



Catalogue 82-567

National Population Health Survey Overview 1996-97



Statistics
Canada

Statistique
Canada

Canada

Data in many forms

Statistics Canada disseminates data in a variety of forms. In addition to publications, both standard and special tabulations are offered. Data are available on the Internet, compact disc, diskette, computer printouts, microfiche and microfilm, and magnetic tape. Maps and other geographic reference materials are available for some types of data. Direct online access to aggregated information is possible through CANSIM, Statistics Canada's machine-readable database and retrieval system.

How to obtain more information

Inquiries about this publication and related statistics or services should be directed to:

Halifax	(902) 426-5331	Regina	(306) 780-5405
Montreal	(514) 283-5725	Edmonton	(403) 495-3027
Ottawa	(613) 951-8116	Calgary	(403) 292-6717
Toronto	(416) 973-6586	Vancouver	(604) 666-3691
Winnipeg	(204) 983-4020		

You can also visit our World Wide Web site: <http://www.statcan.ca>

Toll-free access is provided for all users who reside outside the local dialling area of any of the Regional Reference Centres.

National enquiries line	1 800 263-1136
National telecommunications device for the hearing impaired	1 800 363-7629
Order-only line (Canada and United States)	1 800 267-6677

Ordering/Subscription information

All prices exclude sales tax

Catalogue no. 82-567-XPB (paper) is published occasionally for \$35.00 in Canada. Outside Canada the cost is US \$35.00. Catalogue no. 82-567-XIB (internet) costs \$26.00 in Canada. Outside Canada the cost is US \$26.00

Please send orders to Statistics Canada, Operations and Integration Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario, K1A 0T6 or by dialing **(613) 951-7277** or **1 800 700-1033**, by fax **(613) 951-1584** or **1 800 889-9734** or by Internet: order@statcan.ca. For change of address, please provide both old and new addresses. Statistics Canada publications may also be purchased from authorized agents, bookstores and local Statistics Canada offices.

Standards of service to the public

To maintain quality service to the public, Statistics Canada follows established standards covering statistical products and services, delivery of statistical information, cost-recovered services and services to respondents. To obtain a copy of these service standards, please contact your nearest Statistics Canada Regional Reference Centre.



Statistics Canada
Health Statistics Division

National Population Health Survey Overview 1996/97

Published by authority of the Minister responsible for Statistics Canada

© Minister of Industry, 1998

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without prior written permission from Licence Services, Marketing Division, Statistics Canada, Ottawa, Ontario, Canada K1A 0T6.

July 1998

Catalogue no. 82-567-XPB

Catalogue no. 82-567-XIE

Catalogue no. 82-567-XIF

ISBN 0-660-5055-4

Frequency: Occasional

Ottawa

Note of Appreciation

Canada owes the success of its statistical system to a long-standing cooperation involving Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

National Population Health Survey Overview 1996/97

Analysts

Marie P. Beudet
Jiajian Chen
Claudio Pérez
Nancy Ross
Kathryn Wilkins

Editors

Mary Sue Devereaux
Nancy Ross
Jason Siroonian
Kathryn Wilkins

Assistant Editor

Hélène Aylwin

Production Manager

Renée Bourbonnais

Production and Composition

Bernie Edwards
Agnes Jones
Micheline Pilon

Data Verification

Dan Lucas

This publication was prepared under the guidance of Gary Catlin, Director, and Larry Swain, Assistant Director, Health Statistics Division, Statistics Canada. The data base on which the analysis is based was created by the National Population Health Survey project team.

The National Population Health Survey (NPHS), a longitudinal survey, re-interviews a group of Canadians every two years. It is the first national health survey of its kind conducted in Canada. The initial wave of data collection—cycle 1—took place from June 1994 to June 1995. Data for cycle 2 were collected from June 1996 to August 1997.

This overview presents selected findings from cycles 1 and 2 (cross-sectional data). More notably, it highlights changes in health observed between these two cycles (longitudinal data). Some of the longitudinal findings illustrate the relationships between health determinants (reported in cycle 1) and health outcomes (reported in cycle 2). For example, the data show relationships between various risk factors such as socioeconomic status and disease incidence. Other longitudinal findings reveal changes in health status that occurred during this two-year period.

Health is influenced by an interplay of physical, social, and environmental factors. The relative stability of these conditions in Canada may produce slow changes in population health. For some diseases, many years may elapse between exposure to causal agents and the onset of perceptible illness. For these reasons, the longitudinal data in this overview presumably exclude changes in population health that are occurring now, but are not observable from only two NPHS cycles. Future waves of the survey will enable the examination of these health dynamics.

In general, the NPHS covers household and institutional residents in all provinces and territories, except persons living on Indian reserves, on Canadian Forces bases, and in some remote areas. This overview, however, pertains only to household residents in the ten provinces. 1996/97 NPHS data for territorial residents are being released separately. An institutional component, also not covered here,

surveys long-term residents of hospitals and residential care facilities (see *Survey design*).

General health

Most Canadians describe their health in favourable terms. When asked about their general health in 1996/97, 63% of those aged 12 or older assessed it as either excellent or very good; only 10% reported fair or poor health.

Other measures collected by the NPHS offer further evidence that people are generally in good health. For example, the Health Utility Index—a measure of functional ability that includes vision, hearing, speech, mobility, dexterity, cognition, emotion, and pain/discomfort—indicates that, on average, Canadians enjoy a high level of functioning. Similarly, in the domain of mental health, NPHS data indicate that most people are generally not troubled by feelings of nervousness, hopelessness, or worthlessness.

Survey design

The 1994/95 NPHS provincial, non-institutional sample consisted of 27,263 households, of which 88.7% agreed to participate in the survey. After the application of a screening rule, 20,725 households remained in scope.¹

One knowledgeable person in every participating household provided general socio-demographic and health information about each household member. Data pertaining to 58,439 individuals were collected.

In addition, one randomly selected person in each of the 20,725 participating households was chosen to provide in-depth information about their own health. In 18,342 of these households, the selected person was aged 12 or older. Their response rate to these in-depth health questions was 96.1%, or 17,626 respondents.

In the remaining 2,383 participating households, the randomly selected respondent was younger than 12. In-depth health information was collected for these children as part of the 1994/95 National Longitudinal Survey of Children and Youth.

Of the 17,626 randomly selected respondents to the in-depth health questions who were aged 12 or older, 14,786 were eligible members of the NPHS longitudinal panel, along with 468 persons for whom only general information was collected. And 2,022 of the 2,383 randomly selected respondents under age 12, were also

eligible. Thus, 17,276 respondents were eligible for re-interview in 1996/97. The remaining respondents were sponsored by provincial governments that elected to enlarge the sample size in their province for cycle 1 only. These respondents were not followed-up.

From the longitudinal panel, a response rate of 93.6% was achieved in 1996/97. Of these 16,168 respondents, 15,670 provided full information, that is, general and in-depth health information for both cycles of the survey. The additional 498 respondents provided partial information (they gave at least general health information in both 1994/95 and 1996/97).

As in cycle 1, additional respondents were surveyed in cycle 2 for cross-sectional purposes only—not as a part of the longitudinal panel. Their one-time participation produced a total of 210,377 respondents to the general health questions in cycle 2 (with 173,216 aged 12 or older and 37,161 under age 12) and 81,804 respondents to the in-depth health questions (with 73,402 aged 12 or older and 8,402 under age 12).

