2002 Alberta Survey on Physical Activity:

A Concise Report

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Alberta Centre for Active Living
Research and education for the promotion of physical activity

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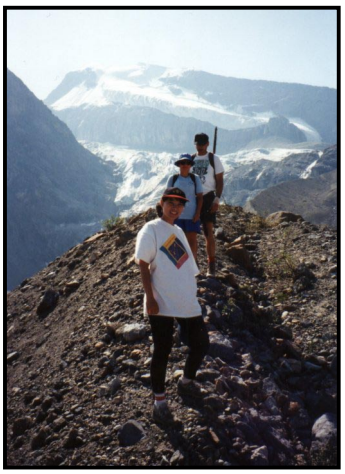
2002 Alberta Survey on Physical Activity



1. Introduction

What Is the Purpose of this Survey?

The Alberta Centre for Active Living (formerly the Alberta Centre for Well-Being) has carried out a survey every other year since 1995 to monitor the status of physical activity in Alberta. This Alberta survey series is part of the centre's strategy of providing credible and user-friendly physical activity information to researchers and practitioners.

Survey Method

The centre sponsored a series of questions on physical activity for the Alberta survey (which was conducted by the Population Research Laboratory at the University of Alberta). The sample included 1,209 adults aged 18 years and over. Data collection methods included the following:

- data were collected by telephone interview between October 29, 2002, and December 1, 2002;
- three separate subsamples represent Edmonton, Calgary, and the rest of the province;
- a random-digit dialling approach ensured that respondents had an equal chance of being contacted whether or not their household was listed in a telephone directory;
- information on demographics, current leisure-time physical activity, beliefs, attitudes, and perceptions of neighbourhood were also collected.

Data Quality

Approximately 54% of the total number of valid households responded to the survey. A random sample of 1,209 is considered accurate within +/– 2.8, 19 times out of 20.

Although the results of the age and gender sample breakdowns adequately reflect the overall Alberta population, dividing into subgroups within the sample does not necessarily represent the Alberta population. We would advise caution in generalizing the findings to the overall population.

Estimating Leisure-Time Physical Activity Levels

We used the following questions, adapted from the Godin Leisure-Time Exercise Questionnaire (Godin & Shephard, 1985), to estimate leisure-time physical activity levels in this study.

- How many times a week, on average, do you do strenuous physical activity for more than 15 minutes during your free time?
- How many times a week, on average, do you do moderate physical activity for more than 15 minutes during your free time?

- How many times a week, on average, do you do mild physical activity for more than 15 minutes during your free time?
- How often (a week), during your leisure time, do you engage in any regular activity long enough to work up a sweat?

Weekly frequencies of strenuous, moderate, and light activities are multiplied by their estimated value in METs[1] (nine, five, and three respectively). We calculated total weekly leisure activity by adding the products of the separate components.

Albertans were considered sufficiently physically active if they expended 38 METs a week (for men) or 35 METs a week (for women). According to Jacobs, Ainsworth, Hartman, & Leon (1993), these measures equal 300–400 MET-minutes per day. This number of MET-minutes equals 2,000 kcals per week (Elosúa et al., 2000).

An energy expenditure of 2,000 kcals or more per week is associated with a reduced risk of heart disease (Paffenbarger, Wing, & Hyde, 1978).

[1] A MET is the ratio of energy expended in kilocalories, divided by resting energy expenditure in kilocalories. A MET is a unit of resting metabolic rate. Thus, 2 METs are equivalent to an intensity twice that of the resting metabolic rate.

2. Results

This report presents the highlights of each question's findings. You will find the complete data tables in the Appendix.

