British Columbia
Health and Wellness Survey (BC-HWS)
Descriptive Report

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PROVINCIAL
Health Services
AUTHORITY

Province-wide solutions.
Better health.

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The descriptive report is available at www.phsa.ca/HealthPro/PreventionPromoProtect/default.htm as well as a brief report (entitled "British Columbia - Health and Wellness Survey (BC-HWS): Brief report") which summarizes the finding presented here.

This is a Provincial Health Services Authority Prevention, Promotion, and Protection Project.

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Foreword

I am pleased to present the results of the first-ever BC Health and Wellness Survey (BC-HWS), coordinated by the Provincial Health Services Authority (PHSA) as part of our "prevention, promotion and protection" mandate. I trust you will find the results interesting and informative, but more importantly, I hope they will help to drive actions towards improving community and individual health.

In the spring of 2006, the BC-HWS collected key information about the health behaviours of people in 26 communities across all five regional health authorities. The results, presented in this report, provide a picture of the health and wellness of British Columbians at a more local level than has ever before been available.

In reviewing the results of BC-HWS 2006, it is important to remember that the data presented have not been interpreted. The data are presented only for descriptive purposes, to provide a general indication of health and wellness in the communities they reflect.

Toward ensuring we provide the most useful information possible, we welcome your feedback to this report.

John Millar
PHSA Executive Director
Population Health Surveillance & Disease Control Planning

Introduction

This report presents descriptive data from the BC Health and Wellness Survey (BC-HWS), an initiative of the Provincial Health Services Authority (PHSA) aimed at developing an understanding of health-related lifestyle patterns of British Columbians. The purpose of the BC-HWS is to empower local communities to:

- Monitor the Premier's lifestyle targets for ActNow BC and the 2010 Challenge, as well as initiatives designed to address those targets*;
- Monitor key public health issues to support program planning and evaluation; and
- Advocate for public policy development to improve the health of British Columbians.

The BC-HWS is modeled after Ontario's Rapid Risk Factor Surveillance System (RRFSS), a randomized telephone survey conducted continuously through the year that monitors health behaviour risk factors and general health. The BC-HWS responds to an urgent need by medical health officers, epidemiologists, health planners and health administrators for health data at a more local level than has previously been available in BC.

Overview of Report

This report provides an overview of data collected for the BC-HWS related to the following categories:

- Socio-demographic characteristics
- Body mass index (BMI)
- General health
- Diabetes
- High blood pressure
- Physical activity level
- Sedentary activities
- Fruit and vegetable consumption

* In order to make British Columbia the healthiest jurisdiction ever to host the Olympic and Paralympic Games, the Premier has set the following targets for BC: to increase by 20% the prevalence of those who eat at least five servings of fruits and vegetables per day; to increase by 20% those who are physically active; to reduce tobacco consumption by 10%; to reduce the prevalence of overweight or obesity; and to increase by 50% those who access information about alcohol risk during pregnancy.

- Tobacco use
- Alcohol consumption
- Physical environment for bicycling and recreation
- Food access and security

The methods section of the report describes how the data were collected and analyzed, while the results section describes the variables of interest for the report and presents the data. The report concludes with a descriptive overview of findings across the local health areas (LHAs)/communities surveyed. The reader is reminded that the purpose of this report is to provide only a descriptive overview of the findings.

Background

According to the World Health Organization (WHO), chronic disease accounts for approximately 60% of all deaths worldwide.[1] Deaths associated with chronic disease are expected to increase by about 15% in the next decade; based on current trends, 44% of these will be due to diabetes.[1] In Canada, chronic diseases account for an even larger proportion of deaths (89%) and are expected to cause the death of two million Canadians over the next decade.[2] The economic impact of premature deaths associated with chronic disease in Canada was estimated at $500 million in 2005, and is projected to reach $9 billion over the next decade.[2] In BC, cardiovascular diseases, cancer and diabetes currently account for 10.3% of the health care budget – or about $1.28 billion.[3]

Addressing the major risk factors for chronic disease, which include an unhealthy diet, lack of physical activity, and tobacco use, could decrease the number of deaths associated with heart disease, stroke, and type 2 diabetes by about 80% and prevent about 40% of cancers.[1,4] Primary prevention aimed at reducing the prevalence of such risk factors is seen as integral to addressing the challenge of chronic disease. The need for more effective prevention strategies has led to an interest among BC LHAs/communities to better understand the health status of their community members, especially regarding the behavioural determinants of health. Until now, only high-level provincial or BC health service delivery area data have been available, through surveys such as Statistics Canada's Canadian Community Health Survey (CCHS) and Health Canada's Canadian Tobacco Use Monitoring Survey (CTUMS). While these are valuable sources of public health and prevention data, there is a need for more local data, such as at the municipal or neighbourhood levels. Providing descriptive health data at this level is the specific intent of the BC-HWS.

Methods

Data Sources

Local Health Area (LHA)/Community Selection and Sampling

The BC-HWS was designed to collect data and gather information about behavioural determinants of health and general health at the local or community level. Data collection involved 26 LHAs/communities, including five LHAs/communities from four of BC's five regional health authorities, and six LHAs from the Interior Health Authority – which provided complete geographic coverage of Interior Health's East Kootenay Health Services Delivery Area. In choosing LHAs/communities for the survey, the health authorities gave priority to those that expressed an interest and to those with the greatest capacity for disseminating the data from the BC-HWS.

The initial intent of BC-HWS was to collect data at the local health area (LHA) level. However, given the tremendous variation in population density and diversity among the province's LHAs this plan was changed, and instead, a mix of 11 LHAs and 15 communities was surveyed. To avoid confusion between LHAs and communities, all LHAs are specifically identified as such where mentioned within this report, e.g. Windermere-LHA, Golden-LHA.

Table 1. Study areas for the 26 selected LHAs/communities from the five regional health authorities surveyed in the BC Health and Wellness Survey (2006)

LHA/Community	Local Health Area (LHA)	LHA coverage	Sampled Area/Source
Vancouver Coastal Health Authority			
North Vancouver-LHA	LHA 44	100%	FED 59019 Includes both City and District of North Vancouver.
South Vancouver-LHA	LHA 166	100%	FED 59034 – FED missing SW Corner. Roughly the area bounded by Boundary Rd in the east, Granville St in the west, 41st Ave to the north, and Fraser River to the south.
Grandview-Woodlands	LHA 39	Approximately 5%	Area bounded by Nanaimo St on the east, Clark Dr on the west, Burrard Inlet to the north and Broadway to the south.
Richmond Blundell	LHA 38	Approximately 15%	Roughly the area of Richmond bounded by Granville Ave in the north, Francis Rd in the south, Number 3 Rd in the east and the Strait of Georgia to the west.
Richmond Centre	LHA 38	Approximately 15%	Area bounded in the north and west by water (Middle Arm of Fraser River and the Strait of Georgia). On the south by Granville Ave to Number 3 Rd, and then General Currie Rd to Garden City. East boundary is Number 3 Rd to Lansdowne Rd and then Garden City. Also includes the Sea Island community of Burkeville.
Interior Health Authority			
Fernie-LHA	LHA 1	100%	CSD 01801, 01019, 01012, 01006, 01003
Cranbrook-LHA	LHA 2	100%	CA 905 & CSD 01803
Kimberley-LHA	LHA 3	100%	CSD 01028, 01037, 01807
Windermere-LHA	LHA 4	100%	CSD 01046, 01804, 01806, 01039, 01040, 01048
Creston-LHA	LHA 5	100%	CSD 03807, 03004, 03013, 03017, 03010
Golden-LHA	LHA 18	100%	CSD 39011, 39007
Northern Health Authority			
Fort Nelson-LHA	LHA 81	100%	CSD 01801, 01019, 01012, 01006, 01003
Robson Valley/McBride/Valemont	LHA 57	Less than 1% of LHA 57.	CMA 905 & CSD 01803
Mackenzie	LHA 57	Approximately 5%	CSD 01028, 01037, 01807
Smithers/Moricetown	LHA 53/54	Approximately 18% of LHA 53 & 54. Smithers is in LHA 54; Moricetown is in LHA53 and includes 3 neighbouring reserves.	CSD 01046, 01804, 01806, 01039, 01040, 01048
Prince Rupert-LHA	LHA 52	100%	CSD 03807, 03004, 03013, 03017, 03010

LHA/Community	Local Health Area (LHA)	LHA coverage	Sampled Area/Source
Vancouver Island Health Authority			
Port Hardy/Port McNeil	LHA 85	Approximately 53%	CSD 43023, 43012
Vancouver Island North	LHA 85	Approximately 47% – excludes Port Hardy/Port McNeil.	CD 43 exclude CSD 43023 & 43012
Port Alberni	LHA 70	Approximately 57%	CSD 23008
Alberni	LHA 70	Approximately 43% - excludes Port Alberni.	CD 23 exclude CSD 23008
Sooke	LHA 62	Approximately 17% - excludes Metchosin, Colwood, Langford and Highlands.	CSD 17815, 17816, 17056, 17054, 17052, 17817, 17818, 17809
Fraser Health Authority			
Hope	LHA 32	Approximately 74 %	CSD 09009
Mission	LHA 75	Approximately 87 %	CSD 09056
New Westminster-LHA	LHA 40	100%	CSD 15029
Port Moody	LHA 43	Approximately 14%	CSD 15043
South Surrey/ White Rock	LHA 202	Approximately 75%. White Rock CSD 15007 (100%) and Surrey CSD 15004 (about 15%).	CSD 15004 & 15007

1. FED = Federal Electoral District
2. CD = Census Division
3. CSD = Census Sub-Division
4. CMA = Census Metropolitain Area

Table 1 provides a list of the LHAs and communities surveyed for the BC-HWS. Eleven of the samples (i.e. North Vancouver (city & district), South Vancouver, Fernie, Cranbrook, Kimberley, Windermere, Creston, Golden, Fort Nelson, Prince Rupert, and New Westminster) represented complete coverage of an LHA. Four samples, surveyed separately, yielded complete coverage for two further LHAs. (The community of Vancouver Island North, for example, excludes Port Hardy and Port McNeil, which were surveyed separately to provide complete coverage of LHA 85. The same approach was taken for Alberni/Port Alberni in LHA 70.) All other areas surveyed represent only portions of their respective LHAs.

A simple random sample of 400 people in each LHA/community was planned to ensure reliable estimates for most variables of interest. As the surveyed LHAs/communities were not randomly selected by the health authorities, data from the BC-HWS cannot be reliably aggregated at the health authority or provincial level.

Questionnaire

The BC-HWS was adapted from Ontario's RRFSS, a telephone survey aimed at providing data across health units in Ontario.[5] Additional questions were taken from other sources, such as the CCHS. The BC-HWS comprised 67 questions, which took an average of 17 minutes to complete. The survey included questions on socio-demographic characteristics, height and weight, general health, diabetes, high blood pressure, other chronic diseases, reproductive health, physical activity level, sedentary activities, fruit and vegetable consumption, tobacco use, alcohol consumption, environment for physical activity (bicycling and recreation), and food access and security. Only the main categories from the BC-HWS are included in this report.

Data Collection and Procedures

BC-HWS data were collected between March and July 2006 using random digit dialling (RDD) methodology for household selection. All samples were drawn from the Canada Survey Sampler software (ASDE Inc.[6]) which included both listed and unlisted phone numbers.†

All interviews were conducted in English using Computer Assisted Telephone Interview (CATI) technology. Random selection of respondents within a household was achieved using the next birthday method,[7] which involves interviewing the person in the household who is 18 years of age or older and whose birthday will be next. To protect against gender imbalance in the data, quota sampling was used to limit males or females in a community to 55% of the collected sample. A 14-callback protocol was instituted to ensure that sampled households had sufficient opportunity to be included in the survey. In total 10,485 interviews were completed within the 26 selected LHAs/communities.

Weighting

A demographic profile for each of the selected LHAs/communities was developed using the 2001 Statistics Canada Census data. A weighting scheme was constructed for each LHA/community based on the population demographic profile and the sampling ratio by gender and by three age groups (18-34, 35-54 and 55+). These weights were used to ensure the correct representation of each LHA/community with respect to age and gender.

† For technical reasons, unlisted numbers were not available in three Vancouver Coastal Health communities (Grandview/Woodland, Richmond Blundell, and Richmond Centre). Overall, 20% of the numbers included in the survey sample were unlisted numbers.

Analysis and reporting

Descriptive analyses were performed for a subset of variables for each of the LHAs/communities. The following summary statistics are reported:

- Percentage
- Median (the mid-point dividing the distribution into upper and lower half; used to summarize the skewed continuous variables)
- Standard error (SE) (measures the precision of survey estimates)
- Coefficient of variation (CV) (standard error divided by the survey estimate; a measure of precision in relative terms and expressed as a percentage)
- 95% confidence interval (95% CI) (an estimated range of values which is likely – i.e. within 95% probability – to include the unknown population parameter.)

Survey weights were applied in all estimations. Finite population correction was used in the calculation of the SE, CV and 95% CI to account for small populations in some of the surveyed LHAs/communities. Non-responses were excluded from the estimations if their percentages were low, while non-responses were reported when they were relatively high. The reliability of the estimates was assessed by the magnitude of the CV. Considering the pilot nature of the BC-HWS, the more liberal CV ratings from the Survey of Aquaculture Industry were adopted.[8] The estimates were classified as: *acceptable*, if the CV was less than 25%; *interpret with caution*, if the CV was between 25% and 34%; and *unreliable*, if the CV was greater than or equal to 35%. Estimates to be interpreted with caution were flagged in the reporting tables, whereas unreliable estimates were suppressed. Data from Canadian CCHS Cycle 3.1, 2005 were used to obtain estimates for the health authorities and for BC when the questions were comparable to those of the BC-HWS, and are provided in this report. All analyses were carried out using SAS 9.1, except the estimation of the median and the SE of the median, which were carried out using SUDAAN 9.0.

Results

Socio-Demographic Data

Description of Variables

A series of demographic questions were asked, including age, marital status, ethnicity, education and household income. Gender was assessed by the interviewer.

- For age, respondents indicated the year and month they were born, which was then classified into one of three age groups: 18-34; 35-55 and 55+.

- Marital status was assessed with one question, and the six response categories were collapsed into three categories as follows: married or living with a partner; widowed, divorced, or separated; and never married.

- Ethnicity was assessed with two questions identical to the 2001 census questions. The first question asked respondents if they considered themselves to be of aboriginal origin (North American Indian, Metis, Inuit) and those who responded "no" were asked to describe their ethnic group (White, Chinese, South Asian, Black, Filipino, Latin American, Southeast Asian, Arab, West Asian, Japanese, Korean, or other). The prevalence of White in these communities is provided in this report.

- Educational level was assessed by asking the highest educational level attained. Data were categorized as follows: did not graduate from high school; graduated from high school with some post secondary education; and, graduated from university.

- Finally, the household income question asked about combined income of the respondent and other members in the household. Income was assessed in 12 categories which were collapsed into three: less than $50,000; $50,000 to $100,000; and more than $100,000.

Summary

Table 2 and **Figure 1** present the age and gender distribution of the populations in BC-HWS LHAs/communities. Populations ranged from 1,375 to 94,404. Six LHAs/communities had populations less than 5,000: Fort Nelson-LHA, Robson Valley/McBride/Valemont, Mackenzie, Smithers/Moricetown, Vancouver Island North, and Hope.

