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Healthy Today, Healthy Tomorrow? Findings from the National Population Health Survey

Trends in Weight Change Among Canadian Adults: Evidence from the 1996/1997 to 2004/2005 National Population Health Survey

by Heather M. Orpana, Mark S. Tremblay and Philippe Finès

Health Analysis and Measurement Group Division
24th floor, R. H. Coats Building, Ottawa, K1A 0T6

Physical Health Measures Division
Main Building, SC5, Ottawa, K1A 0T6

Telephone: 1-613-951-1746



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Standard symbols

The following standard symbols are used in Statistics Canada publications:

- . not available for any reference period
- .. not available for specific reference period
- ... not applicable
- ^p preliminary
- ^r revised
- x suppressed to meet the confidentiality requirements of the *Statistics Act*
- E use with caution
- F too unreliable to be published

Healthy today, healthy tomorrow? Findings from the National Population Health Survey

About this publication

Since its beginning in 1994, the National Population Health Survey (NPHS) has been providing unique information on the health of Canadians by responding to the need for information on health dynamics. The NPHS is a longitudinal survey with a sample of 17,276 individuals spread out in the ten provinces across Canada. Every two years, these same individuals provide current and in-depth information on their physical and mental health status, use of health care services, physical activities, life in the workplace and social environment. Over the years of follow-up, the data have shown how a wide range of factors can contribute to improve or deteriorate health.

Whereas data collected from people at a single point in time provides a snapshot, NPHS longitudinal data reveals the transitions towards good or bad health. The richness of NPHS's data is that it also allows evaluation of the relationships between socio-economic and demographic characteristics of individuals with their health status and its evolution over time.

The Internet Publication, *Healthy Today, Healthy Tomorrow? Findings from the National Population Health Survey*, gradually releases articles based on data collected from the same respondents every two years. For all issues, click on the chronological index: <http://www.statcan.ca/bsolc/english/bsolc?catno=82-618-M&CHROPG=1>

One of the key features of this publication is to have links to longitudinal Cansim tables and to other articles which use NPHS longitudinal data in one location only. Additional information about the survey and access to the data is also provided.

Trends in weight change among Canadian adults: Evidence from the 1996/1997 to 2004/2005 National Population Health Survey

by Heather M. Orpana, Mark S. Tremblay and Philippe Finès

Highlights

- On average over a two-year period, both men and women gain weight, however this rate of weight gain has slowed down significantly in recent years.
- Over an eight-year period, the average weight gain of adults aged 18 to 56 in 1996/1997 was 4.01 kg for men and 3.44 kg for women.
- Weight gain is by far the most prevalent pattern of weight change, with about half of men and women gaining weight over any two year interval. About 22% of men and women maintained a stable weight, while around a third lost weight over any two year period.
- The proportion of men losing weight has significantly increased from 27% in 1998/1999 to 2000/2001, to 32% in 2002/2003 to 2004/2005. This is mirrored by a decrease in the proportion of men gaining weight, from 51% in 1998/1999 to 2000/2001, to 44% in 2002/2003 to 2004/2005.
- Although the percentage of men gaining weight has decreased, the mean amount of weight gained among those who did gain weight significantly increased, from 4.56 kg in 1996/1997 to 1998/1999 to 4.99 kg in 2002/2003 to 2004/2005 for men.

Introduction

Consistent with trends in other countries (Flegal et al 1998; Odgen et al. 2006), the prevalence of obesity has been rising in Canada. From 1978/1979 to 2004, the percentage of Canadian adults who were obese rose from 14% to 23% (Tjepkema 2006). The increasing prevalence of obesity is a major public health concern, as excess weight has been associated with type II diabetes, cardiovascular disease, psychosocial difficulties, osteoarthritis, and premature mortality (National Institutes of Health 1998).

Valuable as it is, cross-sectional information about the prevalence of obesity cannot provide information about patterns of weight change among individuals. Longitudinal data are needed for insight about patterns and rates of change that are behind the increase in obesity in Canada. For instance, a recent longitudinal study showed that almost a third of Canadians whose weight was in the acceptable range in 1994/1995 became overweight in the following eight years, and about a quarter of those who had been overweight became obese (Le Petit and Berthelot 2006). Only 2% of acceptable weight individuals became obese over the same period.

As an extension to this, an understanding of obesity requires information about the rate at which individuals are gaining (or losing) weight. Longitudinal studies of American adults have demonstrated that, in general, they gain weight up to 55 or 60 years of age, after which they start to lose weight (Williamson 1993; Sheehan et al. 2003; Truong and Sturm 2005). Few studies have examined rates of weight change in a representative sample of Canadians. Analyses of data from the 1981 Canada Fitness Survey and the 1988 follow-up, the Campbell Survey of the Well-being of Canadians demonstrated that body mass index (BMI) was relatively stable over the period between the surveys, but the researchers did not estimate the rate of change (Katzmarzyk et al. 1999). Another study based on the same data estimated that in families of at least two persons, the weight change from 1981 to 1988 was a gain of 2.9 kg for fathers and a gain of 3.5 kg for mothers (Hunt et al. 2002). However, both these studies examined only two points in time, and so could not determine whether rates of weight gain were changing or remaining stable.

