

**NATIONAL SCHOOL SURVEY
ON DRUGS AND SPORT**

FINAL REPORT

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NATIONAL SCHOOL SURVEY ON DRUGS AND SPORT

Final Report

**A study conducted by Price-Waterhouse (Ottawa)
on behalf of the
Canadian Centre for Drug-free Sport**

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1.0 Background

Price Waterhouse was commissioned by the Canadian Centre for Drug-free Sport (CCDS) to conduct a national survey on attitudes toward, and the use of, substances to enhance athletic performance by Canadian students. The survey gathered information from over 16,000 students between the ages of 11 and 18 years.

Substances used to enhance athletic performance include anabolic steroids, human growth hormone, stimulants and diuretics. It is believed that anabolic steroids were first used in Olympic competition in 1960 to increase strength. In the beginning, anabolic steroids were used primarily by male athletes competing in sports which required great strength, such as weightlifting, shot put, discus throw and javelin. Since that time, the use of these substances has proliferated widely. Drug use has been detected in a wide range of sports at both national and international levels of competition. No sport or gender is immune to the potential use of banned substances.

The use of steroids and other substances to improve athletic performance is not limited to the world of high performance athletes. They are also used by athletes and youths at the university/college and high school levels. Until recently, much of the attention with respect to these substances has been focused on athletes. However, the rationale behind their use is no longer limited to performance improvement or competitiveness. Increasingly, the use of steroids to improve body image is being recognized.

A previous Literature Review conducted by the CCDS revealed a limited number of studies on the prevalence of substances used to enhance athletic performance. The extent of the problem in Canada and elsewhere is not well documented, since there is insufficient research to provide a reliable estimate of prevalence rates. The authors of existing studies often expressed concern about non-reporting. Recorded statistics are believed to underreport the prevalence of use.

1.1 What the Study was Designed to Accomplish

The objective of the survey was to gather baseline information on the knowledge, attitudes and behaviour of Canadian students toward substances used to improve athletic performance. In addition, the survey included questions on self-esteem, ethics and behavioral intentions. The survey questionnaire also asked

students about their participation in sports and other forms of physical activity. The students were asked whether they had ever used substances to improve athletic performance, and whether they personally knew anyone who was using anabolic steroids.

1.2 A Description of the Study Process

The survey of over 16,000 students was conducted during the winter of 1992-93. Price Waterhouse developed the sampling frame and the survey protocol. The questionnaire was developed by Price Waterhouse and the CCDS, in consultation with key provincial sport and education bodies. The questionnaire was pre-tested to ensure that the students would be able to understand it.

The CCDS, in partnership with each of the provinces, was responsible for the distribution and collection of the questionnaires. The implementation of this research project was possible due to the support and cooperation of the provincial contacts, the school boards and the schools.

The completed surveys were then returned to Price Waterhouse for analysis and report writing.

The following table provides a summary of the number of questionnaires returned by province and by age group.

Summary of Completed Surveys

Region	Age Group			Total
	11 - 13 yrs	14 - 15 yrs	16+ yrs	
British Columbia	937	1,118	1,007	3,062
Prairie	862	920	1,068	2,850
Ontario	1,117	892	1,057	3,066
Quebec	776	1,149	1,240	3,165
Atlantic	1,277	1,408	1,341	4,026
Total	4,969	5,487	5,713	16,169

The responses were weighted by age and region for the analyses included in this report. The weights were calculated using data from the 1991 Census. Weighting by gender was not necessary as the proportion of male and female respondents in each region mirrored the population.

Survey respondents were divided into three age groups, an 11 to 13 age group, a 14 to 15 age group, and a 16 and over age group. Since respondents who were 10 or under only constituted 0.5% of the respondent population, these cases were dropped from the analysis. The students who were 18 years or over (8% of respondents) were categorized in the 16+ age group.

A more detailed description of the methodology is included in **Appendix A**. The questionnaire is provided in **Appendix B**.

1.3 Overview of the Report Structure

The remainder of the report is dedicated to the findings of the study. The following table highlights the structure of the report.

Chapter	Answers the Following Questions
Chapter 2 Knowledge of Substances used to improve athletic performance	<ul style="list-style-type: none"> • Do students think that there are substances that will improve an athlete's performance? • Which substances do students think will have an impact on an athlete's performance? • Do students think that substances used to improve athletic performance will harm them?
Chapter 3 Attitudes Toward Substances used to improve athletic performance	<ul style="list-style-type: none"> • Do students believe that using anabolic steroids to improve sports performance is cheating? • Do students believe that it is okay to try anabolic steroids? • Do students who have used anabolic steroids hold different attitudes from those who have not?
Chapter 4 Use of Substances to improve athletic performance	<ul style="list-style-type: none"> • How many students have used substances in order to improve athletic performance? • How many students have used anabolic steroids, and for what reasons? • Do the students who have used anabolic steroids differ in terms of age, gender or involvement in physical activity from those who have not used anabolic steroids?

Chapter	Answers the Following Questions
Chapter 5 Conclusions	<ul style="list-style-type: none">• What overall conclusions can be drawn as a result of this research?
Chapter 6 Limitations of the Research	<ul style="list-style-type: none">• What are the limitations of this research?• What is the statistical significance of the findings?

The data for the graphs in the text of the report are found in **Appendix C**.

2.0 Belief that Substances Will Enhance Athletic Performance

Students were asked a number of questions about their knowledge of substances used to improve athletic performance, especially anabolic steroids. Questions focused on the extent to which students believed that certain substances could enhance athletic performance, as well as the extent to which they believed that these substances could harm them.

- **Few students had never heard of anabolic steroids**

Only 4 percent of the students surveyed reported that they had never heard of anabolic steroids. A slightly larger proportion (5.8%) of younger students (those aged 11 to 13 years) were unaware of the substance. Of the students aged 14 to 15 years, 3.7% said that they had never heard of anabolic steroids. As shown in the table below, the proportion of students who were unaware of the substance decreases further among the students aged 16 years and older. In this age group, only 2.4% reported that they had never heard of anabolic steroids.

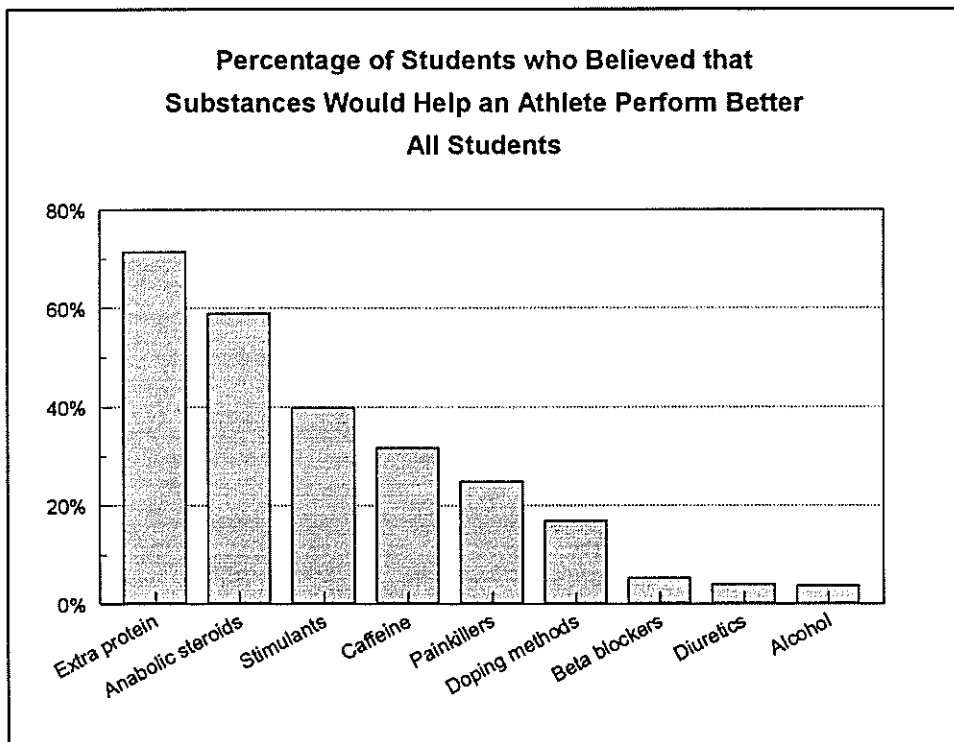
Awareness of Anabolic Steroids

	Age Group		
	11 - 13 yrs	14 - 15 yrs	16 yrs +
Have never heard of anabolic steroids	5.8%	3.7%	2.4%

- **Most students believed that there were substances that would help an athlete perform better**

Three out of four students surveyed (76.5%) agreed that there were one or more substances that would help an athlete improve his/her performance. Of the substances listed on the survey, extra protein and anabolic steroids were more often believed to help an athlete perform better. Almost three-quarters of the students (71.5%) thought that extra protein would help an athlete perform better, and six out of ten students (58.9%) thought that anabolic steroids would have a positive impact on an athlete's performance. As shown in Exhibit 2.1, below, students were much less likely to think that substances such as alcohol and diuretics would help an athlete perform better.

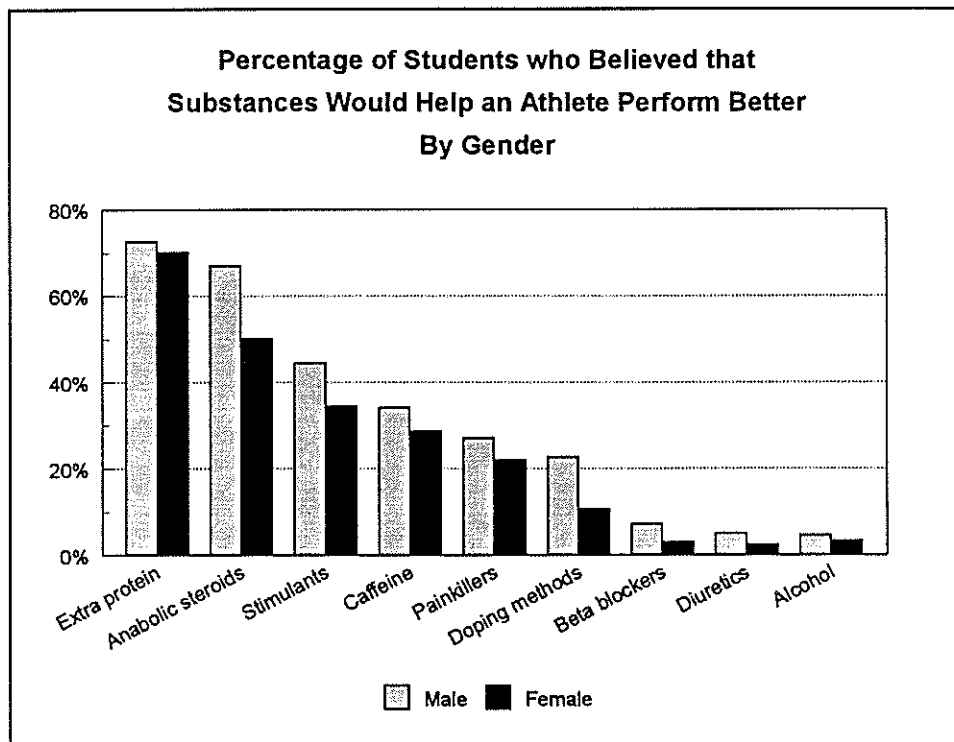
Exhibit 2.1



- **Male students and older students were more likely to believe that substances would help an athlete improve performance**

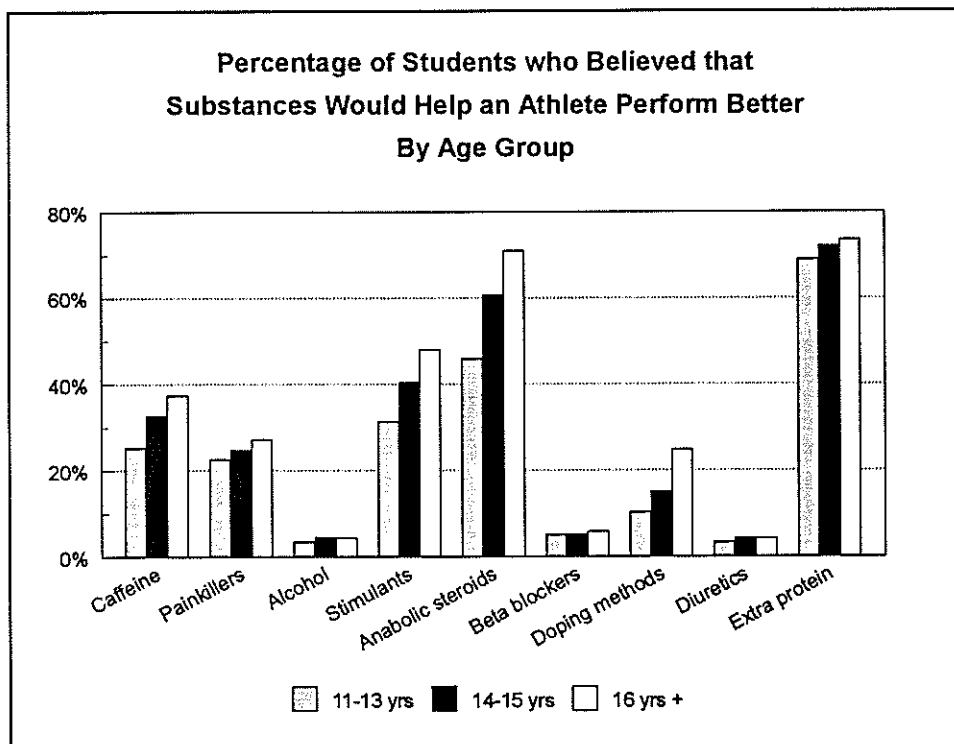
Male students were more likely than female students to believe that each of the substances studied would help an athlete improve his/her performance. For example, two-thirds of the male students (67.0%) thought that anabolic steroids would have a positive impact on athletic performance, while only one half of the female students (50.2%) held the same belief. The graph in Exhibit 2.2, below, highlights these differences in opinion between male and female students.

Exhibit 2.2



In most cases, older students were more likely than younger students to think that a substance would have a positive impact on an athlete's performance. In the case of anabolic steroids, 46% of younger students (11 to 13 years old) believed that anabolic steroids would improve athletic performance. This proportion increased to 61% among the 14 to 15 year old students, and further increased to 71% among students aged 16 years and older. Exhibit 2.3, below, highlights the differences between the three age groups with respect to the belief that substances will improve athletic performance.

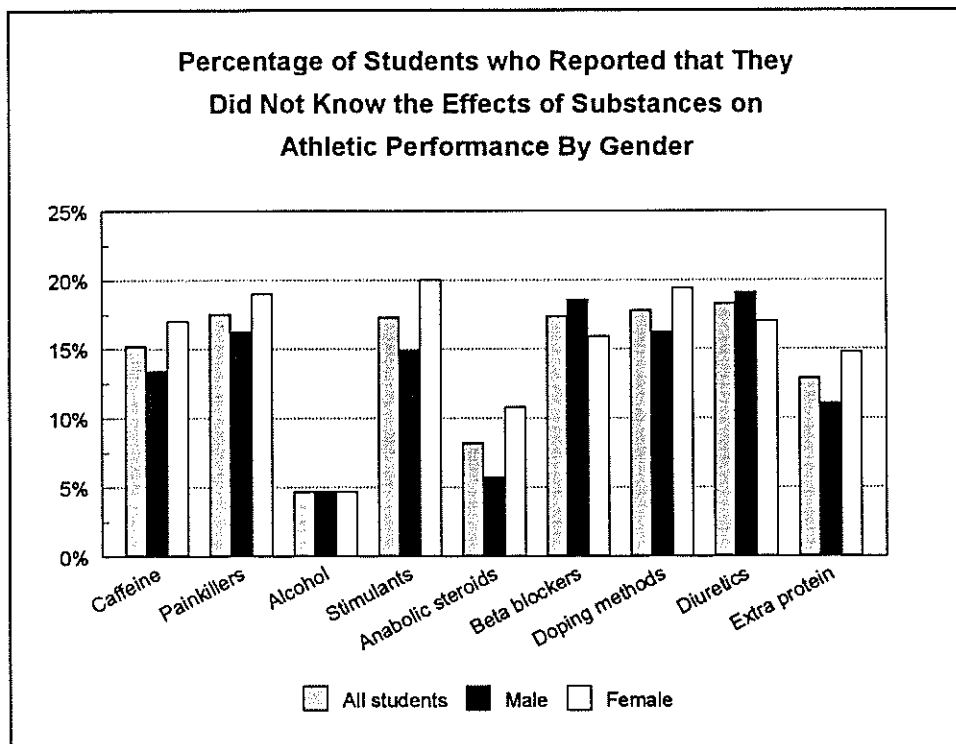
Exhibit 2.3



- Knowledge of the effects of substances on athletic performance varied by gender

For most of the substances studied, more females than males said they did not know whether the substances would help an athlete perform better. This is illustrated by Exhibit 2.4, below. In the case of anabolic steroids, 10.8% of female students reported that they did not know its effects, while only 5.7% of the male students indicated this.

Exhibit 2.4

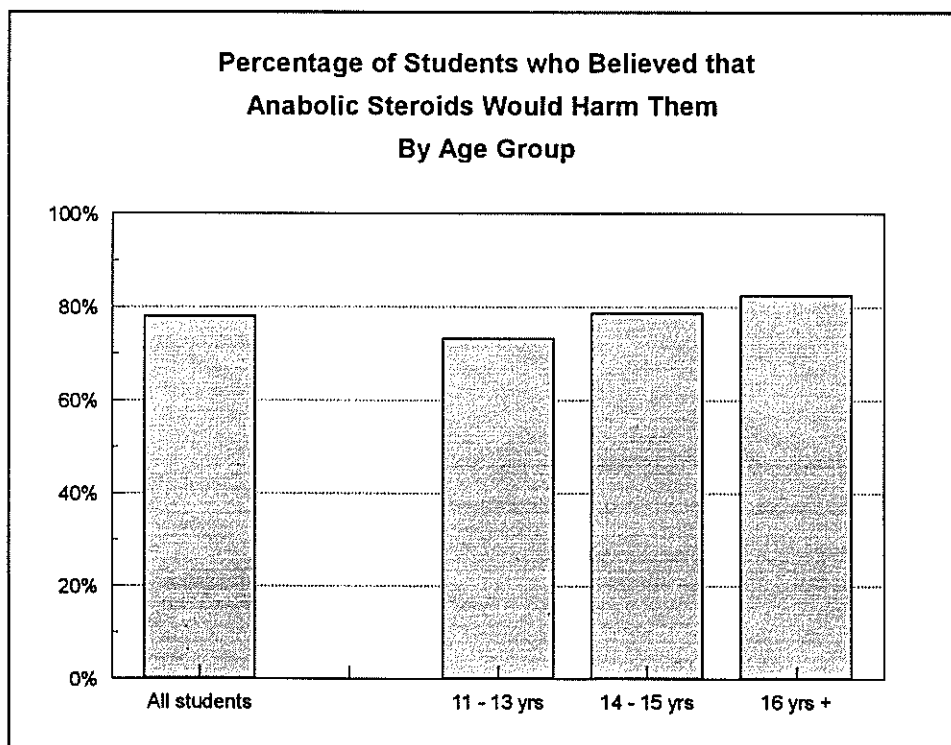


- The vast majority of students believed that anabolic steroids would harm them

Over three-quarters of the students (77.9%) thought that using anabolic steroids would harm them. The majority of students thought that alcohol (77.2%), stimulants or speed (65.4%), and doping methods (59.8%) would also harm them. Substances such as extra protein, diuretics and beta blockers were less often believed to have a harmful effect.