The data used in this analysis were weighted to reflect the sample design, adjustments for non-response, and post-stratification. Variance estimates were calculated using the bootstrap procedure.

Children’s health

Children are among the healthiest members of Canadian society. A full 89% of the population younger than 12 was reported^a to be in excellent or very good health in 1996/97. Mirroring trends in the adult population, however, children’s health varied with household income. The proportion of children reported to be in excellent or very good health was significantly higher for those in the highest household income group, compared with those in the middle or lower groups (Chart 1) (see *Income groups*).

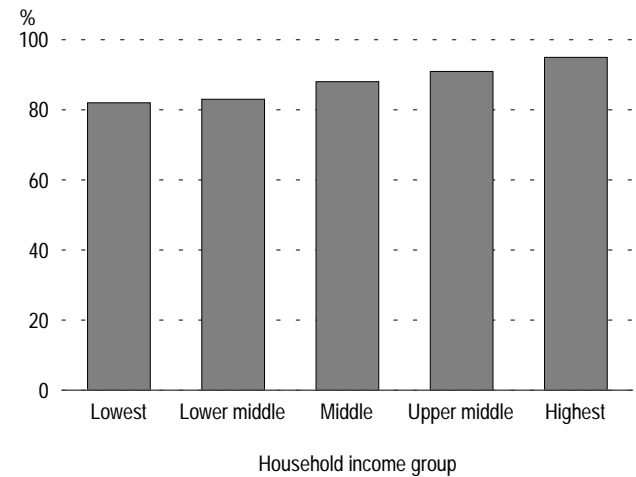
Despite the reports of very good health, nearly one-third of all children reportedly had at least one chronic condition. The most common of these was non-food allergies (14%), followed by asthma (11%) and food allergies (6%).

In the year before the 1996/97 survey, 12% of children had been injured seriously enough to require medical attention. By far, the most frequently reported injury was a cut, scrape or bruise (an estimated 224,000 children), followed by broken or fractured bones (76,000) and sprains/strains (66,000). The majority of injuries happened in or around the home, and most often the injury resulted from an accidental fall.

Like older children, infants and toddlers are generally in good health. Fewer than 10% of children aged 3 or younger were reported to have had frequent nose or throat infections. However, about half of children this age were reported to have experienced ear infections and, of this group, more than half had had three or more such infections since birth.

^a All children’s health questions were proxy-reported. A parent or knowledgeable member of the household provided the information.

Chart 1
Percentage of children younger than 12 reported to have excellent or very good health, by household income group, Canada excluding territories, 1996/97



Data source: National Population Health Survey, Cross-sectional file 1996/97

While generally healthy, infants and toddlers are seen by physicians more often than are older children. This is not surprising, given the regimen of immunization recommended for young children. Infants and toddlers had contact with general practitioners or pediatricians an average of 4.8 times in the 12 months before the 1996/97 survey, compared with 2.8 times for children aged 4 to 11.

Chronic disease incidence

The availability of longitudinal NPHS data makes possible, for the first time, the calculation of disease incidence estimates for the Canadian population. Disease incidence is the number of *n e w* cases occurring during a specific period in a population previously without the disease (that is, the population at risk).

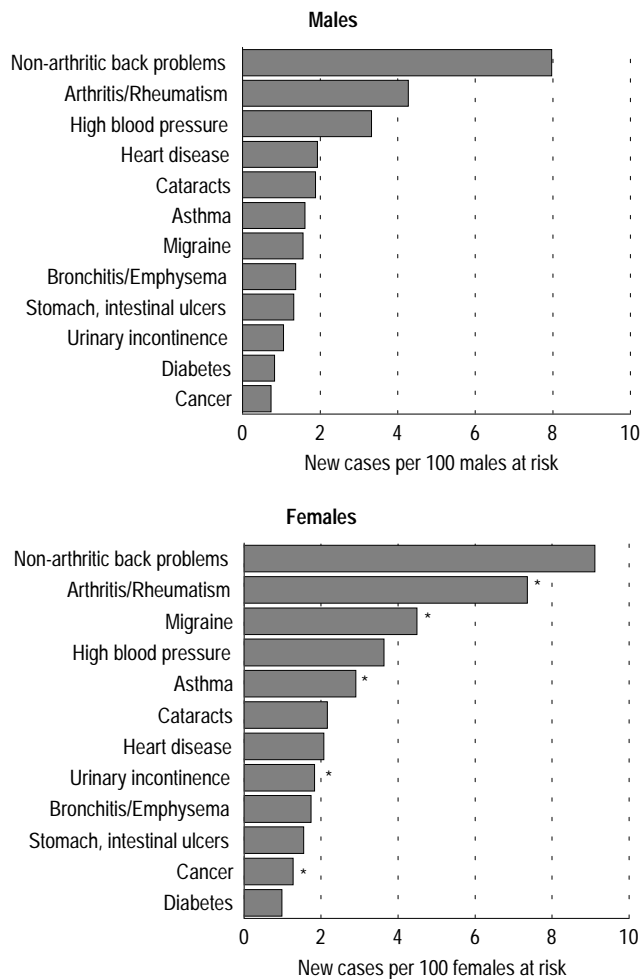
Income groups

Household size	Lowest	Lower middle	Middle	Upper middle	Highest
1 or 2 people	<\$10,000	\$10,000-\$14,999	\$15,000-\$29,999	\$30,000-\$59,999	≥ \$60,000
3 or 4 people	<\$10,000	\$10,000-\$19,999	\$20,000-\$39,999	\$40,000-\$79,999	≥ \$80,000
5 or more people	<\$15,000	\$15,000-\$29,999	\$30,000-\$59,999	\$60,000-\$79,999	≥ \$80,000

Between cycles 1 and 2, the major chronic diseases (covered by the NPHS) with the highest incidence were non-arthritic back problems and arthritis/rheumatism (Chart 2).^b Since cycle 1, nearly 1.8 million new cases of non-arthritic back problems and 1.2 million new cases of arthritis/rheumatism were diagnosed. Among people aged 65 and older, arthritis/rheumatism was the disorder with the highest incidence, occurring in 312,000 who were previously unaffected, followed by cataracts and high blood pressure.

^b Some differences between cycle 1 and cycle 2 data collection procedures may affect the accuracy of disease incidence estimates.

Chart 2
Two-year incidence rate of selected chronic diseases, population aged 12 and older, Canada excluding territories, 1994/95 to 1996/97



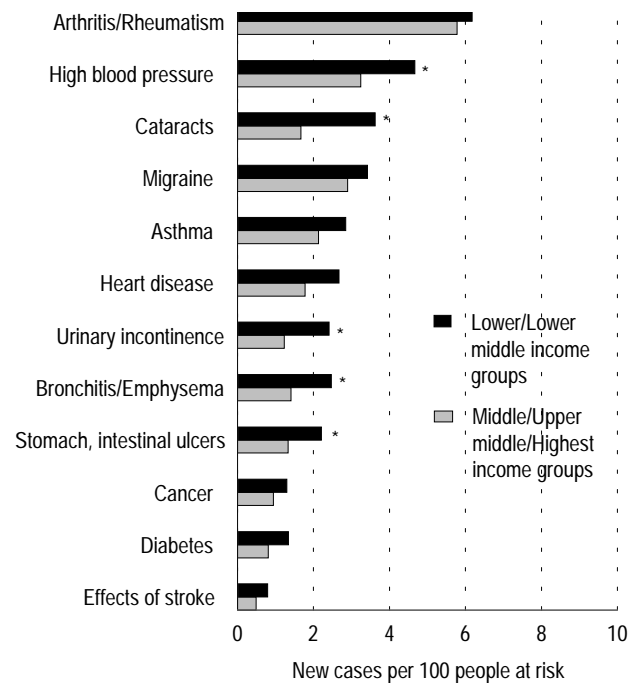
Data source: National Population Health Survey, Longitudinal file cycles 1 and 2
* Incidence rate is significantly higher for females than for males ($p < 0.05$).