A comparison of the BC-HWS sample to the age and gender distribution of the population by LHA/community shows the younger age group as underrepresented and the older group as overrepresented, a typical observation in telephone surveys.[9] As the sampling limited the proportion of males or females in any of the surveyed communities to 55%, females were not overly represented in the BC-HWS as is commonly observed in telephone surveys.[9]

Table 2. Age-sex distribution in the BC Health and Wellness Survey (2006) LHAs/communities

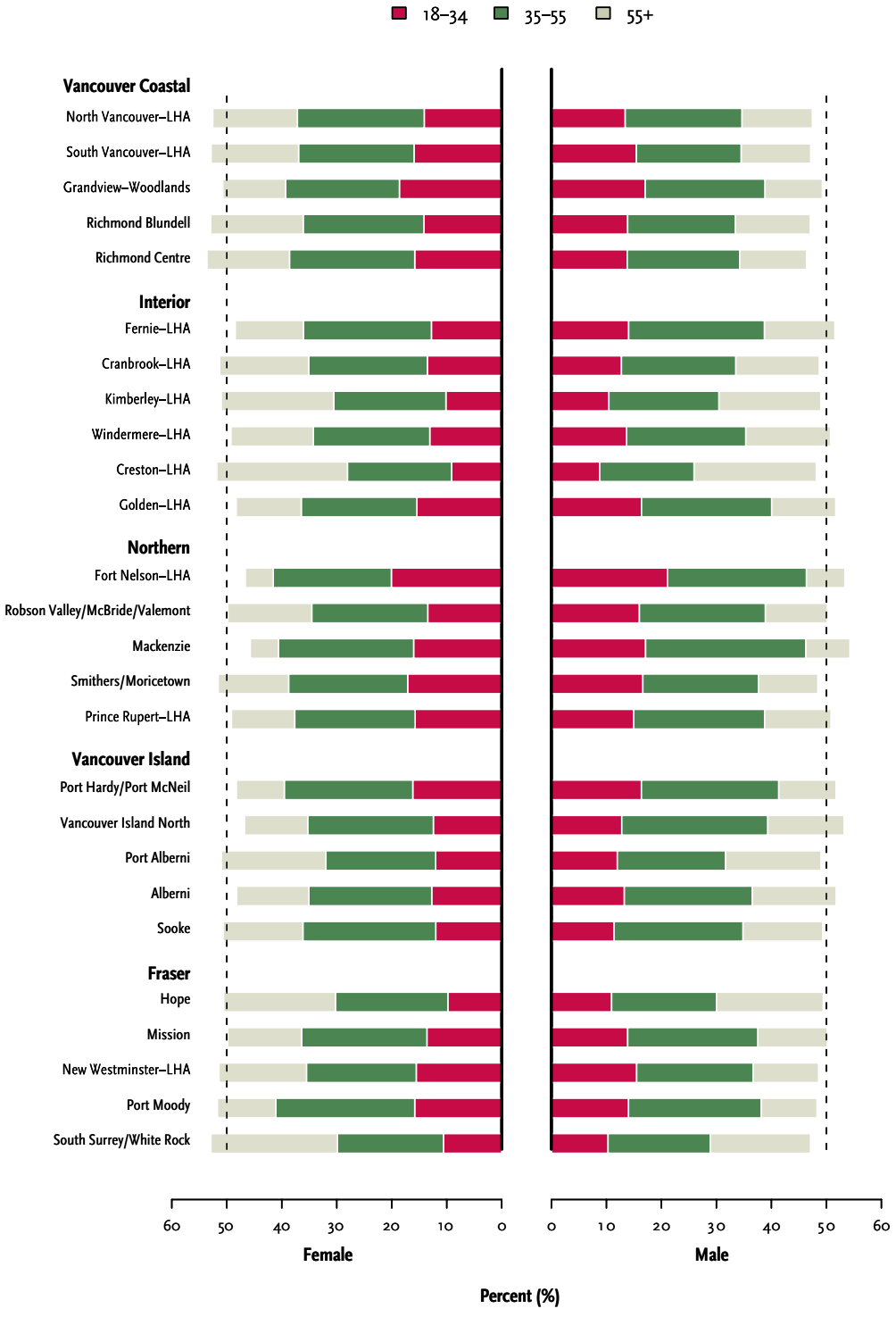
				Age Distribution			
Health Authority	LHA/Community		N	18-34 (%)	35-54 (%)	55+ (%)	Female (%)
Vancouver Coastal	North Vancouver-LHA	Population	94404	27.5	44.3	28.2	52.5
		Sample	408	13.5	46.3	40.2	51.0
	South Vancouver-LHA	Population	92165	31.4	40.1	28.5	52.8
		Sample	410	28.0	39.6	32.3	50.5
	Grandview-Woodlands	Population	25858	35.7	42.5	21.9	50.7
		Sample	407	29.0	52.4	18.5	50.4
	Richmond Blundell	Population	26756	28.0	41.6	30.4	52.9
		Sample	401	20.2	38.7	41.1	50.4
	Richmond Centre	Population	25861	29.6	43.2	27.2	53.6
		Sample	404	22.4	41.6	36.1	49.8
Interior	Fernie-LHA	Population	11175	26.8	48.0	25.2	48.5
		Sample	414	20.1	44.3	35.6	48.1
	Cranbrook-LHA	Population	18455	26.3	42.4	31.3	51.3
		Sample	402	16.1	43.0	40.9	52.0
	Kimberley-LHA	Population	6695	20.6	40.4	39.0	51.0
		Sample	411	14.2	39.0	46.8	49.9
	Windermere-LHA	Population	6875	26.8	42.8	30.4	49.2
		Sample	406	17.9	44.6	37.4	50.5
	Creston-LHA	Population	10140	17.9	36.1	46.0	51.8
		Sample	405	14.2	31.9	53.9	49.6
	Golden-LHA	Population	5280	31.8	44.7	23.5	48.3
		Sample	402	22.5	48.2	29.3	50.2

				Age Distribution			
Health Authority	LHA/Community		N	18-34 (%)	35-54 (%)	55+ (%)	Female (%)
Northern	Fort Nelson-LHA	Population	3935	41.2	46.8	12.1	46.6
		Sample	402	30.2	59.1	10.7	52.5
	Robson Valley/McBride/Valemont	Population	1375	29.5	44.0	26.5	49.8
		Sample	392	21.2	43.7	35.1	53.1
	Mackenzie	Population	3620	33.1	53.7	13.1	45.7
		Sample	404	25.1	54.8	20.1	52.2
	Smithers/Moricetown	Population	4180	33.7	42.7	23.6	51.6
		Sample	404	16.6	48.4	35.0	50.0
	Prince Rupert-LHA	Population	11555	30.7	45.7	23.6	49.2
		Sample	413	20.6	50.5	28.9	49.6
Vancouver Island	Port Hardy/Port McNeil	Population	5285	32.5	48.3	19.1	48.2
		Sample	336	18.9	48.4	32.7	47.9
	Vancouver Island North	Population	4180	25.2	49.4	25.4	46.8
		Sample	405	14.7	51.9	33.4	50.4
	Port Alberni	Population	13605	24.0	39.7	36.3	51.0
		Sample	402	15.6	42.3	42.1	50.0
	Alberni	Population	9540	26.0	45.6	28.4	48.2
		Sample	402	27.9	40.7	31.5	52.5
	Sooke	Population	9915	23.4	47.6	29.0	50.7
		Sample	411	17.7	44.6	37.7	49.6
Fraser	Hope	Population	4795	20.8	39.5	39.7	50.6
		Sample	400	14.9	39.9	45.2	55.8
	Mission	Population	22595	27.5	46.4	26.1	49.8
		Sample	403	22.7	45.8	31.5	50.1
	New Westminster-LHA	Population	45660	31.1	41.1	27.8	51.4
		Sample	413	18.3	47.9	33.8	50.4
	Port Moody	Population	17690	29.8	49.4	20.8	51.7
		Sample	421	17.4	54.6	28.0	51.3
	South Surrey/White Rock	Population	60813	20.9	37.9	41.2	52.9
		Sample	407	12.1	37.2	50.8	50.1

1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006.

2. Population aged 18 and over.

Figure 1. Age-gender distribution of the population in the 26 selected LHAs/communities from the five regional health authorities in British Columbia, 2006



1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006
2. Population aged 18 and over

Figure 1 provides a visual comparison of the surveyed LHAs/communities by age and gender. Creston-LHA in Interior Health had an older population overall than most LHAs/communities, while Fort Nelson-LHA in Northern Health had a younger population overall.

Other socio-demographic characteristics, including marital status, ethnicity, educational level and household income, are presented in **Tables 3 and 4**. Most LHAs/communities show more than 60% of their population as married. The exceptions were four of the LHAs/communities in Vancouver Coastal Health (South Vancouver-LHA, Grandview-Woodlands, Richmond Blundell, and Richmond Centre), the Alberni community in Vancouver Island Health and the New Westminster-LHA in Fraser Health.

Looking at ethnicity, the percentage of White was above 80% for all but five LHAs/communities: South Vancouver-LHA (60.7%), Richmond Blundell (65.0%), Richmond Centre (59.0%), Prince Rupert-LHA (68.9%), and Port Hardy/Port McNeil (79.2%). Education level varied by LHA/community. The five Vancouver Coastal Health LHAs/communities surveyed had a high prevalence of college graduates (over 60%), while the prevalence of college graduates in all five Northern Health LHAs/communities surveyed was lower than 40%. Finally, the proportion indicating a combined household income of more than $100,000 varied across the LHAs/communities from a low of 4.8% to a high of 27.1%. In five communities, at least 20% indicated a household income of greater than $100,000 (North Vancouver-LHA, Fort Nelson-LHA, Mackenzie, Port Moody, and South Surrey/White Rock).

Table 3. Marital status and ethnicity of the BC Health and Wellness Survey (2006) LHAs/communities

			Marital Status			Ethnicity
Health Authority	LHA/Community	Population	Married (%)	Widowed/ divorced/ separated (%)	Never married (%)	White (%)
Vancouver Coastal	North Vancouver-LHA	94404	67.9	15.6	16.5	85.6
	South Vancouver-LHA	92165	53.1	15.7	31.2	60.7
	Grandview-Woodlands	25858	45.7	17.0	37.3	82.2
	Richmond Blundell	26756	57.8	14.1	28.1	65.0
	Richmond Centre	25861	54.3	18.7	27.1	59.0
Interior	Fernie-LHA	11175	73.6	13.1	13.3	94.4
	Cranbrook-LHA	18455	70.8	14.1	15.1	90.6
	Kimberley-LHA	6695	69.9	16.7	13.5	94.5
	Windermere-LHA	6875	72.7	15.1	12.3	94.7
	Creston-LHA	10140	70.2	19.9	9.9	91.4
	Golden-LHA	5280	68.7	15.0	16.2	88.5
Northern	Fort Nelson-LHA	3935	71.1	13.8	15.1	81.1
	Robson Valley/McBride/Valemont	1375	69.3	15.9	14.8	91.8
	Mackenzie	3620	72.7	12.8	14.5	89.9
	Smithers/Moricetown	4180	74.2	12.6	13.1	86.8
	Prince Rupert-LHA	11555	62.4	17.3	20.3	68.9
Vancouver Island	Port Hardy/Port McNeil	5285	67.0	15.6	17.4	79.2
	Vancouver Island North	4180	68.3	15.9	15.7	83.8
	Port Alberni	13605	68.9	17.8	13.3	89.0
	Alberni	9540	59.1	16.6	24.3	81.2
	Sooke	9915	73.1	14.7	12.3	93.7
Fraser	Hope	4795	63.7	23.5	12.8	84.6
	Mission	22595	68.8	18.0	13.3	89.8
	New Westminster-LHA	45660	57.7	21.0	21.2	83.2
	Port Moody	17690	73.2	14.4	12.4	88.6
	South Surrey/White Rock	60813	67.4	16.7	15.9	92.8

1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006.

2. Population aged 18 and over.

3. Data with a coefficient of variation (CV) from 25% to 35% are identified with an (*) and should be interpreted with caution. Data with a coefficient of variation (CV) greater than 35% were suppressed (--) due to extreme sampling variability.

4. Item non-responses were low for education level; non-responses were excluded in the calculation of the estimates. Item non-responses were high for income distribution and were included in the estimates.

5. Married includes married or living with a partner / common law.

Table 4: Education level and household income in the BC Health and Wellness Survey (2006) LHAs/communities

			Education Level			Household Income			
Health Authority	LHA/Community	Population	Below high school (%)	High school (%)	College/ University (%)	<$50,00 (%)	$50,000-$100,000 (%)	>$100,000 (%)	Unknown (%)
Vancouver Coastal	North Vancouver-LHA	94404	2.7*	28.7	68.6	20.5	29.7	24.4	25.5
	South Vancouver-LHA	92165	5.2	25.6	69.2	35.3	24.1	14.3	26.3
	Grandview-Woodlands	25858	4.7	29.1	66.3	44.8	26.1	11.2	17.8
	Richmond Blundell	26756	3.3*	34.6	62.1	27.5	26.6	17.5	28.4
	Richmond Centre	25861	5.0	32.9	62.1	28.6	23.6	14.8	33.1
Interior	Fernie-LHA	11175	11.1	47.1	41.8	22.7	40.8	14.5	22.1
	Cranbrook-LHA	18455	11.7	45.2	43.0	34.9	35.2	7.9	22.0
	Kimberley-LHA	6695	14.2	36.9	48.8	39.6	28.5	9.3	22.5
	Windermere-LHA	6875	12.5	38.8	48.7	32.0	38.3	10.0	19.7
	Creston-LHA	10140	17.5	44.4	38.0	50.2	18.9	4.8	26.1
	Golden-LHA	5280	10.6	41.6	47.7	38.9	30.2	12.5	18.4
Northern	Fort Nelson-LHA	3935	16.4	45.6	37.9	17.9	31.5	24.5	26.1
	Robson Valley/McBride/ Valemont	1375	20.5	46.0	33.5	33.1	25.1	11.9*	29.9
	Mackenzie	3620	9.7	53.2	37.1	13.5	37.0	24.8	24.7
	Smithers/Moricetown	4180	12.3	51.4	36.3	29.9	31.4	13.1	25.7
	Prince Rupert-LHA	11555	13.8	46.4	39.8	35.8	30.4	11.6	22.2
Vancouver Island	Port Hardy/Port McNeil	5285	19.9	40.0	40.0	39.6	29.2	11.8	19.4
	Vancouver Island North	4180	21.0	42.9	36.1	33.4	33.8	9.9	22.9
	Port Alberni	13605	18.6	39.9	41.5	39.6	28.7	8.3	23.5
	Alberni	9540	19.0	41.6	39.4	40.8	27.3	6.8	25.0
	Sooke	9915	8.7	39.6	51.7	30.2	32.1	9.7	28.0
Fraser	Hope	4795	13.3	48.4	38.3	39.1	24.2	6.8	29.9
	Mission	22595	12.7	48.3	39.0	25.8	37.9	11.7	24.6
	New Westminster-LHA	45660	7.6	34.2	58.2	30.7	30.3	16.2	22.8
	Port Moody	17690	2.1*	31.6	66.3	18.5	32.0	23.9	25.6
	South Surrey/White Rock	60813	3.6	40.7	55.7	18.6	26.3	27.1	28.0

1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006.
2. Population aged 18 and over.
3. Data with a coefficient of variation (CV) from 25% to 35% are identified with an (*) and should be interpreted with caution. Data with a coefficient of variation (CV) greater than 35% were suppressed (--) due to extreme sampling variability.
4. Item non-responses were low for education level; non-responses were excluded in the calculation of the estimates. Item non-responses were high for income distribution and were included in the estimates.

Chronic Diseases and Risk Factors

General Health, Diabetes, High Blood Pressure, and Other Chronic Diseases

General health in the BC-HWS survey was assessed by asking respondents to rate their overall health into five response categories: poor, fair, good, very good, and excellent. For reporting purposes, the five-point response format was collapsed into three categories: poor to fair, good, very good to excellent. The general health question was then followed by the chronic disease and risk factor questions.