Older students were more likely than younger students to think that using anabolic steroids would harm them. While 8 in 10 students aged 16 years and older (82.5%) believed that using anabolic steroids would harm them, only 7 in 10 students between the ages of 11 and 13 (73.1%) shared that belief. Exhibit 2.5, below, summarizes the differences between the age groups.

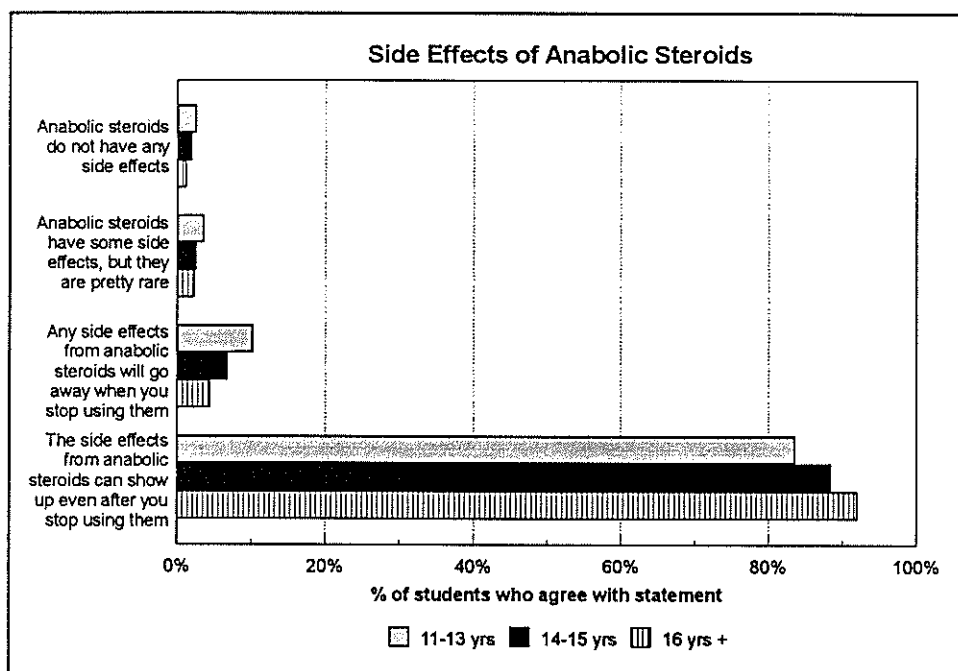
Exhibit 2.5



The majority of students (88.4%) believed that the side effects from anabolic steroid use, whether harmful or not, could appear after usage stops. Again, the older students were more likely to think that the use of anabolic steroids could have a lasting impact.

As the graph in Exhibit 2.6, below, illustrates, older students (16+ years) were more likely than the younger students to believe that the side effects from anabolic steroids could be lasting.

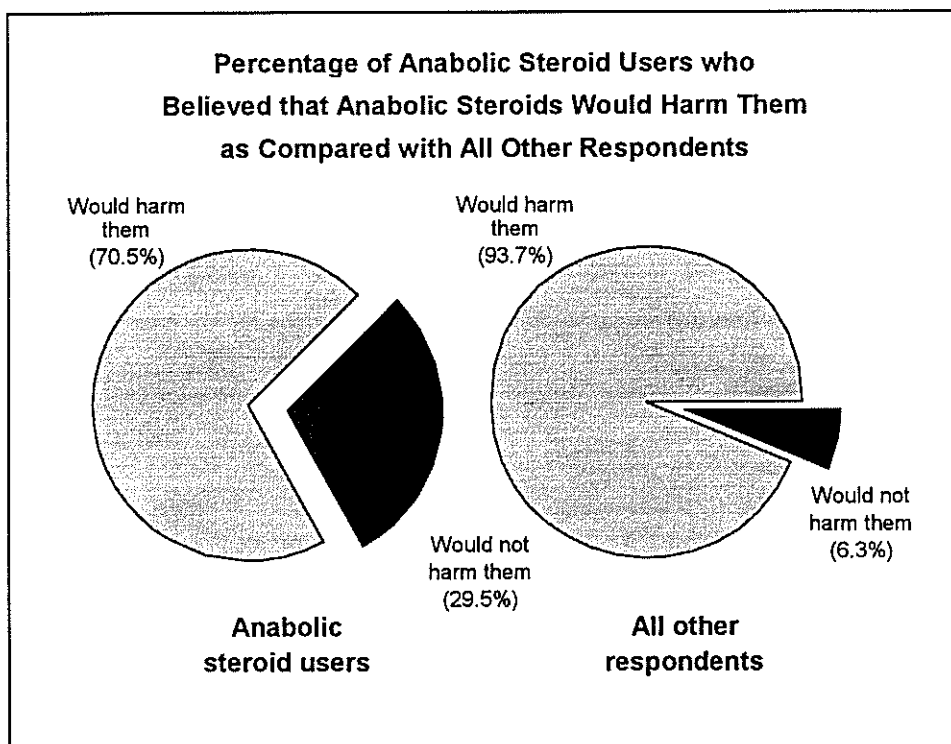
Exhibit 2.6



- **Students who used anabolic steroids were less likely to believe that the substance would harm them**

Three in 10 students (29.5%) who had used anabolic steroids believed that the substance would not have a harmful effect on them. Only 6.3% of students who had not used anabolic steroids held the same belief. This is illustrated in Exhibit 2.7, below.

Exhibit 2.7



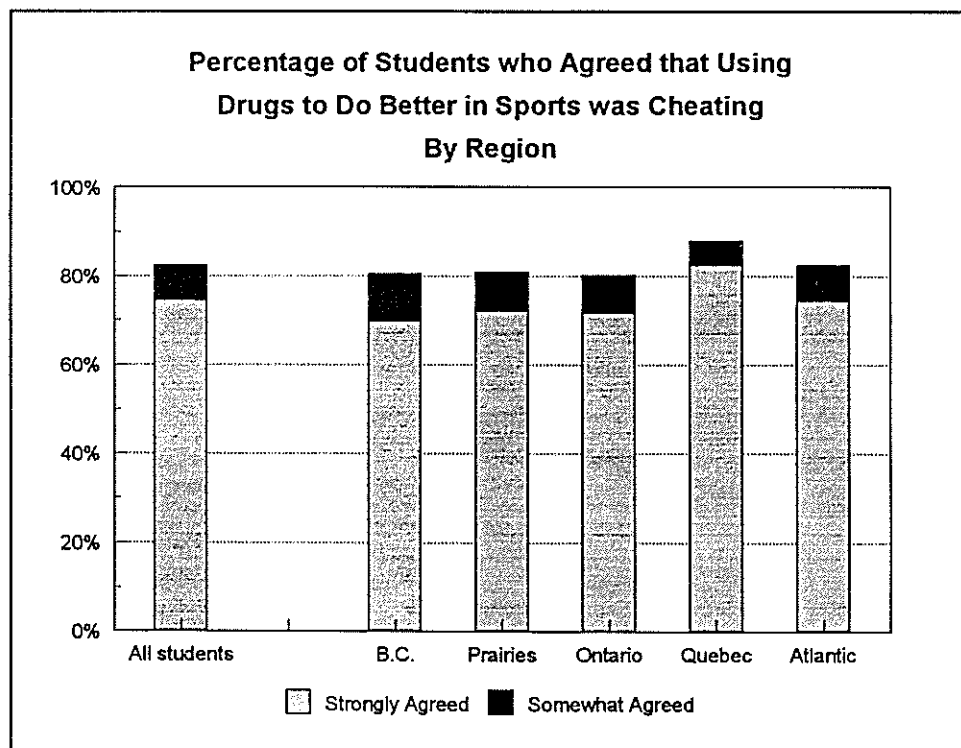
3.0 Attitudes Toward the Use of Substances to Enhance Athletic Performance

The survey also included questions that focused on students' attitudes toward substances used to improve athletic performance. For example, students were asked if they thought that using anabolic steroids to improve athletic performance was cheating. Students were also probed on the likelihood that they would try anabolic steroids.

- According to the vast majority of students, using drugs to do better in sports was cheating

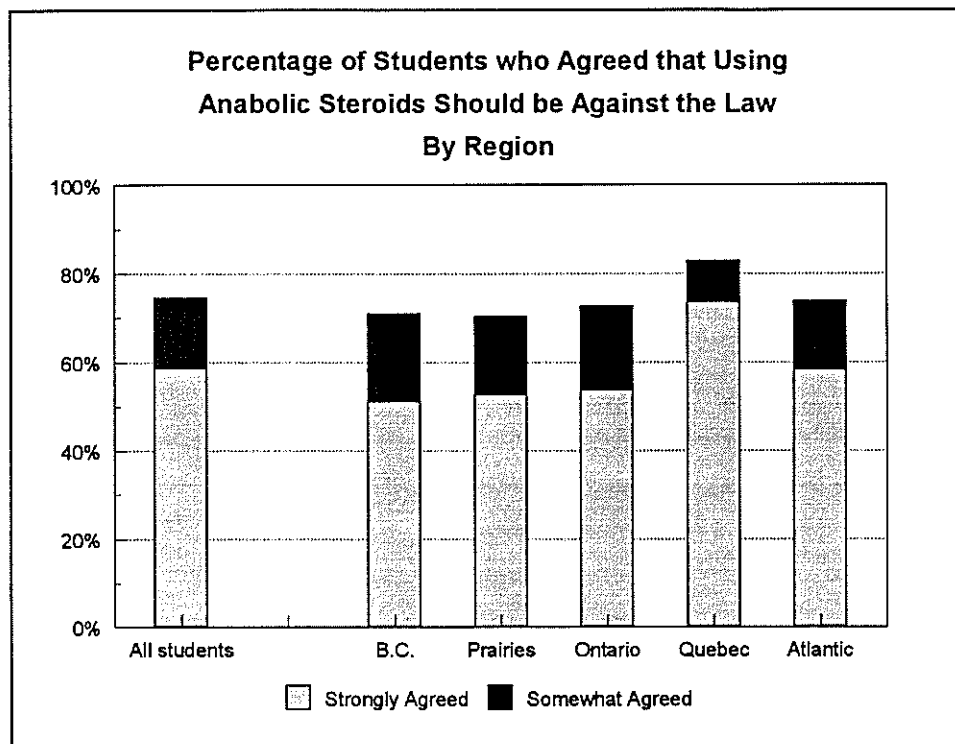
Three-quarters of the students surveyed (74.5%) strongly agreed that using drugs to do better in sports was cheating. Students in Quebec were much more likely to feel strongly that the use of drugs in sports was cheating, as compared to students in the rest of the country. Exhibit 3.1, below, highlights that 83% of Quebec students strongly agreed with the statement.

Exhibit 3.1



Students were also asked if they thought that using anabolic steroids should be against the law. A majority of students (58.6%) strongly agreed with the statement. Again, the students surveyed in Quebec differed significantly from those in the other regions of the country. As shown in Exhibit 3.2, below, three quarters of the students in Quebec (73.7%) felt strongly that using anabolic steroids should be against the law.

Exhibit 3.2

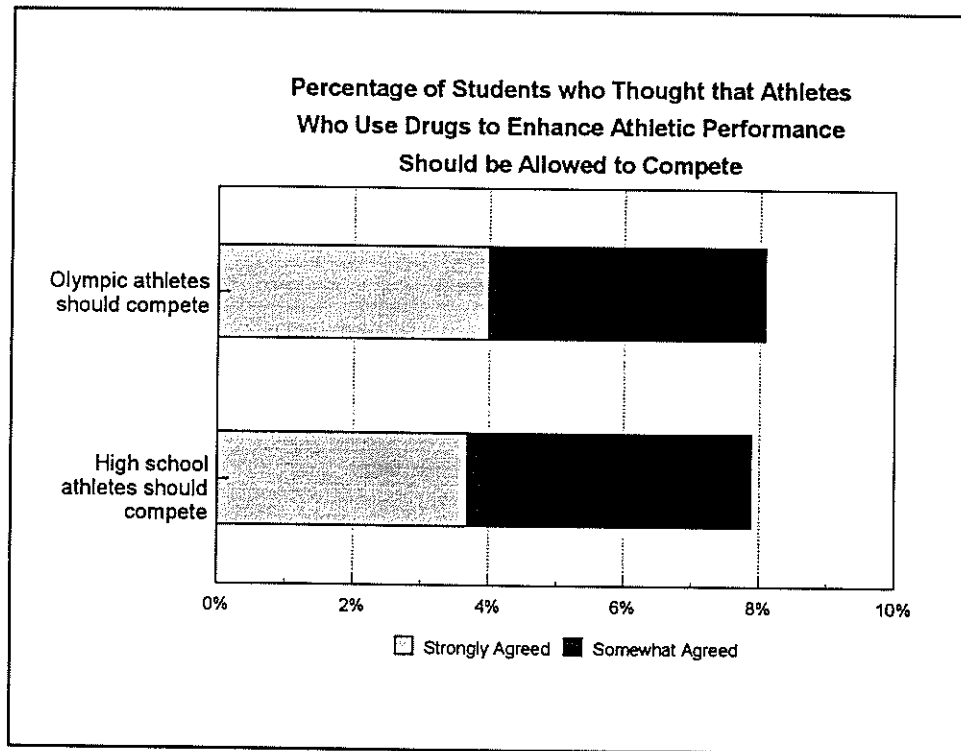


Younger students were also more likely to strongly agree with this statement. Two-thirds of the students aged 11 to 13 years (66.3%) strongly agreed that the use of anabolic steroids should be against the law, while 56% of students aged 14 to 15 years and 53% of students aged 16 years and older, strongly agreed with the statement

- **Eight percent of students thought that athletes who use anabolic steroids should be allowed to compete**

Eight in ten students (83.5%) strongly disagreed with the statement that Olympic athletes who use drugs such as anabolic steroids should be allowed to compete. This view did not differ significantly between age groups and regions. Only 8% of students agreed or strongly agreed that Olympic athletes who use drugs such as anabolic steroids should be allowed to compete. Similarly, the majority of students (81.9%) strongly disagreed with the statement that high school athletes who use drugs such as anabolic steroids should be allowed to compete. Again, 8% of students agreed or strongly agreed that high school athletes who use drugs such as anabolic steroids should be allowed to compete. This is illustrated in Exhibit 3.3, below.

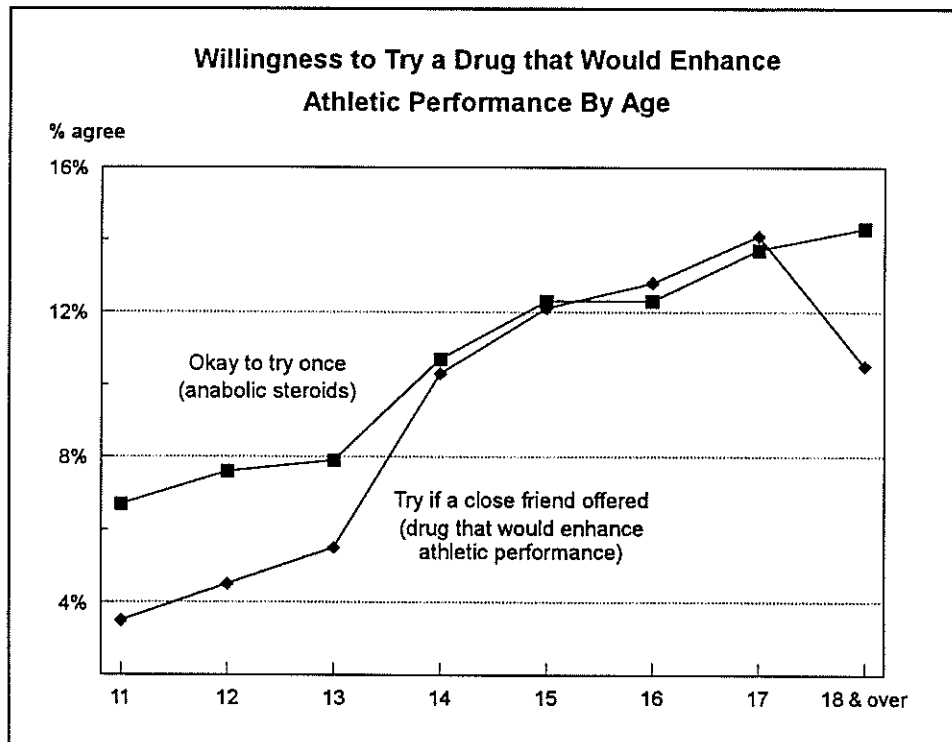
Exhibit 3.3



- **One in ten students thought that it was okay to try anabolic steroids once**

When asked, one in ten students (10.7%) agreed or strongly agreed with the statement that it was okay to try anabolic steroids once. However, the belief that it was okay to try anabolic steroids once differed significantly according to the age of the students. Willingness to try anabolic steroids once increased with the older students. Approximately 7% of students aged 11 years old agreed that it was okay to try anabolic steroids once. The proportion of students aged 18 and over who agreed with the statement was double (14.3%). This increased willingness to try anabolic steroids once is shown in the graph in Exhibit 3.4, below.

Exhibit 3.4

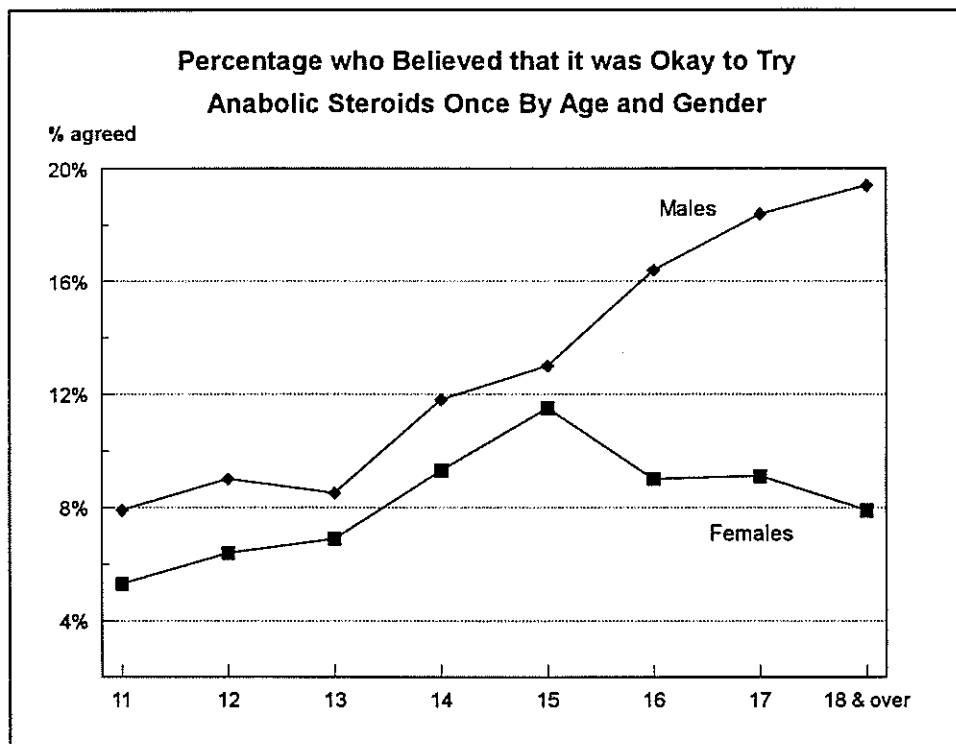


Older students were also more likely than younger students to be willing to try a drug that would help them improve sports performance, if a close friend offered it to them. Of the 11 year old students, 3.5% would try a drug that would help them enhance sports performance if it was offered by a close friend. The older the students were (up to the age of 18), the more likely they were to indicate a willingness to try

a drug offered by a close friend. Fourteen percent of 17 year old students would try a drug that would help them improve athletic performance if it was offered by a close friend, compared to 3.5% of 11 year olds and 10.3% of 14 year olds. Willingness to try a drug offered by a friend appeared to decrease for students over 18. The research was not designed to measure the causes of this decrease. However, this decrease may reflect the diminishing impact of peer pressure.