The purpose of this analysis, which is based on longitudinal data from the National Population Health Survey (NPHS), is to examine two-year changes in the self-reported weight of the Canadian adult household population from 1996/1997 to 2004/2005, and to determine if the rate of change is accelerating, slowing down, or remaining the same (see Methods, Definitions and Limitations).

Rate of gain slowing

Canadians continue to gain weight, but indications are that the pace at which they are gaining has slowed down. The average self-reported weight of people aged 18 to 64 rose 0.96 kg for men and 0.86 kg for women over the two years from 1996/1997 to 1998/1999 (Chart 1). During the 2000/2001 to 2002/2003 interval, average gains were higher: 1.12 kg for men and 1.02 kg for women. Over the next two years (2002/2003 to 2004/2005), Canadians' weight continued to rise, but the average amount gained was lower: 0.74 kg for men and 0.57 kg for women. Regression results (Table 1) indicate that this pattern of weight gain is statistically

significant. Thus, overall Canadian adults were still gaining weight, but significantly less than in the earlier periods.

Amount gained varies

Changes in weight were significantly associated with sex, age group and body mass index (BMI) (Table 1).

Over the eight years from 1996/1997 to 2004/2005, the average self-reported weight of men and women in all age groups increased. However, in each two-year interval, younger people aged 18 to 33 experienced significantly greater average gains than did 34 to 49 year-olds; older adults aged 50 to 64 experienced significantly smaller gains (Chart 2 and Chart 3).

The general trend of a decline in the amount of weight gained in the 2002/2003 to 2004/2005 interval applied to men and women in most age groups. The exception was men aged 18 to 33 whose average weight gain in the last interval was greater than that in the previous one.

An individual's body mass index was associated with how much his or her self-reported weight changed in each two-year interval (Chart 4 and Chart 5). On average, overweight people gained 0.8 kg less, and obese individuals, 1.9 kg less than did people whose weight was in the acceptable BMI range (Table 1). In fact, during most two-year intervals, people who were obese experienced a mean loss in self-reported weight.

The overall decline in the average amount of weight gained in the last two-year interval could reflect several processes: an increase in the number of people losing weight, an increase in the amount of weight lost, a decrease in the number of people gaining weight, a decrease in the amount of weight gained, or a combination of these factors. Further analyses were undertaken to examine how the slowdown in the amount of weight gained was related to these possibilities.

Smaller percentage of Canadians gaining

During each of the first three intervals, almost half of adults experienced a weight gain, but from 2002/2003 to 2004/2005, only 44% of men and 46% of women did so (Table 2). For men, but not women, this was a significantly lower proportion than in the previous intervals.

As well, 32% of men experienced a loss in weight from 2002/2003 to 2004/2005, a significantly higher percentage than in the first two intervals (28% and 27% respectively). Among women, the proportion losing weight did not differ significantly from one interval to another, ranging from 29% in the first three intervals to 32% in the last.

Men and women who gain, gain more than before

For the men who gained weight, the average amount gained rose over time from 4.56 kg in the first interval to 4.99 kg in the last, a statistically significant increasing trend (Table 2). The average gain among the women who gained weight varied, ranging from 4.50 kg to 4.78 kg. A

statistically significant trend of an increasing amount of weight gained among women was also observed.

Among the men who lost weight, there was no statistically significant trend in the amount lost, with the average in the 4.42 kg to 4.68 kg range. By contrast, among the women who lost weight, the average loss rose significantly from 4.35 kg in the first interval to 4.91 kg in the last.

Thus, the overall decrease in the average change in weight in the last interval (2002/03 to 2004/05) appears to be driven by a combination of factors—a smaller proportion of men gaining weight and greater losses among the women who lose weight.

Weight change a dynamic process

An important consideration in examining trends in weight change is that the same people did not gain, lose or maintain their weight over all two-year intervals. For example, of the women who lost weight from 1996/1997 to 1998/1999, almost 64% gained weight over the subsequent interval from 1998/1999 to 2000/2001. Conversely, of the women who gained weight in the first interval, approximately 38% lost weight in the following interval, while approximately 39% gained weight. The pattern was similar for men and across subsequent intervals. Almost two-thirds of the people who lost weight in a given interval gained weight in the next.

Cumulative effects

The average two-year weight changes among adults from 1996/1997 to 2004/2005 were gains of 0.5 kg to 1 kg, and the overall change in weight during the entire eight years was a gain of 4.01 kg for men and a gain of 3.44 kg for women. While these amounts may appear relatively small, such changes are cumulative, resulting in a further shift of the distribution of an already predominantly overweight and obese population toward unhealthy weights (Tjepkema 2006). And even a small shift in the population distribution toward excess weight can have important consequences for the incidence of weight-related diseases (Rose 1985).

Concluding remarks

The results of this analysis *describe* the pattern of weight change among Canadian adults from 1996/1997 to 2004/2005, but they do not *explain* it. While it is known that poor nutrition and lack of physical activity are primary contributors to weight gain, alternative explanations such as environmental factors may be important and should be considered (Keith et al. 2006).