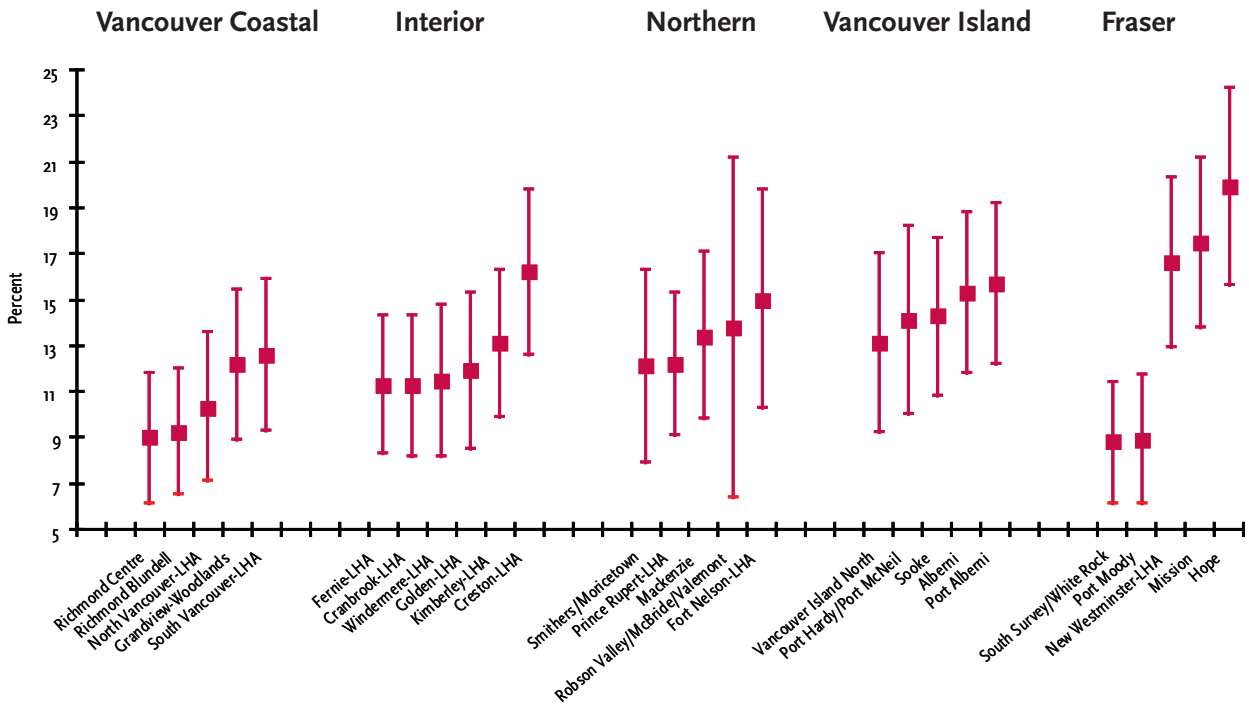
The BC-HWS asked specifically about diabetes and high blood pressure, given these are risk factors for many other chronic diseases and are affected by lifestyle behaviours. Respondents were asked whether they had been told by a doctor or health professional that they had diabetes or high blood pressure. Respondents were also asked an open-ended question regarding whether they had been diagnosed by a health professional for any other chronic or mental health conditions. As other chronic diseases and mental health conditions were not listed by name, it was anticipated that the BC-HWS would underestimate the prevalence of these conditions. No comparisons of disease prevalence were made with the CCHS as the questions were not comparable.

Table 5. General health of the BC Health and Wellness Survey (2006) LHAs/communities

			General health		
Health Authority	LHA/Community	Population	Poor to fair (%)	Good (%)	Very good to excellent (%)
Vancouver Coastal	North Vancouver-LHA	94404	10.3	28.2	61.5
	South Vancouver-LHA	92165	12.6	34.3	53.1
	Grandview-Woodlands	25858	12.2	30.0	57.8
	Richmond Blundell	26756	9.2	30.7	60.0
	Richmond Centre	25861	9.0	36.5	54.5
Interior	Fernie-LHA	11175	11.3	29.1	59.6
	Cranbrook-LHA	18455	11.3	32.1	56.6
	Kimberley-LHA	6695	13.1	30.4	56.4
	Windermere-LHA	6875	11.5	28.4	60.1
	Creston-LHA	10140	16.2	34.4	49.4
	Golden-LHA	5280	11.9	27.3	60.8
Northern	Fort Nelson-LHA	3935	15.0	36.1	48.9
	Robson Valley/McBride/Valemont	1375	13.8*	39.9	46.3
	Mackenzie	3620	13.4	34.2	52.4
	Smithers/Moricetown	4180	12.1	32.2	55.7
	Prince Rupert-LHA	11555	12.2	38.8	48.9
Vancouver Island	Port Hardy/Port McNeil	5285	14.1	39.6	46.4
	Vancouver Island North	4180	13.1	35.4	51.5
	Port Alberni	13605	15.7	36.3	48.0
	Alberni	9540	15.3	27.7	57.1
	Sooke	9915	14.3	29.6	56.1
Fraser	Hope	4795	19.9	39.3	40.8
	Mission	22595	17.5	30.7	51.7
	New Westminster-LHA	45660	16.6	35.8	47.6
	Port Moody	17690	8.9	31.3	59.8
	South Surrey/White Rock	60813	8.8	25.5	65.7

1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006.
2. Population aged 18 and over.
3. Data with a coefficient of variation (CV) from 25% to 35% are identified with an (*) and should be interpreted with caution. Data with a coefficient of variation (CV) greater than 35% were suppressed (--) due to extreme sampling variability.
4. Item non-responses were low; non-responses were excluded in the calculation of the estimates.

Figure 2. Percentages and 95% confidence intervals of household population aged 18 and over with self-reported poor to fair general health.



1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006
2. Population aged 18 and over.
3. Item non-responses were low; non-responses were excluded in the calculation of the estimates.
4. No corresponding measure in the Canadian Community Health Survey for health authorities and British Columbia.

Summary

The results for self-reported general health are presented in **Table 5** and **Figure 2**. The estimated prevalence of reported poor or fair general health ranged from 8.8% (South Surrey/White Rock) to 19.9% (Hope). The variability among the 26 LHAs/communities is depicted in **Figure 2**. South Surrey/White Rock and Port Moody have a lower prevalence of poor to fair health than New Westminster-LHA, Mission and Hope, and Creston-LHA, Alberni and Port Alberni (as observed by the non-overlapping CI). Finally, the prevalence estimate for Robson Valley/McBride/Valemont was found to be unreliable, as shown by the wide 95% CI for that community.

The estimated prevalence of high blood pressure and diabetes is summarized in **Table 6**. The estimated prevalence of high blood pressure ranged from 12.2% in Grandview-Woodlands to 28.9% in Creston-LHA. Creston-LHA had a significantly higher prevalence of high blood pressure in comparison with the other five surveyed LHAs in Interior Health (see **Figure 3**).

Table 6. Prevalence of chronic diseases in the BC Health and Wellness Survey (2006) LHAs/communities

			Chronic Diseases	
Health Authority	LHA/Community	Population	Diabetes (%)	High blood pressure (%)
Vancouver Coastal	North Vancouver-LHA	94404	4.8	15.8
	South Vancouver-LHA	92165	8.1	17.4
	Grandview-Woodlands	25858	4.8	12.2
	Richmond Blundell	26756	5.4	17.6
	Richmond Centre	25861	5.8	15.3
Interior	Fernie-LHA	11175	4.8	19.3
	Cranbrook-LHA	18455	7.1	20.0
	Kimberley-LHA	6695	5.8	18.2
	Windermere-LHA	6875	3.9	19.7
	Creston-LHA	10140	6.8	28.9
	Golden-LHA	5280	4.5	16.0
Northern	Fort Nelson-LHA	3935	4.2	12.3
	Robson Valley/McBride/Valemont	1375	2.3	18.1
	Mackenzie	3620	5.3	19.9
	Smithers/Moricetown	4180	3.7	13.3
	Prince Rupert-LHA	11555	8.4	17.8
Vancouver Island	Port Hardy/Port McNeil	5285	7.3	17.5
	Vancouver Island North	4180	5.7	19.3
	Port Alberni	13605	7.7	24.3
	Alberni	9540	4.8	15.8
	Sooke	9915	9.8	18.6
Fraser	Hope	4795	5.7	26.5
	Mission	22595	7.7	18.0
	New Westminster-LHA	45660	6.3	16.4
	Port Moody	17690	3.1*	15.6
	South Surrey/White Rock	60813	6.5	19.2

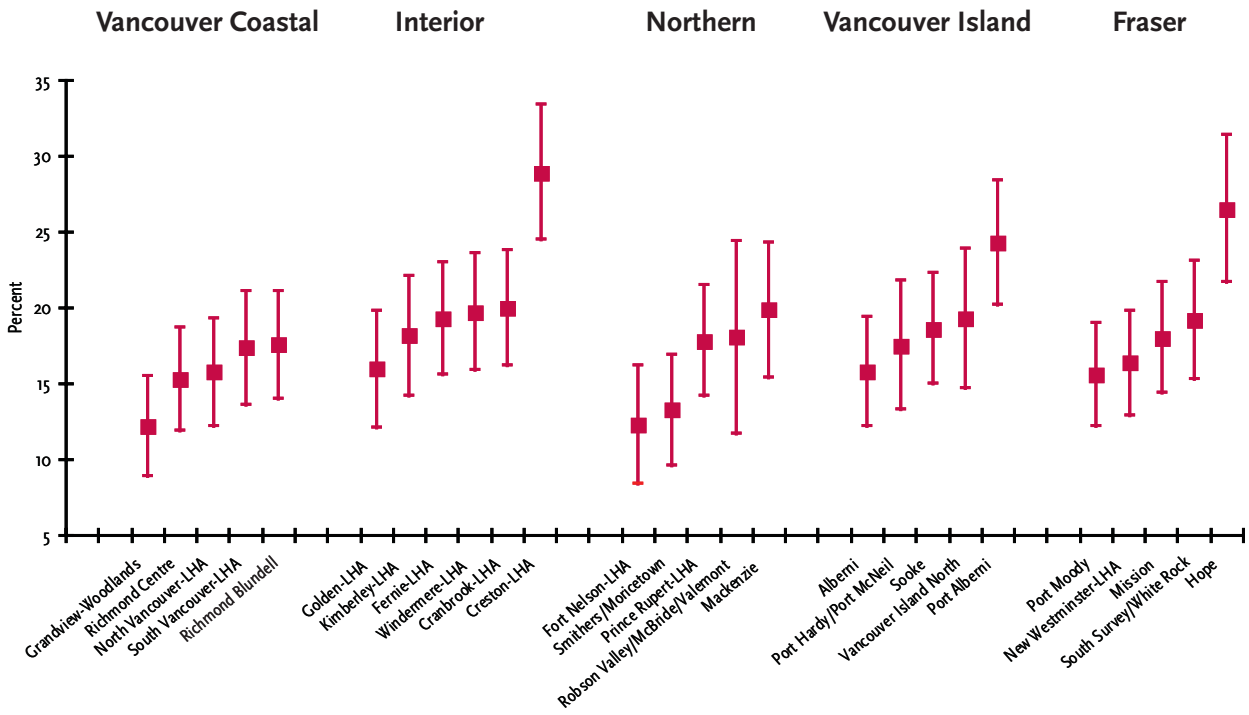
1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006.

2. Population aged 18 and over.

3. Data with a coefficient of variation (CV) from 25% to 35% are identified with an (*) and should be interpreted with caution. Data with a coefficient of variation (CV) greater than 35% were suppressed (--) due to extreme sampling variability.

4. Item non-responses were low; non-responses were excluded in the calculation of the estimates.

Figure 3. Percentages and 95% confidence intervals of high blood pressure for household population aged 18 and over.



1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006
2. Population aged 18 and over.
3. Item non-responses were low; non-responses were excluded in the calculation of the estimates.
4. No corresponding measure in the Canadian Community Health Survey for health authorities and British Columbia.

The estimated prevalence of diabetes ranged from a low of 2.3% in Robson Valley/McBride/Valemont to 9.8% in Sooke (see Table 6). Although the lowest diabetes prevalence was found in Robson Valley/McBride/Valemont, Prince Rupert-LHA, which is within the same health authority, was more than three times higher (8.4%).

More than 20 other chronic diseases were reported by the surveyed population, including heart-related problems, stroke, cancer, chronic respiratory problems, mental disorders and arthritis. However, given the sample size for each selected LHA/community and the very low prevalence for these chronic conditions, the estimates were not sufficiently reliable to be reported. For heart-related problems, only four LHAs/communities provided estimates with sufficient reliability, while none of the LHAs/communities had reliable estimates for reporting the prevalence of stroke. Five LHAs/communities provided reliable estimates for mental disorders, seven for chronic respiratory problems, and 15 for arthritis. For cancer, no LHAs/communities had reliable estimates to report. For this reason, none of these data are included in this report.

Body Mass Index (BMI)

BMI is the ratio of a person's weight in relation to his/her height (kg/m^2). Self-reported height and weight were obtained to compute BMI. According to the WHO, there are six BMI categories (see below) associated with varied levels of health risk.[10] The BC-HWS reports only four categories: underweight, normal weight, overweight, and obese (combining all obese classes into one).

BMI Category	Range (Kg/m^2)	Level of health risks
Underweight	<18.5	Increased
Normal weight	18.5 – 24.9	Least
Overweight	25.0 – 29.9	Increased
Obese Class I	30.0 – 34.9	High
Obese Class II	35.0 – 39.9	Very high
Obese Class III	>=40	Extremely high

Summary

The estimated prevalence of self-reported overweight/obesity differed across LHAs/communities, ranging from 40.0% in Grandview-Woodlands to 66.1% in Cranbrook-LHA (**Table 7** and **Figure 5**).

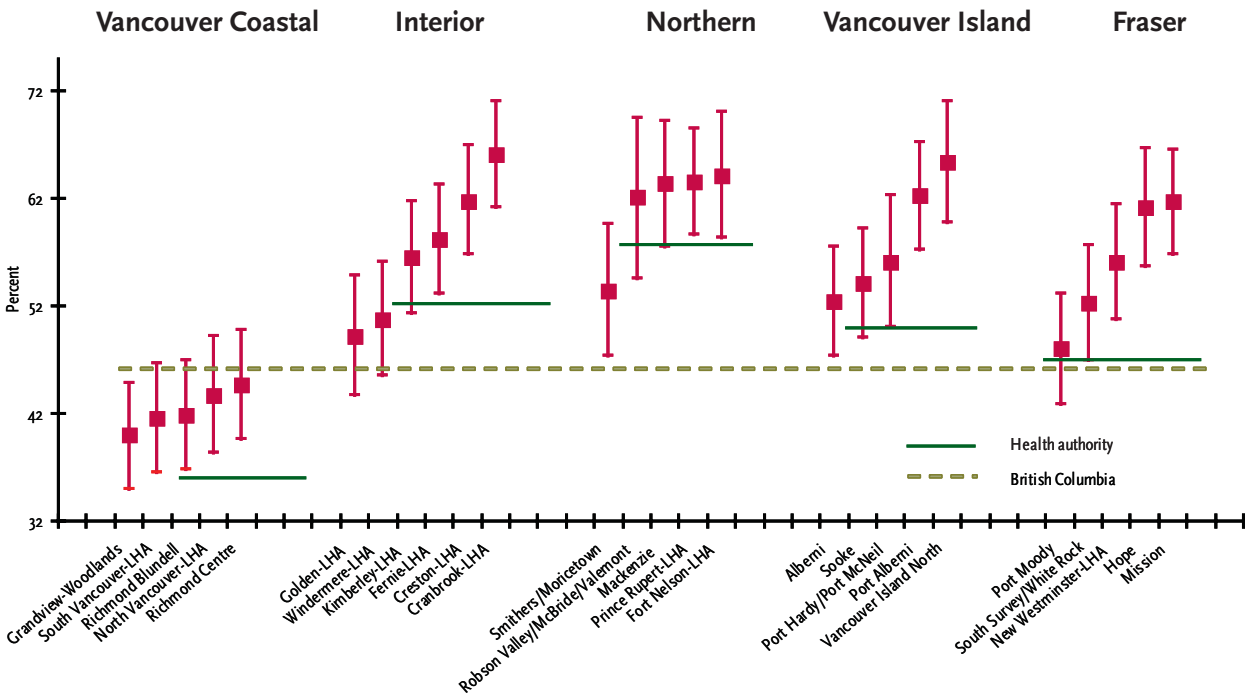
LHAs/communities from Vancouver Coastal Health reported a generally lower prevalence of overweight/obesity (40.0% to 44.7%). LHAs/communities in Interior Health, Vancouver Island Health and Fraser Health reported a wide range in the prevalence of overweight/obesity, ranging from 48.1% to 66.1%. Northern Health LHAs/communities reported a similar prevalence of overweight/obesity (62.1% to 64.2%), except for the community of Smithers/Moricetown, which had a self-reported estimate of 53.5% for overweight/obesity.