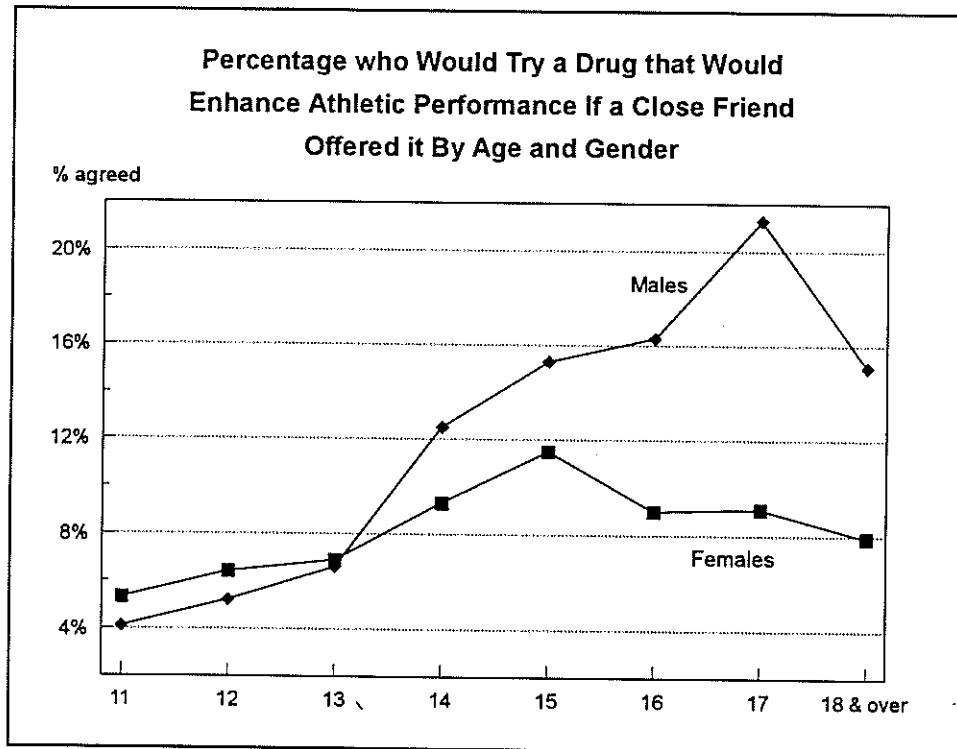
As shown in Exhibit 3.5, below, male students were more likely than female students to agree with the statement that it was okay to try anabolic steroids once. Among females, the acceptability of trying anabolic steroids peaked at age 15. Among males, the proportion who agreed that it was okay to try anabolic steroids once increased with age. By age 17 and 18, one in five male respondents agreed that trying anabolic steroids once was okay.

Exhibit 3.5



However, older male students (16 years and older) were two times more willing (to try anabolic steroids once) than their female counterparts. The willingness of female students to try a drug that would enhance athletic performance if it were offered by a close friend peaked at age 15, while the willingness of male students peaked at age 17. Exhibit 3.6, below, summarizes these trends.

Exhibit 3.6



- **Students who used anabolic steroids to improve athletic performance rationalized the use of substances**

Students who reported that they had used or were using anabolic steroids tended to justify their use. For example, students who reported having used anabolic steroids were more likely to agree that the substance would help them improve athletic performance or would help them look better. These students were also more likely to agree that they would try a drug to enhance sports performance if a close friend offered it to them. In addition, students who had used anabolic steroids were more likely to agree that it was "nobody's business" but their own if they chose to use anabolic steroids. Students who had not used anabolic steroids were more likely than those who had to believe that the use of the drug to improve sports performance was cheating. Exhibit 3.7, below, summarizes the differences in the beliefs held by students who had used anabolic steroids and those students who had not.

This constellation of attitudes is associated with the use of anabolic steroids, and could potentially be interpreted as "susceptibility" indicators.

Exhibit 3.7

	% who strongly agreed	
	Users	Non-users
Beliefs more likely to be held by students who had used anabolic steroids		
• it is okay to try anabolic steroids once	26.3	3.1
• if a close friend offered me a drug that would make me do better in sports, I would try it	27.9	2.8
• anabolic steroids will help me look better	24.7	6.6
• it is nobody's business but my own if I choose to take anabolic steroids	56.8	28.6
Beliefs more likely to be held by students who had not used anabolic steroids		
• using drugs to do better in sports is cheating	44.6	75.3
• using anabolic steroids should be against the law	28.1	59.8
• people who sell anabolic steroids should go to jail	19.5	41.1

4.0 Use of Substances to Enhance Athletic Performance

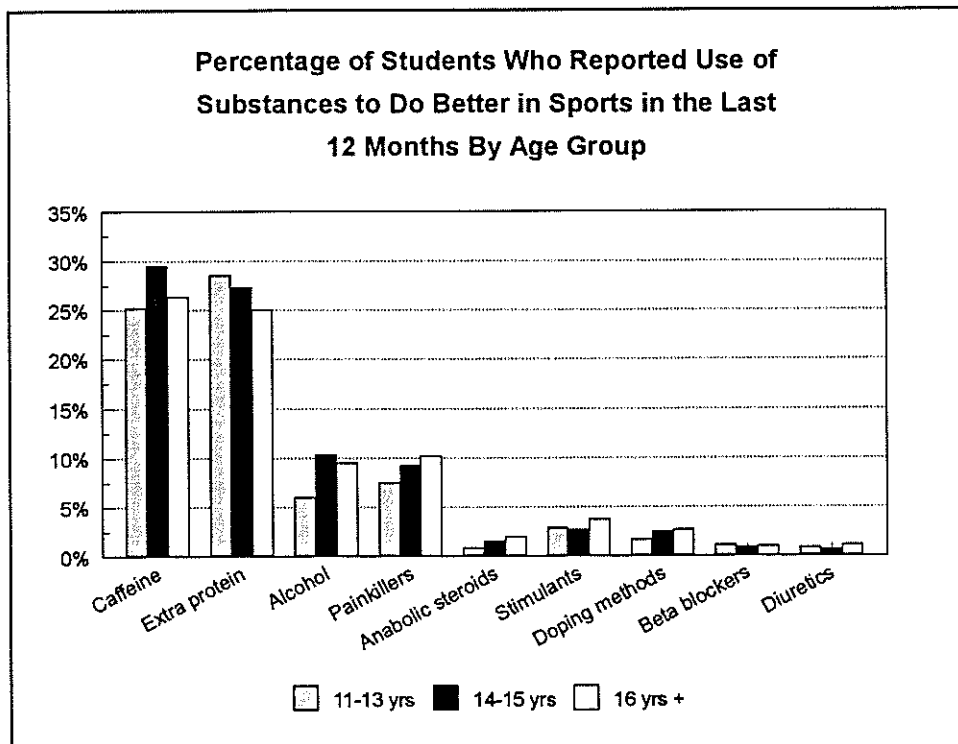
This chapter provides information on the reported use of substances to enhance athletic performance -- more specifically on the use of anabolic steroids. Differences are highlighted in terms of age, gender, region, and participation in sports/fitness activities. Information is also provided on the number of students who reported that they knew someone who used anabolic steroids or that someone had suggested that they (the respondents) use drugs to enhance their performance or improve the way they look. Lastly, information is provided on the number of students who reported use of a needle to inject anabolic steroids, and shared use of a needle to inject anabolic steroids.

- **Extra protein, caffeine, painkillers and alcohol are the substances most commonly used to enhance performance**

Over one-quarter of survey respondents reported having used extra protein (27.0%) or caffeine (26.7%) over the last 12 months to enhance sports performance. Usage levels for other substances included on the questionnaire were as follows: painkillers (8.9%); alcohol (8.4%); stimulants/speed (3.1%); doping methods (2.3%); anabolic steroids (1.5%); beta blockers (1.0%); and diuretics (0.9%). While the percentages for extra protein and caffeine appear much higher than those for other substances, it should be noted that extra protein could include anything from taking protein pills daily to eating steak before a competition. Similarly, respondents were asked to consider all forms of caffeine (pills, chocolate, soft drinks, etc.) when answering the question.

As shown in Exhibit 4.1, below, in terms of the substances used to improve sports performance in the last 12 months, anabolic steroids, painkillers and doping methods were the only substances that show a direct relationship between use and age. Use of extra protein by age shows an inverse relationship, while all other substances (caffeine, alcohol, stimulants, beta blockers, and diuretics) show either a peak or bottom for students aged 14 to 15 years.

Exhibit 4.1



The following table in Exhibit 4.2, below, shows the breakdown of use of substances by region. The survey was distributed in French in most of Quebec and in parts of New Brunswick and was distributed in English in the remainder of the country. It should be noted that subtle differences in the interpretation of a concept can occur when it is presented in two languages.

Exhibit 4.2

**Reported Use of Substances to Do Better in Sports
in the Previous 12-month Period**

Substance	B.C.	Prairies	Ontario	Quebec	Atlantic	Canada
Extra protein	31.4	31.1	27.4	20.2	29.9	27.0
Caffeine	27.6	31.0	25.9	23.4	29.1	26.7
Painkillers	11.8	12.4	9.7	3.9	9.2	8.9
Alcohol	7.7	7.6	5.9	12.7	9.1	8.4
Stimulants/Speed	4.5	6.9	3.0	2.1	3.7	3.1
Anabolic steroids	2.0	1.6	1.5	1.1	1.7	1.5
Doping methods	2.9	2.2	1.8	3.0	1.7	2.3
Beta blockers	1.2	0.9	1.1	0.9	0.8	1.0
Diuretics	0.8	0.7	1.0	1.0	0.9	0.9

In addition to questioning whether they had used substances to improve their performance in sports *over the last 12 months*, survey respondents were asked whether they had *ever* used anabolic steroids either to change their appearance or for any other reason. Respondents who answered yes to having used anabolic steroids to enhance sports performance, to change their appearance, or for any other reasons (e.g., to build muscles/strength or as a result of peer pressure) were considered users of anabolic steroids.

Overall, 2.8% of survey respondents reported having used anabolic steroids. Exhibit 4.3, below, shows a breakdown of reasons given for using/having used anabolic steroids.

Exhibit 4.3

**Students Were Asked If They Had Ever Used Anabolic Steroids
To Do Better in Sports, To Change Their Appearance or For Any Other Reason**

Reason	% of respondents*
Do better in sports	1.5
Change appearance	1.3
Other reasons (e.g., build muscles/strength, peer pressure)	0.5
Total usage of anabolic steroids	2.8

* Respondents could indicate more than one reason.

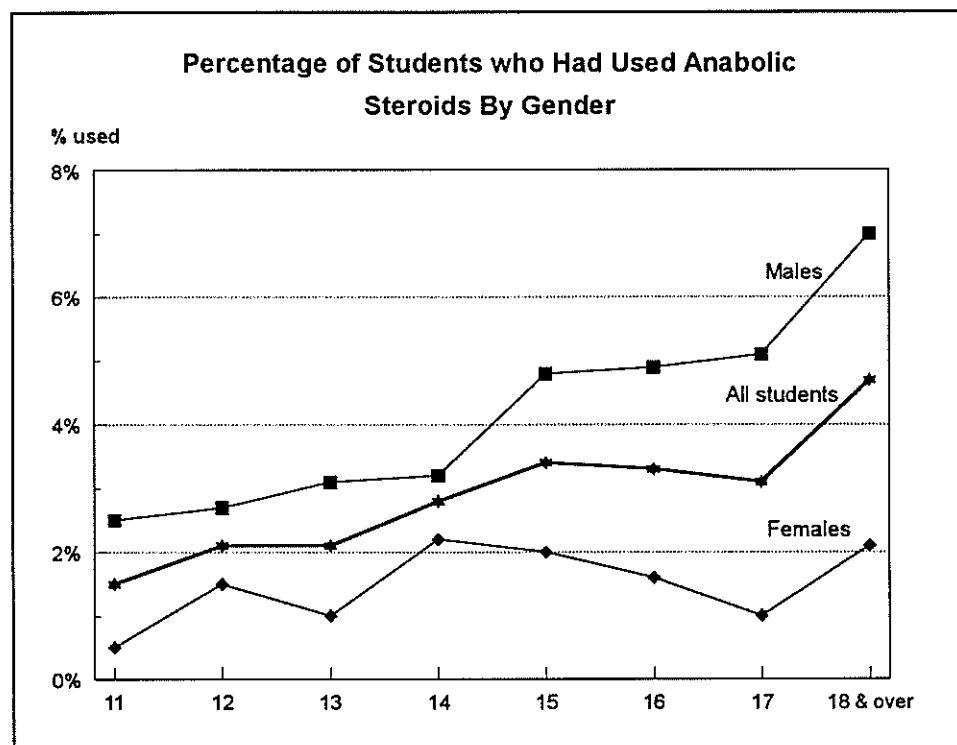
The characteristics of users of anabolic steroids and, to a lesser extent, of other substances are highlighted in the following paragraphs.

- **Male respondents were more likely than female respondents to have used anabolic steroids**

As was mentioned above, 2.8% of all respondents reported that they had used anabolic steroids in the last 12 months, either to improve their performance in sports, to change their appearance, or for any other reason. Of male respondents, 4.1% reported that they had used anabolic steroids for one or more of those reasons, while only 1.5% of females surveyed reported the same.

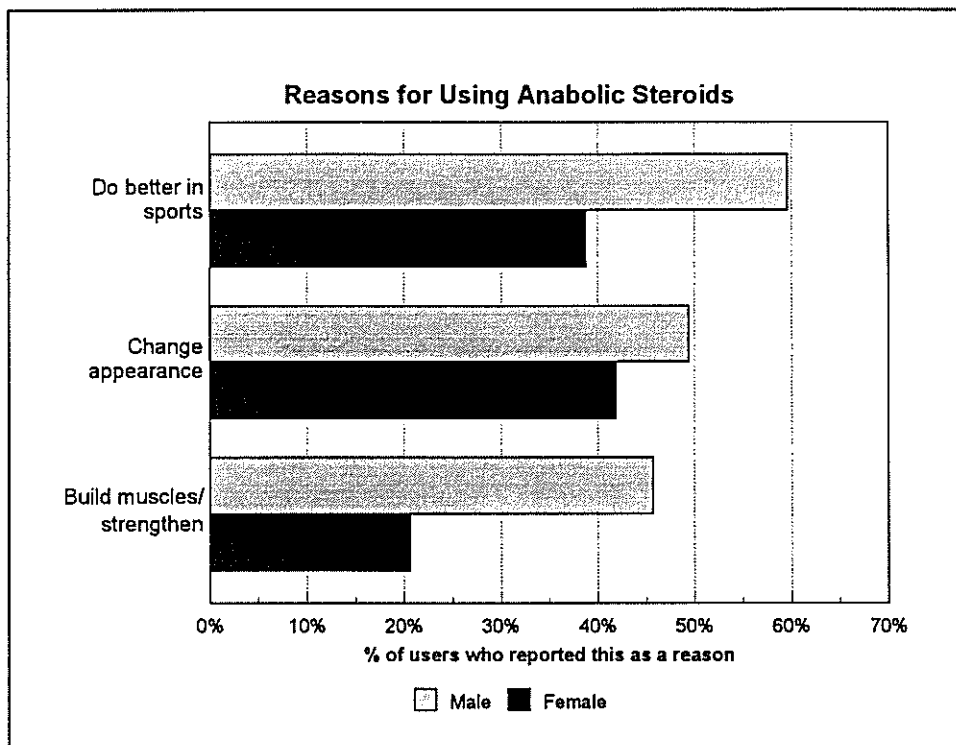
As the graph in Exhibit 4.4 below illustrates, usage among male students increased steadily with age. Usage of anabolic steroids climbed from 2.5% among 11 year old males to 7.0% among male students 18 years and older. Usage among female students appeared to peak at age 14, although those over 18 reported an increased usage.

Exhibit 4.4



Male users most often reported doing better in sports as their reason for using anabolic steroids, while female users most often reported changing their appearance as their reason. Of male users, 59.7% reported that they had used anabolic steroids in the last 12 months to do better in sports, 49.5% indicated that they had used them to change their appearance, 45.8% to build muscles/become stronger, and 1.0% as a result of peer pressure. For female users, these percentages were 38.9%, 42.0%, 20.7% and 2.3%, respectively. These figures are shown in Exhibit 4.5, below.

Exhibit 4.5



The percentage of respondents in each region who reporting having used anabolic steroids hovered around 3.0% (3.4% in Atlantic Canada, 2.0% in Quebec, 3.2% in Ontario, 2.9% in the Prairie provinces and 3.0% in B.C.).

Doing better in sports was mentioned as a reason to use anabolic steroids by more respondents than any other reason in all regions except Quebec. Changing the way they looked was stated as a reason for using anabolic steroids by Quebec users more often than any other reason.

- **Usage of anabolic steroids was more common among students involved in a regular physical activity**

As might have been expected, students involved in a regular physical activity were more likely than students not involved in a regular physical activity to have used anabolic steroids. Of students involved in a regular physical activity, 3.0% reported having used anabolic steroids. Of students not involved in a regular physical activity, 2.3% reported having used anabolic steroids.

Again, there was a significant difference between regions. Of students involved in a regular physical activity, Quebec students were less likely than students in other regions to have used anabolic steroids.

Students who indicated they were members of a health or fitness club were even more likely to have used anabolic steroids. Indeed, 6.1% of respondents who belonged to a health or fitness club reported having used anabolic steroids, compared to 2.2% of students who did not belong to such a club. In this case, there was no significant difference between regions.

The only substances, besides anabolic steroids, which respondents involved in a regular physical activity were more likely to have used during the past 12 months to enhance sports performance were: caffeine, doping methods, painkillers and extra protein. In addition to those substances, respondents belonging to a health or fitness club were also more likely to have used alcohol and stimulants during the last 12 months to enhance sports performance.