Chronic conditions are generally associated with aging, so it is not surprising that the incidence rates of arthritis/rheumatism, heart disease and cancer were higher among seniors than among younger people. However, some chronic conditions are less common at older ages. For example, the incidence rate of migraine headaches was lower among seniors than among younger people.

The estimated incidence rates of most chronic conditions were higher for females than for males, although in some cases, the differences were not statistically significant (Chart 2).

NPHS data reflect the well-established relationship between socioeconomic status and health. For all major chronic diseases measured, estimated incidence rates were higher for people in the two lowest household income groups than for those in the upper three groups (Chart 3). Statistically significant differences in rates occurred for several conditions.

Chart 3
Two-year incidence rate of selected chronic diseases, by household income group, population aged 12 and older, Canada excluding territories, 1994/95 to 1996/97



Data source: National Population Health Survey, Longitudinal file cycles 1 and 2
* Incidence rate is significantly higher for lower/lower middle income groups than for other income groups ($p < 0.05$).

Longitudinal NPHS data enable the analysis of the survival of people with chronic diseases. Among respondents who reported having a chronic condition in cycle 1, some did not live to be re-interviewed during cycle 2. Individuals with cancer experienced the highest death rate. Nearly one in every six people aged 12 to 75 who reported having cancer in 1994/95 died in the following two years. Respondents with heart disease or diabetes also had high death rates.

Socioeconomic status affected people's chances of survival as well as of becoming ill. Being in the two lowest household income groups in 1994/95 was predictive of death before age 75, even after controlling for sex, chronic diseases, and smoking.

Changes in activity limitation status

The abilities required to perform daily activities, both at home and at work, are important aspects of health and quality of life. Deterioration in these abilities can lead to dependence in daily living, institutionalization, and eventually, death. But even at older ages, activity limitations fluctuate, for example, as a person sustains illness or undergoes surgery and then recovers. A better awareness of the dynamics of activity limitations, or the factors associated with the transition from one level of ability to another, might reveal areas in which interventions could prolong independent living (see *Activity limitation, dependence and restriction*).

In 1994/95, most people (95%) aged 12 to 64 who lived in households did not need any help with basic activities of daily living (ADL) or instrumental activities of daily living (IADL). Even at age 65 and older, 71% needed no ADL or IADL help.

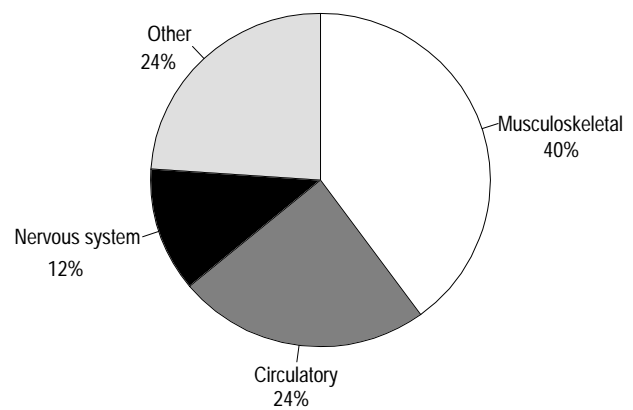
However, when the cohort of seniors was re-surveyed two years later, substantial changes had occurred. Only 55% needed no ADL or IADL help. Another 35% of these seniors needed IADL and/or ADL help, 2% had entered institutional residences, and 8% had died.

One in six seniors (16%) who were free of activity limitation in 1994/95 had become limited by 1996/97. Arthritis/rheumatism and other musculoskeletal disorders accounted for most (40%) new activity limitation, followed by heart or other

circulatory diseases (24%) and by nervous system or sense-related diseases (12%) (Chart 4).

On the other hand, 19% of seniors who had been limited in 1994/95 were no longer limited in 1996/97. Improvements were fairly common even among those who had been seriously affected. For example, one in five seniors who had needed help

Chart 4
Distribution of main conditions among population aged 65 and older not limited in 1994/95 but affected in 1996/97, Canada excluding territories



Data source: National Population Health Survey, Longitudinal file cycles 1 and 2

Activity limitation, dependence and restriction

Activity limitation refers to any long-term physical or mental condition or disability that limits a person's activities at home, at school, at work, or in other settings. *Activity dependence* refers to the need for help (for health reasons) with instrumental activities of daily living (IADL) such as preparing meals, shopping for groceries or other necessities, doing everyday housework, and doing heavy household chores (washing walls, yard work). It also refers to the need for help with basic activities of daily living (ADL) such as personal care (washing, dressing or eating) or moving about inside the house.

Based on information about a respondent's activity limitation and dependence status, an *activity restriction* variable was derived and categorized (from most restricted to no restriction) as follows: ADL-dependent, IADL-dependent, limited in activities but not IADL- or ADL-dependent, and not limited or dependent in activities. Activity restriction status in cycle 2 was defined in the same way as in cycle 1; death and institutionalization were included as separate categories.

only with IADL in 1994/95, and a similar proportion who had been ADL-dependent, no longer required such help two years later.

Interpretation of these findings is somewhat constrained by the unavailability of data on the extent of activity limitation and the duration of IADL- or ADL-dependency. Nonetheless, the results echo American research,^{2,3} suggesting that the capacity of older people to regain function may be more dynamic than might be assumed from cross-sectional data. Although physical decline was observed in many seniors, and is probably inevitable for most over a longer period, the extent of maintaining independence in daily activities or recovery within a two-year interval was far greater than might have been expected.

Determinants of depression

Depression is a relatively common mental disorder. In 1994/95, 5.6% of Canadians aged 12 and older reported symptoms strongly suggesting that they had experienced at least one major depressive episode in the year before their NPHS interview (see *Measuring depression*). The percentage dropped to 4.2% in 1996/97.

In accord with previous studies,^{4,7} the NPHS revealed a higher prevalence of depression in women than men: 7.4% versus 3.7% in cycle 1, and 5.5% versus 2.8% in cycle 2. This pattern is maintained among longitudinal respondents, that is, respondents who participated in both cycles 1 and 2 (Chart 5). Women were also more likely to experience recurring depressive episodes. Nearly three out of four people (72%) who reported a depressive episode in both 1994/95 and 1996/97 were women.