Table 7. Body mass index (BMI - based on self-report) of the BC Health and Wellness Survey (2006) LHAs/communities

			Weight categories based on BMI				
Health Authority	LHA/Community	Population	Underweight (%)	Normal (%)	Overweight (%)	Obese (%)	Overweight/ Obese (%)
Vancouver Coastal	North Vancouver-LHA	94404	--	54.6	34.2	9.6	43.7
	South Vancouver-LHA	92165	5.4	53.0	29.5	12.1	41.6
	Grandview-Woodlands	25858	2.5*	57.5	29.3	10.6	40.0
	Richmond Blundell	26756	--	56.2	31.6	10.2	41.9
	Richmond Centre	25861	4.6*	50.7	32.7	12.1	44.7
Interior	Fernie-LHA	11175	--	40.1	40.4	17.8	58.2
	Cranbrook-LHA	18455	--	32.3	43.8	22.3	66.1
	Kimberley-LHA	6695	--	41.9	36.9	19.6	56.5
	Windermere-LHA	6875	--	48.4	38.2	12.7	50.8
	Creston-LHA	10140	--	36.6	38.9	22.9	61.8
	Golden-LHA	5280	--	49.9	37.0	12.2	49.2
Northern	Fort Nelson-LHA	3935	--	35.2	39.5	24.7	64.2
	Robson Valley/McBride/ Valemont	1375	1.7*	36.2	42.3	19.7	62.1
	Mackenzie	3620	--	34.3	37.5	25.8	63.4
	Smithers/Moricetown	4180	--	46.1	38.3	15.2	53.5
	Prince Rupert-LHA	11555	--	34.4	39.0	24.6	63.6
Vancouver Island	Port Hardy/Port McNeil	5285	--	42.3	33.5	22.6	56.1
	Vancouver Island North	4180	--	33.7	42.4	23.1	65.4
	Port Alberni	13605	--	36.0	40.7	21.5	62.3
	Alberni	9540	--	47.0	32.7	19.7	52.4
	Sooke	9915	--	44.2	34.7	19.5	54.1
Fraser	Hope	4795	--	37.2	41.8	19.4	61.2
	Mission	22595	--	37.3	37.5	24.2	61.7
	New Westminster-LHA	45660	2.4*	41.5	38.8	17.4	56.1
	Port Moody	17690	--	51.8	35.1	13.0	48.1
	South Surrey/White Rock	60813	--	45.8	40.0	12.3	52.3

1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006.
2. Population aged 18 and over, excluding pregnant women.
3. Data with a coefficient of variation (CV) from 25% to 35% are identified with an (*) and should be interpreted with caution. Data with a coefficient of variation (CV) greater than 35% were suppressed (--) due to extreme sampling variability.
4. Item non-responses were low; non-responses were excluded in the calculation of the estimates.
5. Body mass index (BMI) was calculated by dividing the respondent's self-reported body weight (in kilograms) by his/her self-reported height (in meters) squared.
6. BMI categories are as follows: Underweight: < 18.5 kg/m2; Normal: 18.5-24.9 kg/m2; Overweight: 25.0-29.9 kg/m2; Obese: >=30.0 kg/m2.

Figure 5. Percentages and 95% confidence intervals of self-reported overweight/obesity for household population aged 18 and over.



1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006
2. Population aged 18 and over, excluding pregnant women.
3. Item non-responses were low; non-responses were excluded in the calculation of the estimates.
4. Body mass index (BMI) was calculated by dividing the respondent's body weight (in kilograms) by his/her height (in meters) squared.
5. Overweight / Obese was defined as BMI >=25.0 kg/m2.
6. Estimates for health authorities and British Columbia were based on Canadian Community Health Survey, Cycle 3.1, 2005.

The CCHS estimates of overweight/obesity prevalence for BC and the health authorities are presented in **Figure 5** (see dashed and solid horizontal lines). The LHAs/communities surveyed in the BC-HWS followed patterns similar to those of the corresponding health authorities in the CCHS data.

It should be noted that self-reported BMI data, as compared to objectively measured BMI data, underestimate the prevalence of overweight/obesity, as women underestimate their weight, men overestimate their height, and individuals with high BMI tend to underestimate their weight.[11] Data from the CCHS suggest that obesity is underestimated by about 7.8% with self-report.[12,13] Data collection methodology has also been found to result in different prevalence estimates, with self-report from telephone interviews resulting in lower prevalence as compared with self-report from face-to-face interviews.[12,13] Recent CCHS data include about half from face-to-face interviews and half from telephone interviews, while all the BC-HWS are from telephone interviews.

Lifestyle Factors

Physical Activity

Physical activity was assessed using the 11-question International Physical Activity Questionnaire (IPAQ) short form.[14] The questions are not limited to leisure time physical activity but rather assess all forms of physical activity, including those activities done as part of household chores, yard work, transportation and work. The questionnaire collects information about physical activity, including vigorous, moderate, and walking activities that were performed in the past seven days and lasted for at least 10 minutes. Vigorous activities are defined as activities that make one breathe much harder than usual and may include heavy lifting, digging, aerobics or fast bicycling. Moderate intensity physical activities are defined as activities that make one breath somewhat harder than usual and may include carrying a light load, bicycling at a regular pace, or doubles tennis. The questionnaire provides separate scores for vigorous, moderate, and walking as well as a combined total score. The data are expressed in minutes per week and MET-minutes per week (MET-min/week), where one MET (metabolic equivalent) is equivalent to the amount of energy expended at rest.[15] A MET-minute is computed by multiplying the minutes an activity was performed by the MET level for that activity (see example in the following table). A MET-minute takes into account the intensity of the activity or, alternatively, it can be interpreted as standardized calories for someone who weighs 65 kg. For example, someone who weighs 65 kg and does 30 minutes of walking five days a week will burn 495 calories or 495 MET-minutes.

MET levels	MET-min/week for 30 min/day, 5 days
Walking = 3.3	3.3 METs * 30 min * 5 days = 495 MET-min/week
Moderate intensity = 4.0	4.0 METs * 30 min * 5 days = 600 MET-min/week
Vigorous intensity = 8.0	8.0 METs * 30 min * 5 days = 1200 MET-min/week
	TOTAL = 2,295 MET-min/week

The IPAQ allows the data to be aggregated into levels of physical activity. The original classification includes three categories, but we have used an expanded classification as used by the Canadian Fitness Lifestyle Research Institute. The levels of physical activity are described below. See Appendix 1 for examples.

Level of Physical Activity	Description of Physical Activity Levels
High	At least 7 days of some level of physical activity and achieving 3000 MET-min/week OR Vigorous activity on 3 or more days of the week and achieving 3000 MET-min/week
Moderately Active	At least 7 days of activity and achieving 1500 MET-min/week OR 3 or more days of vigorous activity and achieving 1500 MET-min/week
Somewhat Active	3 to 6 days of vigorous activities at least 20 min per day OR 5 to 6 days of moderate activities or walking at least 30 min per day OR 5 days of any combinations of activities per week and achieving 600 MET-min per week
Sedentary	Does not meet any of the above physical activity criteria

CCHS collects information about leisure time over the previous three months. Since the CCHS does not include all forms of physical activity, its classification levels are not comparable to those of the IPAQ. As the recommendation for adults in Canada is to accumulate 60 minutes of physical activity on most days of the week, combining the sedentary and somewhat active categories provides an estimate of those who do not meet current Canadian physical activity guidelines.

Summary

Results from the IPAQ are summarized in **Tables 8 and 9 and Figure 6**. As the data are highly skewed, **Table 8** presents the median minutes of vigorous, moderate, and walking activities in the past week. The median time spent in vigorous physical activity ranged from a low of 59 min/week (Richmond Blundell) to a high of 180 min/week (Alberni). The median time for moderate activities ranged from 44 min/week (Richmond Centre) to 228 min/week (Robson Valley/McBride/Valemont). Walking ranged from 148 min/week (Richmond Centre) to 298 min/week (Alberni).

Table 8. Physical activity summary (Median Minutes/Week by Type of Activity) for the BC Health and Wellness Survey (2006) LHAs/communities

			Physical Activity (minutes/week)			
Health Authority	LHA/Community	Population	Vigorous	Moderate	Walk	Total MET - minutes/week
Vancouver Coastal	North Vancouver-LHA	94404	114	68	201	2465
	South Vancouver-LHA	92165	106	51	191	2225
	Grandview-Woodlands	25858	113	65	208	2697
	Richmond Blundell	26756	59	52	203	2035
	Richmond Centre	25861	98	44	148	1890
Interior	Fernie-LHA	11175	178	113	208	3539
	Cranbrook-LHA	18455	116	83	207	2911
	Kimberley-LHA	6695	115	109	212	3089
	Windermere-LHA	6875	166	144	277	3904
	Creston-LHA	10140	114	111	204	3181
	Golden-LHA	5280	179	154	258	4408
Northern	Fort Nelson-LHA	3935	142	83	205	3418
	Robson Valley/McBride/Valemont	1375	113	228	233	4065
	Mackenzie	3620	104	88	240	2873
	Smithers/Moricetown	4180	119	88	212	3083
	Prince Rupert-LHA	11555	114	82	207	2717
Vancouver Island	Port Hardy/Port McNeil	5285	153	111	273	3790
	Vancouver Island North	4180	138	108	239	3685
	Port Alberni	13605	147	111	206	2928
	Alberni	9540	180	117	298	4153
	Sooke	9915	175	113	205	3159
Fraser	Hope	4795	133	107	207	2986
	Mission	22595	116	110	207	3595
	New Westminster-LHA	45660	96	51	191	1980
	Port Moody	17690	111	59	204	2418
	South Surrey/White Rock	60813	161	81	204	2868

1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006.
2. Population aged 18 and over.
3. Data with a coefficient of variation (CV) from 25% to 35% are identified with an (*) and should be interpreted with caution. Data with a coefficient of variation (CV) greater than 35% were suppressed (--) due to extreme sampling variability.
4. Item non-responses were excluded in the calculation of the estimates.
5. Physical activity level was defined based on International Physical Activity Questionnaire (IPAQ) short form.

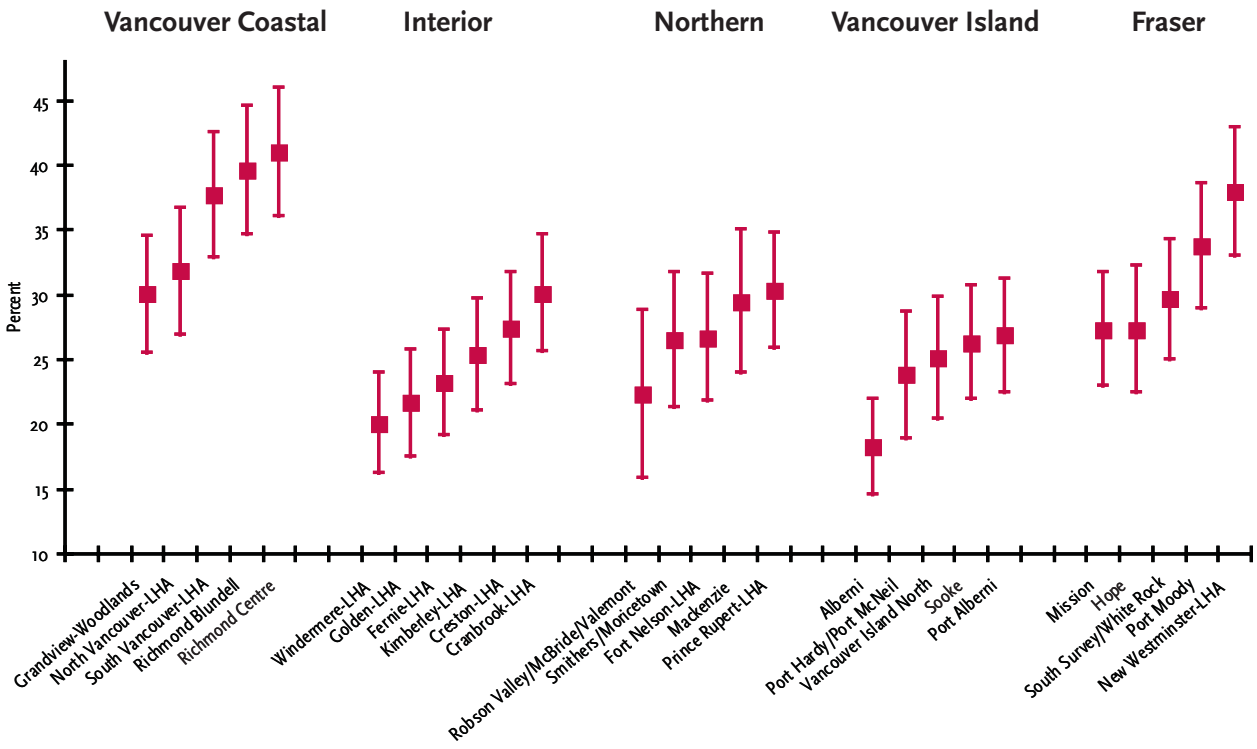
As total MET-min/week integrated the vigorous, moderate and walking activities, it is easier to compare LHAs/communities along this variable. Total MET-min/week ranged from a low of 1,890 (Richmond Centre) to a high of 4,408 (Golden-LHA). All LHAs/communities had median total MET-min/week exceeding that of the moderate activity level (1,500 MET-min/week) and half of the LHAs/communities had medians corresponding to a high activity level (3,000 MET-min/week).