These data indicate that patterns of weight gain, loss and stability are dynamic, and warrant further research to identify the correlates and causes of the slowdown in the average amount of weight gained and the increase in the number of people losing weight. The increase in the amount of weight gained by those people who gained weight also deserves more investigation. Longitudinal analysis, which provides information about how individuals move from one weight category to another, is needed for public health strategies aimed at addressing the problem of obesity in Canada. Analysis of subsequent cycles of the NPHS will make it possible to determine if the decrease in the rate of weight gain continues in the future.

Although Canadian adults are still, on average, gaining weight, public health messages promoting healthy eating and physical activity have proliferated, and it is possible that without these interventions, the current rate of weight gain might have been higher.

Acknowledgements

Jean-Marie Berthelot generated the idea for this article. Georgia Roberts contributed invaluable statistical and methodological assistance, and Kathy White and Christel Le Petit provided helpful comments on successive drafts.

Methods

Data source

This analysis is based on data from five cycles (cycles 2 to 6) of the National Population Health Survey (NPHS), conducted by Statistics Canada from 1996/1997 to 2004/2005. Every two years since 1994/1995, the NPHS collects data about health status, health behaviours, and other determinants of health. This survey is representative of the household residents in all provinces in 1994/1995, excluding Territories, Indian reserves, Crown Lands, health institutions and members of the Canadian Forces bases and some remote areas in Ontario and Quebec. Although the NPHS also has an institutional component covering residents of health institutions such as nursing homes, that sample was not analysed in this article.

In 1994/1995, 20,095 household residents were selected to be members of the NPHS longitudinal panel. Of these, 86.0% agreed to participate, yielding a sample of 17,276. Response rates in subsequent cycles were 92.8% in 1996/1997; 88.3% in 1998/1999; 84.8% in 2000/2002; 80.5% in 2002/2003; and 77.4% in 2004/2005. More detailed descriptions of the NPHS design, sample and interview procedures are available in other papers and reports (Tambay and Catlin 1999).

Data were collected primarily through computer-assisted personal interviews in 1994/1995 and primarily through computer assisted-telephone interviews thereafter. To rule out the potential impact of collection mode on the results, only data from 1996/1997 to 2004/2005 were analysed. Telephone interviews comprised over 96% of all interviews in 1996/1997 and 1998/1999; over 98% in 2000/2001 and 2002/2003; and more than 99% in 2004/2005.

Analytical techniques

The sample for this analysis consisted of people who were aged 10 to 60 in 1994/1995. As they aged through 1996/1997 to 2004/2005, individuals were included in the analysis if they had reached age 18 by the beginning of a given interval, and were excluded if they were 65 or older at the end of a given interval. For instance, a respondent who was 62 in 1996 would have been included in the 1996/1997 to 1998/1999 interval, but excluded thereafter. Records for women who were pregnant at the beginning or the end of an interval were excluded for that interval.

For the first interval, 1996/1997 to 1998/1999, there were 9,387 respondents aged 18 to 64 at the beginning and end of the interval; 318 cases were missing data on weight; and 203 women were excluded because they were pregnant at the beginning or end of the interval. Thus, the sample size for the first interval was 8,866 cases. For the second, third and fourth intervals, there were 8,689, 8,098, and 7,517 respondents aged 18 to 64 at the beginning and end of the interval. Of these, 220, 160, and 139 cases, respectively, were missing data on weight, and 156, 152, and 139 women were excluded because of pregnancy. Additionally, for analyses using body mass index (BMI), cases with missing height were excluded: 7, 6, 12 and 8 cases for the first, second, third and fourth intervals, respectively.

Average weight change for the four two-year intervals from 1996/1997 to 2004/2005 was calculated for men and women. To reduce the effect of outliers, individuals who gained or lost more than 25 kg were given a value of 25 kg. For the first interval, 28 cases of weight loss and 23 cases of weight gain were truncated at 25 kg; for the second interval, 32 cases of weight loss and 31 cases of weight gain were truncated; for the third interval, 27 cases of weight loss and 42 cases of weight gain were truncated; and in the fourth interval, 30 cases each of weight loss and weight gain were truncated.

To determine whether the rate of change in body weight was increasing or decreasing over time, multiple linear regression was conducted using a person-period dataset, predicting two-year weight differences from time, time squared, sex, age group and BMI category at the beginning of the interval. Age group and BMI category were time-varying covariates. Records for individuals missing data on any variable for a given interval were excluded for that interval only. This accounted for less than 4% of records for any interval. Thus, for the regression model, the sample was 8,866 records for the 1996/1997 to 1998/1999 interval; 8,313 for the 1998/1999 to 2000/2001 interval; 7,786 for the 2000/2001 to 2002/2003 interval; and 7,239 records for the 2002/2003 to 2004/2005 interval.

To clarify patterns underlying observed differences in weight change, the proportion of people gaining weight, losing weight, or remaining stable (no change in self-reported weight), as well as mean weight gain among those who gained weight and mean weight loss among those who lost weight, were analysed for each two-year interval. Confidence intervals of the sex-specific proportions of respondents who gained weight, lost weight or remained stable were calculated, and compared to determine if they differed significantly over time. To test for the association between time and weight gain or weight loss, a linear regression was performed only on records where an individual experienced a weight gain or loss.