Measuring depression

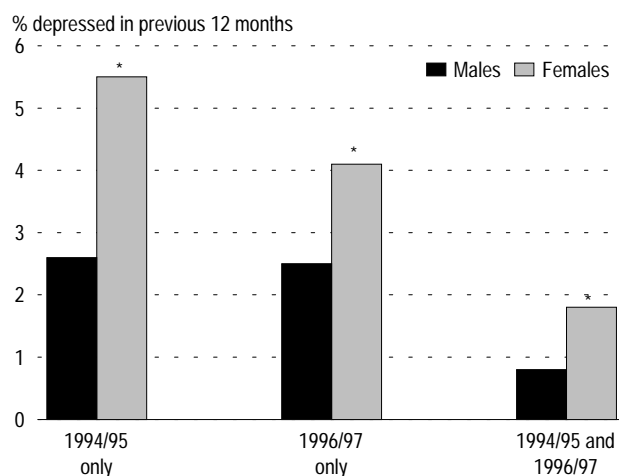
The NPHS measures a *major depressive episode* with a subset of questions from the Composite International Diagnostic Interview.⁸ These questions cover a cluster of symptoms for a depressive disorder, which are listed in the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R).⁹

Depression can be triggered by a stressful life event. For example, almost 9% of respondents aged 18 and older who had not reported a depressive episode in 1994/95, but subsequently experienced the loss of a spouse through separation, divorce or widowhood, reported a depressive episode in 1996/97.

Unstable employment was also associated with depression. Only 3.1% of people aged 18 to 64 who had not reported a depressive episode in 1994/95 and were employed in both cycles 1 and 2 reported an episode in 1996/97. At 4%, the corresponding rate for those who were unemployed in both cycles was not much different. By contrast, the rate of depression was 5.8% among those who were working at the time of their cycle 1 interview, but were employed only intermittently before their cycle 2 interview.^c This rate of depression was significantly higher than that of people who were employed, but not significantly above the rate of the unemployed.

^c People with intermittent work patterns are those who were not working at the time of the 1996/97 interview, but reported having had a job sometime during the previous year.

Chart 5
Percentage with depression, population aged 12 and older, by sex, Canada excluding territories, 1994/95 and 1996/97



Data source: National Population Health Survey, Longitudinal file cycles 1 and 2

* Percentage is significantly higher for females than for males ($p < 0.05$).

Repetitive strain injuries

In response to growing awareness of occupational and other overuse injuries arising from repetitious muscular effort, cycle 2 included questions to measure the incidence of repetitive strain injuries (RSIs) such as carpal tunnel syndrome, tennis elbow, tendinitis, and back injury. An estimated 2 million Canadians aged 12 and older (8%) reported having an RSI in the 12 months before their 1996/97 interview. Injuries to the back or spine accounted for the greatest share (20%) of RSIs among men, while injuries to the wrist, hand or fingers were the most common (25%) among women. For both sexes, the greatest proportion of RSIs occurred at work or school. The second highest percentage for men was sustained during sports or leisure activities, and for women, in the home.

Other injuries

Other serious (non-repetitive strain) injuries were reported by 2.6 million people aged 12 and older. Accidental falls were the most frequent cause, accounting for 39% of such injuries among men and 51% among women. Most serious injuries resulted in sprains or strains. Broken bones were the second most common type of injury, reported by 622,000 people.

According to data from people followed over the two-year period, age and level of leisure time physical activity were predictive of injury. For people aged 12 to 34 and for people categorized as physically active, the odds were about 50% higher that they would have sustained a non-repetitive strain injury than for people aged 35 and older or for people who were less physically active.

Almost one-quarter (24%) of men who had experienced an injury in 1994/95 had also experienced an injury in 1996/97; the corresponding figure for women was 17%. Even after considering other related factors, including age, household income, leisure time physical activity level and alcohol use, being injured in 1994/95 remained a strong predictor of injury in 1996/97. This may reflect injury 'proneness' among some people, perhaps arising from behavioural traits or the physical demands of their job, or perhaps from

lingering frailty due to previous injury. Although it is possible that some people reporting injury in both periods were referring to the same injury, the survey was designed to measure new occurrences in each reference period.

Alcohol dependence

In 1996/97, an estimated 438,000 individuals aged 12 and older reported a level of alcohol use suggestive of dependence (see *Alcohol dependence*). The rate of alcohol dependence was higher among males than females, at 2.6% and 1%, respectively; and was highest at ages 18 to 24: 9.9% for men and 5.2% for women.

Like many other illnesses, susceptibility to alcohol dependence is, in part, rooted in heredity.¹⁰⁻¹² Reliance on alcohol as a coping mechanism may also be learned.¹³ The NPHS provides evidence of an association between alcohol dependence and a history of family alcohol problems. Respondents aged 18 and older who reported that during their youth they had experienced problems caused by a parent's abuse of alcohol or other drugs had more than twice the odds of reporting alcohol use suggestive of dependence than did respondents who did not report such problems. This was the case even after accounting for sex, age, education, change in marital status or living arrangements between 1994/95 and 1996/97, decrease in household income, and gaps in employment.

People with alcohol dependence tend to be at relatively high risk of injury. About 24% of respondents aged 12 and older whose drinking patterns suggest alcohol abuse reported a serious injury in cycle 2, compared with 11% of those who

Alcohol dependence

The NPHS assesses *alcohol dependence* with a set of nine questions developed by Kessler et al.¹⁴ The questions operationalize Criterion A and Criterion B of the DSM-III-R diagnosis of Psychoactive Substance Use Disorder. These questions were asked only of respondents who reported that they had consumed five or more drinks, at least once a month, during the previous 12 months.

did not drink excessively. After taking into account sex, age, education, change in marital status and living arrangements, decrease in household income, and employment gaps, the odds of injury for alcohol abusers were twice as high as for non-abusers.

Smoking initiation and re-initiation

Between cycles 1 and 2, the overall prevalence of smoking in Canada continued to decline. About 6.7 million people, or 29% of the household population aged 15 and older, were smokers in 1996/97, down from 31% in 1994/95. In contrast to a decline among adults, the percentage of 15- to 17-year-olds who smoked rose from 23% to 26%, although this change was not a statistically significant increase.

Nearly one million Canadians aged 15 and older who did not smoke in 1994/95 had become daily or occasional smokers two years later. Around two-thirds of them were “relapsed smokers,” meaning that although they did not smoke in 1994/95, they reported then that they had smoked in the past. The rest (some 346,000 people) had started smoking for the first time. Youths aged 15 to 19 made up a disproportionate share of this group. Although in cycle 1, youths represented only 13% of all people

who had never smoked, in cycle 2, half of all new smokers were from this age group. Initiation of smoking, either on a daily or occasional basis, was much higher among teenagers younger than 18 (13%) and among those aged 18 or 19 (16%) than among people aged 20 and older (2%).

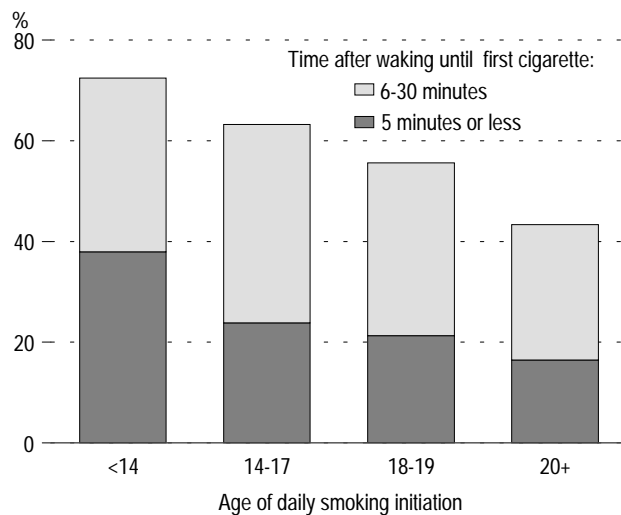
New evidence from the 1996/97 NPHS further strengthens the association between age of onset of daily smoking and nicotine dependence. Smoking the first cigarette of the day within 30 minutes of waking is regarded as an indicator of nicotine dependence.¹⁵⁻¹⁷ Among people aged 21 to 49 who had become daily smokers before age 14, 72% light their first cigarette within 30 minutes of waking (Chart 6). By contrast, just 43% of daily smokers in the same age group who began when they were 20 or older have their first cigarette within the first half hour after waking. This relationship persists even after taking into account the effects of educational level, sex, household income, occurrence of major depression, and distress.