Current Participation in Leisure-Time Physical Activity

- Fifty-seven per cent of Albertans (60% of men and 54% of women) are physically active enough to experience health benefits.
- Thirty-two per cent of Albertans state that they often participate in regular physical activity long enough to work up a sweat/41% state that they sometimes participate in regular physical activity long enough to work up a sweat/26% declare that they never/rarely participate in physical activity long enough to work up a sweat.
- Fifty per cent of Albertans expend 41 or more METs per week.
- We found a relationship between gender and leisure-time physical activity,

  $F(1, 1185) = 14.05, p = .000.$

  Males report significantly higher levels of leisure-time physical activity than females. Our analysis of the patterns of leisure-time physical activity among Albertans reveals that the main differences between genders is in strenuous physical activity (see Table 2).
- There is also a relationship between age and leisure-time physical activity,

  $F(3, 1148) = 11.427, p = .000.$

  The survey divided results into four age groups (18–24, 25–44, 45–64, and 65 and over). The 18–24 group reported significantly higher rates of physical activity than all the other groups. The 25–44 group also reported significantly higher levels of physical activity than the 45–64 and 65 and over groups. However, there were no significant differences in physical activity levels between the 45–64 and the 65 and over groups.

  Again, an analysis of the patterns of physical activity among Albertans shows that age decreases in physical activity exist primarily at the level of strenuous physical activity (see Table 2).

  Furthermore, when considered with other potential moderating demographic, social-cognitive, or environmental factors, age is also a significant predictor of leisure-time physical activity behaviour in this sample (see Table 3).
- A significant interaction between gender and age,

  $F(1,3) = 2.93, p = .03,$

further indicates that the differences between males and females in leisure-time physical activity occur mostly in the 18–24 and 65 and over age groups.

- Annual household income also influences leisure-time physical activity participation,

  $F(6, 896) = 2.441, p = .024.$

  Specifically, Albertans earning $100,000 or more report significantly higher levels of leisure-time physical activity than those earning $30,000–39,999 and $40,000–59,000.

Awareness of the Importance of Being Physically Active

- Ninety-one per cent of Albertans agree or strongly agree that physical activity will keep them healthy.
- Eighty-seven per cent of Albertans agree or strongly agree that physical activity will reduce their chances of getting serious health problems.
- There is a relationship between age and the belief in the health benefits of physical activity,

  $F(3, 1159) = 6.333, p = .000.$

  In particular, Albertans aged 45–64 report a significantly higher belief in the health benefits of physical activity than Albertans in the 18–24 and the 65 and over groups.
- Education also affects the belief in the health benefits of physical activity,

  $F(2, 1193) = 8.037, p = .000.$

  The higher their level of education, the stronger the belief of Albertans in the health benefits of physical activity.

Confidence in Being Able to Overcome Barriers to Physical Activity

- Forty-five per cent of Albertans are very to extremely confident that they can be physically active when they are a little tired.
- Twenty-seven per cent of Albertans are very to extremely confident that they can be physically active when they have many other demands on their time.
- Thirty-five per cent of Albertans are very to extremely confident that they can be physically active when the weather is bad.
- When considered with other possible moderating demographic, psychological, or environmental factors, self-efficacy (that is, confidence in being able to overcome potential barriers to physical activity) is by far the most significant predictor of leisure-time physical activity behaviour in this sample (see Table 3).
- A relationship exists between gender and a person's self-efficacy,

  $F(1, 1172) = 36.334, p = .000.$

  Males display significantly higher scores of self-efficacy than females.

- There is a relationship between age and a person's self-efficacy,

  $F(3, 1135) = 2.773, p = .043.$

  Specifically, Albertans aged 65 years and over show significantly lower levels of self-efficacy than those in the 25–44 group.
- The differences between males and females in levels of self-efficacy are most evident in the youngest (18–24) and oldest (65 and over) age groups.
- Education also influences self-efficacy,

  $F(2, 1169) = 10.851, p = .000.$

  Higher levels of education are significantly associated with higher levels of self-efficacy.
- Total annual household income also affects self-efficacy,

  $F(6, 893) = 2.837, p = .010.$

  Albertans with an annual household income of $100,000 or more have significantly higher scores on measures of self-efficacy than Albertans in the $30,000–39,999 group and almost significantly higher scores than those in the $40,000–59,999 group.