In order to take the complex survey design of the NPHS into account, the bootstrap method was used to generate confidence intervals of the estimates for all analyses (Rao et al. 1992; Rust et al. 1996; Yeo et al. 1999). Bootstrap weights for individuals were applied to each record for an individual (Fitzmaurice et al. 2004). Significance was set at $p < 0.05$ (i.e., probability less than 0.05), and the weights for the longitudinal square file were used to weight the records to reflect the Canadian household population in 1994/1995. All analyses were conducted in SAS 9.

Definitions

Weight was self-reported and converted to the nearest kilogram for respondents answering in pounds. Similarly, **height** was self-reported and converted into metres for respondents answering in feet and inches.

Body mass index (BMI) was calculated by dividing weight in kilograms by height in metres squared. According to Health Canada guidelines (Health Canada 2003), individuals whose BMI was less than 18.5 kg/m² were considered underweight; those whose BMI ranged from 18.5 to 24.9 kg/m² were considered to be an acceptable (normal) weight; those whose BMI ranged from 25.0 to 29.9 kg/m², overweight; and those whose BMI was 30 kg/m² or more, obese.

Three adult **age groups** were identified: 18 to 33 years, 34 to 49 years, and 50 to 64 years.

Limitations

The data in these analyses were obtained primarily by computer-assisted telephone interviews and were self-or proxy-reported. Self-reported data may be affected by response biases such as social desirability. Self-reported weight is generally an underestimate of measured weight (Tjepkema 2006). If this reporting bias changed within individuals over time, it could affect the results. It is possible that increased media attention on obesity in recent years may have changed the magnitude of this bias. However, analyses using American data indicate no significant change in the magnitude of the bias associated with self-reporting weight and height during the periods 1988 to 1994 and 1999 to 2002 (Ezzati et al. 2006).

As in all surveys, non-response may introduce bias into the survey results. While the 1994/1995 longitudinal square weights adjust for non-response at the initial measurement, they do not adjust for subsequent non-response. Differential non-response may have affected the results. However, because regression using the person-period dataset does not require a respondent to answer at each cycle in order to include them in the analysis, this bias is somewhat attenuated. Future analyses should take non-response patterns into account, to investigate the possibility that selective attrition is affecting the results.

Because the data can be conceptualized as observations nested within individuals, a growth curve model would be an appropriate approach to analysing the data (Singer and Willett 2003). Initial analyses were conducted using a growth curve model in SAS; however, the estimates of SAS PROC MIXED have been reported to be biased when survey weights are used in the estimation (Asparouhov 2005), and the bootstrapping procedure was not available to estimate the variance of the growth curve model approach. Thus, an alternative approach using a person-period dataset was adopted. While it is less efficient than a growth curve model, it is unbiased and allowed for variance estimation using the bootstrap procedure.

Tables

Table 1

Results of linear regression predicting two-year weight change in kilograms from time, time squared, sex, age group and body mass index (BMI) category, household population aged 18 to 64, Canada excluding territories, 1996/1997 to 2004/2005

Characteristics	Beta	95% confidence interval
Intercept	0.67 ¹	0.24 to 1.10
Time	0.60 ¹	0.21 to 1.00
Time squared	-0.13 ¹	-0.20 to 0.05
Gender		
Male ²	0.40 ¹	0.28 to 0.53
Age group		
18 to 33 ³	0.30 ¹	0.15 to 0.46
50 to 64 ³	-0.33 ¹	-0.47 to 0.18
BMI category		
Underweight ⁴	1.56 ¹	0.97 to 2.15
Overweight ⁴	-0.82 ¹	-0.99 to 0.66
Obese ⁴	-1.88 ¹	-2.13 to -1.63

1. $p < 0.05$ (probability less than 0.05)

2. Reference group, females

3. Reference group, 34 to 49 years

4. Reference group, acceptable weight

Data Source: National Population Health Survey (1996/1997 to 2004/2005)

Table 2

Prevalence of weight change and average change (kilograms) over two-year interval, by sex, household population aged 18 to 64, Canada excluding territories, 1996/1997 to 2004/2005

Category	1996/1997 to 1998/1999				1998/1999 to 2000/2001				2000/2001 to 2002/2003				2002/2003 to 2004/2005			
	%	number	kg	sd ²	%	number	kg	sd ²	%	number	kg	sd ²	%	number	kg	sd ²
Men																
Gains (p < 0.05 ¹)	49	2,114	4.56	0.10	51	1,988	4.82	0.11	49	1,819	4.98	0.13	44 ³	1,499	4.99	0.14
Losses (not significant ¹)	28	1,194	-4.56	0.18	27	1,109	-4.68	0.18	29	1,049	-4.42	0.17	32 ⁴	1,106	-4.61	0.17
Stable	23	969	...	...	22	855	...	...	22	815	...	...	23	792	...	...
Women																
Gains (p < 0.05 ¹)	49	2,253	4.69	0.10	48	2,131	4.50	0.11	49	2,033	4.78	0.14	46	1,767	4.62	0.12
Losses (p < 0.05 ¹)	29	1,342	-4.35	0.12	29	1,274	-4.54	0.13	29	1,206	-4.46	0.15	32	1,247	-4.91	0.20
Stable	22	994	...	...	22	956	...	...	22	864	...	...	22	828	...	...