Table 9. Level of physical activity of the BC Health and Wellness Survey (2006) LHAs/communities

			Level of Physical Activity					
Health Authority	LHA/Community	Population	Sedentary (%)	Somewhat Active (%)	Moderately Active (%)	High (%)	Unknown (%)	Sedentary / Somewhat Active (%)
Vancouver Coastal	North Vancouver-LHA	94404	12.6	19.2	24.6	39.0	4.6	31.8
	South Vancouver-LHA	92165	16.1	21.6	22.2	33.8	6.3	37.7
	Grandview-Woodlands	25858	11.5	18.5	21.7	41.8	6.5	30.0
	Richmond Blundell	26756	15.7	23.9	23.1	33.1	4.1	39.6
	Richmond Centre	25861	21.4	19.6	21.1	32.5	5.5	41.0
Interior	Fernie-LHA	11175	10.9	12.4	17.5	50.3	9.0	23.2
	Cranbrook-LHA	18455	11.0	19.1	18.0	43.6	8.2	30.1
	Kimberley-LHA	6695	11.5	13.8	19.2	47.7	7.7	25.4
	Windermere-LHA	6875	9.5	10.6	18.3	51.9	9.6	20.1
	Creston-LHA	10140	14.1	13.3	16.1	46.3	10.2	27.4
	Golden-LHA	5280	8.2	13.4	13.3	56.8	8.3	21.6
Northern	Fort Nelson-LHA	3935	14.8	11.9	15.2	48.5	9.7	26.7
	Robson Valley/McBride/ Valemont	1375	12.3*	10.0	11.9	58.7	7.1	22.3
	Mackenzie	3620	11.1	18.4	18.2	42.8	9.6	29.5
	Smithers/Moricetown	4180	10.5	16.0	18.2	45.4	9.9	26.5
	Prince Rupert-LHA	11555	13.2	17.1	17.6	43.0	9.1	30.3
Vancouver Island	Port Hardy/Port McNeil	5285	12.3	11.5	15.1	52.7	8.5	23.8
	Vancouver Island North	4180	11.8	13.4	14.6	48.7	11.5	25.1
	Port Alberni	13605	10.5	16.4	18.8	44.4	10.0	26.9
	Alberni	9540	10.5	7.8	16.9	52.0	12.8	18.3
	Sooke	9915	13.7	12.6	18.1	46.2	9.4	26.3
Fraser	Hope	4795	14.5	12.8	16.8	42.8	13.1	27.3
	Mission	22595	11.7	15.7	13.8	49.1	9.8	27.3
	New Westminster-LHA	45660	18.3	19.7	22.1	32.4	7.5	38.0
	Port Moody	17690	11.9	21.9	23.3	37.4	5.5	33.7
	South Surrey/White Rock	60813	10.9	18.8	22.3	41.9	6.1	29.6

1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006.
2. Population aged 18 and over.
3. Data with a coefficient of variation (CV) from 25% to 35% are identified with an (*) and should be interpreted with caution. Data with a coefficient of variation (CV) greater than 35% were suppressed (--) due to extreme sampling variability.
4. Physical activity level was defined based on International Physical Activity Questionnaire (IPAQ) short form.

Figure 6. Percentages and 95% confidence intervals of physical inactivity for household population aged 18 and over.



1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006
2. Population aged 18 and over.
3. Physical activity level (sedentary, somewhat active, moderately active, and high) was defined based on International Physical Activity Questionnaire (IPAQ) short form. Inactive included sedentary and somewhat active.
4. No corresponding measure in the Canadian Community Health Survey for health authorities and British Columbia.

Table 9 and Figure 6 present levels of physical activity for all LHAs/communities. Combining the sedentary and somewhat active categories provides an estimate of those who are at increased risk for physical inactivity-related health conditions. Physical inactivity ranged from a low of 18.3% (Alberni) to a high of 41.0% (Richmond Blundell). Levels of physical inactivity were higher for three of the communities in Vancouver Coastal Health (South Vancouver, Richmond Blundell and Richmond Centre) and New Westminster-LHA in Fraser Health, than for most of the other LHAs/communities surveyed. As indicated earlier, the IPAQ data are not comparable to the CCHS data, and it is known that the IPAQ yields a higher prevalence estimate[16] of people meeting the Canadian physical activity recommendations than any other survey. Therefore, these prevalence estimates must be interpreted cautiously. The validity and reliability of the instrument have been established[14] and the data are reliable enough to allow LHAs/communities to be compared and to identify LHAs/communities at higher risk, but any prevalence estimate comparisons with other physical activity surveys may not be meaningful.

Sedentary Activities

The sedentary questions were taken directly from the CCHS questionnaire (version 3.1), which asked about time spent at computers, playing video games, watching TV and reading. The questions asked how much time in a typical week the person spent on each of these sedentary activities. The response categories were: none, less than an hour, one to two hours, three to five hours, 11 to 14 hours, 15 to 20 hours and more than 20 hours. Total sedentary activities were derived by taking the sum of the mid-point of the response category across the four questions. This report presents time spent watching TV as well as total time for sedentary activities. Although the questions were the same as for CCHS, CCHS asked the video games questions only to those 19 years and younger. Therefore, the BC-HWS results were not compared to the CCHS results.

Summary

Table 10 presents the number of hours per week spent watching TV, and total hours of sedentary activity. The estimated prevalence of being sedentary for at least 30 hr/week (more than 3 hr/day) ranged from a low of 13.1% (Windermere-LHA and Robson Valley/McBride/Valemont) to a high of 29% (Richmond Blundell). **Figure 7** shows the five surveyed Vancouver Coastal LHAs/communities and Creston-LHA as having a somewhat higher prevalence of sedentary activity than all other LHAs/communities.

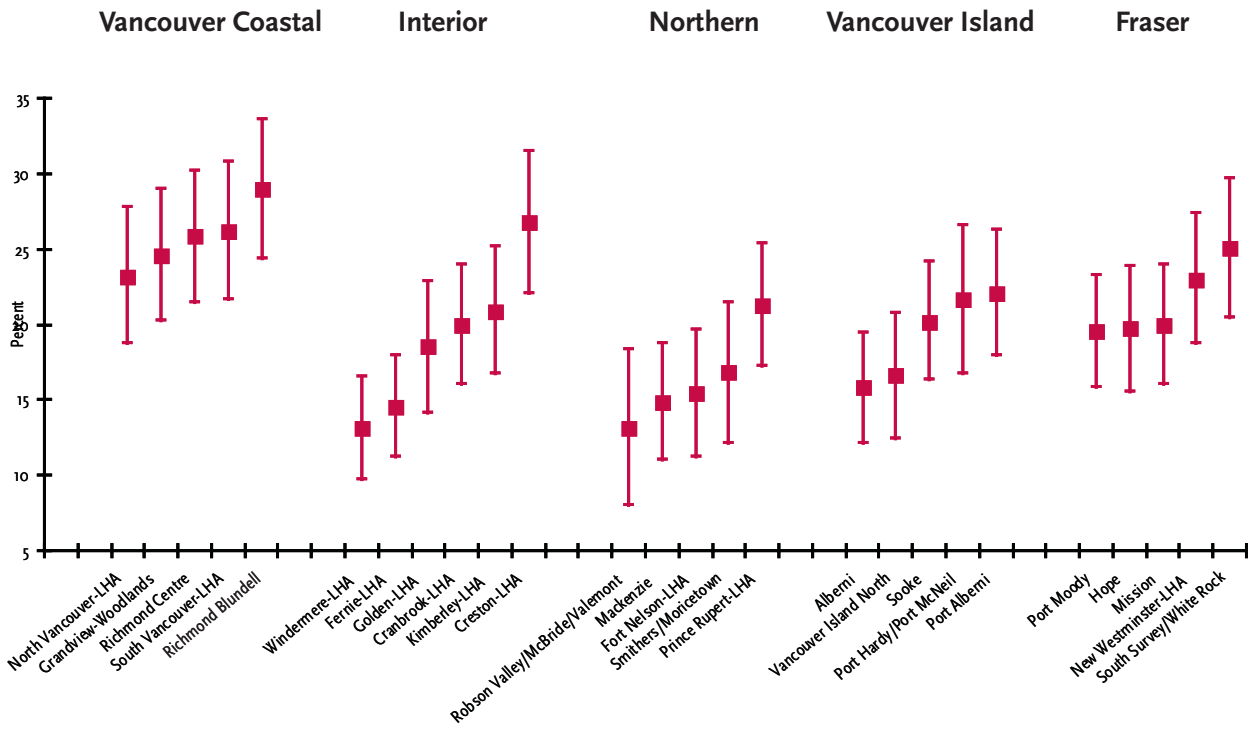
The estimated prevalence of watching TV 15 hrs/week or more ranged from a low of 18.6 % (Grandview-Woodlands) to a high of 36.4% (Creston-LHA). **Figure 8** shows Creston-LHA as having a higher prevalence of watching TV 15 hrs/wk or more than 17 of the 26 surveyed LHAs/communities.

Table 10. Prevalence of sedentary activities in the BC Health and Wellness Survey (2006) LHAs/communities

			TV watching	Sedentary Activities					
Health Authority	LHA/Community	Population	>= 15 h/wk (%)	< 10 h/wk (%)	10 to 19 h/wk (%)	20 to 29 h/wk (%)	30 to 39 h/wk (%)	>= 40 h/wk (%)	>= 30 h/wk (%)
Vancouver Coastal	North Vancouver-LHA	94404	23.8	17.2	29.1	30.5	13.3	10.0	23.2
	South Vancouver-LHA	92165	29.0	16.9	21.6	35.2	15.3	10.9	26.2
	Grandview-Woodlands	25858	18.6	20.5	29.6	25.3	13.4	11.2	24.6
	Richmond Blundell	26756	26.3	15.8	22.6	32.6	17.0	12.0	29.0
	Richmond Centre	25861	25.0	17.5	22.8	33.9	17.2	8.7	25.9
Interior	Fernie-LHA	11175	25.1	21.9	32.9	30.6	8.3	6.3	14.5
	Cranbrook-LHA	18455	26.9	15.8	28.7	35.5	9.1	11.0	20.0
	Kimberley-LHA	6695	28.3	20.5	27.1	31.5	13.6	7.3	20.9
	Windermere-LHA	6875	21.8	22.9	32.9	31.1	9.5	3.6	13.1
	Creston-LHA	10140	36.4	15.1	23.3	34.7	16.3	10.5	26.8
	Golden-LHA	5280	24.4	25.8	27.7	28.0	9.7	8.9	18.5
Northern	Fort Nelson-LHA	3935	27.3	24.3	25.7	34.6	9.6	5.8	15.4
	Robson Valley/ McBride/Valemont	1375	21.2	24.7	29.9	32.3	7.7*	5.4	13.1
	Mackenzie	3620	28.1	19.5	33.4	32.3	9.0	5.9	14.8
	Smithers/Moricetown	4180	20.2	23.0	29.1	31.2	10.7	6.0	16.8
	Prince Rupert-LHA	11555	29.3	15.8	29.3	33.6	10.4	10.9	21.3
Vancouver Island	Port Hardy/Port McNeil	5285	24.5	21.1	28.3	28.9	10.8	10.9	21.7
	Vancouver Island North	4180	30.0	22.7	27.6	33.1	8.7	7.9	16.6
	Port Alberni	13605	29.0	21.2	25.3	31.3	12.9	9.2	22.1
	Alberni	9540	21.6	23.7	27.0	33.5	8.3	7.4	15.8
	Sooke	9915	26.8	16.2	29.4	34.2	10.9	9.3	20.2
Fraser	Hope	4795	29.0	19.5	28.1	32.7	11.4	8.3	19.7
	Mission	22595	27.0	16.9	29.1	34.0	11.8	8.2	20.0
	New Westminster-LHA	45660	26.7	19.8	25.9	31.3	13.0	10.0	23.0
	Port Moody	17690	20.5	19.8	30.0	30.6	13.0	6.5	19.5
	South Surrey/White Rock	60813	22.8	16.7	27.5	30.7	14.3	10.8	25.1

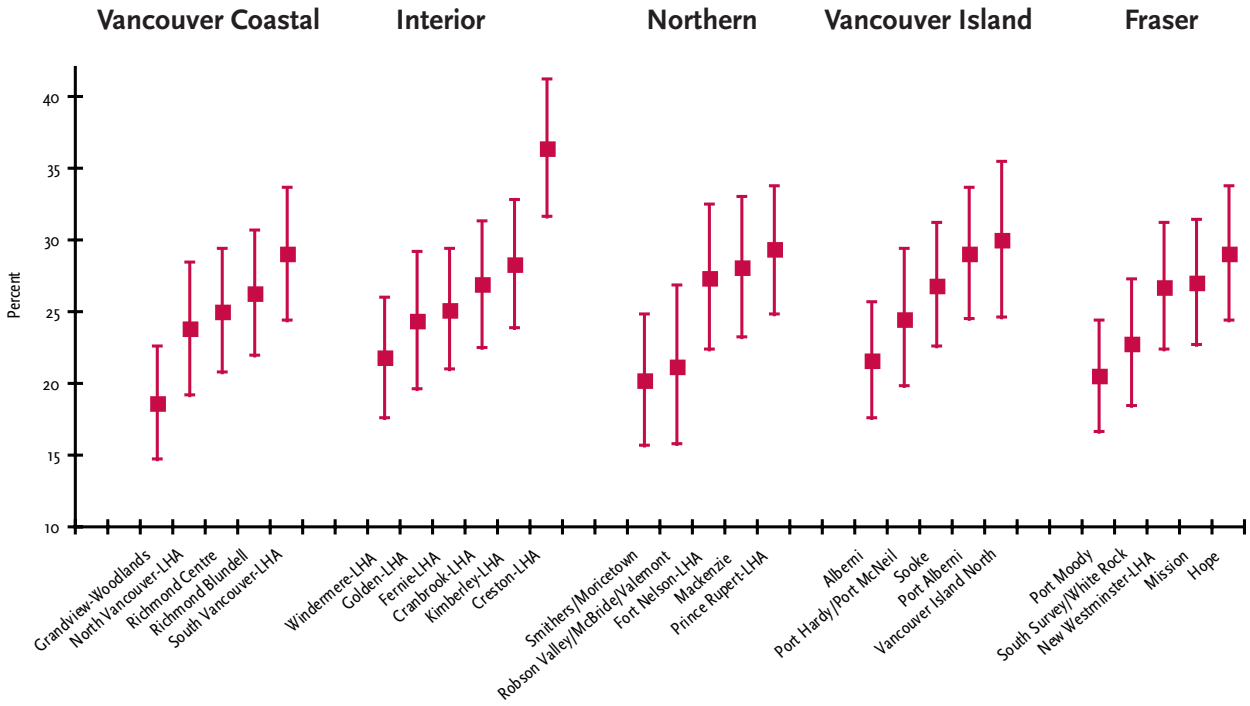
1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006.
2. Population aged 18 and over.
3. Data with a coefficient of variation (CV) from 25% to 35% are identified with an (*) and should be interpreted with caution. Data with a coefficient of variation (CV) greater than 35% were suppressed (--) due to extreme sampling variability.
4. Item non-responses were low; non-responses were excluded in the calculation of the estimates.
5. Hours per week abbreviated as h/wk.
6. Time spent watching TV includes watching videos.
7. Total sedentary hours per week includes time spent on a computer, playing videogames, watching TV or reading during leisure time.

Figure 7. Percentages and 95% confidence intervals of household population aged 18 and over with total sedentary activity time ≥ 30 hours/week.



1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006.
2. Population aged 18 and over.
3. Item non-responses were low; non-responses were excluded in the calculation of the estimates.
4. No corresponding measure in the Canadian Community Health Survey for health authorities and British Columbia.
5. Total sedentary hours per week includes time spent on a computer, playing videogames, watching TV or reading during leisure time.

Figure 8. Percentages and 95% confidence intervals of household population aged 18 and over with ≥15 hours/week of TV watching times.



1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006.
2. Population aged 18 and over.
3. Item non-responses were low; non-responses were excluded in the calculation of the estimates.
4. No corresponding measure in the Canadian Community Health Survey for health authorities and British Columbia.
5. Time spent watching TV includes watching videos.

Fruit and Vegetable Consumption

Fruit and vegetable consumption was assessed with six questions that are almost identical to the CCHS. Respondents were asked to indicate if they consumed the following: 100% fruit juices and tomato juice, fruits, green salad, non-fried potatoes, carrots, and other vegetables. Respondents were asked "How many times per day, week, or month ..." they consumed these items, whereas the CCHS surveyed population was asked "How often do you usually..." consume these items, and were then asked to select the reporting period, which could be per day, week, month, or year. Given these negligible differences between the BC-HWS and the CCHS, the data are considered comparable.