Perceived Opportunities to Be Physically Active

- Seventy-two per cent of Albertans agree or strongly agree that they have easy access to places where they can get physical activity.
- Seventy-seven per cent of Albertans somewhat agree or strongly agree that their neighbourhood has several free or low-cost recreational facilities.
- When considered with other potential moderating demographic, psychological, or environmental factors, perceived access to places that allow physical activity is still a significant predictor of leisure-time physical activity behaviour in this sample (see Table 3).
- We found a relationship between gender and perceived access to places that allow physical activity,

  $F(1, 1202) = 6.120, p = .014.$

  Males' perceptions of access are significantly higher than those of females.
- A relationship exists between education and perceived access to places that allow physical activity,

  $F(2, 1199) = 10.184, p = .000.$

  People who have not completed high school have significantly lower perceptions of access than people with a secondary or a post-secondary degree.
- Age influences whether Albertans perceive that their neighbourhood offers several free or low-cost recreational facilities,

  $F(3, 1160) = 2.982, p = .030.$

In particular, those in the 18–24 age group display significantly higher perceptions about the availability of facilities than those in the 45–64 group.

- Provincial location significantly affects perceptions, for example, about access to places that offer physical activity,

  $F(2, 1201) = 4.895, p = .008.$

  Provincial location also influences perceptions about the availability of free or low-cost recreational facilities in one's neighbourhood,

  $F(2, 1195) = 13.547, p = .000.$

  Albertans from other regions in the province are significantly lower in both sets of perceptions than Albertans from Edmonton and Calgary.

3. Conclusions and Recommendations

Comparing the results from previously released Alberta surveys (Spence, Mummery, & Poon, 1997; Spence, Poon, & Mummery, 1998; Spence & Poon, 2000) is difficult because the questions used to estimate physical activity levels in the present study are not the same as the ones used in previous surveys. Nevertheless, we can compare the current results with data from the unpublished 2000 Alberta survey (see Table 4). For example, both surveys used the same questions to assess physical activity levels.

Activity Levels

Albertans seem to be just as active in 2002 as in 2000. Currently, approximately 57% of Albertans are sufficiently active. These findings differ from the recent *Canadian Community Health Survey* (Statistics Canada, 2002) and *2001 Physical Activity Monitor* (Canadian Fitness and Lifestyle Research Institute, 2002), both of which reported fewer than 50% of Albertans as sufficiently active to experience optimal health benefits.

These differences are most likely due to the different questionnaires and definitions of physical activity used in each study. In addition, the measure used in this study to assess levels of physical activity only examines one domain (i.e., leisure-time) in which physical activity can occur.

Recent work by an international Consensus Group on Physical Activity sponsored by WHO (Craig et al., 2003) discusses five domains in which health-related physical activity can occur:

- occupational;
- transport;
- yard/garden;
- household; and
- leisure.

Our study may then underestimate how much Albertans engage in physical activity practices that may lead to health benefits.

Awareness Levels

Most Albertans seem aware of the health benefits of being physically active. Furthermore, the percentage of Albertans who agree or strongly agree that physical activity will reduce their chances of getting serious health problems has increased four points in the past two years. Nevertheless, promoting awareness of the health benefits of physical activity should continue, especially among less educated Albertans.

Although most Albertans also seem aware of opportunities to be physically active, we need to further explore their knowledge about how to be active. We recommend promoting a consistent message, in addition to a long-term promotion of *Canada's Physical Activity Guide to Healthy Active Living* (Health Canada, 1998).

Confidence Levels

The confidence of Albertans in being able to overcome barriers to physical activity significantly increased between 2000 and 2002. However, confidence levels of Albertans remain quite low in general. Albertans still need help in overcoming barriers to physical activity participation. This seems particularly true for females and older Albertans.