1. Trend in mean weight change is based on linear regression of mean weight gain or loss on time.

2. Standard Deviation

3. Significantly different from first three intervals (p < 0.05, probability less than 0.05)

4. Significantly different from intervals 1996/1997 to 1998/1999 and 1998/1999 to 2000/2001 (p < 0.05, probability less than 0.05)

Data Source: National Population Health Survey (1996/1997 to 2004/2005)

Other Data Tables (CANSIM)

These free of charge longitudinal data tables in CANSIM, HTML and PDF format present changes from one NPHS cycle to another for a variety of topics. You can view the following tables by going to <http://www.statcan.ca/english/research/82-618-MIE/2006001/tables.htm>.

Changes in smoking between 1994/1995 and 2004/2005, household population aged 12 and over who reported on smoking every 2 years, by age group and sex, Canada and provinces. (available in CANSIM format)

Changes, by category, in smoking from 1994/1995 to 2004/2005
(available in HTML and PDF format)

- Table 1. By sex, Canada
- Table 2. By age group, Canada
- Table 3. Canada and provinces

Changes, by category, in smoking between 1994/1995 and 2004/2005
(available in HTML and PDF format)

- Table 4. By sex, Canada
- Table 5. By age group, Canada
- Table 6. Canada and provinces

Changes in self-rated health between 1994/1995 and 2004/2005, household population aged 12 and over who rated their general health every 2 years, by age group and sex, Canada and provinces. (available in CANSIM format)

Changes, by category, in self-rated health since 1994/1995
(available in HTML and PDF format)

- Table 7. By sex, Canada
- Table 8. By age group, Canada
- Table 9. Canada and provinces

Changes, by category, in self-rated health between 1994/1995 and 2004/2005
(available in HTML and PDF format)

- Table 10. By sex, Canada
- Table 11. By age group, Canada
- Table 12. Canada and provinces

Changes in body mass index (BMI) between 1994/1995 and 2004/2005, household population aged 18 to 56 who reported their height and weight, by sex, Canada. (available in CANSIM format)

Changes, by category, in body mass index (BMI) from 1994/1995 to 2004/2005
(available in HTML and PDF format)

Table 13. By sex, Canada

Changes between body mass index (BMI) categories from 1994/1995 to 2004/2005
(available in HTML and PDF format)

Table 14. By sex, Canada

Changes in physical activity level between 1994/1995 and 2004/2005, household population aged 12 and over who reported on physical activity every 2 years, by age group and sex, Canada and provinces (available in CANSIM format)

Changes in physical activity level since 1994/1995
(available in HTML and PDF format)

Table 15. By sex, Canada

Table 16. By age group, Canada

Table 17. Canada and provinces

Changes between physical activity level categories from 1994/1995 to 2004/2005
(available in HTML and PDF format)