Canada's Food Guide to Healthy Eating recommends that adults consume five to 10 servings of fruits and vegetables daily. Therefore, data from the six questions were aggregated into three consumption categories: less than three servings per day; three to four per day; and five or more per day.

Summary

Table 11 presents the patterns of fruit and vegetable consumption for the 26 LHAs/communities. The estimated prevalence of consuming less than three fruits and vegetables per day ranged from a low of 14.6% (South Surrey/White Rock) to a high of 25.4% (Mission). Close to 60% of the surveyed population do not consume the recommended level of five or more fruits and vegetables per day: the estimated prevalence ranged from 51.9% (Smithers/Moricetown) to 67.4% (New Westminster-LHA).

The estimated prevalence of high alcohol consumers ranged from a low of 3.9% (Richmond Centre and Cranbrook-LHA) to a high of 13.2% (Alberni) (see **Table 12**). As shown in **Figure 11**, there is wide variation on alcohol use among the surveyed LHAs/communities.

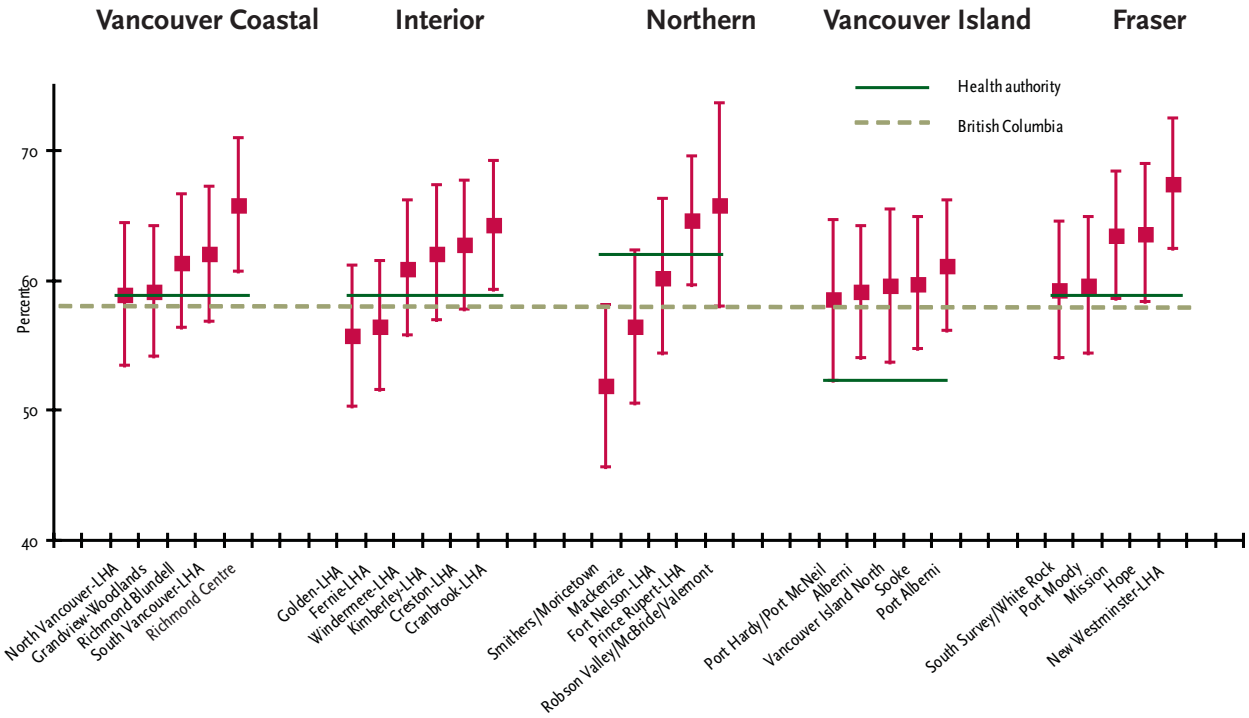
Table 11. Prevalence of fruit and vegetable consumption in the BC Health and Wellness Survey (2006) LHAs/communities

			Fruit and vegetable consumption			
Health Authority	LHA/Community	Population	<3 times/day (%)	3 to 4 times/day (%)	>=5 times/day (%)	<5 times/day (%)
Vancouver Coastal	North Vancouver-LHA	94404	15.5	43.4	41.1	58.9
	South Vancouver-LHA	92165	22.6	39.4	38.0	62.0
	Grandview-Woodlands	25858	25.1	34.0	40.9	59.1
	Richmond Blundell	26756	22.2	39.2	38.6	61.4
	Richmond Centre	25861	20.7	45.1	34.2	65.8
Interior	Fernie-LHA	11175	15.5	41.0	43.5	56.5
	Cranbrook-LHA	18455	20.7	43.6	35.7	64.3
	Kimberley-LHA	6695	19.4	42.7	37.9	62.1
	Windermere-LHA	6875	17.2	43.7	39.1	60.9
	Creston-LHA	10140	20.2	42.5	37.3	62.7
	Golden-LHA	5280	14.8	40.9	44.3	55.7
Northern	Fort Nelson-LHA	3935	25.2	35.1	39.8	60.2
	Robson Valley/McBride/Valemont	1375	23.2	42.6	34.2	65.8
	Mackenzie	3620	20.3	36.1	43.6	56.4
	Smithers/Moricetown	4180	16.0	35.9	48.1	51.9
	Prince Rupert-LHA	11555	23.6	41.0	35.4	64.6
Vancouver Island	Port Hardy/Port McNeil	5285	24.0	34.5	41.5	58.5
	Vancouver Island North	4180	17.7	41.8	40.4	59.6
	Port Alberni	13605	18.9	42.1	38.9	61.1
	Alberni	9540	16.1	43.1	40.9	59.1
	Sooke	9915	18.1	41.6	40.3	59.7
Fraser	Hope	4795	21.8	41.8	36.4	63.6
	Mission	22595	25.4	38.1	36.6	63.4
	New Westminster-LHA	45660	23.0	44.4	32.6	67.4
	Port Moody	17690	19.1	40.5	40.4	59.6
	South Surrey/White Rock	60813	14.6	44.6	40.8	59.2

1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006.
2. Population aged 18 and over.
3. Data with a coefficient of variation (CV) from 25% to 35% are identified with an (*) and should be interpreted with caution. Data with a coefficient of variation (CV) greater than 35% were suppressed (--) due to extreme sampling variability.
4. Item non-responses were low; non-responses were excluded in the calculation of the estimates.
5. Fruit and vegetable consumption identifies the number of times per day either fruits or vegetables were eaten.

As shown in **Figure 9**, the prevalences for the surveyed LHAs/communities within Vancouver Island Health were close to the CCHS estimate for BC, but were higher than the CCHS estimate for Vancouver Island Health.

Figure 9. Percentages and 95% confidence intervals of household population aged 18 and over with fruit and vegetable consumption <5 times/day.



1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006
2. Population aged 18 and over.
3. Item non-responses were low; non-responses were excluded in the calculation of the estimates.
4. Fruit and vegetable consumption identifies the number of times per day either fruits or vegetables were eaten.
5. Estimates for health authorities and British Columbia were based on Canadian Community Health Survey, Cycle 3.1, 2005.

Tobacco and Alcohol Consumption

Tobacco consumption was assessed with two questions. One question asked if the person had smoked 100 cigarettes in his/her lifetime, and those who answered yes were asked to indicate if they currently smoke every day, some days, or not at all. Although the tobacco consumption questions are not identical to the CCHS questions, they are similar enough to be compared (e.g. "daily" is used instead of "every day," and "occasionally" instead of "some days"). The data are summarized into three categories of smoking status: never smoked, former smoker, and current smoker.

Alcohol consumption was assessed with four questions. The questions asked the following: have you had a drink in the past year, do you drink alcohol every day, how many days a week do you drink, and on average about how many drinks do you consume on those days? The alcohol questions are not comparable to CCHS. The alcohol data were summarized using the Heart and Stroke Foundation guideline for drinking at a safe level, defined as consuming one to two drinks per day to a weekly maximum of 14 for men and nine for women.[17] Men and women who reported consuming more than the Canadian guideline are classified as consuming alcohol at a high risk. In addition, pregnant women who consumed any alcohol were considered high risk consumers.

Summary

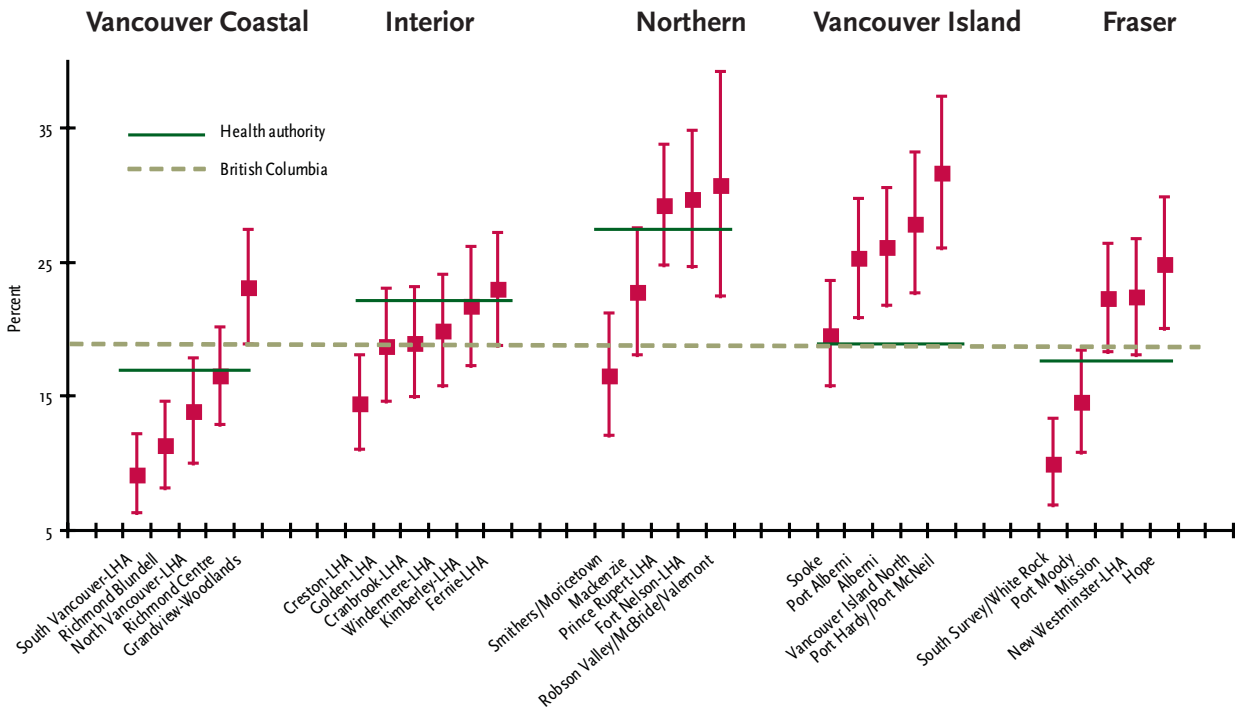
As shown in **Table 12**, the prevalence of current smokers varies from a low of 9.2% (South Vancouver-LHA) to a high of 31.7% (Port Hardy/Port McNeil). As shown in **Figure 10**, the estimated prevalence of current smokers tends to be lower than the BC average for four LHAs/communities surveyed in Vancouver Coastal Health, one in Interior Health and two in Fraser Health. In contrast, the estimated prevalence of current smokers appears to be higher than the BC average for three of the LHAs/communities surveyed in Northern Health and four in Vancouver Island Health.

Table 12. Prevalence of tobacco and alcohol use in the BC Health and Wellness Survey (2006) LHAs/communities

			Smoking status			Alcohol use
Health Authority	LHA/Community	Population	Never smoked (%)	Former smoker (%)	Current smoker (%)	High risk (%)
Vancouver Coastal	North Vancouver-LHA	94404	57.5	28.6	13.9	7.9
	South Vancouver-LHA	92165	67.4	23.3	9.2	5.5
	Grandview-Woodlands	25858	43.5	33.4	23.1	8.4
	Richmond Blundell	26756	60.1	28.5	11.3	6.8
	Richmond Centre	25861	61.4	22.2	16.5	3.9
Interior	Fernie-LHA	11175	47.2	29.8	23.0	6.9
	Cranbrook-LHA	18455	44.4	36.6	19.0	4.2*
	Kimberley-LHA	6695	41.7	36.6	21.7	9.3
	Windermere-LHA	6875	49.0	31.1	19.9	7.3
	Creston-LHA	10140	49.2	36.3	14.5	7.4
	Golden-LHA	5280	46.2	35.0	18.8	7.4
Northern	Fort Nelson-LHA	3935	39.4	30.9	29.7	8.1
	Robson Valley/McBride/ Valemont	1375	40.5	28.7	30.8	9.7*
	Mackenzie	3620	47.8	29.4	22.8	11.5
	Smithers/Moricetown	4180	47.2	36.2	16.6	6.9
	Prince Rupert-LHA	11555	45.9	24.9	29.3	5.7
Vancouver Island	Port Hardy/Port McNeil	5285	35.4	33.0	31.7	6.1
	Vancouver Island North	4180	36.9	35.2	27.9	7.7
	Port Alberni	13605	38.7	36.0	25.3	10.5
	Alberni	9540	37.8	36.0	26.1	13.2
	Sooke	9915	43.3	37.1	19.6	7.8
Fraser	Hope	4795	36.3	38.8	24.9	9.8
	Mission	22595	40.9	36.7	22.3	8.0
	New Westminster-LHA	45660	46.1	31.5	22.4	6.0
	Port Moody	17690	54.2	31.2	14.6	6.8
	South Surrey/White Rock	60813	55.9	34.0	10.0	7.7

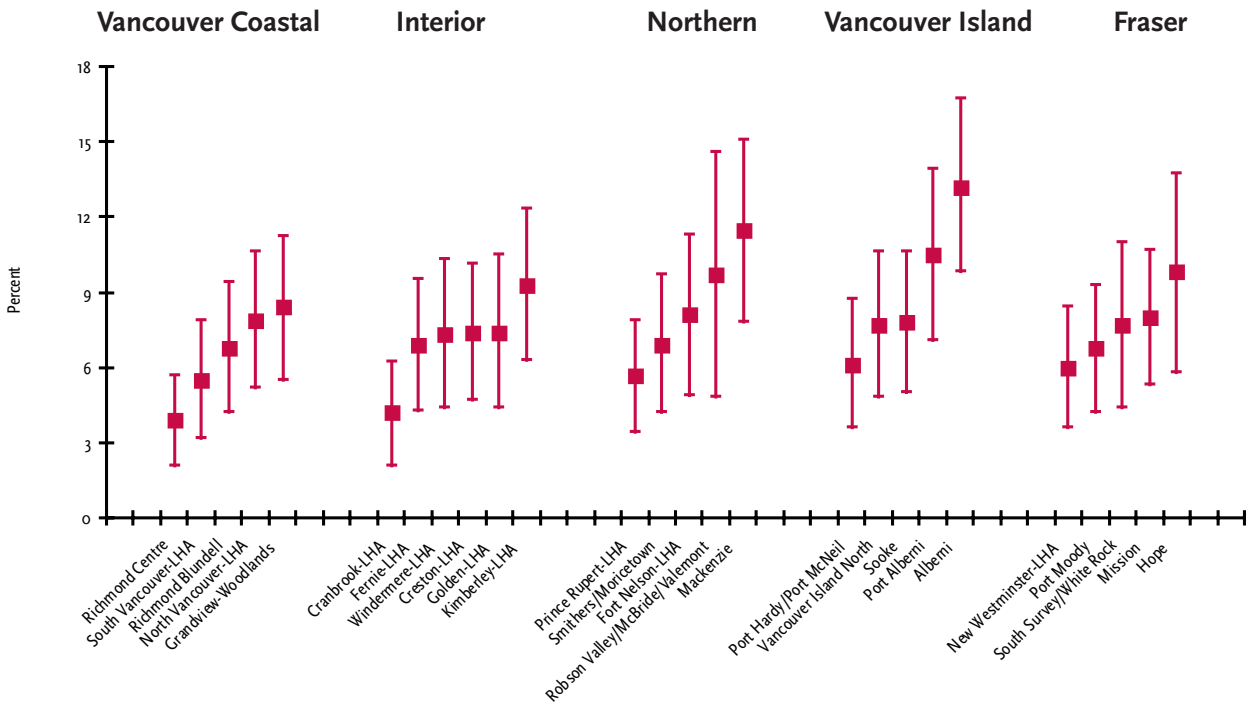
1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006.
2. Population aged 18 and over.
3. Data with a coefficient of variation (CV) from 25% to 35% are identified with an (*) and should be interpreted with caution. Data with a coefficient of variation (CV) greater than 35% were suppressed (--) due to extreme sampling variability.
4. Item non-responses were low; non-responses were excluded in the calculation of the estimates.
5. Current smokers are those who smoke either daily or occasionally. Former smokers are those who previously smoked either daily or occasionally and are now non-smokers.
6. High risk alcohol drinkers are defined as drinking 10 or more drinks per week for women, 15 or more drinks per week for men, or any drinks if the woman is pregnant. One drink is defined as one can or bottle of beer, one glass of wine, one can or bottle of wine cooler, one cocktail or one shot of liquor.