Changes in the health of respondents between cycles 1 and 2 suggest that smoking is related to elevated risks of limitations in daily activities due to respiratory, heart or other circulatory diseases, and of death. The deleterious effects of smoking persist, even after accounting for the influence of age, sex, education, and household income. Among people who had not been limited in their daily activities in 1994/95, the odds of developing activity limitation due to respiratory diseases were twice as high for those who smoked regularly as for those who never smoked. Finally, the odds that current smokers aged 45 to 84 in cycle 1 would have died by cycle 2 were twice as high as for people this age who reported that they had never smoked.

Protective effects of physical activity

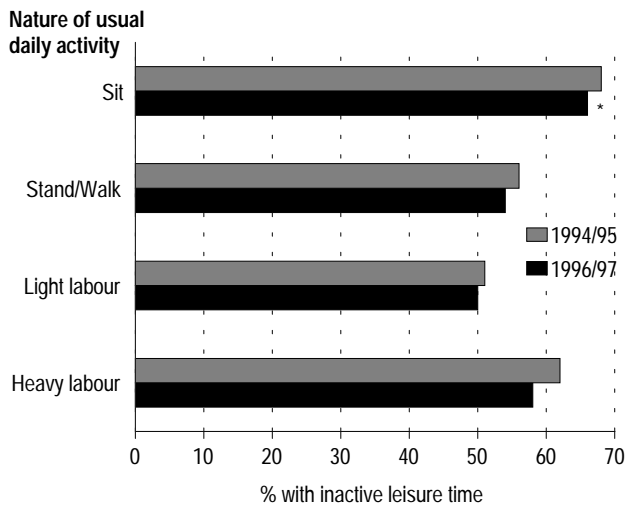
Whether in the home or on the job, the daily activities of most Canadians do not require intense physical exertion. The 1996/97 NPHS shows that the routine daily activities of 95% of the population aged 12 and older, or 22.6 million people, involved only light physical effort.

Chart 6
Smoking dependence, by age of initiation of daily smoking, current daily smokers aged 21 to 49, Canada excluding territories, 1996/97



Data source: National Population Health Survey, Cross-sectional file 1996/97

Chart 7
Percentage of population aged 12 and older with inactive leisure time, by nature of usual daily activity, Canada excluding territories, 1994/95 and 1996/97



Data source: National Population Health Survey, Cross-sectional files 1994/95 and 1996/97
 * Percentage with inactive leisure is significantly lower than in 1994/95.

Leisure time activity

The level (or intensity) of *leisure time physical activity* was defined in the NPHS based on energy expenditure (EE): “active” is ≥ 3 kcal/kg/day (KKD); “moderate” is 1.5 to 2.9 KKD; “inactive” is < 1.5 KKD. EE was estimated for each activity in which respondents engaged during their leisure time and was calculated by multiplying by four the number of times they took part in an activity over the previous three months, by the average duration in hours, and by the energy requirement of the activity (expressed in kilocalories expended per kilogram of body weight per hour of activity.) To calculate an average daily EE for the activity, the estimate was divided by 365. This calculation was repeated for all activities engaged in by each individual, and the resulting estimates were summed as the total daily EE for that individual.

The frequency (or regularity) of leisure time physical activity was based on the number of times respondents participated in a physical activity that lasted more than 15 minutes in the previous three months: regular = 12 or more times per month; occasional = 4 to 11 times per month; infrequent = 3 or fewer times per month. In multivariate analysis, based on both the level and frequency of activity, respondents were grouped as: active (including moderate) and regular; inactive but regular; occasional; or sedentary (i.e., infrequent).

Furthermore, people with relatively sedentary daily activities are the most likely to be physically inactive in their leisure time (see *Leisure time activity*). In 1996/97, 66% of people whose usual daily activities involved mostly sitting engaged in leisure pursuits requiring such a low level of energy expenditure that they were categorized as “inactive.” This represented a small decrease from 1994/95, when 68% of this group fell in the inactive category (Chart 7).

Inactive leisure time is associated with having been diagnosed with heart disease. Among people who in 1994/95 reported excellent or very good health and no heart disease, those who were sedentary in their leisure time had five times the odds of developing heart disease over the next two years as did moderately active or active people at the same levels of self-reported health. This association persisted even after accounting for the effects of age, sex, educational level, household income, smoking, high blood pressure, and presence of disability.

Inactive leisure time is also associated with depression, even after controlling for the effects of age, sex, education, household income, and presence of disability. Among people who in 1994/95 reported excellent or very good health and did not report a depressive episode, those who were sedentary in their leisure time had 1.7 times the odds of experiencing such an episode before cycle 2 as did people who were at least moderately active.

Both heart disease and depression have complex origins and usually develop over a long period. The NPHS findings linking a sedentary activity level to the incidence of these disorders in the space of only two years cannot establish causality, especially without information on duration of physical activity. However, the direction of the associations from the longitudinal data is compelling and underscores the importance of at least moderate activity in maintaining good health.

Routine check-ups

An annual medical physical exam, it is commonly assumed, is essential for safeguarding health. But in 1979, the Canadian Task Force on the Periodic

Health Examination recommended that check-ups involving a standard set of tests and examinations be dropped for asymptomatic, low-risk individuals, and that preventive maneuvers and detection techniques be customized to the age, sex, health, and risk status of the patient.¹⁸ The Task Force further recommended that medical exams should not be routinely scheduled at fixed intervals, but administered in the course of visits to the doctor for specific health concerns.

Despite these recommendations, NPHS data suggest that routine annual check-ups are still common. In 1996/97, most respondents aged 12 and older reported having had a check-up within the last three years: 53% of them annually, and 17%, every two years. Certainly, some people may save various health questions to discuss with their doctor during the yearly visit, which may ultimately result in fewer consultations. However, 60% of people who reported that they had received physical check-ups, but had no specific health concerns, normally go to their doctor once a year, compared with 38% of those who claim to have always gone for specific problems. Of those who were asked why they normally go for a physical exam, only 11% said that, among other reasons, they went for specific tests (such as blood pressure measurement or a Pap test); most (60%) wanted to “make sure everything is OK.”

People with known health problems, or at clear risk of developing them, might be expected to get check-ups more often than those in good health or at low risk. Four groups with specific health risks were identified and studied in terms of reported check-up frequency: physically inactive people, heavy drinkers (those who, more often than once a month in the last year, had consumed at least five drinks on one occasion), daily smokers, and people reporting at least one chronic condition.