Table 18. By sex, Canada

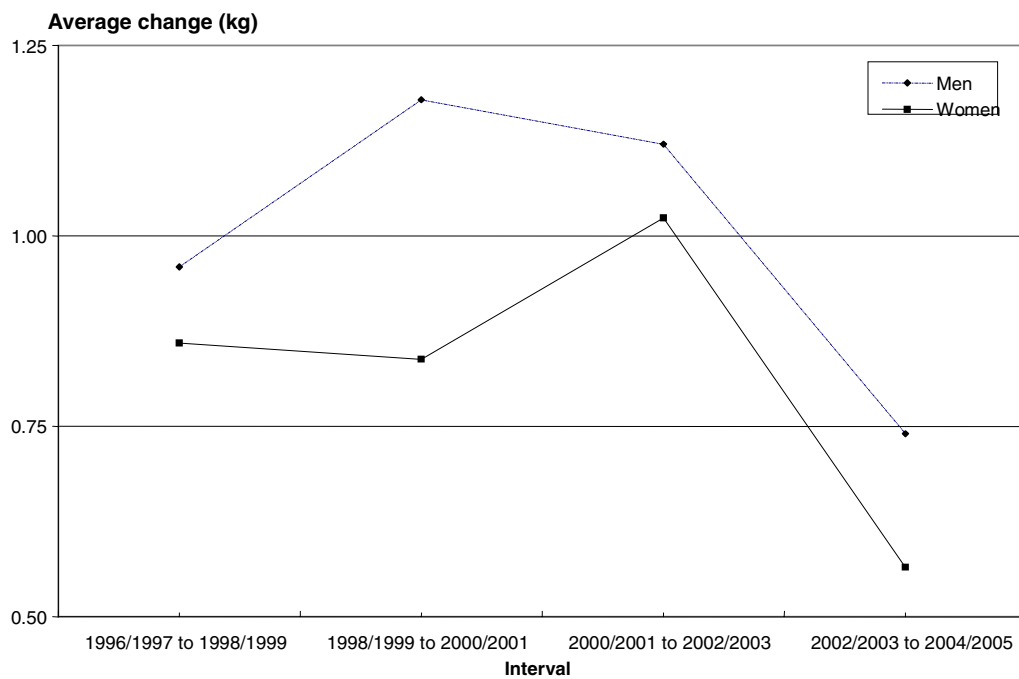
Table 19. By age group, Canada

Table 20. Canada and provinces

Charts

Chart 1

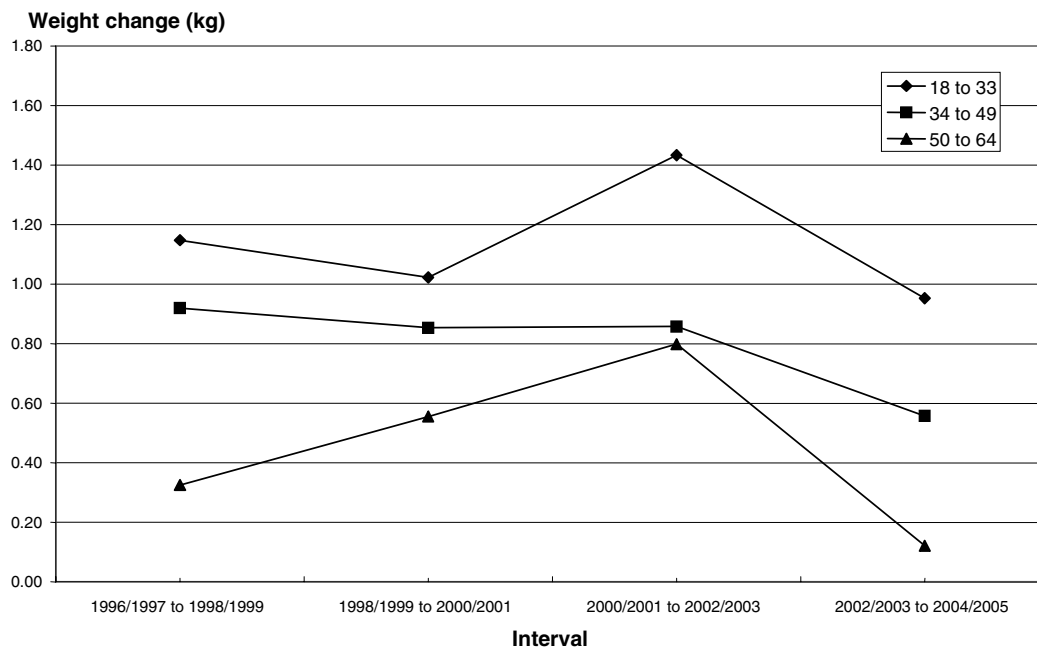
Average two-year change in weight, by sex, household population aged 18 to 64, Canada excluding territories, 1996/1997 to 2004/2005



Data Source: National Population Health Survey (1996/1997 to 2004/2005)

Chart 2

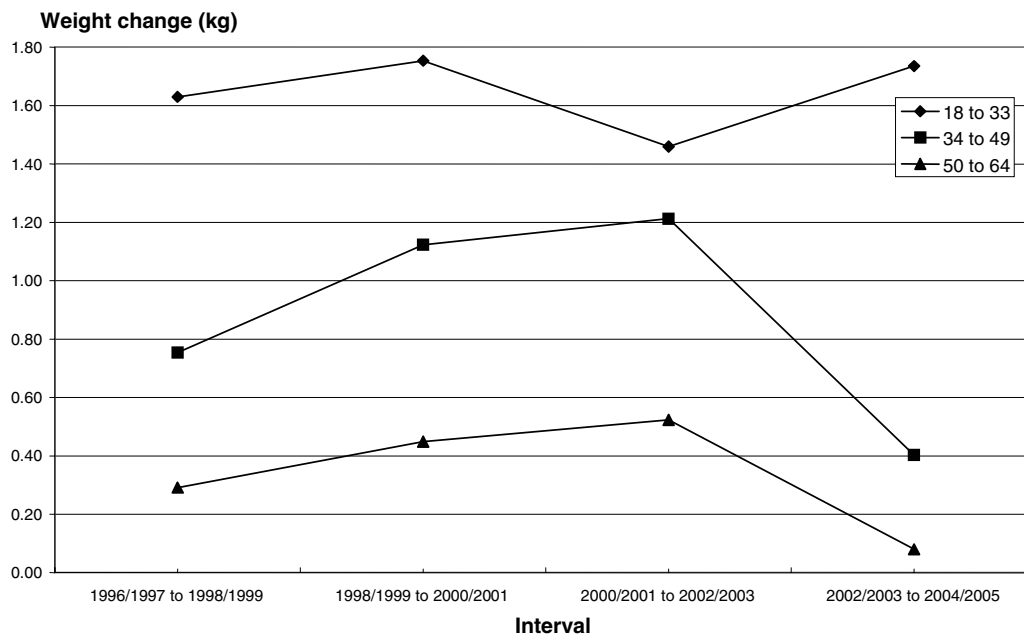
Average two-year change in weight, by age group at beginning of interval, female household population aged 18 to 64, Canada excluding territories, 1996/1997 to 2004/2005