Figure 10. Percentages and 95% confidence intervals of current smokers for household population aged 18 and over.



1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006.
2. Population aged 18 and over.
3. Item non-responses were low; non-responses were excluded in the calculation of the estimates.
4. Current smokers are those who smoke either daily or occasionally.
5. Estimates for health authorities and British Columbia were based on Canadian Community Health Survey, Cycle 3.1, 2005.

Figure 11. Percentages and 95% confidence intervals of high risk alcohol drinkers for household population aged 18 and over.



1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006
2. Population aged 18 and over.
3. Item non-responses were low; non-responses were excluded in the calculation of the estimates.
4. High risk alcohol drinkers are defined as any alcohol consumption for pregnant women, drinking 10 or more drinks per week for women or 15 or more drinks per week for men. One drink is defined as one can or bottle of beer, one glass of wine, one can or bottle of wine cooler, one cocktail or one shot of liquor.
5. No corresponding measure in the Canadian Community Health Survey for health authorities and British Columbia.

Environmental and Social Factors

As there is increasing interest in the environmental barriers that prevent people from walking and cycling where they live and work – as well as emerging evidence that the built environment affects physical activity behaviour[18] – the 11-question International Environmental Module was administered[19] as part of the BC-HWS, including questions about the type of housing found in the neighbourhood, the availability of shops, stores, markets or other places within walking distance, being within 10-15 minutes of public transit, availability of sidewalks in the neighbourhood, facilities to bicycle in or near the neighbourhood, availability of free or low-cost recreation facilities, crime making it unsafe to walk, traffic making it unsafe to walk, the number of people active in the neighbourhood, interesting places to walk to in neighbourhood, and the number of motorized vehicles in the household. With the exception of the questions about type of housing in the neighbourhood and number of motorized vehicles, the response format for all questions was a four-point ordinal scale (strongly agree to strongly disagree). The report presents data on the questions that focused on having access to bicycle and recreational facilities. It should be noted that questions about environmental barriers have most often been used to survey larger/urban areas, and the availability of bicycle trails may not be as relevant for people in more rural areas.

Summary

The perceived level of opportunities to bicycle in the neighbourhood (e.g. access to bicycle trails and lanes) is presented in **Table 13**. The prevalence of the surveyed population disagreeing that there are facilities in or near the neighbourhood for cycling ranged from a low of 16.2% (Grandview/Woodlands) to a high of 87.0% (Creston-LHA), where a low value is indicative of perceiving one's neighbourhood as having many facilities for cycling.

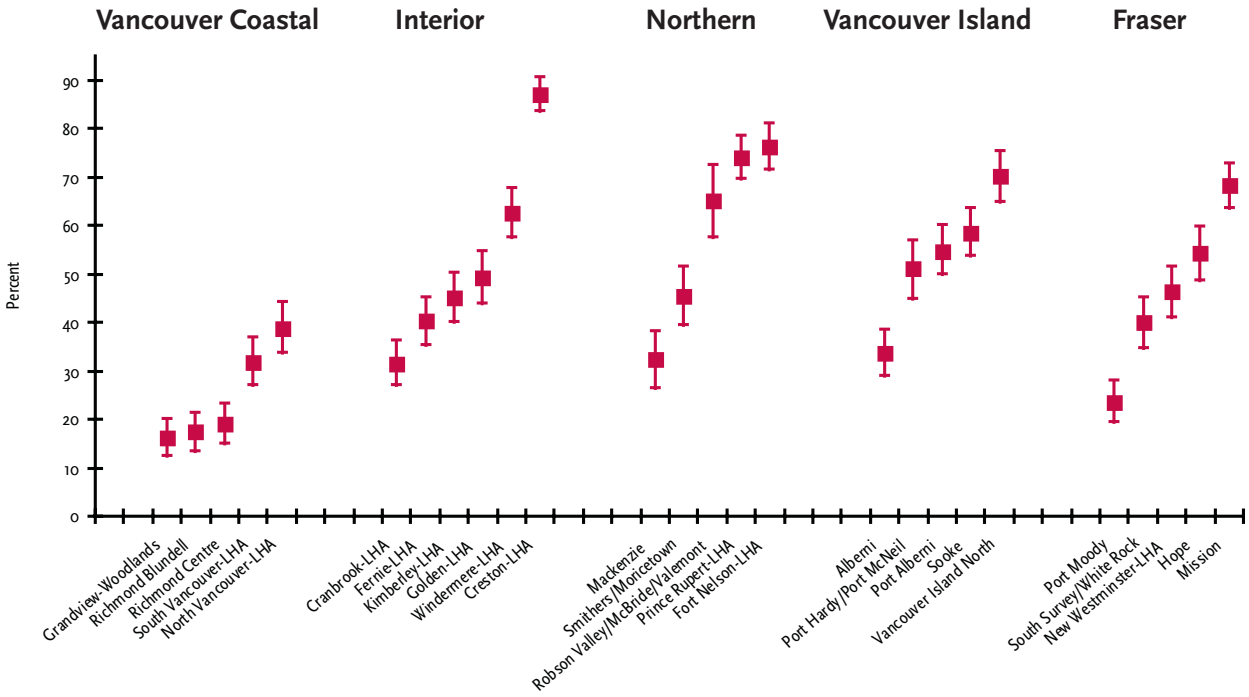
Table 13. Physical activity environment in the BC Health and Wellness Survey (2006) LHAs/communities

			Physical Activity Environment	
Health Authority	LHA/Community	Population	Disagree: facilities available for cycling (%)	Disagree: several free / low cost recreation facilities available (%)
Vancouver Coastal	North Vancouver-LHA	94404	38.9	7.7
	South Vancouver-LHA	92165	31.9	11.6
	Grandview-Woodlands	25858	16.2	7.0
	Richmond Blundell	26756	17.4	9.4
	Richmond Centre	25861	19.1	9.4
Interior	Fernie-LHA	11175	40.3	20.3
	Cranbrook-LHA	18455	31.6	24.4
	Kimberley-LHA	6695	45.2	25.5
	Windermere-LHA	6875	62.7	45.2
	Creston-LHA	10140	87.0	55.3
	Golden-LHA	5280	49.4	37.1
Northern	Fort Nelson-LHA	3935	76.3	32.4
	Robson Valley/McBride/Valemont	1375	65.0	41.6
	Mackenzie	3620	32.3	6.7
	Smithers/Moricetown	4180	45.5	32.0
	Prince Rupert-LHA	11555	74.1	22.2
Vancouver Island	Port Hardy/Port McNeil	5285	51.0	14.9
	Vancouver Island North	4180	70.1	30.4
	Port Alberni	13605	54.8	26.6
	Alberni	9540	33.6	36.1
	Sooke	9915	58.5	29.9
Fraser	Hope	4795	54.2	26.3
	Mission	22595	68.2	23.5
	New Westminster-LHA	45660	46.3	10.4
	Port Moody	17690	23.6	4.3*
	South Surrey/White Rock	60813	39.9	15.2

1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006.
2. Population aged 18 and over.
3. Data with a coefficient of variation (CV) from 25% to 35% are identified with an (*) and should be interpreted with caution. Data with a coefficient of variation (CV) greater than 35% were suppressed (--) due to extreme sampling variability.
4. Item non-responses were low; non-responses were excluded in the calculation of the estimates.
5. Facilities available for cycling in or near the neighbourhood include special lanes, separate paths or trails, shared use paths for cyclists and pedestrians.
6. Free and low cost recreation facilities in the neighbourhood include parks, walking trails, bike paths, recreation centres, playgrounds, public swimming pools, etc.

As shown in **Figure 12**, all the LHAs/communities surveyed in Vancouver Coastal Health report low levels of disagreement (<40%) with having facilities for cycling in the neighbourhood. Creston-LHA, however, reported a much higher level of disagreement than any other BC-HWS LHA/community surveyed, perceiving few opportunities to bicycle in the neighbourhood.

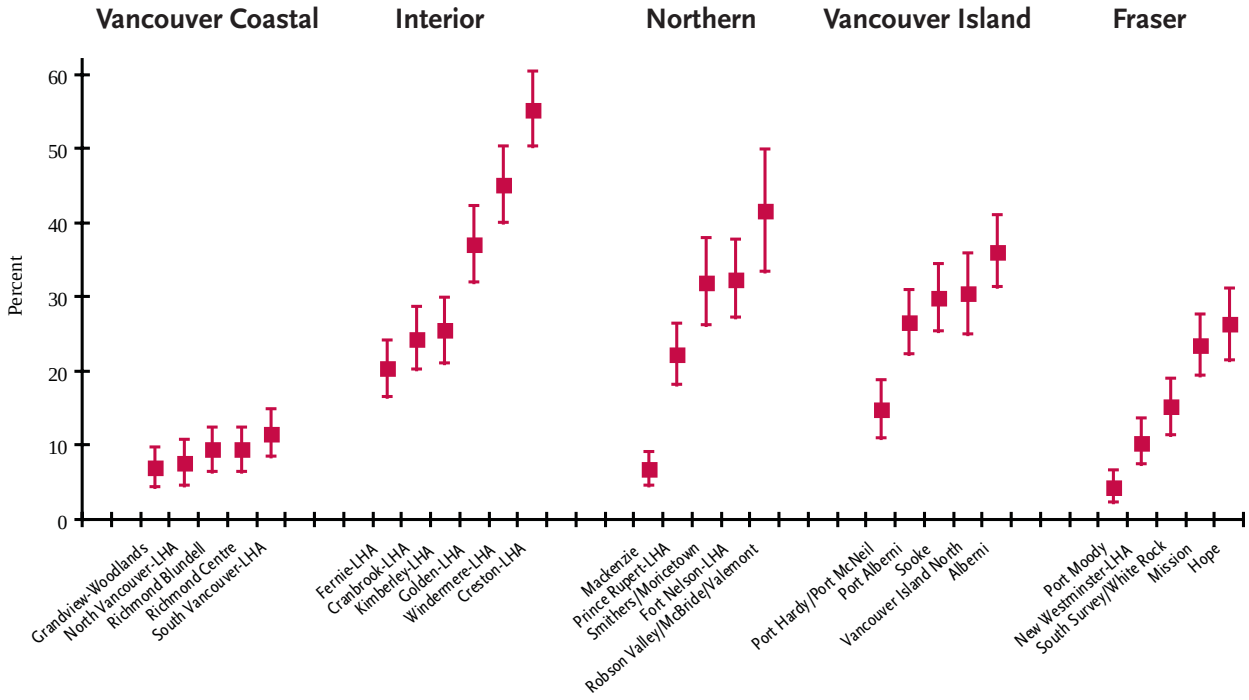
Figure 12. Percentages and 95% confidence intervals of household population aged 18 and over disagreeing that there are locally available bike paths.



1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006
2. Population aged 18 and over.
3. Item non-responses were low; non-responses were excluded in the calculation of the estimates.
4. No corresponding measure in the Canadian Community Health Survey for health authorities and British Columbia.
5. Available facilities for cycling in or near the neighbourhood (i.e. special lanes, separate paths or trails, shared use of paths for cyclists and pedestrians).

The perceived existence of many free or low-cost recreational facilities (e.g., parks, walking trails, bike paths, recreation centres, playgrounds, public swimming pools) in the neighbourhood is presented in **Table 13**. The prevalence of disagreeing that there is access to several free or low-cost recreational facilities ranged from 4.3% (Port Moody) to 55.3% (Creston-LHA), with low values indicating the perception that the neighbourhood has many recreational facilities. As shown in **Figure 13**, all the LHAs/communities sampled in Vancouver Coastal Health had a low prevalence, indicating a perception that they do not lack recreational facilities.

Figure 13. Percentages and 95% confidence intervals of household population aged 18 and over disagreeing that there are several free or low-cost recreational facilities available in their neighbourhood.



1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006
2. Population aged 18 and over.
3. Item non-responses were low; non-responses were excluded in the calculation of the estimates.
4. Free and low cost recreation facilities include parks, walking trails, bike paths, recreation centres, playgrounds, public swimming pools, etc.
5. No corresponding measure in the Canadian Community Health Survey for health authorities and British Columbia.

Food Access and Security

According to the Food and Agriculture Organization of the United Nations (FAO), food security "exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. Household food security is the application of this concept to the family level, with individuals within households as the focus of concern".[20]

In the BC-HWS, food security was assessed with six questions. Three questions asked if lack of money resulted in: not having enough food to eat, not having quality and variety of food to eat, or worrying that there might not be enough to eat. If the person indicated yes to any of those questions, the household was classified as being food insecure. Depending on which question was answered yes, respondents received a follow-up question. If they reported not having enough to eat, they were asked if they could go to a family member, a friend, a food bank, or other places to eat; those who reported not having the quality and variety of food to eat were asked if they had a place to go to get better food; and finally those who reported worrying about not having enough to eat were asked if they did not get enough to eat, did they have a place to go? The follow-up questions were summarized as follows: among those who reported being food insecure, did the respondent report having a place to go? Although the CCHS asked about food access and security, the questions are not comparable to the BC-HWS and are not reported here.