People reporting at least one chronic condition or sedentary leisure time activities had gone for a check-up more frequently and more recently than the general population, while the opposite was true for heavy drinkers and daily smokers. For heavy drinkers and daily smokers who had not seen a

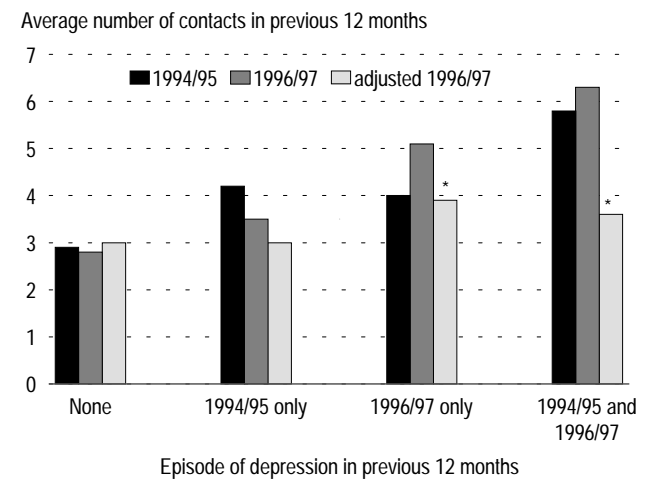
physician for an exam in more than three years, the most stated reason was the same as for general population: they did not think it was necessary.

Recurring depression and doctor visits

People who suffer recurring depression contact physicians relatively often. In the year before their 1996/97 interview, respondents who reported experiencing depression in both cycles had, on average, three more contacts with a doctor than did those who reported no depression in either cycle or those who had experienced depression in 1994/95 only. Even after accounting for previous health care utilization,^d number of chronic diseases, sex and age, the adjusted average number of doctor contacts (3.7) among recurring depression sufferers exceeded that of people not reporting a depressive episode in either cycle (3.0) and that of people who reported depression in 1994/95 only. Similarly, people who experienced a depressive episode in cycle 2 had a higher number of doctor contacts (3.9) than those not reporting depression or reporting an episode in 1994/95 only (Chart 8).

^d Indicators of utilization were: number of physician contacts in 1994/95; four or more contacts with a health care professional for emotional or mental health in 1994/95; number of contacts with a health care professional for emotional or mental health in 1996/97; and use of anti-depressant medication in 1996/97.

Chart 8
Average number of contacts with physicians, by depression, population aged 12 and older, Canada excluding territories, 1994/95 and 1996/97



Data source: National Population Health Survey, Longitudinal file cycles 1 and 2

* Average number of contacts is significantly higher than among people reporting no depressive episode or depressive episode in 1996/97 only (p < 0.05).

Blood pressure

The diagnosis of even mild high blood pressure is often an early warning of the eventual development of serious hypertension. Elevated blood pressure increases the risk of circulatory problems, such as stroke, congestive heart failure, and aortic aneurysm rupture. Blood pressure measurement is universally accessible to Canadians. In 1996/97, 91% of people aged 12 and older reported having had their blood pressure taken sometime during their life, and 68% within the year before the interview.

In people with high blood pressure, the risk of cardiovascular disease is compounded by the presence of other risk factors. Regular blood pressure monitoring is thus particularly important for the elderly, physically sedentary individuals, smokers, and men. The proportions of people having their blood pressure checked in the previous two years were greater at older ages. As well, compared with people who were active in their leisure time, the percentage of individuals reporting low or moderate leisure time activity who had recently been checked was higher. However, the recency of blood pressure checks did not vary with daily, occasional or non-smoking status. And despite being at higher risk of circulatory disease, a smaller proportion of men than women reported having their blood pressure measured within the last two years. Most of this gap is attributable to differences at ages 15 through 34, when circulatory disease risk is relatively low. For example, at ages 20 to 24, 61% of men, compared with 83% of women, reported having had their blood pressured measured within the past two years.

Mammograms

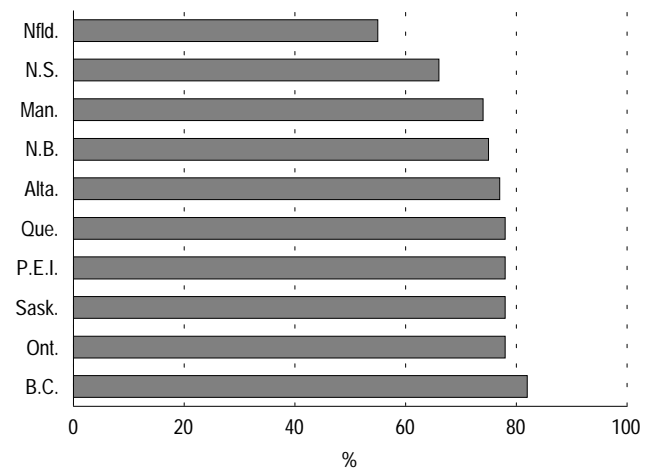
The lifetime mammography rate at ages 50 to 69, the target group of provincial screening programs, was 77% in 1996/97, compared with 73% two years earlier. Relatively few women reported having difficulty obtaining a mammogram.

Mammography rates for women in the target age group varied by province and socioeconomic status. In 1996/97, the lifetime rate was significantly lower in Newfoundland (56%) than in all other provinces except Nova Scotia (65%) (Chart 9). Mammography

rates were also highest among women in the upper middle and highest household income groups (Chart 10).

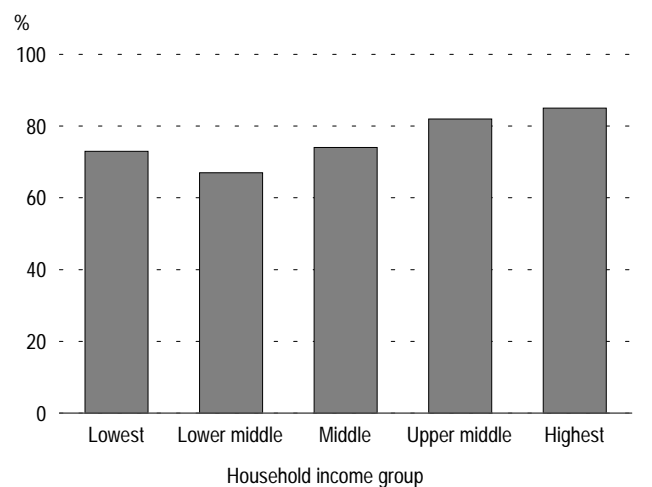
To achieve population-wide reductions in death from breast cancer, it is recommended¹⁸ that women aged 50 to 69 undergo mammography screening every two years. While the majority (80%) of women in this age group who had ever had a mammogram had done so in the previous two years,

Chart 9
Percentage of women aged 50 to 69 who ever had a mammogram, by province, 1996/97



Data source: National Population Health Survey, Cross-sectional file 1996/97

Chart 10
Percentage of women aged 50 to 69 who ever had a mammogram, by household income group, Canada excluding territories, 1996/97



Data source: National Population Health Survey, Cross-sectional file 1996/97

20% reported that their most recent one had been more than two years earlier. The most common reasons women cited for not having had a mammogram in the past two years were that they did not think it was necessary (53%); they did not get around to it (24%); and their physician thought it was unnecessary (12%).

Pap tests

Canadian guidelines recommend cervical cancer screening by the Papanicolaou (Pap) test following the initiation of sexual activity or at age 18, whichever occurs first. After two normal smears (done one year apart), the recommended screening frequency is every three years until age 69.¹⁸

Most women have had at least one Pap test. In 1996/97, the lifetime rate for women aged 18 and older was 84%, up from 82% in 1994/95. The majority indicated that they had received their Pap test as part of a regular check-up or routine screening rather than for diagnostic purposes.

