examination of trends
- provide current data
- share similar methodology (self-report, confidential, school-based) with the AHS

In a few instances, smaller-scale, more narrowly focused data sets from the US are cited.

The reader should be aware of the limitations of any comparisons based on differing age groups, conducted in different years or using different survey methods. For example, data sets that include summary data for grades 7 to 12 may look quite different from those that report risky behaviours for grades 6 to 9.

The main source of US data in this section is the Youth Risk Behaviour Surveillance (YRBS) (Grunbaum, J.A., Kann, L., Kinchen, S., Ross, J., Hawkins, J., Lowry, R. et al., 2004; Kann, L., Kinchen, S.A., Williams, B.I., Ross, J.G., Lowry, R., Grunbaum, J.A., et al., 2000; Kann, L., Warren, C., Harris, W.A., Collins, J.L., Douglas, K.A., Collins,

M.E., et al. 1995). It is particularly useful as a comparative data source because many AHS items are derived from the YRBS. Conducted by the Centers for Disease Control and Prevention in the US, this large-scale national survey was conducted in 1993, 1999, and 2003. It provides a nationally representative sample of adolescents in grades 9-12. Comparisons with the YRBS in this report use AHS data for BC students in grades 9-12.

The principle source for national Canadian and for European data is the Health Behaviour in School-aged Children (HBSC) study conducted under the auspices of the World Health Organization (Boyce, W., 2004; World Health Organization, 2004). In Canada this survey provides a national representative sample of students in grades 6 to 10, while in international settings the survey was conducted in grades 7, 9 and 11. When comparing these various data sets with the AHS results, adjustments have been made to include those grades used in these two different data sets.

Other data sources included in these comparisons provide limited comparability because they were only done once or have specialized samples. The New Zealand Youth Survey was conducted in 2000 using a randomly-selected national sample of students aged 12 to 18 (Adolescent Health Research Group, 2003). The Canadian Youth Sexual Health and HIV /AIDS survey was conducted in 2002 and consisted of a random national sample of students in Grades 7, 9 and 11 (Boyce, W., Doherty, M., Fortin, C. & MacKinnon, D., 2003). Unfortunately, it had limited participation in BC.

Other interesting data sets include Finkelhor's (Finkelhorn, D., Ormrod, R., Turner, H., & Hamley, S.L., 2005) report on victimization of children and youth as derived from the recent national (US) Developmental Victimization Survey, while Bensley (Bensley, L.S., Van Eenwyk, J., Spieker, S.J., & Schoder, J., 1999) reports on a Washington State public school survey that included items on abuse.

Trends in risky behaviours

The overall trends in prevalence of risky behaviours improved in both the US and BC over the past decade. In terms of substance use, the YRBS reports higher prevalence of smoking than did the AHS in each of the three survey periods, and in two of the periods (1998/99 and 2003) it reports a lower prevalence of binge drinking and marijuana use than did the AHS (Table 17). In both surveys binge drinking and marijuana use peaked in 1998-99 and declined in 2003. Use of other drugs such as cocaine also peaked in 1998-99, but the prevalence of its use was higher in the US than in BC in 1992-93 and 2003.

Fewer BC youth smoked as compared to the Canadian average. Among grade 11 students, 42% of BC boys and 50% of girls smoked. Nationally 64% of boys and 65% of girls were smoking. Smoking rates among 15 year old girls in BC in 2003 (39%) were substantially less than those observed in England (70%), France (64%), and Sweden (56%). Overall, BC adolescents smoke less than their national, US, and European peers.

In 2003, use of marijuana by grade 9 girls in BC was above the national rate (35% vs. 30%), but for Grade 9 boys the BC and national rates were not significantly different (34% vs. 35%). In 2003 marijuana use by 15-year-old boys in BC was 41%, while use reported by HBSC in Europe varied considerably (43% in England, 34% in France, 8%

Table 17
Trends in Substance Use – BC vs. US

	BC ^A	US ^B
Ever Smoked		
1992/1993	66% ⁱ	70%
1998/1999	64% ⁱ	70%
2003	43%	58%
Binge Drinking in the Past Month		
1992/1993	31% ⁱⁱ	30% ⁱⁱ
1998/1999	36%	32%
2003	34%	28%
Ever Used Marijuana		
1992/1993	32% ⁱⁱⁱ	33% ⁱⁱⁱ
1998/1999	52%	47%
2003	47%	40%

^AAdolescent Health Survey - British Columbia, Canada 1992, 1998, & 2003. This represents a population-based sample of adolescents in grades 7 to 12 in British Columbia, Canada. The above data are of adolescents in grades 9 to 12 only.