Data Source: National Population Health Survey (1996/1997 to 2004/2005)

Chart 3

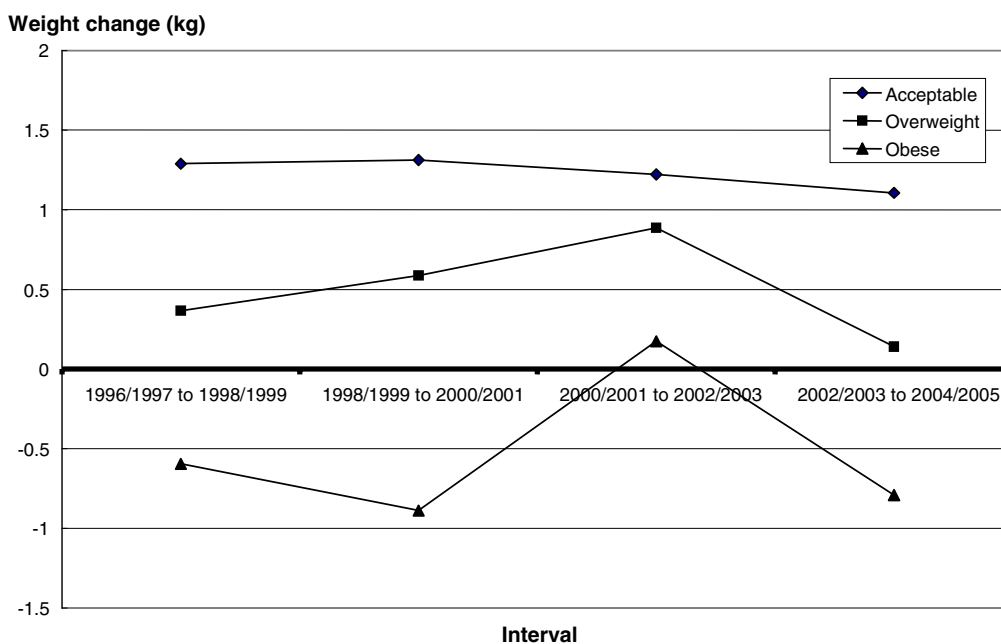
Average two-year change in weight, by age group at beginning of interval, male household population aged 18 to 64, Canada excluding territories, 1996/1997 to 2004/2005



Data Source: National Population Health Survey (1996/1997 to 2004/2005)

Chart 4

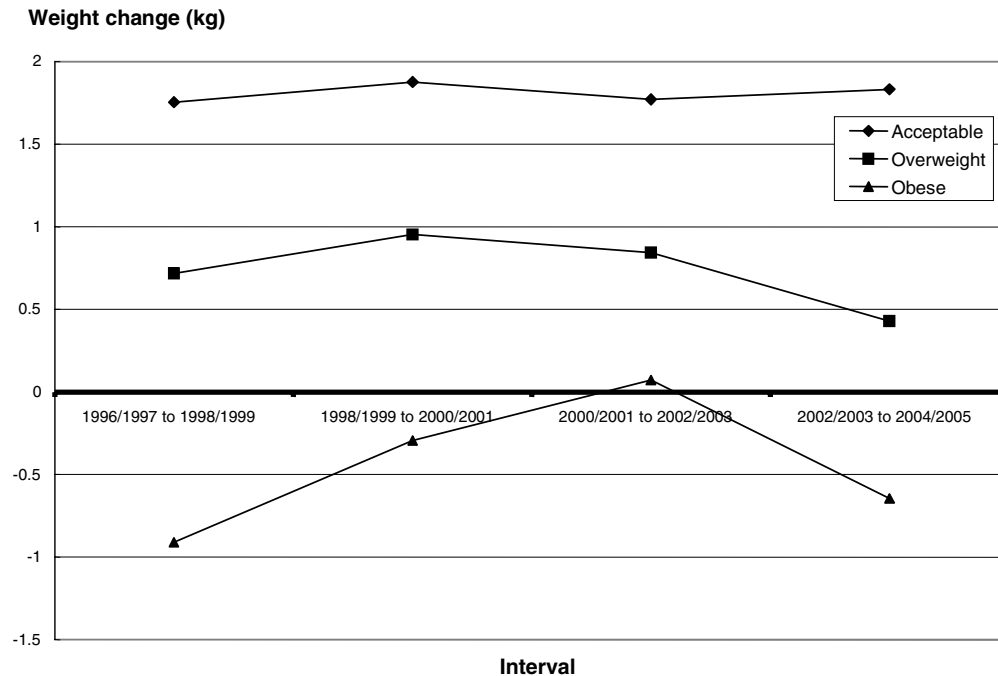
Average two-year change in weight, by body mass index (BMI) category at beginning of interval, female household population aged 18 to 64, Canada excluding territories, 1996/1997 to 2004/2005



Data Source: National Population Health Survey (1996/1997 to 2004/2005)