- **Students involved in a weight training program were more likely to have used anabolic steroids**

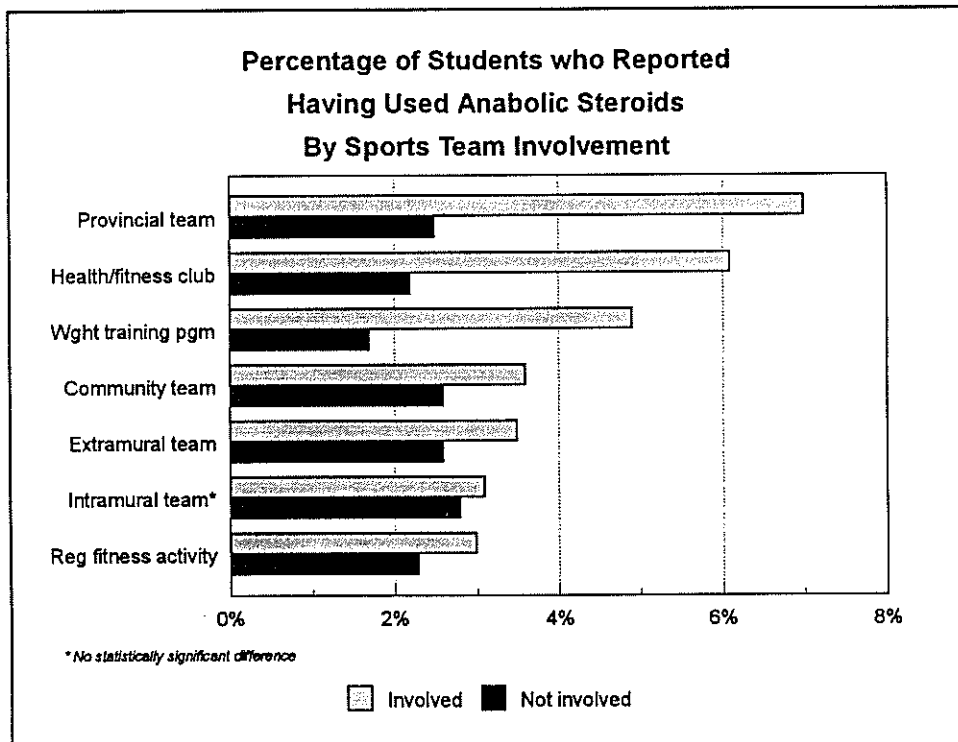
Of students involved in a weight training program, 4.9% reported having used anabolic steroids, compared to 1.7% of respondents not involved in a weight training program. This was found to be statistically significant. With respect to the percentage of respondents involved in a weight training program having used anabolic steroids, no significant differences were found between regions.

Students involved in a weight training program were also more likely than those not involved in such a program to have taken the following substances in the last 12 months to enhance sports performance: alcohol, caffeine, doping methods, painkillers, extra protein and stimulants.

- **Students on a team were more likely than students not on a team to have used anabolic steroids**

Students were asked whether they were involved in an intramural, an extramural, a community or a provincial team. Students on an extramural team, on a community team or on a provincial team were all more likely to report having used anabolic steroids than those not on such teams. Only students on an intramural team were less likely to have used anabolic steroids than students not on an intramural team. In addition, the higher the level of the team, the greater the percentage of students who reported having used anabolic steroids. While the percentages of students on extramural and community teams who reported having used anabolic steroids were approximately the same (3.5% and 3.6% respectively), the percentage of students on provincial teams who reported having used anabolic steroids was twice as much (7.0%). Exhibit 4.6, below, shows the use of anabolic steroids by students involved and not involved in certain types of activity, by activity.

Exhibit 4.6



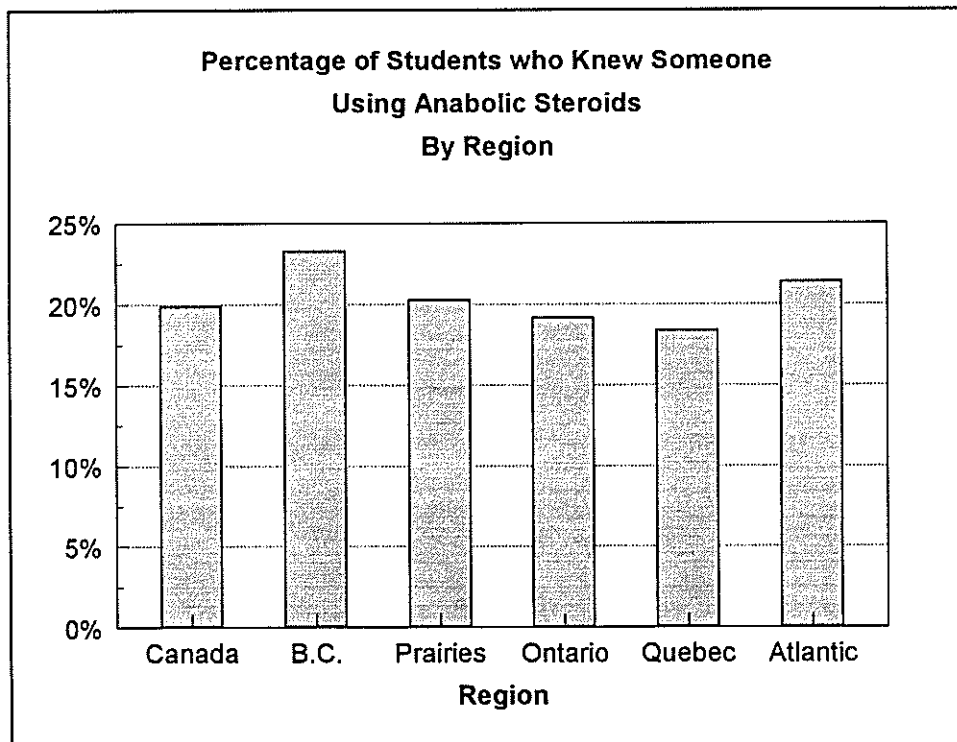
- **Male students aged 16 years and older were at the highest risk of trying anabolic steroids**

As seen in the preceding discussions, students who had used anabolic steroids differed from those who had not. For example, students who had used anabolic steroids were more likely to hold certain beliefs (e.g, agree that it is okay to try anabolic steroids once, would try a drug that would improve athletic performance if a close friend offered it, do not agree that using anabolic steroids should be against the law). They are also more likely to belong to a health club, be involved in a weight training program and/or be on a provincial team. Students who hold many of these characteristics, but who have not used anabolic steroids can be considered to be at a significantly higher risk of trying the substance. For example, using only the above noted attitudes and characteristics, 3.9% of students who responded to the survey and have never used the substance were at risk of trying anabolic steroids. Most at risk using these criteria were male students between the age of 14 and 15 (5.1%) and male students aged 16 years and older (9.2%).

- One in five students knew someone using anabolic steroids.

Survey respondents were asked whether they *personally* knew someone using anabolic steroids. As shown in Exhibit 4.7, below, approximately one in five students reported knowing someone using anabolic steroids. The majority of these students were 16 years and older. In fact, almost one-third of the students aged 16 years and older (30.6%) reported knowing someone who is using anabolic steroids, compared to 11.0% of those aged 11 to 13 and 17.1% of those aged 14 to 15 years. A statistically significant difference existed between male and female students, with male respondents being more likely to know someone using anabolic steroids (22.1%) than female students (17.1%).

Exhibit 4.7



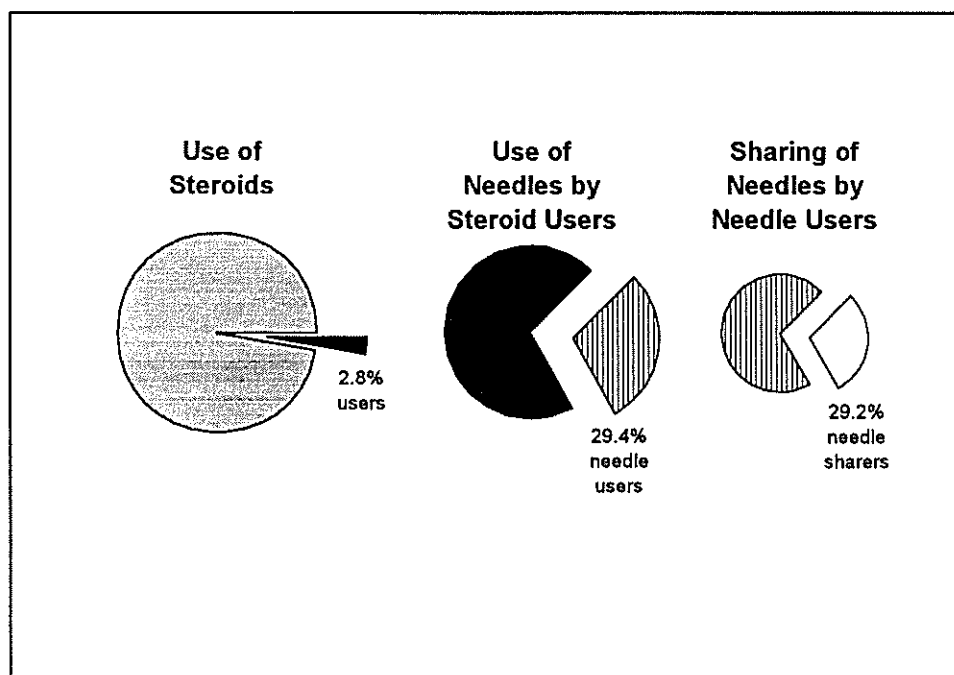
Of the students who reported having used anabolic steroids, two-thirds (66.9%) reported knowing someone else who was using them.

- **Slightly less than one-third of the students who had used anabolic steroids had used a needle to inject them**

Respondents were asked whether they had ever used a needle to inject anabolic steroids. Of the students who reported having used anabolic steroids, 29.4% answered positively. Older students were more likely than younger students to have used a needle to inject anabolic steroids. Of respondents aged 16 and older who had used anabolic steroids, 33.8% had used a needle. The percentage of those who had used a needle dropped to 24.2% among anabolic steroid users aged 11 to 13 years.

Of those who used anabolic steroids, one-third used needles, and of those who used needles, one-third shared needles. This behaviour may expose these students to diseases spread through needle sharing. Therefore, there was a proportion of users whose health may be at risk because of this behaviour (see Exhibit 4.8, below). The tendency to share a needle decreased with age. Among anabolic steroid users who used a needle, over one half of respondents aged 11 to 13 (57.8%) had shared a needle with other anabolic steroid users. Older anabolic steroid users (16 years and over) who had used a needle were much less likely to have shared a needle (17.9%)

Exhibit 4.8



- **Using drugs to change their appearance or to improve their athletic performance had been suggested to 12.8% of students**

Overall, 12.8% of students surveyed said someone had suggested that they try drugs to change their appearance or to improve their athletic performance. Slightly less than two-thirds (63.3%) of those were males. The percentage reporting that someone had suggested that they try drugs for either of these purposes was consistent across all regions.

Older students are more likely to have been suggested to use drugs to change their appearance or improve their athletic performance. Indeed, 9.3% of respondents between 11 and 13 years reported that someone had made such a suggestion, compared to 13.0% of those between 14 and 15 years and 16.3% those 16 years and older..

As indicated in Exhibit 4.9 below respondents of both genders, in all regions, and belonging to all age groups, who said someone suggested that they try drugs, most often identified "a friend" or an "other person" as that someone. Approximately one half of these respondents said a friend had made the suggestion.

Exhibit 4.9

"Has anyone ever suggested that you try drugs to improve your athletic performance or to change your appearance?"

	Yes	If yes, who?*				
		Coach	Teammate	Friend	Someone at gym	Other
All students	12.8	10.1	14.9	51.5	16.7	42.3
Males						
11 to 13 years	9.6	11.3	14.2	37.9	8.8	49.9
14 to 15 years	14.9	13.3	12.9	44.5	14.3	45.9
16 years +	22.9	13.3	22.1	57.9	28.7	36.0
All males	15.7	12.8	18.0	50.0	20.6	41.6
Females						
11 to 13 years	8.8	4.7	4.5	46.9	4.7	51.2
14 to 15 years	10.6	3.6	9.0	55.2	8.2	42.8
16 years +	8.9	7.7	12.3	56.9	14.4	36.9
All females	9.3	5.5	8.6	52.9	9.2	43.9
B.C.	14.3	11.3	15.7	53.3	21.1	43.6
Prairies	12.9	7.9	18.4	50.8	12.4	38.4
Ontario	12.4	11.6	17.4	52.0	21.2	45.3
Quebec	12.4	9.2	10.1	52.0	17.1	39.2
Atlantic	13.1	8.8	10.6	47.9	15.4	44.7

* Multiple responses permitted.

Students who belonged to a health or fitness club, were involved in a weight training program, or were on a provincial team were the most likely to state that someone had suggested that they use a drug to improve their athletic performance or to change their appearance. Almost one-quarter of students who belonged to a health or fitness club (23.8%) reported having a drug suggested to them. A high proportion of provincial team members (23.5%) and students involved in a weight training program (21.8%) also reported having had someone suggest the use of such a drug to them. Exhibit 4.10 below summarizes these findings.

Exhibit 4.10

Students were asked "Has anyone ever suggested that you try drugs to improve your athletic performance or to change your appearance?"

	Yes	If yes, who?*				
		Coach	Teammate	Friend	Someone at gym	Other
Regular physical activity	14.1	9.5	16.3	50.8	18.9	42.9
School PE course	12.6	9.6	14.4	50.0	15.8	43.3
Belong to a health or fitness club	23.8	11.9	22.1	51.5	32.9	40.4
Weight training program	21.8	9.9	18.2	49.2	22.9	43.7
Intramural team	13.6	11.9	15.9	43.4	16.5	47.2
Extramural team	14.9	11.2	22.6	45.0	19.4	48.0
Community team	16.4	11.4	21.3	47.6	20.7	45.9
Provincial team	23.5	14.5	27.6	43.1	22.6	48.0

* Multiple responses permitted.

Of respondents who reported having used anabolic steroids, over half (56.0%) said someone had suggested that they try drugs to improve their athletic performance or change their appearance. Of those who reported not having used anabolic steroids, only 11.6% said someone had suggested that they try drugs to change their appearance or to improve athletic performance. Almost one-third (32.6%) of the respondents who said their coach had suggested they try drugs for these reasons also reported having used anabolic steroids. The other significant influence was someone at the gym: 22.5% of respondents who said someone at the gym had suggested they try drugs (for the purposes identified above) had used anabolic steroids.

5.0 Conclusions

This section of the report summarizes the findings of the study and integrates them to assist in identifying appropriate approaches and target groups for education and intervention purposes.

- **Anabolic steroid users have a unique profile**

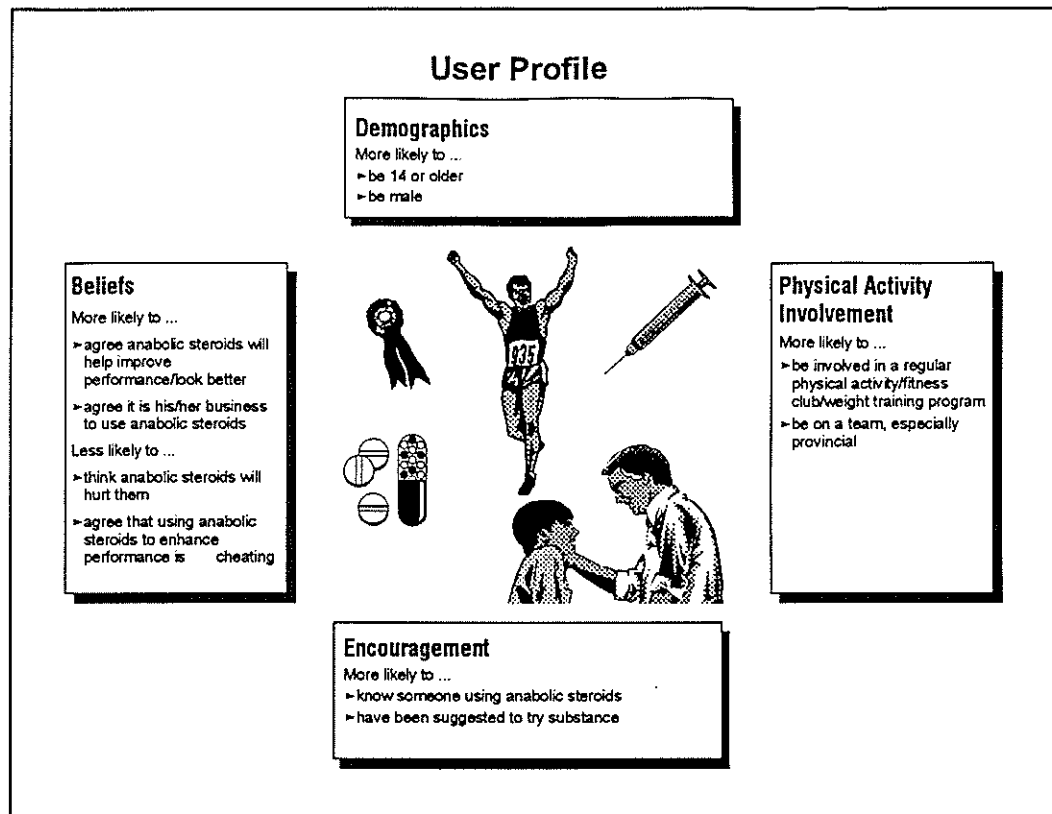
As many sections of this report have indicated, the anabolic steroid users in this study possessed a unique profile which should be considered when undertaking any education or intervention efforts. Exhibit 5.1 below shows the use of anabolic steroids by students by age and gender. Exhibit 5.2, on the following page, provides the profile of anabolic steroids users who responded to the survey.

Exhibit 5.1

Use of Anabolic Steroids By Age and Gender

Group	% who had used anabolic steroids
All students	2.8
11 to 13 years	2.0
14 to 15 years	3.1
16 years +	3.5
Male students	4.1
11 to 13 years	2.8
14 to 15 years	3.9
16 years +	5.5
Female students	1.5
11 to 13 years	1.1
14 to 15 years	2.1
16 years +	1.5

Exhibit 5.2



- **Intervention approaches should differ for younger and older students**

Older students (aged 13 years and older) tended to report that they had used anabolic steroids more often than younger students (aged 11 to 12 years) did. In and of itself, this finding is important since the risk of using anabolic steroids increases with age. But more than straightforward differences in usage, older and younger students also differ in their beliefs and attitudes toward anabolic steroid use.

Older students were more likely to believe that anabolic steroids would hurt them if they used them, and less likely to believe that anabolic steroids did not have any side effects, that the side effects were rare, or that they would go away after one stopped using the anabolic steroids. They were nevertheless more

likely to have used anabolic steroids, or think that it was okay to try them once, especially if a friend offered them.

Interventions directed at students 13 years and older should therefore not focus exclusively on awareness and knowledge, but should also address the ability to resist pressures to use anabolic steroids. Such intervention is particularly relevant for older students, since the older students who had been suggested to try drugs to change their appearance/improve their performance were more likely to have used anabolic steroids than younger students were.

Younger students (age 11 to 13 years) need to be made aware of the consequences of, and risks associated with, anabolic steroid use. As well, interventions should build a foundation of skills to resist pressure at later stages to try drugs to change their appearance or improve athletic performance. Younger students also need to learn about the risks associated with sharing needles with other steroid users.

- **Awareness of the harmful effects associated with anabolic steroid use has a limited association with the willingness to try them**

While students who had not used anabolic steroids were more likely than students who had used them to believe that anabolic steroids would hurt them if used, a majority of anabolic steroid users (approximately 70%) did believe that anabolic steroids had harmful effects. But anabolic steroid users were also more likely to agree that it was okay to try anabolic steroids, that anabolic steroids would improve their appearance, and that it was their business if they chose to take anabolic steroids. Non-users were more likely to believe that using drugs to enhance sports performance was cheating, and that using anabolic steroids should be against the law.

In addition to different awareness of the risks, there appears to be a different value system, which guides students on either the user or non-user path. Whether these values are inherent to users, or appear once students have become users, cannot be determined from this survey. However, it is clear that awareness of the negative consequences of using anabolic steroids is not enough to encourage adolescents to avoid that substance. To non-users, the moral, or ethical, implications of using anabolic steroids seem to be as important as the physical and health implications.