We need to promote the message that activity can be accumulated throughout the day instead of in long bouts (in line with Health Canada's *Physical Activity Guide to Healthy Active Living* (1998; 1999)). Further, consistent messages about attainable goals (e.g., decreasing the resting heart rate and achieving small changes in weight) would also be helpful.

Access Issues

The percentage of Albertans who agree or strongly agree that they have easy access to places to participate in physical activity increased by two percentage points between 2000 and 2002. However, this percentage is significantly lower for females and for Albertans outside Edmonton and Calgary. The cause of these important differences needs to be further investigated.

Taking a Determinants-of-Health Approach

The fact that several demographic, social-cognitive, or environmental factors affect and/or independently predict physical activity participation further supports the determinants-of-health framework advocated in the *1999 Alberta Survey on Physical Activity* (Spence & Poon, 2000).

The term "determinants of health" includes the broad range of personal, social, and environmental factors (beyond personal risk factors and coping skills) that affect individual and population health. This framework, along with current and previous research, underscores the need for a balance between individual behaviour change strategies and environmental change strategies (Coalition for Active Living, 2002).

Furthermore, the fact that several demographic, social-cognitive, or environmental factors affect and/or independently predict physical activity participation highlights the need for recent policy initiatives (Alberta Active Living Task Force, 1998) and public-health campaigns to reduce physical inactivity (Health Canada, 1998) to be positioned within a determinants-of-health framework. As the authors of the *1999 Alberta Survey of Physical Activity* suggested, "encouraging more Albertans to become physically active will require a shift in policies and practices that reflect this broader health determinants thinking" (Spence & Poon, 2000, p. 9). Today, as then, it is important to understand physical inactivity as a public-health issue and not simply as a personal problem.

The Complementary Life Course Approach to Health

In addition to embracing a determinants-of-health framework, we suggest adopting a complementary life course approach to health (World Health Organization, 2000). This approach shows how current patterns of physical activity participation develop because of past and present experiences shaped by the wider social, economic, and cultural context. For example, the low levels of confidence about overcoming barriers to physical activity among older females in our sample may relate more to the typical socialization experiences of a generation or cohort rather to being female and reaching a certain age.

Recommendations for Future Surveys

From a methodological point of view, we recommend that future Alberta surveys address the relative gap in information about the physical activity participation rates of children and adolescents in Alberta.

Furthermore, the demographic, social-cognitive, and environmental variables used in this study only explain about 18% of the variance in physical activity in the current sample. Future surveys could include additional variables to better understand the factors that influence Albertans' physical activity levels. For example, future surveys could include questions about the affective aspects of participating in physical activity (e.g., enjoyment) and perceptions of social support in participating (Eyler, Brownson, Bacak & Houseman, 2003; Fox, Rejeski, & Gauvin, 2000).

Finally, future assessments of physical activity participation need to be consistent with national and international guidelines that reflect best practice in both the research and implementation sides of physical activity participation.

An example of the latter is the recent work of the WHO-sponsored International Physical Activity Questionnaire (IPAQ) Consensus Group on Physical Activity Measurement. As a result of this work, the IPAQ has recently been validated in 12 countries, including Canada (Craig et al., 2003). This questionnaire, which can be administered in a short telephone interview, includes several domains of health-related physical activity (in addition to leisure-time physical activity). The measurement properties of the questionnaire are at least as good as other established self-reports.

The IPAQ will also make it possible for the first time to obtain internationally comparable data on health-related physical activity. We recommend that future Alberta surveys be aligned with this recent development in observing and measuring physical activity.