Chart 5

Average two-year change in weight, by body mass index (BMI) category at beginning of interval, male household population aged 18 to 64, Canada excluding territories, 1996/1997 to 2004/2005



Data Source: National Population Health Survey (1996/1997 to 2004/2005)

How to access National Population Health Survey (NPHS) data

On-site access

Research Data Centres Program

Research Data Centres provide researchers with approved projects access to the microdata from the NPHS. The centres, which also house microdata from other population and household surveys conducted by Statistics Canada, are situated in secure university settings across the country. For more information on the RDC program, visit:

<http://www.statcan.ca/english/rdc/index.htm>

Data Liberation Initiative (DLI)

As part of Statistics Canada's learning resources, the DLI provides a wide range of data and metadata to participating post-secondary educational institutions, allowing their faculty and students unlimited access to numerous Statistics Canada public use microdata files (PUMFs), databases and geographic files. The cross-sectional PUMFs that were produced from each of the first three cycles of the NPHS are part of the DLI collection. For more information on the DLI program, visit: <http://www.statcan.ca/english/Dli/dli.htm>

Off-site access

Remote access

In some instances where access to Research Data Centres is not feasible and the public use microdata files do not provide enough information for their project, researchers can apply for remote access to the NPHS data sets. Once their project is approved, researchers are provided with synthetic data from which they develop and test their computer programs (in SAS or SPSS), and then transmit them to the Health Statistics Division's Data Access and Information Services (DAIS) via a dedicated e-mail address. The programs are run on the secure data servers by DAIS staff, who also vet the outputs for disclosure issues, and return the vetted outputs to the user via e-mail. Remote access to the NPHS data is offered free of charge, but is restricted to projects with demonstrated needs. For more information on remote access to the NPHS, contact the DAIS staff at nphs-ensp@statcan.ca.

Custom tabulations

Custom tabulations based on the NPHS are also available on a cost recovery basis. For more information, contact the Health Statistics Division's Data Access and Information Services at hd-ds@statcan.ca.

Other findings from the National Population Health Survey (NPHS)

The articles below were mostly published in Health Reports. They show, among others, results from the National Population Health Survey longitudinal data. They are listed in chronological order. In order to access these articles, users are required to click on the appropriate Health Reports Volume and number available from the chronological index: Health Reports: at <http://www.statcan.ca/bsolc/english/bsolc?catno=82-003-X&CHROPG=1> and Health Reports – Supplement Chronological index at <http://www.statcan.ca/bsolc/english/bsolc?catno=82-003-S&CHROPG=1>.

Health Reports, Volume 17, no. 1, 2005
Body Mass and Dependency

Health Reports Special Issue, Supplement to Volume 16, 2005
How Healthy are Canadians? 2005 Annual Report: Health at Older Ages
Successful aging in health care institutions
Predictors of death in seniors
Healthy living among seniors

Health Reports, Volume 16, no. 4, 2005
Weekly hours and health-related behaviours in full-time students

Health Reports, Volume 16, no. 3, 2005
The journey to quitting smoking
Youth smoking

Special Issue, Supplement to Volume 15, 2004
How Healthy are Canadians? 2004 Annual Report: Focus on Mental Health
Alcohol and illicit drug dependence

Health Reports, Volume 15, no. 3, 2004
Proxy reporting of health information

Health Reports, Volume 15, no. 1, 2004
Incident arthritis in relation to excess weight
Stress, health and the benefit of social support

Health Reports, Volume 14, no. 4, 2003
Repetitive strain injuries

Health Reports, Volume 14, no. 3, 2003
Social support and mortality in seniors
Tracking diabetes: Prevalence, incidence and risk factors

Health Reports, Volume 14, no. 1, 2002
Moderate alcohol consumption and heart disease

Health Reports, Volume 13, no. 4, 2002

Loss and recovery of independence among seniors
Shift work and health

Health Reports, Volume 13, no. 1, 2001
Determinants of self-perceived health
Patterns of use – alternative health care practitioners

Health Reports, Volume 12, no. 4, 2001
Heart disease, family history and physical activity
Starting and sustaining physical activity

Health Reports, Volume 12, no. 3, 2001
The health divide: How the sexes differ

Health Reports, Volume 12, no. 2, 2001
Migraine

Health Reports, Volume 12, no. 1, 2000
Chronic back problems among workers
Proxy reporting in the National Population Health Survey

Health Reports, Volume 11, no. 4, 2000
Changes in social support in relation to seniors' use of home care

Health Reports, Volume 11, no. 3, 1999
Health among older adults
Health in mid-life
Personal health practices: Smoking, drinking, physical activity and weight
Psychological health – depression

Health Reports, Volume 11, no. 2, 1999
Hormone replacement therapy and incident arthritis
Long working hours and health
The health of lone mothers

Health Reports, Volume 11, no. 1, 1999
Health effects of physical activity

Health Reports, Volume 10, no. 4, 1999
Health care consequences of falls for seniors
The National Population Health Survey – its longitudinal nature

Others: National Population Health Survey Overview, 1996-97 (82-567) at
<http://www.statcan.ca/bsolc/english/bsolc?catno=82-567-X&CHROPG=1>

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