- **Coaches and people at gyms may influence the likelihood of a student using anabolic steroids**

While the values held by a student may influence him/her either to use or not to use anabolic steroids, it must be recognized that other influences are at work as well. The influence of coaches and of people that a student meets at the gym is significant. While a "friend" or an "other" person were identified most often as the people who had suggested to students that they try drugs to improve their athletic performance or to change their appearance (regardless of age, gender or region), the influence of these people on anabolic steroid use by students is less important than the influence of coaches or people in gyms.

In almost all cases where someone had suggested the use of drugs and the students had used anabolic steroids, use was most likely to occur if a coach had made the suggestion. In the few cases where this was not the situation (for female students and for students on community teams), someone at the gym appeared to be the greatest influence. Again, this survey does not allow us to conclude a causal link between suggestion and use. For example, some students might have been suggested to try a performance enhancing drug at a time when they were already users. Nevertheless, the findings are sufficiently striking to invite attention.

Education and intervention should specifically target coaches and people in gyms. Coaches are more easily identifiable, especially at higher levels of competition, which is where their influence appears to be greatest.

All these findings combined would tend to give weight to the argument that a value system which includes the view that using anabolic steroids is morally wrong may inhibit the use of anabolic steroids, but that the influence of an important person in a student's life, such as a coach, can override this value system.

6.0 Limitations of the Research

This section discusses the statistical significance of the survey. The potential occurrence of both over reporting and under reporting of usage of substances to improve athletic performance is also discussed.

6.1 Statistical Significance

The survey sample was designed to provide statistically significant results by region and by age group. The national sample of students is statistically significant at a 99% confidence level with a margin of error of $\pm 0.0001\%$. That is to say, if the survey was repeated, the results would remain the same within a margin of error of 0.0001%, 99 times out of 100. The confidence level and/or margin of error for specific questions will change if the number of students responding to the question is smaller.

The following table shows the statistical significance calculated for the sample of students, broken down by region and age group.

Statistical Significance

	Number of Respondents	Confidence Level	Margin of Error
British Columbia			
11 to 13 years	937	99%	0.0019
14 to 15 years	1,118	99%	0.0016
16 years +	1,107	99%	0.0016
Prairie Provinces			
11 to 13 years	862	99%	0.0021
14 to 15 years	920	99%	0.0020
16 years +	1,068	99%	0.0017

	Number of Respondents	Confidence Level	Margin of Error
Ontario			
11 to 13 years	1,117	99%	0.0016
14 to 15 years	892	99%	0.0020
16 years +	1,057	99%	0.0017
Quebec			
11 to 13 years	776	99%	0.0023
14 to 15 years	1,149	99%	0.0016
16 years +	1,240	99%	0.0017
Atlantic Provinces			
11 to 13 years	1,277	99%	0.0014
14 to 15 years	1,408	99%	0.0013
16 years +	1,341	99%	0.0013
National Sample	16,169	99%	0.0001

6.2 Accuracy of Self Reporting

When asking students to self report their use of prohibited substances such as anabolic steroids, two potential biases must be noted. First, some students may over report their use of substances used to improve athletic performance. Second, students who are using a prohibited substance may be reluctant to report this.

A control variable was included in the questions about the use of substances to improve athletic performance. The name of a non-existent substance, alphabodies, was included in the list of substances used to improve athletic performance. One percent of students reported that they had used this substance. Analysis shows that males and anabolic steroid users were significantly more likely to report that they had used alphabodies than the other students were. One possible reason for this is that students using anabolic steroids may be using a large number of substances and are not familiar with the

names of all of these products. As a result, they may have assumed that they had used alphabodies because the product name appeared on a survey about substances used to improve athletic performance.

A certain level of under reporting can also be expected on a survey of this type. One possible reason could be that despite the fact that students were assured confidentiality and asked not to identify themselves on their questionnaire, some students who have used anabolic steroids may still have chosen not to report usage.

6.3 Timing and Causality

The survey questionnaire was designed to uncover attitudes and characteristics (e.g., age, gender, etc.) that show a strong association with use of substances that enhance performance. It was not designed to show causality (e.g., what leads a student to use a substance like anabolic steroids). For example, the survey showed us that students who use anabolic steroids are more likely to be male and participate in a weightlifting program. We may know that a student who has used anabolic steroids is more likely to have had someone suggest use of a drug to improve athletic performance to them. However, the survey was not designed to gather information on which event occurred first: the use of the substance or the suggestion to use the substance.

Appendix A

Methodology

Table A-1

Region	Number of School Boards Selected	Total Number of Schools Selected
B.C.	6	17
Prairies	7	20
<i>Alberta</i>	3	10
<i>Saskatchewan</i>	2	5
<i>Manitoba</i>	2	5
Ontario	6	21
Québec	6	24
Atlantic	9	25
<i>P.E.I.</i>	2	5
<i>New Brunswick</i>	3	8
<i>Nova Scotia</i>	2	6
<i>Newfoundland</i>	2	6
Total	34	107

Appendix A - Methodology

In this appendix, we describe the methodology that was used for conducting this assignment. The Canadian Centre for Drug-free Sport, in partnership with each of the provinces, was responsible for the distribution and collection of the questionnaires. Questionnaires were distributed to school boards, which distributed them to schools, or were sent directly to the schools selected for the sample frame. The questionnaire was then administered to a specified number of students in each grade (as a representation of age) according to a protocol which teachers had to follow. Similar protocols were followed for the distribution and collection of completed questionnaires.

The survey questionnaire used is presented in Appendix B.

Sampling

A probability sampling was used to select a total sample of over 16,000 students from grades 6 and above. Grades were used as an approximation of age. The ten provinces were grouped into 5 regions: B.C., Prairies, Ontario, Quebec, and Atlantic. Table A-1, below, shows the allocation of the sample among regions, grades, school boards and schools.

Table A-1

Region	Number of School Boards Selected	Total Number of Schools Selected
B.C.	6	17
Prairies	7	20
<i>Alberta</i>	3	10
<i>Saskatchewan</i>	2	5
<i>Manitoba</i>	2	5
Ontario	6	21
Québec	6	24

Region	Number of School Boards Selected	Total Number of Schools Selected
Atlantic	9	25
<i>P.E.I.</i>	2	5
<i>New Brunswick</i>	3	8
<i>Nova Scotia</i>	2	6
<i>Newfoundland</i>	2	6
Total	34	107

The final estimation for the sub-populations have a confidence level of 99% and a margin of error of less than $\pm 1\%$.

There were 3 steps followed for the sampling scheme.

Step 1: Selection of School Boards

In this step, each province was considered an independent stratum. Within each province, the school boards were selected according to their composition (i.e. urban or rural). The number of school boards selected in each province is showed in Table A.

Step 2: Selection of Schools from Selected School Boards

Schools were randomly selected within each school board. Some private schools and technical schools were included in the sample. As many schools were selected as was necessary to obtain the required number of students per grade grouping.

Step 3: Selection of Classes from Selected Schools

Each school coordinator was provided with a protocol to follow for the random selection of appropriate classes within each school. Every student in the selected classes was then asked to fill out a

questionnaire, even when the number of students in a given class surpassed the required number of students.

Pre-tests

Prior to conducting the survey on a national scale, the questionnaire was pre-tested with a sample of 3 schools (1 English and 2 French schools) selected by the CCDS. The draft questionnaire was filled out by students in grades 7 to 13. The main objectives of the pre-test were to:

- assess the general flow and continuity of the questionnaire;
- identify problems that may be encountered by teachers in following and/or communicating the instructions set out in the protocol;
- ensure that respondents clearly understood the questions and relevant concepts used in the questionnaire (excluding the names of specific substances);
- ensure the questions yielded both reliable and consistent responses; and
- identify any problems that could have been encountered by respondents completing the questionnaire.

The pre-test also examined the time required to complete the questionnaire. The pre-tests was observed and a brief interview with each class was conducted after completion of the questionnaire.

The results of the pre-test were communicated to officials at the CCDS and changes were made to the questionnaire in consultation with them. A copy of the final questionnaire can be found in Appendix B.

Appendix B

Questionnaire

National Survey of Youths Attitudes Towards Performance Enhancing Substances

You are being asked to take part in a survey about how Canadian students feel about using substances to do better at sports or to change their appearance.

This survey is anonymous. You should **not** put your name or the name of your school on your survey. Because your answers are confidential, we ask you to respond as honestly as you can. There are no good or bad answers. Please answer all questions based on what you think.

Please put a check mark in the appropriate boxes.

1. How old are you?

☐ 10 and under

☐ 13

☐ 16

☐ 11

☐ 14

☐ 17

☐ 12

☐ 15

☐ 18 and over

2. Are you...?

☐ Male

☐ Female

3. In which province do you live?

☐ Newfoundland

☐ Quebec

☐ Saskatchewan

☐ Prince Edward Island

☐ Ontario

☐ Alberta

☐ Nova Scotia

☐ Manitoba

☐ British Columbia

☐ New Brunswick

4. Are you doing any physical activity on a regular basis specifically to improve or maintain your physical fitness level?

☐ Yes

☐ No

5. Are you taking a physical education course in school this year?

☐ Yes

☐ No

6. Are you on a school team that plays against teams from other schools?

☐ Yes

☐ No

If yes, what sport(s)?

1. _____ 2. _____
3. _____ 4. _____

7. Are you on a school team that plays other teams from within your school?

☐ Yes

☐ No

If yes, what sport(s)?

1. _____ 2. _____
3. _____ 4. _____

8. Are you on a community team (for example, city league, YM/YWCA)?

☐ Yes

☐ No

If yes, what sport(s)?

1. _____ 2. _____
3. _____ 4. _____

9. Do you belong to a provincial team?

☐ Yes

☐ No

If yes, what sport(s)?

1. _____ 2. _____
3. _____ 4. _____

10. Do you belong to a health or fitness club?

☐ Yes

☐ No

11. Are you involved in a weight training program, for example do you lift weights or work out on machines?

☐ Yes

☐ No

12. Please read each statement carefully before answering. Circle one number for each statement.

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree	Don't Know
I usually like the way that I look.	1	2	3	4	0
In sports, winning is the most important thing.	1	2	3	4	0
Doing my best at sports is more important than winning.	1	2	3	4	0
Most people my age are better liked than me.	1	2	3	4	0
Few Olympic athletes use drugs to perform better.	1	2	3	4	0
Few university athletes use drugs to perform better.	1	2	3	4	0
I think that I do well at school.	1	2	3	4	0
Olympic athletes using drugs such as anabolic steroids should be allowed to compete.	1	2	3	4	0
Athletes using drugs such as anabolic steroids should be allowed to compete on a high school team.	1	2	3	4	0
People judge me on my appearance.	1	2	3	4	0
It is okay to try anabolic steroids once.	1	2	3	4	0
If a close friend offered me a drug that would make me do better in sports, I would try it.	1	2	3	4	0
I often wish that I was someone else.	1	2	3	4	0
There are substances that will help improve athletic performance.	1	2	3	4	0
Usually, if I have something to say, I say it.	1	2	3	4	0
Using drugs to do better in sports is cheating.	1	2	3	4	0
Anabolic steroids will help me look better.	1	2	3	4	0
It is hard to tell if someone is taking anabolic steroids.	1	2	3	4	0
Using anabolic steroids should be against the law.	1	2	3	4	0
I usually get upset if someone yells at me.	1	2	3	4	0
People who sell anabolic steroids should go to jail.	1	2	3	4	0
It is nobody's business but my own if I choose to take anabolic steroids.	1	2	3	4	0

13. Do you think that any of the following will help an athlete perform better?

	Yes	No	Don't know effects	Never heard of this
Caffeine (for example, in pills, in chocolate, in soft drinks)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pain killers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alcohol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stimulants/speed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anabolic steroids	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beta blockers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Doping methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alphabodies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diuretics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extra protein	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. In the last 12 months, have you used any of the following to help you do better in sports?

[illegible]

15. Have you ever used anabolic steroids to change the way that you look?

☐ Yes

☐ No

16. Have you ever used anabolic steroids for any another reason?

☐ Yes

☐ No

Please explain:

17. Have you ever used a needle to inject steroids?

☐ Yes

☐ No

If yes, have you ever shared needles with other steroid users?

☐ Yes

☐ No

18. Do you think that any of the following will hurt you in any way if you use them?

	Yes	No	Don't know	Don't know what this is
Caffeine (for example, in pills, in chocolate, in soft drinks)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pain killers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alcohol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stimulants/speed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anabolic steroids	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beta blockers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Doping methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alphabodies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diuretics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extra protein	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19. Has anyone ever suggested that you try drugs to improve your athletic performance or to change your appearance?

☐ Yes

☐ No

If yes, who?

☐ Coach

☐ Friend

☐ Teammate

☐ Someone at the gym

☐ Other person

20. Do you **personally** know someone who is using anabolic steroids?

☐ Yes

☐ No

21. Which of the following statements do you agree with most? **Check one statement only**

☐ anabolic steroids do not have any side effects

☐ anabolic steroids have some side effects, but they are pretty rare

☐ any side effects from anabolic steroids will go away when you stop using them

☐ the side effects from anabolic steroids can show up even after you stop using them

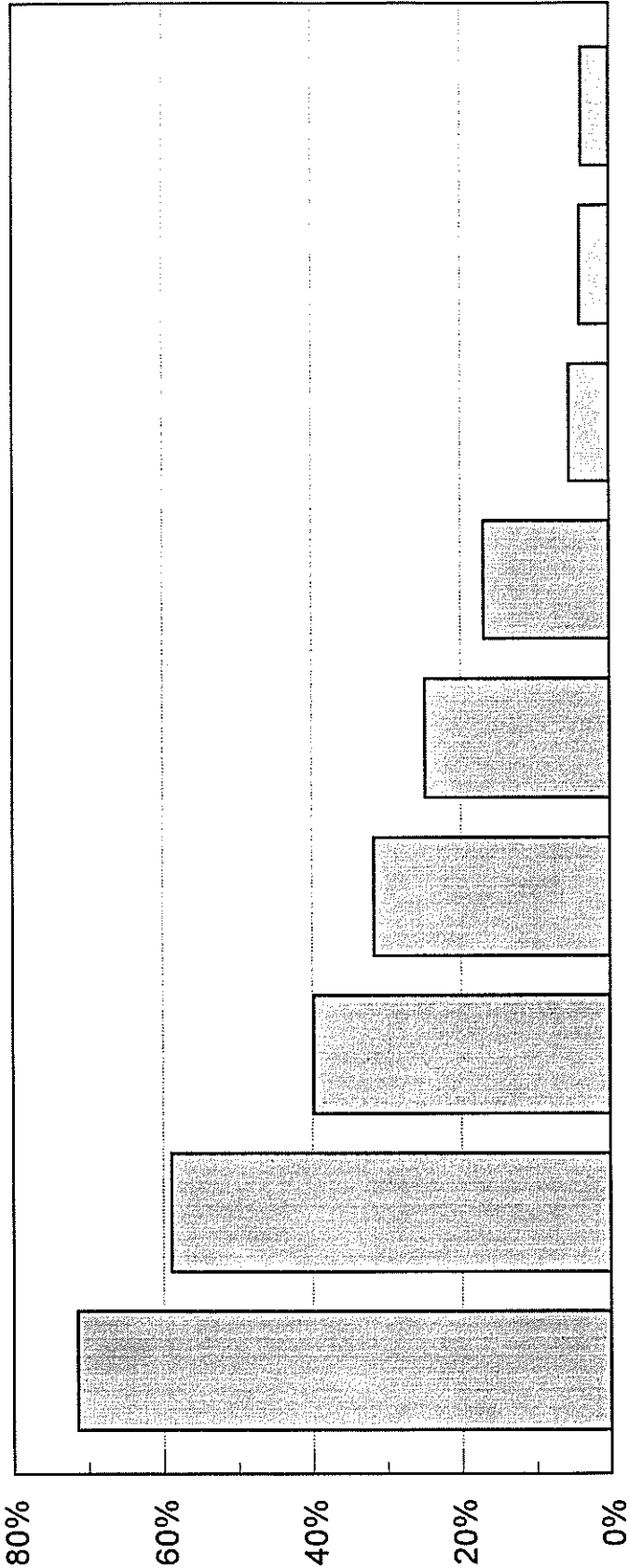
☐ don't know

Thank you for your participation!

Appendix C

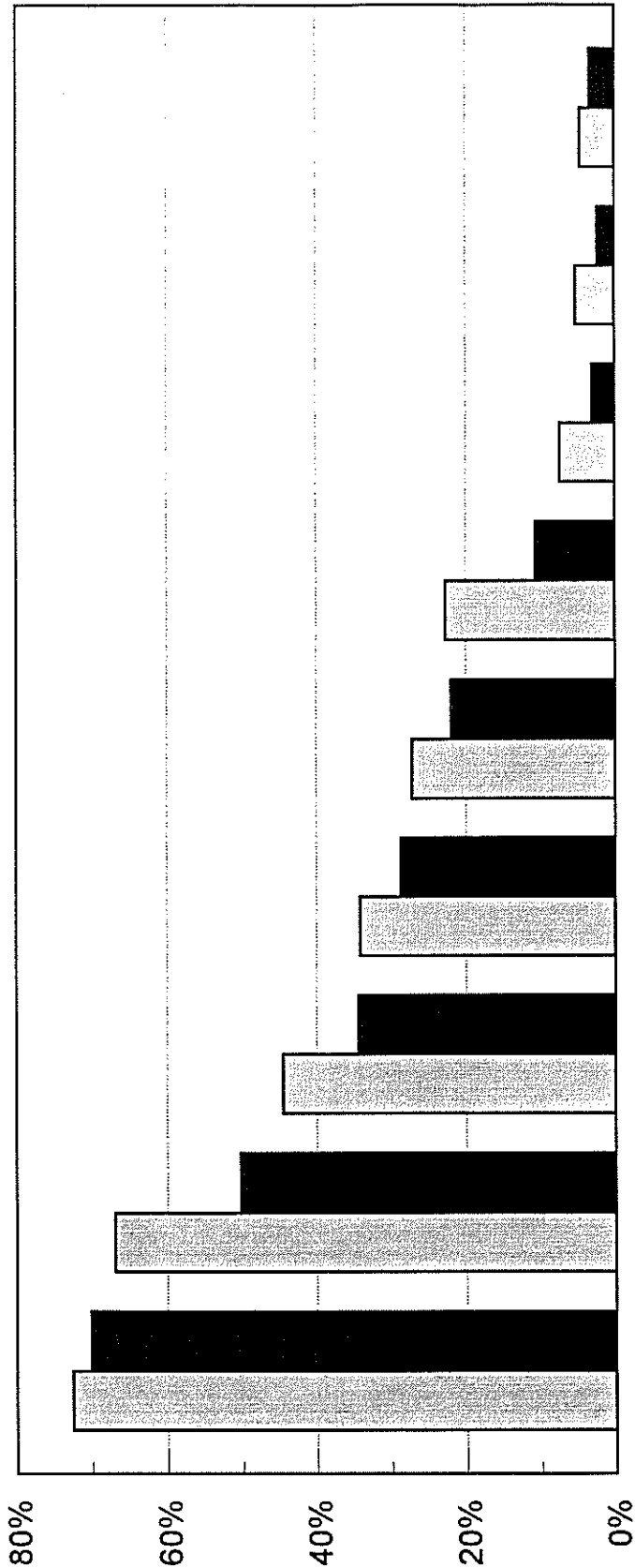
Detailed Exhibits

Percentage of Students who Believed that
Substances Would Help an Athlete Perform Better
All Students



Extra protein	Anabolic steroids	Stimulants	Caffeine	Painkillers	Doping methods	Beta blockers	Diuretics	Alcohol
71.5%	58.9%	39.8%	31.7%	24.8%	16.9%	5.4%	4.0%	3.8%