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Appendix: Tables

Table 1: Leisure-Time Physical Activity Participation in Alberta

	N	LTPA[1] Mean	SD[2]
Gender:			
Female	593	42.47	30.51
Male	595	49.27	31.98
Total	1,188	45.87	31.42
Age:			
18–24 years	162	55.54	55.54
25–44 years	517	48.23	48.23
45–64 years	340	41.34	41.34
65+years	133	38.07	38.07
Total	1,152	46.04	46.04
Educational Level:			
Less than Secondary	144	47.72	38.17
Secondary	243	44.57	31.81
Post-Secondary	798	45.85	29.86
Total	1,185	45.81	31.37
Annual Household Income:			
<$20,000	75	44.90	35.57
$20–29,999	71	46.51	31.21
$30–39,999	91	39.79	29.54
$40–59,000	203	42.81	34.27
$60–79,999	158	47.10	29.86
$80–99,999	105	47.38	28.43
$100,000+	201	52.60	31.30
Total	904	46.43	31.78

	N	LTPA[1] Mean	SD[2]
Region:			
Edmonton	381	45.60	30.97
Calgary	391	45.81	30.45
Others	416	46.17	32.77
Total	1,188	45.87	31.42

Note 1: LTPA = Leisure-time physical activity.

Note 2: SD = Standard deviation.

Table 2: Patterns of Leisure-Time Physical Activity Participation in Alberta

	N	LTPA[1] Mean	SD[2]
Gender			
Mild Activity:			
Female	599	12.14	9.05
Male	597	11.74	10.93
Total	1,196	11.94	10.03
Moderate Activity:			
Female	604	16.05	14.06
Male	595	16.81	13.59
Total	1,199	16.43	13.83
Strenuous Activity:			
Female	604	14.37	18.88
Male	597	20.64	21.47
Total	1,201	17.49	20.44
Age			
Mild Activity:			
18–24 years	163	12.92	10.30
25–44 years	522	12.49	10.56
45–64 years	341	10.75	9.10
65+ Years	134	11.75	8.55
Total	1,160	11.95	9.91
Moderate Activity:			
18–24 years	162	18.99	13.92
25–44 years	523	16.61	13.97
45–64 years	345	16.14	13.59
65+ Years	133	14.19	13.80
Total	1,163	16.52	13.87

	N	LTPA[1] Mean	SD[2]
Strenuous Activity:			
18–24 years	163	23.58	20.19
25–44 years	522	19.06	20.06
45–64 years	346	14.37	19.56
65+ Years	134	12.59	22.22
Total	1,165	17.55	20.46
Educational Level			
Mild Activity:			
Less than Secondary	148	11.93	10.24
Secondary	245	10.85	9.33
Post-Secondary	801	12.26	10.20
Total	1,194	11.93	10.04
Moderate Activity:			
Less than Secondary	145	17.11	16.01
Secondary	246	17.64	14.01
Post-Secondary	805	15.91	10.20
Total	1,196	16.41	13.83
Strenuous Activity:			
Less than Secondary	149	19.06	24.14
Secondary	247	16.01	19.69
Post-Secondary	804	17.60	19.87
Total	1,200	17.46	20.41

	N	LTPA[1] Mean	SD[2]
Annual Household Income			
Mild Activity:			
<$20,000	76	11.80	11.09
$20–29,999	71	11.37	9.59
$30–39,999	91	12.08	10.20
$40–59,000	205	10.82	10.08
$60–79,999	161	11.38	8.87
$80–99,999	107	13.21	9.92
$100,000+	201	13.75	10.80
Total	912	12.09	10.12
Moderate Activity:			
<$20,000	76	15.86	15.21
$20–29,999	71	17.59	15.84
$30–39,999	92	15.42	11.97
$40–59,000	207	16.10	15.10
$60–79,999	159	16.53	12.22
$80–99,999	105	16.45	13.68
$100,000+	203	17.11	13.79
Total	913	16.47	13.92
Strenuous Activity:			
<$20,000	75	17.19	21.22
$20–29,999	71	17.54	20.69
$30–39,999	92	12.44	16.53
$40–59,000	207	16.01	21.40
$60–79,999	160	19.59	20.11
$80–99,999	107	17.43	17.71
$100,000+	203	21.48	20.67
Total	915	17.87	20.20