As was the case for mammography, Pap smear rates varied by socioeconomic status (Chart 11). Lifetime rates for women aged 18 and older ranged

from 75% of those in the lowest household income group to 90% for those in the highest.

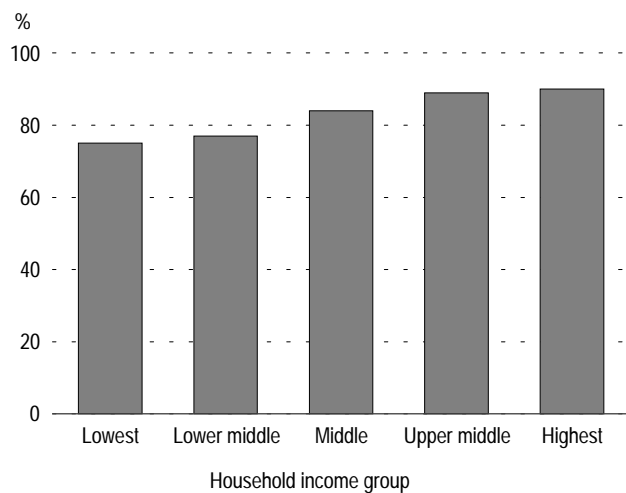
Supplemental health insurance

The majority (76%) of Canadians aged 12 and older reported having at least some type of supplemental health insurance covering all or part of their expenses related to prescription drugs, dental care, private/semi-private hospital rooms, or eyeglasses/contact lenses. The most common type of insurance was for prescription drugs (which includes private, government, and employer-paid plans), with 61% of Canadians having coverage. Dental insurance was the next most common (53%), followed by extended hospital insurance (48%), and insurance covering eyeglasses/contact lenses (44%).

Not surprisingly, having supplemental health insurance was related to socioeconomic status. A relatively large proportion of people in lower household income groups had no supplemental coverage. By contrast, people with “complete” coverage made up larger proportions of the upper-middle and highest household income groups.

Having dental insurance has a major impact on the use of dental services. Canadians who were not insured were much less likely to have had contact with a dentist. Fully 58% of those without dental insurance had not seen a dentist in the year before their cycle 2 interview, compared with 28% of those who were insured. People with dental insurance reported an average of 1.5 visits in the 12 months before being surveyed; those without insurance averaged less than a single visit (0.8).

Chart 11
Percentage of women aged 18 and older who ever had a Pap test, by household income group, Canada excluding territories, 1996/97



Data source: National Population Health Survey, Cross-sectional file 1996/97

Use of American health care services

According to cycle 2 data, approximately 0.5% of Canadians (about 135,000 people) reported receiving health care in the United States in the previous 12 months. The proportion was higher for those aged 55 and older, 0.9% of whom indicated that they had used American health care services. An estimated 0.1%, or 27,000 Canadians, reported going to the U.S. *specifically* for health care.

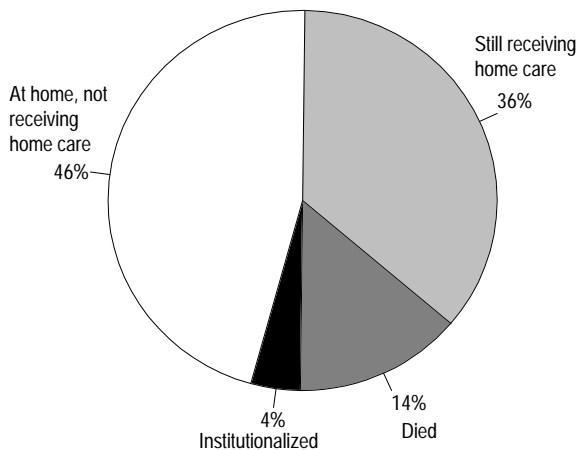
Home care

In 1996/97, close to 545,000 people aged 18 and older (2.5%) received some type of government-supported home care. This was nearly the same as in 1994/95 when the number of recipients was estimated at nearly 523,000 (2.4%). As might be expected, a higher percentage of seniors than people younger than age 65 were receiving home care.

Just over one-third (36%) of people who received home care in cycle 1 were still receiving services in cycle 2. However, a larger share (46%) were living at home and no longer receiving home care. Another 14% of home care recipients had died, and 4% had entered institutional care facilities (Chart 12).

Two-thirds of home care recipients in 1996/97 had not been getting these services two years earlier. Becoming a new home care recipient was related not only to physical need but also social and socioeconomic conditions. Among numerous characteristics considered, the following were predictive of entering home care service arrangements: being in one of the two lowest household income groups (in 1994/95), being 65 or older, no longer living with a spouse or family members, being diagnosed with cancer, and developing a need for assistance with personal care (e.g., washing, dressing, eating). These factors

Chart 12
Status in 1996/97 of people who received home care in 1994/95, Canada excluding territories



Data source: National Population Health Survey, Longitudinal file cycles 1 and 2

remained predictive even after controlling for sex, diagnosis of other specific diseases, occurrence of serious injury, and smoking.

Only a fraction of the burden of caring for people at home can be reflected by statistics on formalized home care. Recent data from the General Social Survey show that most care in the home is given informally, usually by female family members.¹⁹

Concluding remarks

The availability of longitudinal data from the National Population Health Survey provides the opportunity to study the effects of numerous factors on health outcomes. In addition, cross-sectional data offer new information on areas of health and health care access.

As is well known, the incidence of most chronic diseases rises with age, and this was observed from the NPHS data. However, the data also show that in the space of two years, a substantial proportion of seniors who experienced activity limitations recovered or returned to a higher level of functioning in their daily activities. It therefore appears that the degree to which rehabilitation or improvement in health occurs in this age group may commonly be underestimated.

The consistency with which low income is associated with a variety of chronic conditions is compelling and adds to the evidence of the complex of factors that influence the incidence of disease. The importance of socioeconomic status is also evident in the use of preventive screening among women and in the health status of children. In addition, distressing life events, such as the loss of a spouse or unstable employment, affect health. And not surprisingly, NPHS data show that susceptibility to depression is heightened after enduring such difficulties.

Most Canadians do not exercise vigorously, but NPHS data suggest that those who do have a greater likelihood of avoiding heart disease, as well as depression. Preventing such serious disorders may compensate for the somewhat increased occurrence of injury observed among physically active people.

Childhood experiences also have a lasting influence on health. People who have had an

alcoholic parent are more likely to abuse alcohol themselves. Children who begin to smoke as young adolescents are, at least by some indicators, addicted to smoking to a greater degree than people who started later. The damaging effects of smoking on health are common knowledge. NPHS data showing higher incidence of disability due to heart and lung disease, and even, death among smokers offer a stark reminder of the harm that smoking causes.

This overview represents only a few of the findings that have emerged after just two years of follow-up. An understanding of the dynamic processes affecting health will improve over time as additional information is accumulated from subsequent cycles of the NPHS.