Percentage of Students who Believed that
Substances Would Help an Athlete Perform Better
By Gender



	Extra protein	Anabolic steroids	Stimulants	Caffeine	Painkillers	Doping methods	Beta blockers	Diuretics	Alcohol
Male <input type="checkbox"/>	72.6%	67.0%	44.5%	34.2%	27.2%	22.7%	7.4%	5.2%	4.7%
Female <input checked="" type="checkbox"/>	70.2%	50.2%	34.4%	28.7%	22.0%	10.7%	3.1%	2.4%	3.4%

Percentage of Students who Believed that

Exhibit 2.3

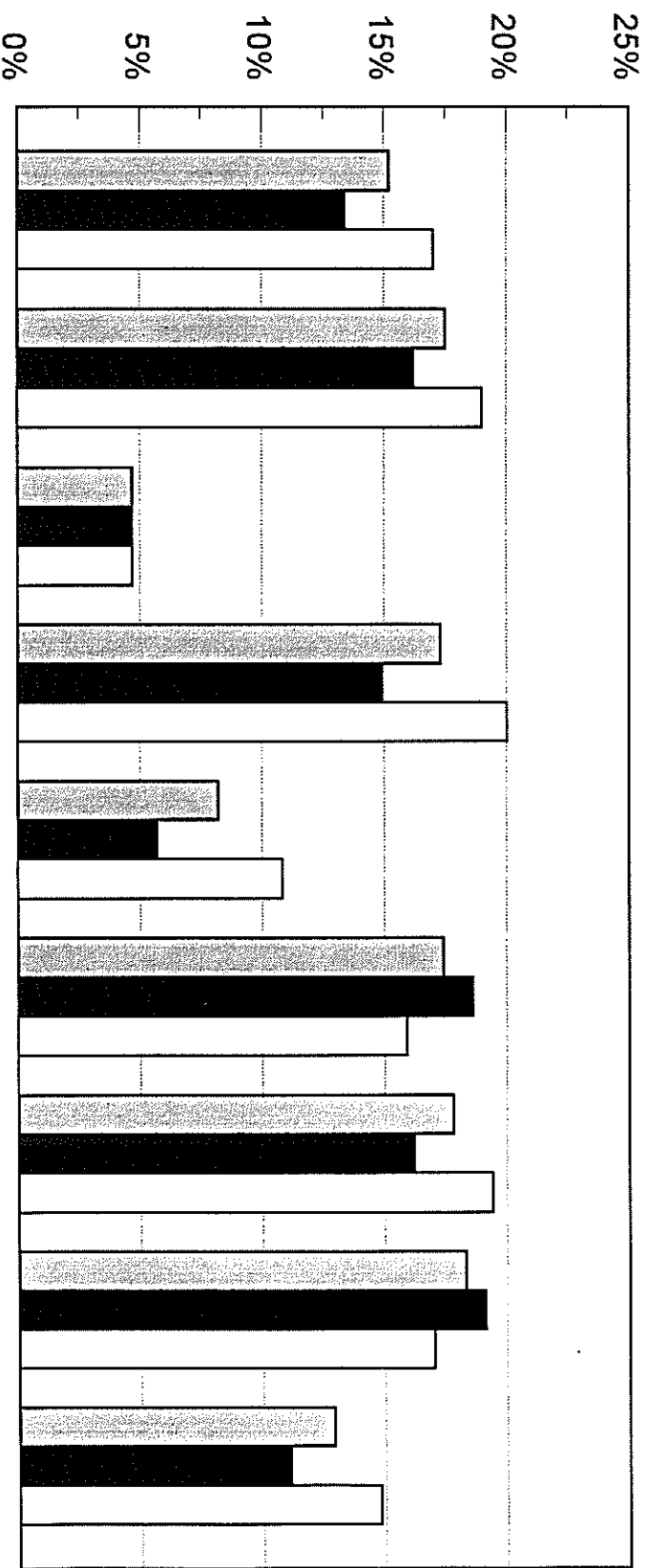
Substances Would Help An Athlete Perform Better

By Age Group



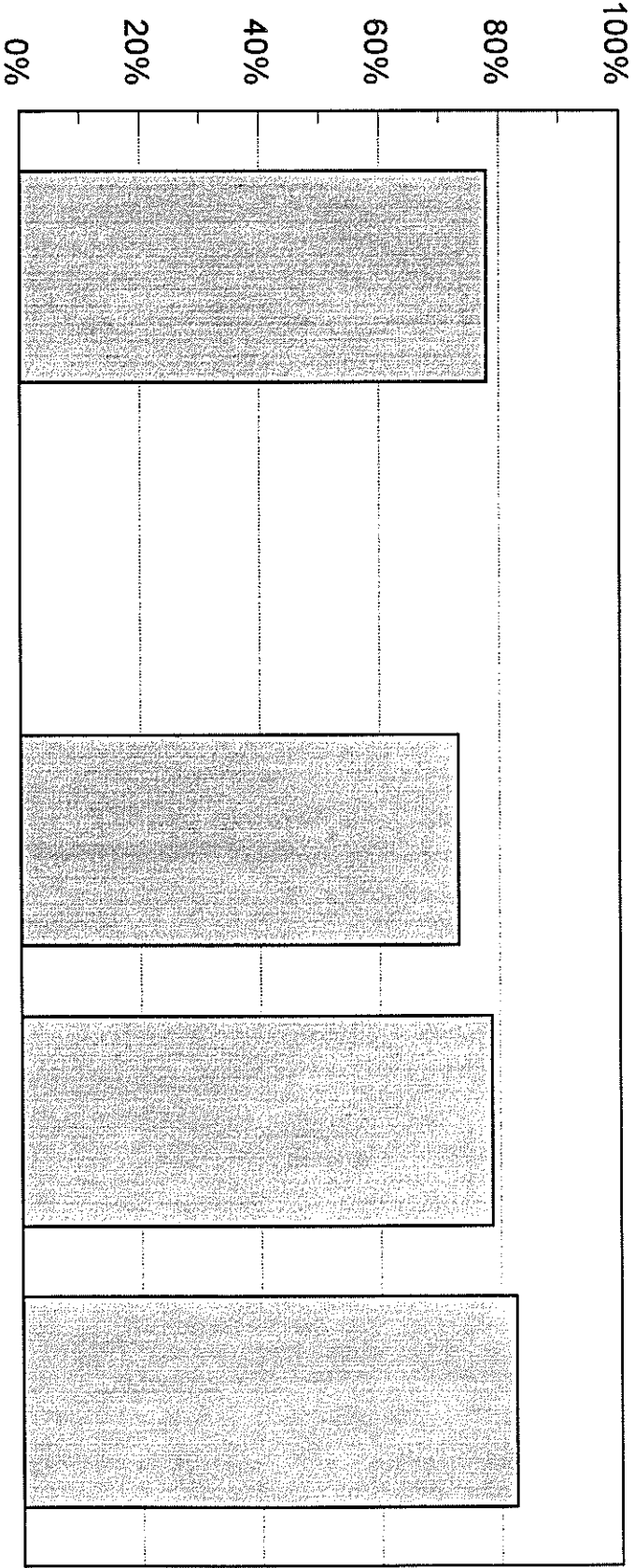
	Caffeine	Painkillers	Alcohol	Stimulants	Anabolic steroids	Beta blockers	Doping methods	Diuretics	Extra protein
11-13 yrs <input type="checkbox"/>	25.3%	22.6%	3.5%	31.3%	45.8%	5.2%	10.3%	3.3%	69.0%
14-15 yrs <input checked="" type="checkbox"/>	32.7%	24.6%	4.5%	40.4%	60.6%	5.1%	15.0%	4.2%	72.0%
16 yrs + <input type="checkbox"/>	37.4%	27.2%	4.3%	47.9%	71.0%	5.8%	24.8%	4.2%	73.6%

Exhibit 2.4
Percentage of Students who Reported that They
Did Not Know the Effects of Substances on
Athletic Performance By Gender



	Caffeine	Painkillers	Alcohol	Stimulants	Anabolic steroids	Beta blockers	Doping methods	Diuretics	Extra protein
All students <input type="checkbox"/>	15.2%	17.5%	4.7%	17.3%	8.2%	17.4%	17.8%	18.3%	12.9%
Male <input checked="" type="checkbox"/>	13.4%	16.2%	4.7%	14.9%	5.7%	18.6%	16.2%	19.1%	11.1%
Female <input type="checkbox"/>	17.0%	19.0%	4.7%	20.0%	10.8%	15.9%	19.4%	17.0%	14.8%

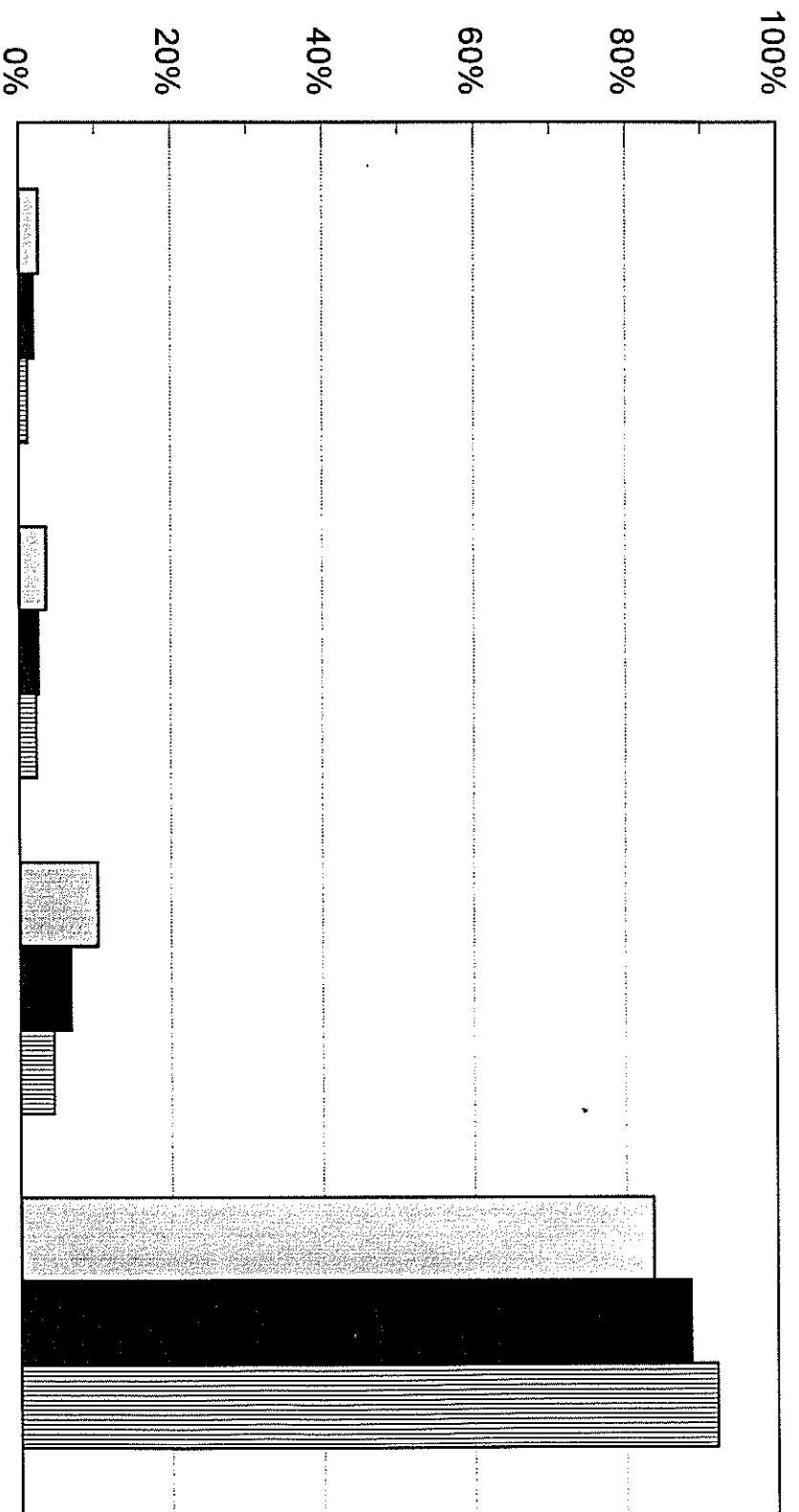
**Percentage of Students who Believed that
Anabolic Steroids Would Harm Them
By Age Group**



All students		11 - 13 yrs	14 - 15 yrs	16 yrs +
77.9%		73.1%	78.6%	82.5%

Side Effects of Anabolic Steroids

Exhibit 2.6



	Anabolic steroids do not have any side effects	Anabolic steroids have some side effects, but they are pretty rare	Any side effects from anabolic steroids will go away when you stop using them	The side effects from anabolic steroids can show up even after you stop using them
11-13 yrs	2.6%	3.6%	10.3%	83.6%
14-15 yrs	2.0%	2.6%	6.8%	88.5%
16 yrs +	1.2%	2.3%	4.5%	92.0%

**Percentage of Anabolic Steroid Users who
Believed that Anabolic Steroids Would Harm Them
as Compared with All Other Respondents**

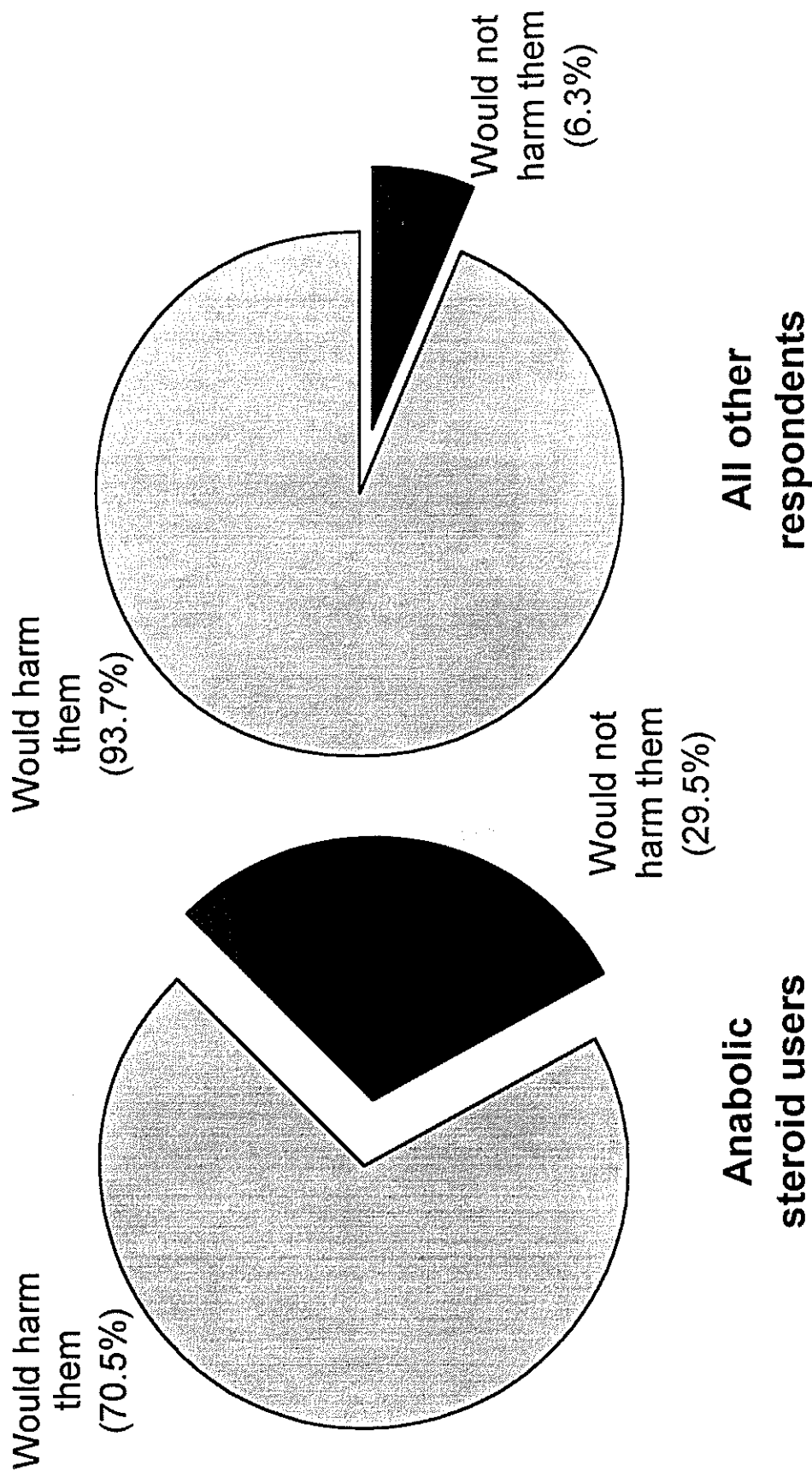
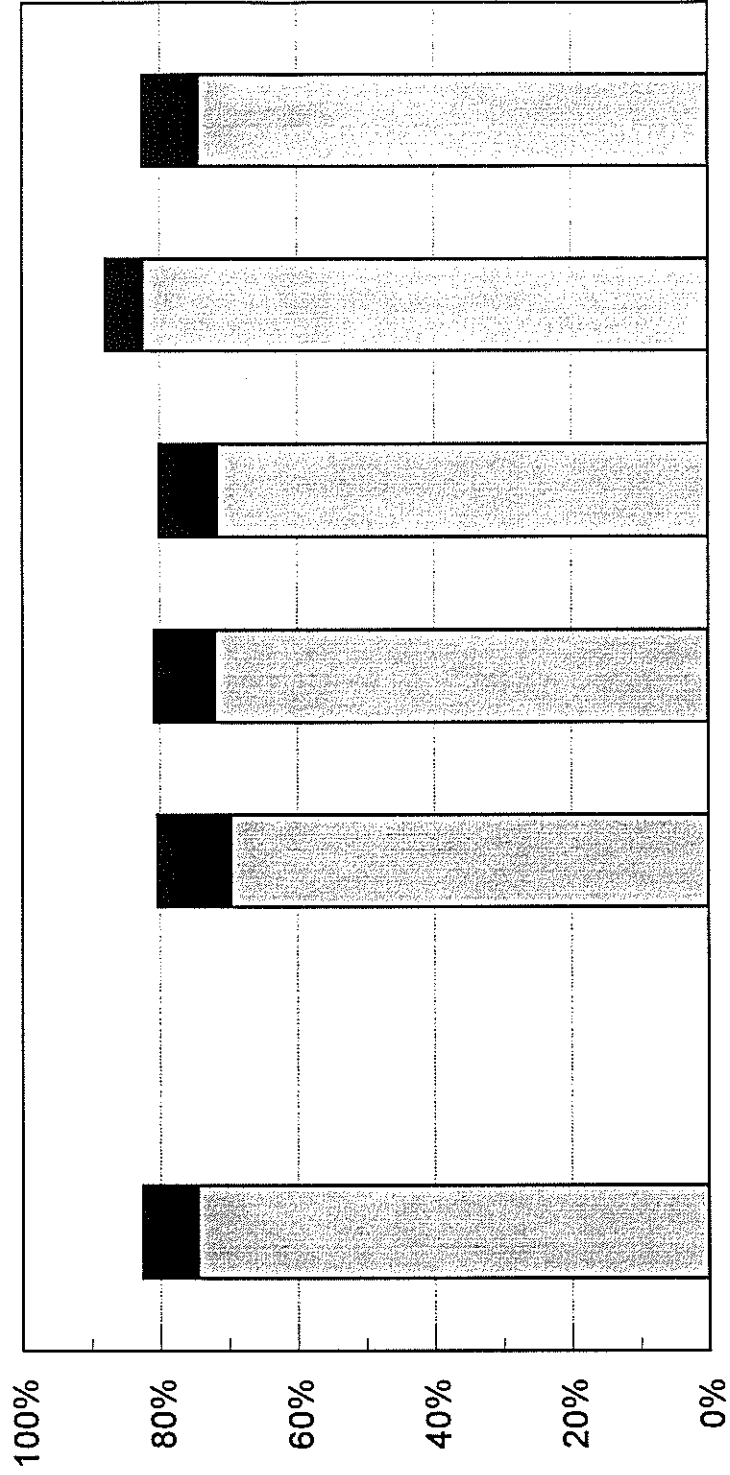