^BYouth Risk Behavior Surveillance - United States 1993, 1999, & 2003. Atlanta, Georgia: Centers for Disease Control and Prevention. This is a nationally-representative sample of adolescents in grades 9 to 12.

i) Difference between 1992 and 1998 ever smoked data is not statistically significant.

ii) BC and US confidence intervals overlap.

iii) BC and US confidence intervals overlap.

in Sweden). While smoking was more prevalent in New Zealand youth aged 13 years, the marijuana use rates in New Zealand were similar for girls (18% in BC and 19% in New Zealand) and higher for boys (16% in BC and 21% in New Zealand).

Table 18 shows comparisons of selected indicators of risky behaviours for BC and US youth. BC adolescents reported less physical fighting and sexual activity than did the YRBS students. However, BC students appear to have experienced more physical and sexual abuse than did students in Washington State.

Similar to the BC trend, nationally there has been a decline in the proportion of Canadian youth who report having ever had sexual intercourse. The data suggest that a smaller proportion of BC

youth are sexually active compared with national survey results. Among Canadian students in grade 9, 23% of boys and 19% of girls have had sex vs. 15% of BC boys and 15% of BC girls in grade 9. Among grade 11 students, 40% of males and 46% of females in Canada have had sexual intercourse, as compared to 34% of males and 40% of females in BC. Comparable prevalences for 15-year-old females in Europe were more variable (40% in England, 18% in France, 31% in Sweden) compared with 23% in BC. Self protection as measured by condom use at last intercourse as reported by sexually-active 15-year-old females and males in BC was comparable to England, higher than in Sweden (for girls only) and lower than in France.

Suicidality as reflected in the percentage of students who have made a suicide attempt is about the same for BC and US students. The trends over time in the both of these jurisdictions have shown no improvement. Meaningful comparison of the physical and sexual abuse experience of students in different jurisdictions is not possible in this

report given the variations in study methodologies used for different surveys. However, it is possible to compare reports of forced sex. In 2003 2% of boys and 7% of girls in BC reported being coerced to have sex. This is lower than US rates from YRBS data showing that 6% of boys and 12% of girls were coerced into sex. The US rates of forced sex have not improved over time. Other forms of violence such as physical fighting were more prevalent among students in the USA than in BC (41% vs. 33% for students in grades 9 to 12) but the likelihood of injury as a result of a fight was not significantly different. In 2003, 15-year-old boys in BC were less likely to fight (38%) as compared to 15-year-old boys in England (54%), France (51%) or Sweden (42%).

Future considerations for national and international youth surveys should address the need to develop uniform questions on selected indicators to allow comparability of data related to key youth health issues.

Table 18
Selected Indicators - BC vs. US

	1992 BC ^A	1993 US	2003 BC ^A	2003 US
Physical fighting in the past year ^B	30%	42%	25%	33%
Attempted suicide in the past year ^B	7% ⁱ	9% ⁱ	7% ⁱⁱ	9% ⁱⁱ
Ever had sexual intercourse ^B	39%	53%	32%	47%
Physical abuse ^C	-	-	15%	11%
Sexual abuse ^C	-	-	8%	6%
Coercive sex ^C	-	-	5%	9%
Obese ^B	-	-	3%	14%

^AAdolescent Health Survey - British Columbia, Canada 1992, 1998, & 2003. This represents a population-based sample of adolescents in grades 7 to 12 in British Columbia, Canada. The above data are of adolescents in grades 9 to 12 only.

^BThe US data are from the Youth Risk Behavior Surveillance - United States 1993. Atlanta, Georgia: Centers for Disease Control and Prevention. This is a nationally-representative sample of adolescents in grades 9 to 12

^CThe US data are from a Washington study reported in Bensley, Van Eenwyk, Spieker, & Schoder (1999) and represents a sample of 4,790 students in grades 8, 10, and 12 in Washington public schools. Physical abuse was defined as "abused" and sexual abuse was defined as "molested."

i) BC and US confidence intervals overlap.

ii) BC and US confidence intervals overlap.

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