	N	LTPA[1] Mean	SD[2]
Region			
Mild Activity:			
Edmonton	384	12.10	9.13
Calgary	391	12.04	11.03
Others	421	11.70	9.86
Total	1,196	11.94	10.03
Moderate Activity:			
Edmonton	386	16.51	13.79
Calgary	392	16.16	13.47
Others	421	16.60	14.21
Total	1,199	16.43	13.83
Strenuous Activity:			
Edmonton	385	16.84	20.84
Calgary	392	17.63	19.69
Others	424	17.95	20.78
Total	1,201	17.49	20.44

Note 1: LTPA = Leisure-time physical activity.

Note 2: SD = Standard deviation.

Table 3: Summary of Hierarchical Regression Analysis for Variables Predicting Leisure-Time Physical Activity

Variable	beta (B)	SE B[1]	Standardized Beta (β)
Step 1[2] (Demographic Variables):			
Gender	−4.463	2.140	−.070*
Age	−.371	.070	−.176***
Years of Education	−.003	.368	.000
Annual Household Income	.196	.135	.050
Provincial Location	−.476	1.273	−.012
Step 2 (Demographic and Social-Cognitive Variables):			
Gender	−.758	2.038	−.012
Age	−.319	.067	−.150***
Years of Education	−.637	.350	−.059
Annual Household Income	.034	.128	.009
Provincial Location	−.400	1.199	−.010
Self-Efficacy	4.942	.429	.375***
Outcome Expectation (belief in benefits of physical activity)	1.919	1.112	.055
Step 3 (Demographic and Social-Cognitive and Environmental Variables):			
Gender	−.778	2.042	−.012
Age	−.334	.068	−.156***
Years of Education	−.565	.350	−.052
Annual Household Income	−.036	.129	−.009
Provincial Location	−.616	1.205	−.016
Self-Efficacy	4.411	.447	.335***
Outcome Expectation (belief in the benefits of physical activity)	1.277	1.135	.036

Variable	beta (B)	SE B[1]	Standardized Beta (β)
Easy Access to Places to Get Physical Activity	2.666	.885	.105**
Several Free or Low-Cost Recreational Facilities in Neighbourhood	−.089	.994	−.003
Interesting Things to Look at while Walking in Neighbourhood	1.370	.983	.045

Note 1: SE B = Standard error of beta.

Note 2:
R^2 = .040 for Step 1;

ΔR^2 = .139 for Step 2;

ΔR^2 = .012 for Step 3;

R^2 Total = .181 (ps < .05). *p<.05. **p< .01. ***p<.001.

Table Note:
The information in this table is based on a weighted sample.

Table 4: Evolution of Variables of Interest (2000–2002)

	2000	2002
Participation in Leisure-Time Physical Activity		
% of Albertans who state that they often participate in regular physical activity long enough to work up a sweat.	35%	32%
METs per week spent by 50% of Albertans	39 or more	41 or more
% of Albertans who are active enough to experience health benefits	55%	57%
Awareness of the Importance of Being Physically Active		
% of Albertans who agree or strongly agree that physical activity will keep them healthy.	91%	91%
% of Albertans who agree or strongly agree that physical activity will reduce their chances of getting serious health problems.	83%	87%
Confidence in Being Able to Overcome Barriers to Physical Activity		
% of Albertans who are very to extremely confident that they can be physically active when they are a little tired.	37%	45%
% of Albertans who are very to extremely confident that they can be physically active when they have many other demands on their time.	20%	27%
% of Albertans who are very to extremely confident that they can be physically active when the weather is bad.	32%	35%
Perceived Opportunities to Be Physically Active		
% of Albertans who agree or strongly agree that they have easy access to places where they can get physical activity.	70%	72%