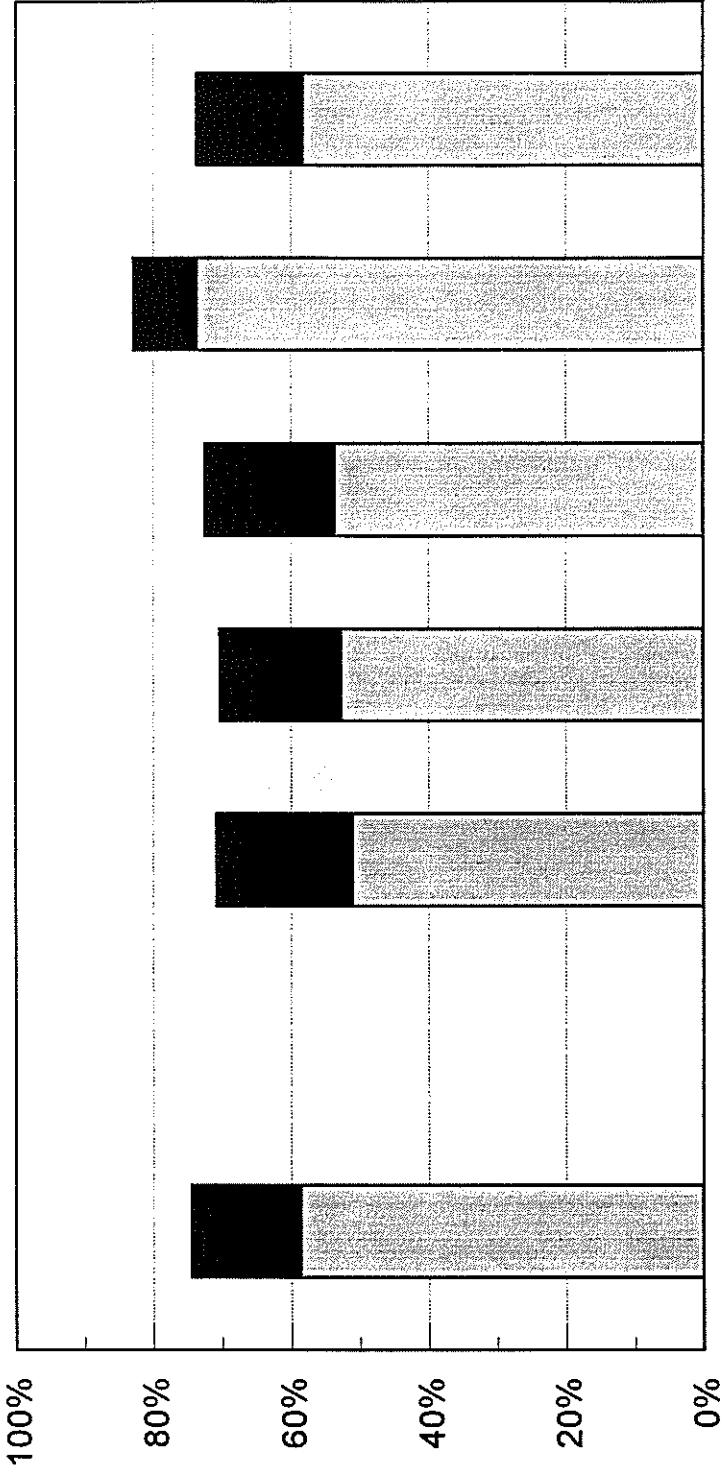
Exhibit 3.1



Percentage of Students who Agreed that Using
Drugs to Do Better in Sports was Cheating
By Region



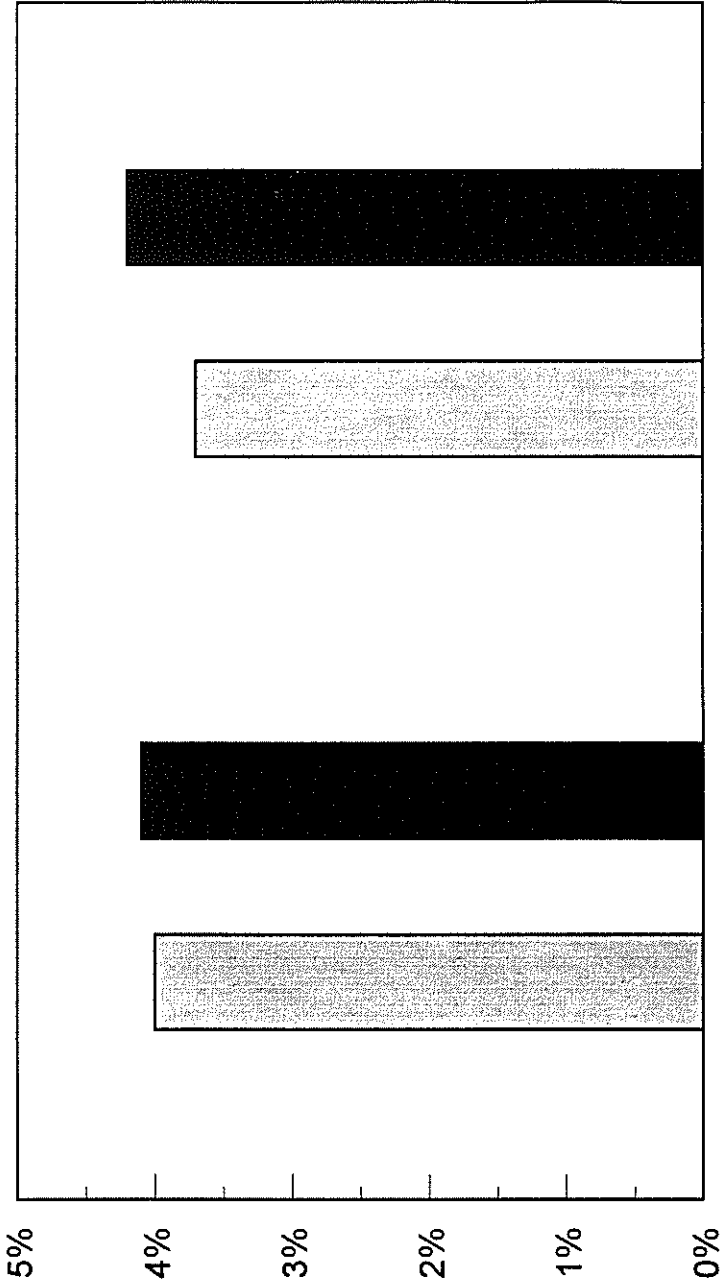
	All students	B.C.	Prairies	Ontario	Quebec	Atlantic
Strongly Agreed 	74.5%	69.7%	72.0%	71.6%	82.5%	74.4%
Somewhat Agreed 	8.0%	10.7%	8.9%	8.5%	5.4%	8.1%



Percentage of Students who Agreed that Using
Anabolic Steroids Should be Against the Law
By Region



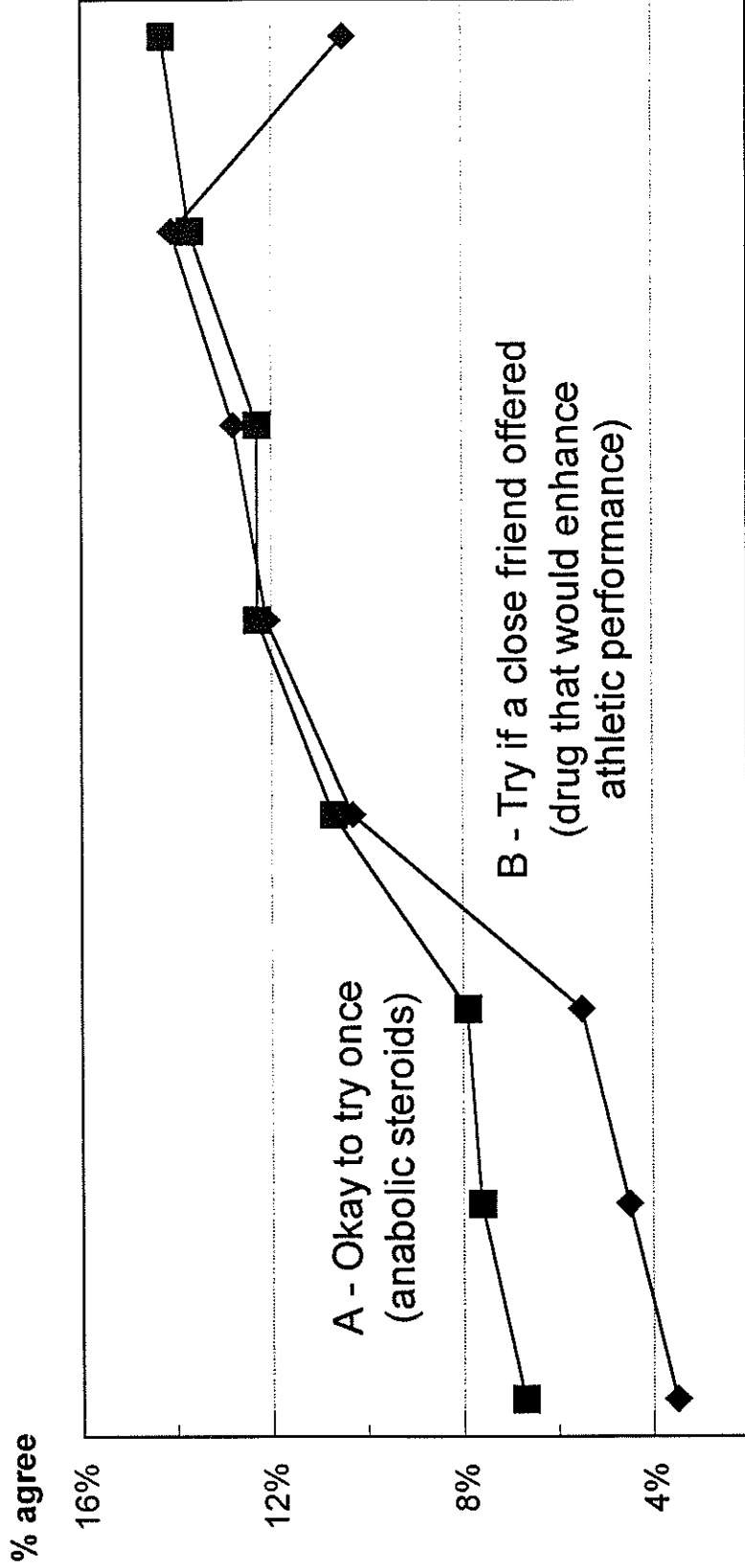
	All students	B.C.	Prairies	Ontario	Quebec	Atlantic
Strongly Agreed 	58.6%	51.1%	52.7%	53.7%	73.7%	58.3%
Somewhat Agreed 	15.9%	19.8%	17.7%	18.9%	9.2%	15.5%

Percentage of Students who Thought that Athletes
Who Use Drugs to Enhance Athletic Performance
Should be Allowed to Compete



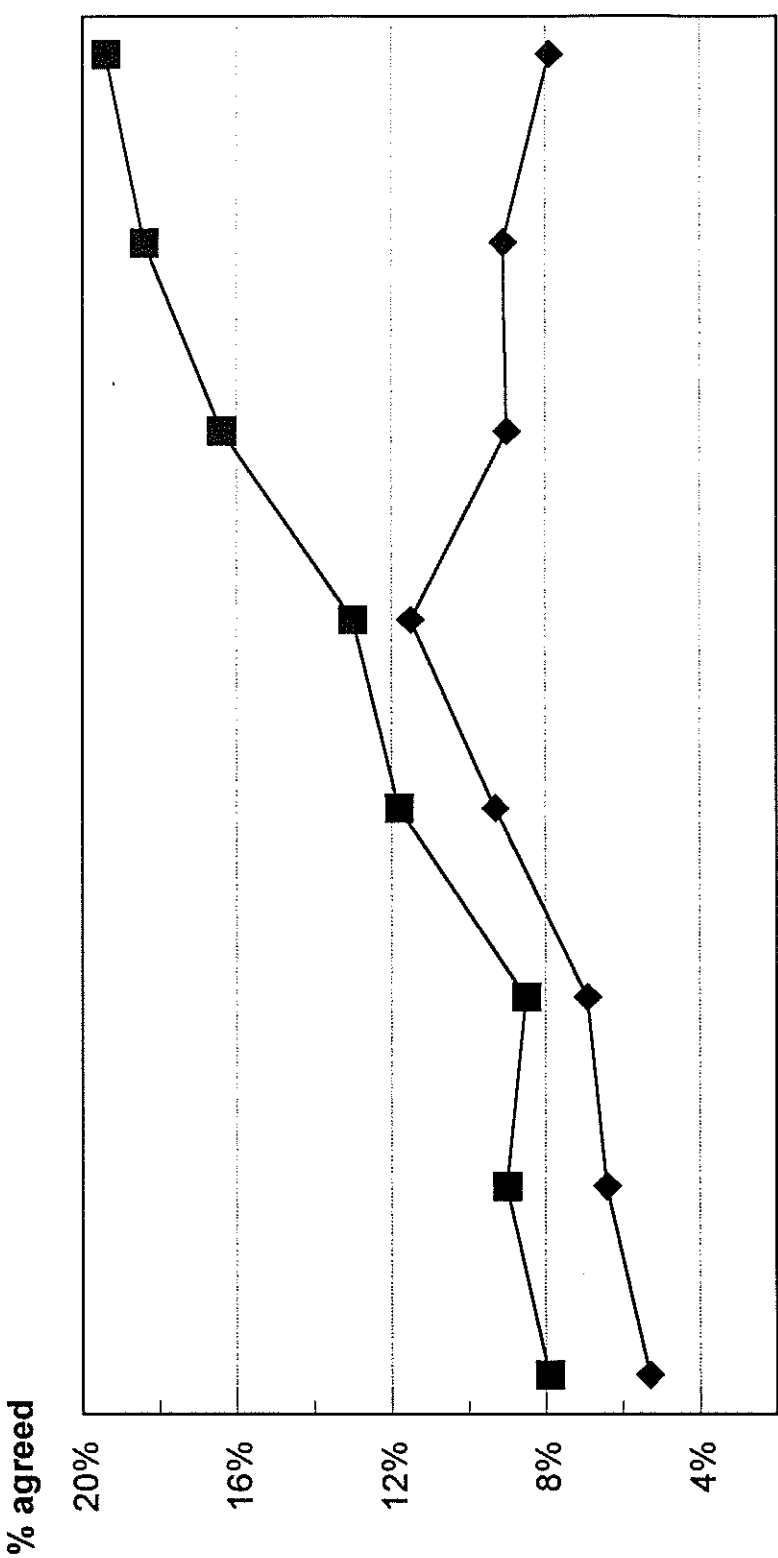
	Olympic athletes should compete	High school athletes should compete
Strongly Agreed 	4.0%	3.7%
Somewhat Agreed 	4.1%	4.2%

Willingness to Try a Drug that Would Enhance Athletic Performance By Age



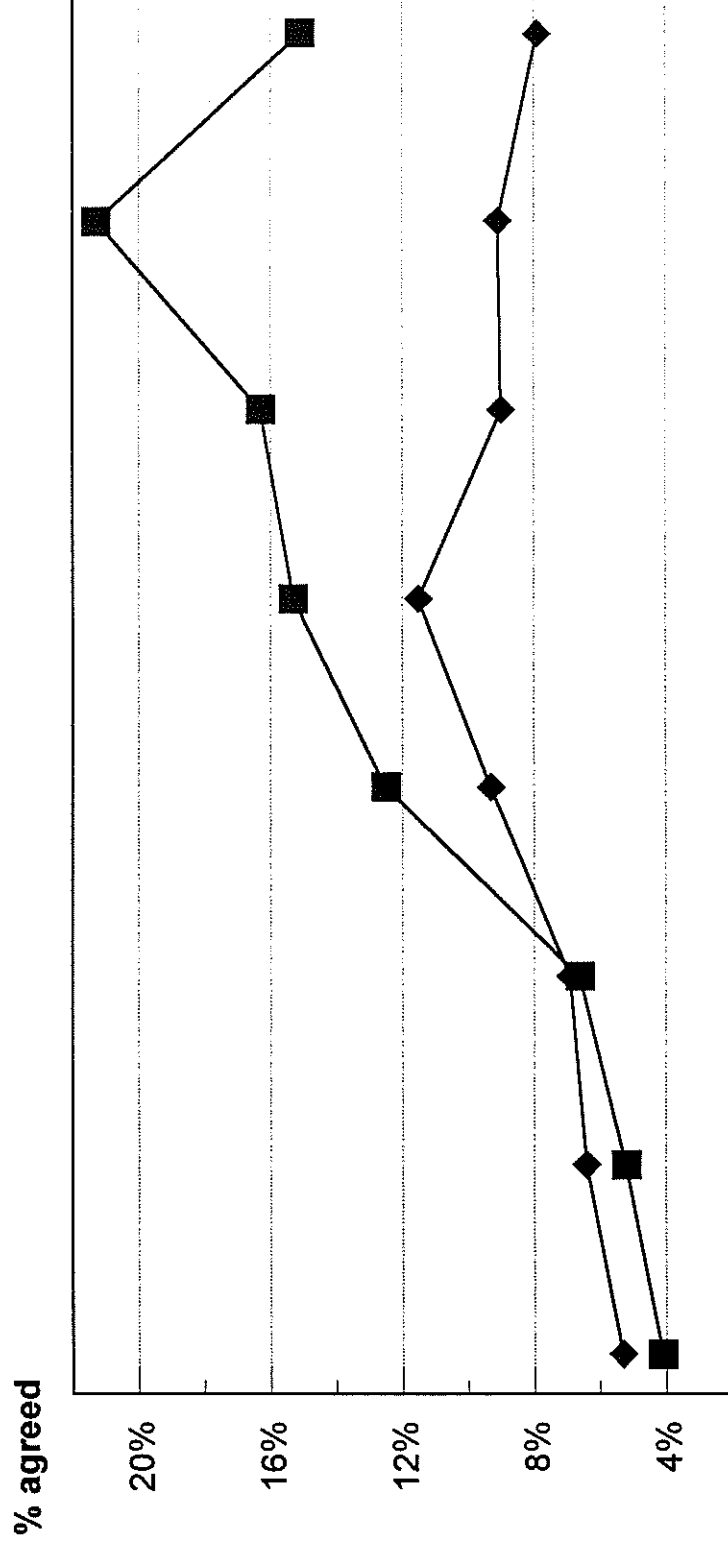
	11	12	13	14	15	16	17	18 & over
A ■	6.7%	7.6%	7.9%	10.7%	12.3%	12.3%	13.7%	14.3%
B ◆	3.5%	4.5%	5.5%	10.3%	12.1%	12.8%	14.1%	10.5%