Summary

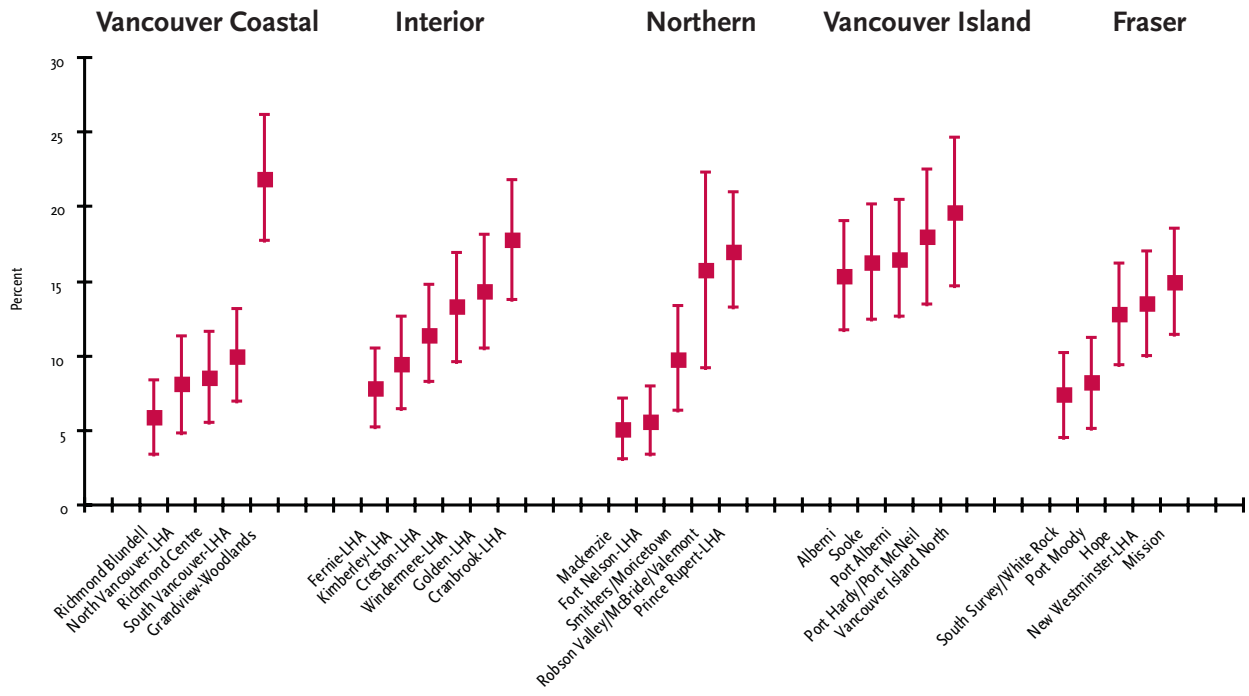
Table 14 and Figure 14 present the food insecurity results. The estimated prevalence of food insecurity varies from a low of 5.1% (Mackenzie), to a high of 21.9% (Grandview-Woodlands), representing those households that reported lacking money to have enough food, to have quality and variety of food, or who worried there might not be enough to eat. Grandview-Woodlands had a higher prevalence of food insecurity than the other four surveyed LHAs/communities in Vancouver Coastal Health. **Table 14** also displays the prevalence of not having a place to go for people who were food insecure. Given that the prevalence of food insecurity is relatively low, 11 of the LHA/community estimates for not having a place to go were suppressed or flagged for being unreliable. Among those respondents who reported being food insecure, the prevalence of not having a place to go ranged from a low of 12.6% (Robson Valley/McBride/Valemont) to a high of 56.6% (Mackenzie), excluding those LHAs/communities with suppressed estimates.

Table 14. Prevalence of food insecurity in the BC Health and Wellness Survey (2006) LHAs/communities

			Food Insecurities	
Health Authority	LHA/Community	Population	Food insecure (%)	Not having a place to go (%)
Vancouver Coastal	North Vancouver-LHA	94404	8.1	--
	South Vancouver-LHA	92165	10.0	32.4
	Grandview-Woodlands	25858	21.9	25.1
	Richmond Blundell	26756	5.9	41.8*
	Richmond Centre	25861	8.5	28.6*
Interior	Fernie-LHA	11175	7.8	22.7*
	Cranbrook-LHA	18455	17.8	24.7
	Kimberley-LHA	6695	9.5	24.5*
	Windermere-LHA	6875	13.3	40.0
	Creston-LHA	10140	11.4	42.6
	Golden-LHA	5280	14.3	30.3
Northern	Fort Nelson-LHA	3935	5.6	30.3*
	Robson Valley/McBride/Valemont	1375	15.8	12.6*
	Mackenzie	3620	5.1	56.6
	Smithers/Moricetown	4180	9.8	--
	Prince Rupert-LHA	11555	17.0	24.1
Vancouver Island	Port Hardy/Port McNeil	5285	18.0	26.9*
	Vancouver Island North	4180	19.6	42.8
	Port Alberni	13605	16.5	21.7
	Alberni	9540	15.4	39.2
	Sooke	9915	16.3	32.6
Fraser	Hope	4795	12.8	40.0
	Mission	22595	15.0	26.7
	New Westminster-LHA	45660	13.5	39.1
	Port Moody	17690	8.2	--
	South Surrey/White Rock	60813	7.4	28.5*

1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006.
2. Population aged 18 and over.
3. Data with a coefficient of variation (CV) from 25% to 35% are identified with an (*) and should be interpreted with caution. Data with a coefficient of variation (CV) greater than 35% were suppressed (--) due to extreme sampling variability.
4. Item non-responses were low; non-responses were excluded in the calculation of the estimates.
5. Food insecurity questions refer to how the respondent felt in the last 12 months.
6. Food insecure refers to the respondent or anyone in the household not having or worrying about not having enough to eat, or not eating the quality or variety of foods wanted because of a lack of money.

Figure 14. Percentages and 95% confidence intervals of household population aged 18 and over with food insecurity in the past 12 months.



1. Data source: Provincial Health Services Authority, British Columbia Health and Wellness Survey, 2006
2. Population aged 18 and over.
3. Item non-responses were low; non-responses were excluded in the calculation of the estimates.
4. No corresponding measure in the Canadian Community Health Survey for health authorities and British Columbia.
5. Food insecuritiy refers to the respondent or anyone in the household not having or worrying about not having enough to eat, or not eating the quality or variety of foods wanted because of a lack of money.

Overview of Results

Table 15 summarizes the results presented in this report for the 26 LHAs/communities surveyed in the BC-HWS. The results across the 12 variables reported were colour-coded into quintiles. The lightest color (quintile 1) in the table represents the lowest level of health risk among the 26 LHAs/communities, while the darkest colour (quintile 5) identifies LHAs/communities with the highest level of health risk. Examination of these colour patterns across and within LHAs/communities is most useful for identifying overall issues at the LHA/community level and for identifying local resources and infrastructure needed for primary prevention. **However, it is important to understand that patterns observed at the LHA/community level cannot be directly extrapolated to patterns or associations at the individual level.**

Categorizing the data into quintiles provides a quick way of looking at the data; however doing so results in some loss of information (e.g., the degree of differences among the LHAs/communities). For some variables there may be little difference between the top and bottom quintiles, while for other variables these differences may be much larger. To help interpret the quintiles, **Table 15** provides the prevalence range for each variable as well as the high and low value observed for that variable. With these caveats in mind, this section of the report describes patterns observed at the LHA/community level that may be helpful for developing lifestyle interventions.

Table 15. Overview of the BC Health and Wellness Survey (2006) for the 26 LHAs/communities

LHA/Community	General health	High Blood Pressure	Diabetes	Body Mass Index (BMI)	Physical activity	Sedentary	Fruit & Vegetable	Tobacco use	Alcohol use	Bicycling facilities	Recrea-tional facilities	Food insecure
North Vancouver-LHA	1	2	2	1	4	4	2	1	4	2	1	2
South Vancouver-LHA	3	2	5	1	5	5	4	1	1	2	2	3
Grandview-Woodlands	3	1	2	1	4	4	2	4	4	1	1	5
Richmond Blundell	1	3	3	1	5	5	3	1	2	1	1	1
Richmond Centre	1	1	3	1	5	5	5	2	1	1	2	2
Fernie-LHA	2	4	2	3	1	1	1	4	2	3	3	1
Cranbrook-LHA	2	5	4	5	4	3	5	2	1	1	3	5
Kimberley-LHA	3	3	3	3	2	3	4	3	4	3	3	2
Windermere-LHA	2	4	1	2	1	1	3	3	3	4	5	3
Creston-LHA	5	5	4	4	3	5	4	1	3	5	5	3
Golden-LHA	2	2	2	2	1	2	1	2	3	3	5	3
Fort Nelson-LHA	4	1	1	5	3	1	3	5	4	5	4	1
Robson Valley / McBride / Valemont	4	3	1	4	1	1	5	5	5	4	5	4
Mackenzie	3	5	3	5	3	1	1	3	5	2	1	1
Smithers/Moricetown	2	1	1	3	2	2	1	2	2	3	4	2
Prince Rupert-LHA	3	3	5	5	4	3	5	5	1	5	3	5
Port Hardy / Port McNeil	4	3	4	3	2	4	1	5	2	3	2	5
Vancouver Island North	3	4	3	5	2	2	2	5	3	5	4	5
Port Alberni	5	5	5	4	3	4	3	4	5	4	4	4
Alberni	4	2	2	2	1	2	2	4	5	2	5	4
Sooke	4	4	5	3	2	3	3	3	3	4	4	4
Hope	5	5	3	4	3	3	4	4	5	4	3	3
Mission	5	3	5	4	3	3	4	3	4	5	3	4
New Westminster-LHA	5	2	4	3	5	4	5	3	1	3	2	3
Port Moody	1	1	1	2	5	2	3	2	2	1	1	2
South Surrey / White Rock	1	4	4	2	4	5	2	1	3	2	2	1
Prevalence - Low	8.8%	12.2%	2.3%	40.0%	18.3%	13.1%	14.6%	9.2%	3.9%	16.2%	4.3%	5.1%
Prevalence - High	19.9%	28.9%	9.8%	66.1%	41.0%	29.0%	25.4%	30.8%	13.2%	87.0%	55.3%	21.9%
Prevalence - Range	11.1%	16.7%	7.5%	26.1%	22.7%	15.9%	10.8%	21.6%	9.3%	70.8%	51.0%	16.8%

Lowest risk — Highest risk

1	2	3	4	5

Top quintile — Bottom quintile

The LHAs/communities surveyed in Vancouver Coastal Health had similar patterns for a number of variables. All Vancouver Coastal LHAs/communities were ranked in the top quintile (quintile 1) for BMI and in the top two for access to bicycling and recreational facilities; however, they were ranked in the bottom two quintiles (quintiles 4 and 5) for physical activity and sedentary activities. These results indicate, at an LHA/community level, that having lower levels of overweight/obesity is not necessarily correlated with having the most active population. Although physical activity efforts are often part of obesity control efforts, there is much evidence suggesting that physical activity is an independent risk factor, irrespective of obesity.[21,22] Blair and colleagues have shown that people who are physically fit and overweight/obese have lower cardiovascular disease, coronary health disease, hypertension, type 2 diabetes and cancer than those who are unfit and of normal weight. The pattern observed in these LHAs/communities highlights that it is important to not only focus on BMI levels but also to evaluate levels of physical activity.

Examining patterns among the five lifestyle variables (physical activity, sedentary activities, fruit and vegetable consumption, tobacco use and alcohol use) provides a view on behaviours which may be modified through primary interventions. The community of Smithers/Moricetown had all five lifestyle variables ranked in either the top or second quintiles. Fernie-LHA and Golden-LHA had four of five lifestyle variables in the top two quintiles. None of the LHAs/communities had all five lifestyle variables ranked in the bottom two quintiles, although Grandview-Woodlands had four of the lifestyle variables in the bottom two quintiles. Although examination of the quintiles provides an easy way to compare the LHAs/communities, it is important to also evaluate the prevalence of these lifestyle variables in terms of their meeting or not meeting BC or Canadian recommendations. However, examination of the patterns can be helpful in developing multi-behavioural interventions. Although not all possible patterns have been highlighted, it is hoped that people from these LHAs/communities can shed some light on the observed patterns.

Limitations

This descriptive report is intended to present (rather than interpret) the BC-HWS data and to highlight some seemingly important differences among the 26 surveyed LHAs/communities.

In reviewing the BC-HWS data it is important to consider the limitations of the data and the survey. As the data were collected over a three-month period, it is important to note the estimates might be biased, as many of the lifestyle behaviours assessed through the survey are affected by seasonality.[23,24] Therefore, the prevalence estimates in this report may not be accurate or comparable to other survey results. However, as the bias should be consistent across the 26 surveyed LHAs/communities, the data are reliable enough to allow LHA/community comparisons, as done in this report. In addition, any difference in the data collection methodology has an impact on prevalence estimates. Therefore any divergence from the CCHS data, for example (which used telephone and face-to-face interviews as opposed to only telephone-based interviews as was done for the BC-HWS) should be interpreted with caution.

By comparing the BC-HWS distribution of educational levels with those from the 2001 census data for the surveyed LHAs/communities, it was observed that respondents without a high school diploma were underrepresented in the survey, while respondents who graduated from college were overrepresented. Although this is often observed in telephone surveys,[9] the bias may be more pronounced in the BC-HWS than would normally be expected. This should be considered in the interpretation of the data. Similarly, other observed differences in the socio-demographic characteristics of the surveyed LHAs/communities should be carefully considered when interpreting the results of the BC-HWS.

A further limitation of the data, mentioned in the methods section of this report, is that the 26 surveyed LHAs/communities were not randomly selected, and therefore their prevalence estimates cannot be generalized for their respective health authorities. Where possible, the corresponding CCHS data estimate for the province and each health authority are provided. As the LHAs/communities were not randomly selected, they cannot be expected to have patterns similar to those reflected by the CCHS data. The CCHS data are provided simply as background information. Any comparisons with the BC-HWS data, or interpretation of the BC-HWS data based on such comparisons, should be made with caution.

Concluding Remarks

The results of the BC-HWS provide a view on differences at the LHA/community level across a number of health-related lifestyle variables. They highlight the differences that exist among the 26 surveyed LHAs/communities and will challenge those LHAs/communities to examine the patterns in their data toward explaining the observed variability. As a recent report from the WHO suggests, developing population-wide approaches to health offers a solution for reducing the growing cost of chronic disease in Canada.[1] In fact, the WHO estimates that reducing the prevalence of risk factors associated with chronic disease in Canada by 2% would result in a saving of $1 billion over 10 years.[1,2]

The economic impact of unhealthy behaviours is significant, and population-based strategies are desperately needed to help address this issue. Surveillance plays an important role in primary prevention as both a means of evaluating prevention efforts, and as a way of informing communities about their health status and empowering them to take action to help curtail the rise of chronic disease at the local level.

More in-depth analyses of the BC HWS data are planned to help explain the patterns observed among the surveyed LHAs/communities. In addition, input from these LHAs/communities on the types of data and usefulness of the data presented here is being sought. The intent is to delineate the data most useful for identifying overall issues at the LHA/community level and for identifying resources and infrastructure needed at an LHA/community level for primary prevention initiatives.

Appendix 1:
Level of Physical Activity - Examples

Level of Physical Activity	Examples
High	Scenario #1 Going for a 60 min run 4 days a week Lifting weights for 60 min twice a week Walking the dog for 30 min twice a week (3078 MET-min/week) Scenario #2 Doing aerobics twice a week (60 min) Going for a run twice a week (45 min) Going for a walk once a week (30 min) Playing softball twice a week (60 min) Lifting light boxes for work 5 days (30 min) (3129 MET-min/week)
Moderately Active	Scenario #1 Biking to and from work 4 days a week (45 min each way) Going for a moderate hike with friend (60 min) Doing yoga once a week (60 min) Going for a walk with spouse (30 min) (2019 MET-min/week) Scenario #2 Walking dog to park 4 days (10 min) Talking your dog for a long walk (45 min) Going for a run 3 days a week (45 min) Walking to and from bus to work 5 days a week (10 min) (1525.5 MET-min/week)
Somewhat Active	Scenario #1 Walking for at least 30 min every day (840 MET-min/week) Scenario #2 Gardening twice a week (30 min) Going for a walk with friend (30 min) Swimming once a week (30 min) Golfing without a cart (90 min) (800 MET-min/week)
Sedentary	N/a

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