Percentage who Believed that it was Okay to Try
Anabolic Steroids Once By Age and Gender



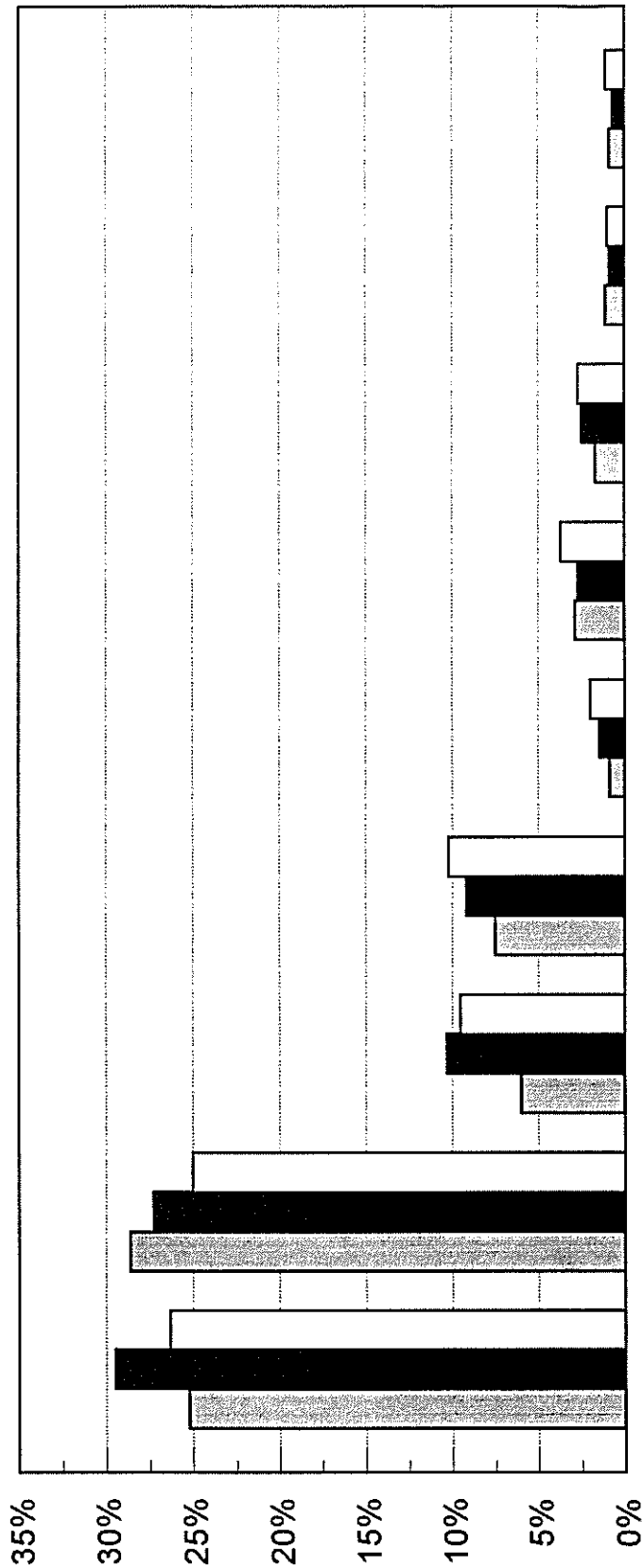
	11	12	13	14	15	16	17	18 & over
Males ■	7.9%	9.0%	8.5%	11.8%	13.0%	16.4%	18.4%	19.4%
Females ◆	5.3%	6.4%	6.9%	9.3%	11.5%	9.0%	9.1%	7.9%

Percentage who Would Try a Drug that Would Enhance Athletic Performance If a Close Friend Offered it By Age and Gender



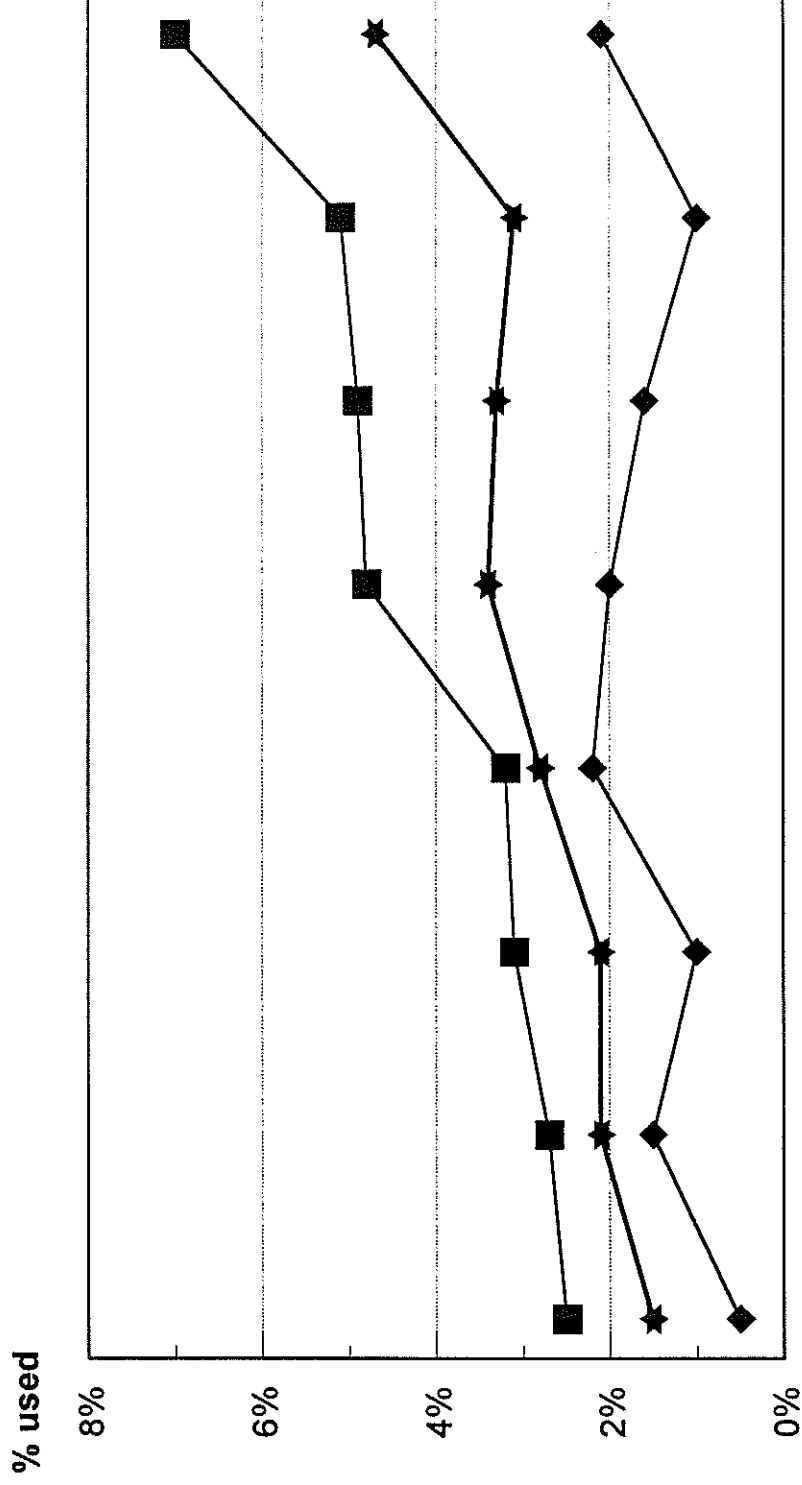
	11	12	13	14	15	16	17	18 & over
Males ■	4.1%	5.2%	6.6%	12.5%	15.3%	16.3%	21.3%	15.1%
Females ◆	5.3%	6.4%	6.9%	9.3%	11.5%	9.0%	9.1%	7.9%

Percentage of Students Who Reported Use of Substances to Do Better in Sports in the Last 12 Months By Age Group



	Caffeine	Extra protein	Alcohol	Painkillers	Anabolic steroids	Stimulants	Doping methods	Beta blockers	Diuretics
11-13 yrs <input type="checkbox"/>	25.2%	28.6%	6.0%	7.5%	0.9%	2.9%	1.7%	1.1%	0.9%
14-15 yrs <input checked="" type="checkbox"/>	29.5%	27.3%	10.3%	9.2%	1.5%	2.7%	2.5%	0.9%	0.7%
16 yrs + <input type="checkbox"/>	26.3%	25.0%	9.5%	10.2%	2.0%	3.7%	2.7%	1.0%	1.1%

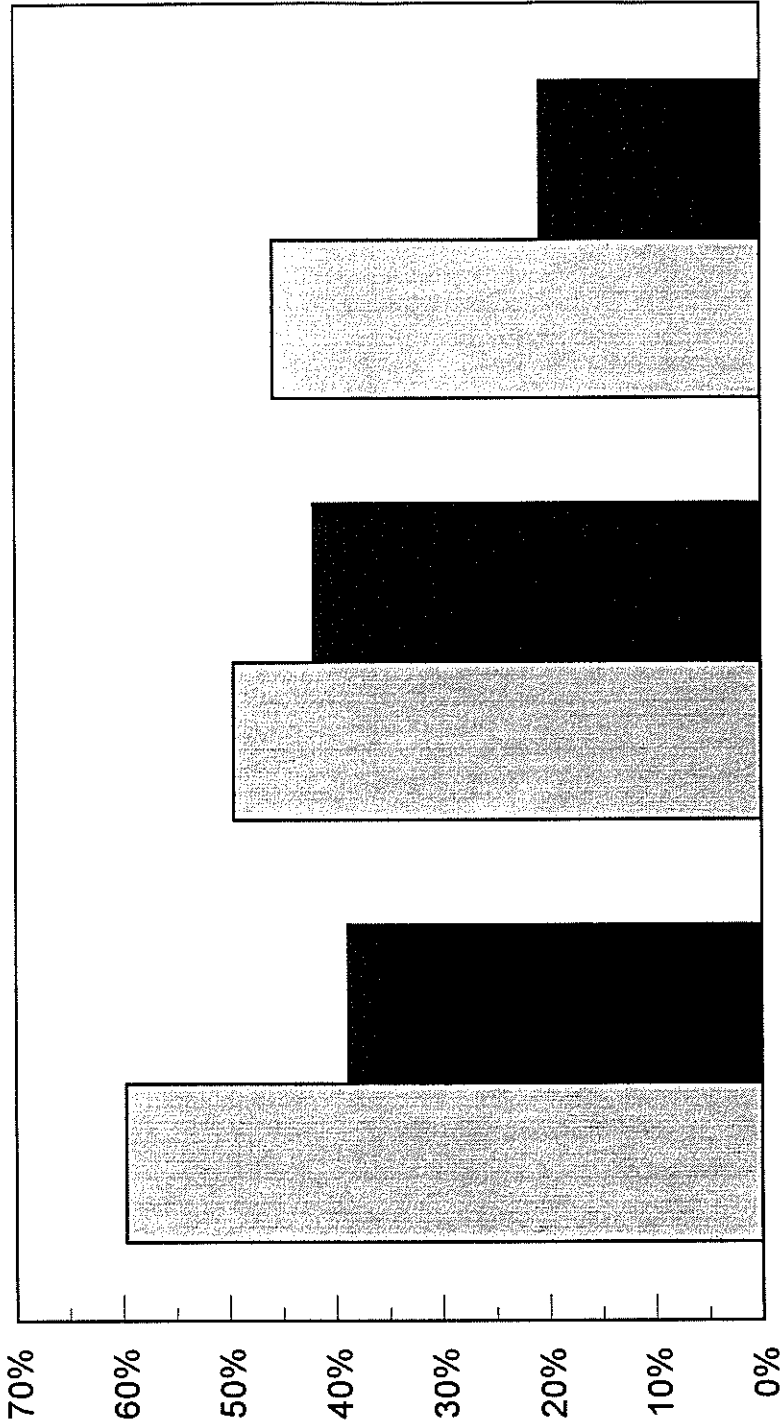
Percentage of Students who Had Used Anabolic Steroids By Gender





	11	12	13	14	15	16	17	18 & over
Males ■	2.5%	2.7%	3.1%	3.2%	4.8%	4.9%	5.1%	7.0%
Females ◆	0.5%	1.5%	1.0%	2.2%	2.0%	1.6%	1.0%	2.1%
All students ★	1.5%	2.1%	2.1%	2.8%	3.4%	3.3%	3.1%	4.7%

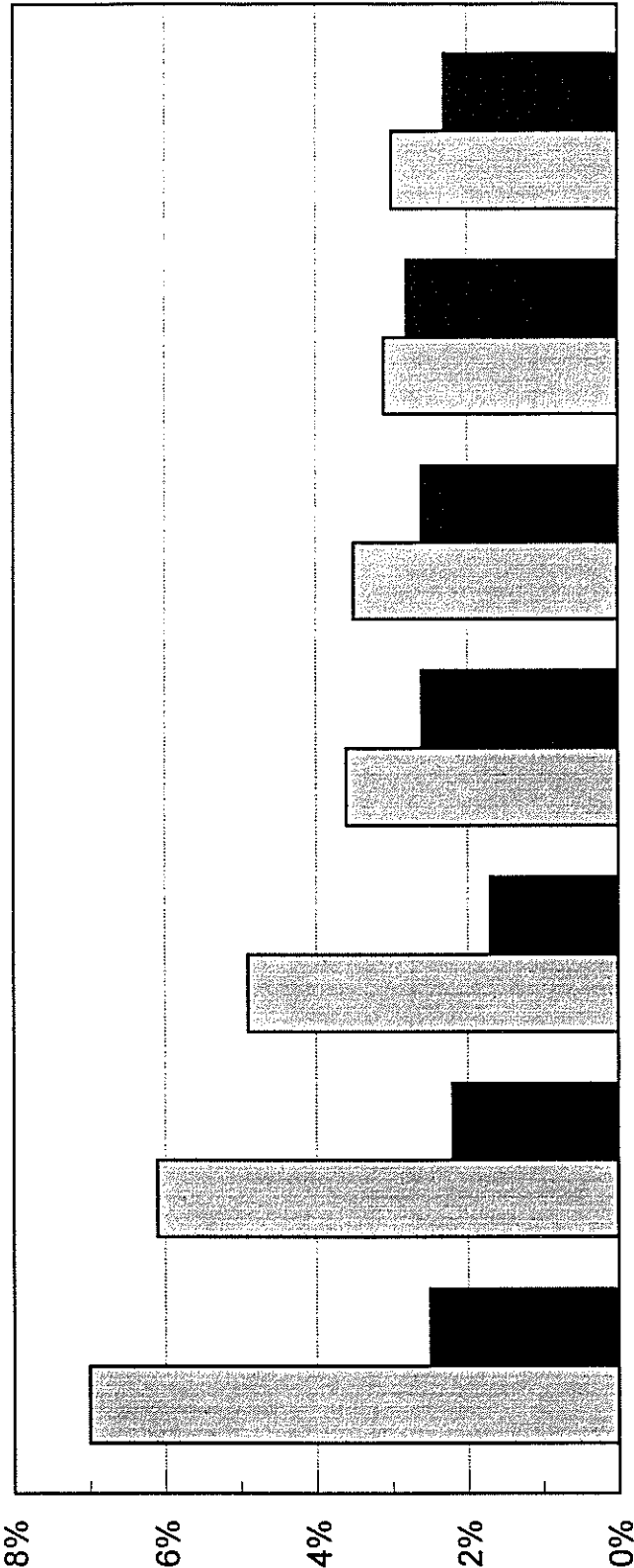
Reasons for Using Anabolic Steroids



% of users who reported this as a reason



	Do better in sports	Change appearance	Build muscles/ strengthen
Male 	59.7%	49.5%	45.8%
Female 	38.9%	42.0%	20.7%

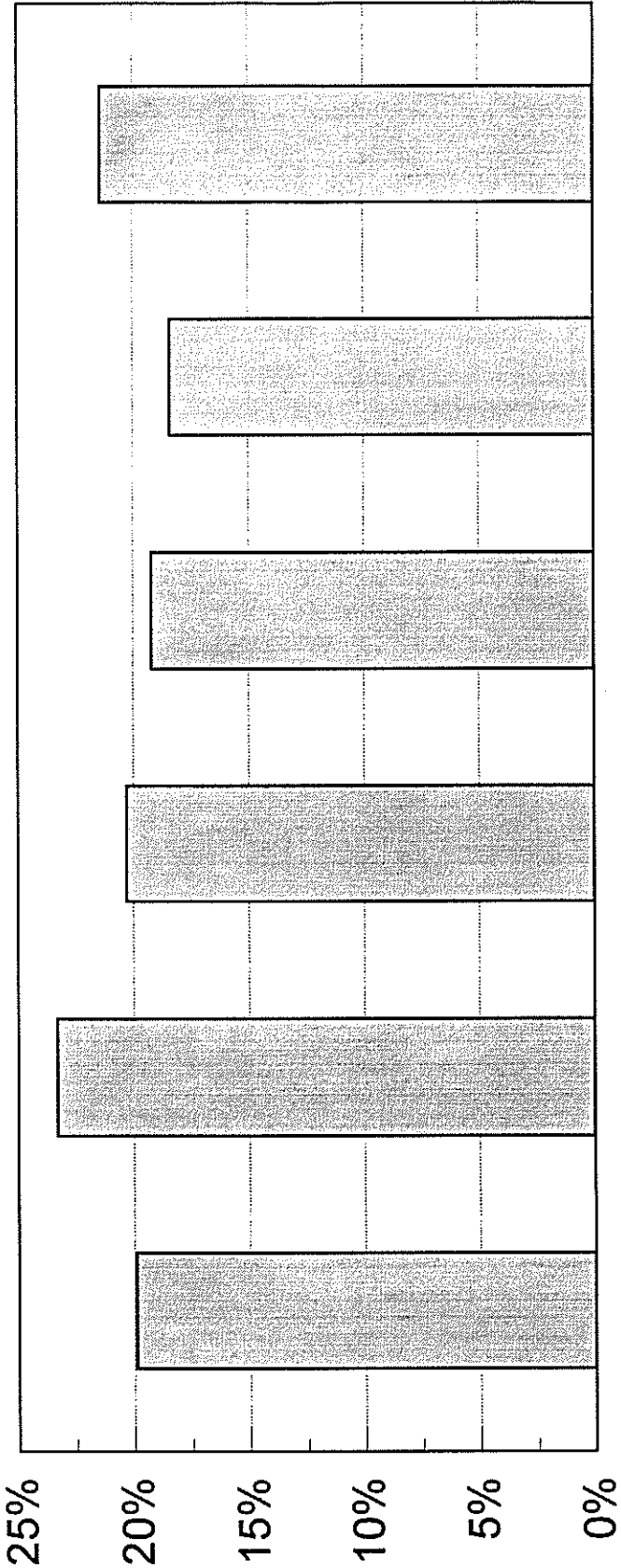
Percentage of Students who Reported
Having Used Anabolic Steroids
By Sports Team Involvement



	Provincial team	Health/fitness club	Wght training pgm	Community team	Extramural team	Intramural team*	Reg fitness activity
Involved 	7.0%	6.1%	4.9%	3.6%	3.5%	3.1%	3.0%
Not involved 	2.5%	2.2%	1.7%	2.6%	2.6%	2.8%	2.3%

* No statistically significant difference

Percentage of Students who Knew Someone
Using Anabolic Steroids
By Region



Canada	B.C.	Prairies	Ontario	Quebec	Atlantic
19.9%	23.3%	20.3%	19.2%	18.4%	21.4%