References

- 1 Tamblay J-L, Catlin G. Sample design of the National Population Health Survey. *Health Reports* (Statistics Canada, Catalogue 82-003) 1995; 7(1): 29-38.
- 2 Manton KG, Corder LS, Stallard E. Estimates of change in chronic disability and institutional incidence and prevalence rates in the U.S. elderly population from the 1982, 1984, and 1989 National Long Term Care Survey. *Journal of Gerontology* 1993; 48(4): S153-66.
- 3 Crimmins EM, Saito Y. Getting better and getting worse. *Journal of Aging and Health* 1993; 5(1): 3-36.
- 4 Bland RC, Newman SC, Orn H. Period prevalence of psychiatric disorders in Edmonton. *Acta Psychiatrica Scandinavica* 1988; 77(338 suppl): 33-42.
- 5 Kovess V, Murphy HBM, Tousignant M. Urban-rural comparisons of depressive disorder in French Canada. *Journal of Nervous and Mental Disorders* 1987; 175: 457-66.
- 6 Weissman MM, Leaf PJ, Tischler GL, et al. Affective disorder in five United States communities. *Psychological Medicine* 1988; 18: 141-83.
- 7 Weissman MM, Klerman GL. Sex differences and the epidemiology of depression. *Archives of General Psychiatry* 1987; 34: 98-110.
- 8 Kessler RC, McGonagle KA, Zhao S, et al. Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: Results from the National Comorbidity Survey. *Archives of General Psychiatry* 1994; 51(1): 8-19.
- 9 American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 3rd rev.ed. Washington, D.C.: American Psychiatric Association, 1987.
- 10 Kendler KS, Davis CG, Kessler RC. The familial aggregation of common psychiatric and substance use disorders in the National Comorbidity Survey: A family history study. *British Journal of Psychiatry* 1997; 170: 541-8.
- 11 Schuckit MA, Smith TL, Tipp JE. The self-rating of the effects of alcohol (SRE) form as a retrospective measure of the risk for alcoholism. *Addiction* 1977; 92(8): 979-88.
- 12 Schuckit MA, Tipp JE, Bergman M, et al. Comparison of induced and independent major depressive disorders in 2,945 alcoholics. *American Journal of Psychiatry* 1997; 154(7): 948-57.
- 13 Light JM, Irvine KM, Kjerulf L. Estimating genetic and environmental effects of alcohol use and dependence from a national survey: A "quasi-adoption" study. *Journal of Studies on Alcohol* 1996; 57(5): 507-20.
- 14 Kessler RC, Andrews G, Mroczek D, et al. The World Health Organization Composite International Diagnostic Interview Short-Form (CIDI-SF). *Psychological Medicine* (In press).
- 15 Son BK, Markovitz JH, Winders S, et al. Smoking, nicotine dependence, and depressive symptoms in the CARDIA study: Effects of educational status. *American Journal of Epidemiology* 1997; 145(2): 110-6.
- 16 Heatherton TF, Kozlowski LT, Frecker RC, et al. Measuring the heaviness of smoking: Using self-reported time to the first cigarette of the day and number of cigarettes smoked per day. *British Journal of Addiction* 1989; 84: 791-9.
- 17 Fagerstrom KO. Measuring degree of physical dependence to tobacco smoking with reference to individualization of treatment. *Addictive Behaviors* 1978; 3: 235-41.
- 18 Canadian Task Force on the Periodic Health Examination. *The Canadian Guide to Clinical and Preventive Health Care* (Health Canada, Catalogue H21-117/1994E) Ottawa: Supply and Services Canada, 1994.
- 19 General Social Survey. *Who Cares? Caregiving in the 1990s* (Statistics Canada, Catalogue 11-612E) Ottawa: Minister of Industry, 1997.



To order the products listed below, contact:

Marketing Division, Sales and Service
 Statistics Canada
 Ottawa, Ontario
 K1A 0T6
 Telephone: (613) 951-7277
 1-800-267-6677, toll-free in Canada
 Fax: (613) 951-1584,
 or visit our site on the internet, [www@statcan.ca](http://www.statcan.ca)

Title	Catalogue number	Format	Price [†]		
			Canada	US (\$ US)	Other countries (\$ US)
Health Reports · subscription · single issue	82-003-XPB	Paper	\$116	\$116	\$116
			\$ 35	\$ 35	\$ 35
	82-003-XIE	Internet	\$ 26	\$ 26	\$ 26
Health Indicators	82-221-XDE	Diskette	\$250	\$250	\$250
Births					
Births and Deaths [‡]	84-210-XPB	Paper	\$35	\$35	\$35
	84-210-XMB	Microfiche	\$25	\$25	\$25
	84-210-XIB	Internet	\$26	\$26	\$26
Reproductive Health: Pregnancies and Rates, Canada, 1974-1993	82-568-XPB	Paper	\$32	\$39	\$45
Selected Birth and Fertility Statistics, Canada, 1921-1990	82-553-XPB	Paper	\$40	\$48	\$56
General Summary of Vital Statistics	84F0001-XPB	Paper	\$30	\$30	\$30
Cancer					
Cancer in Canada [‡]	82-218-XPB	Paper	\$25	\$30	\$35
Cancer Incidence in Canada, 1969-1993	82-566-XPB	Paper	\$42	\$42	\$42
Deaths					
Births and Deaths [‡]	84-210-XPB	Paper	\$35	\$42	\$49
	84-210-XMB	Microfiche	\$25	\$30	\$35
	84-210-XIB	Internet	\$26	\$26	\$26
Mortality - Summary List of Causes	84-209-XPB	Paper	\$31	\$31	\$31
Selected Mortality Statistics, Canada, 1921-1990	82-548-XPB	Paper	\$40	\$48	\$56
Selected Infant Mortality and Related Statistics, Canada, 1921-1990	82-549-XPB	Paper	\$40	\$48	\$56
Causes of Death	84-208-XPB	Paper	\$62	\$62	\$62
Leading Causes of Death	84-503-XPB	Paper	\$30	\$30	\$30
General Summary of Vital Statistics	84F0001-XPB	Paper	\$30	\$30	\$30

[†] All prices exclude sales tax.

[‡] Discontinued; back issues available.

Title	Catalogue number	Format	Price [†]		
			Canada	US (\$ US)	Other countries (\$ US)
Divorce					
Divorces [‡]	84-213-XPB	Paper	\$30	\$36	\$42
	84-213-XMB	Microfiche	\$25	\$30	\$35
Hospitals					
Hospital Indicators [‡]	83-246-XPB	Paper	\$60	\$72	\$84
	83-246-XMB	Microfiche	\$45	\$54	\$63
Hospitalization					
Hospital Morbidity and Surgical Procedures [‡]	82-216-XPB	Paper	\$40	\$48	\$56
	82-216-XMB	Microfiche	\$35	\$42	\$49
Canadian Classification of Diagnostic, Therapeutic and Surgical Procedures and Treatments	82-562-XPB	Paper	\$40	\$48	\$56
Life Expectancy					
Life Tables, Canada and Provinces, 1990-1992	84-537-XPB	Paper	\$40	\$48	\$56
	84-537-XDB	Diskette	\$40	\$40	\$40
Marriage					
Marriages [‡]	84-212-XPB	Paper	\$30	\$36	\$42
	84-212-XMB	Microfiche	\$25	\$30	\$35
Selected Marriage Statistics, 1921-1990	82-552-XPB	Paper	\$40	\$48	\$56
The Decline of Marriage in Canada, 1981 to 1991	84-536-XPB	Paper	\$36	\$44	\$51
Mental Health					
Mental Health Statistics [‡]	83-245-XPB	Paper	\$15	\$18	\$21
National Population Health Survey					
National Population Health Survey Overview 1994-95	82-567-XPB	Paper	\$10	\$12	\$14
	82-567-XIB	Internet	\$ 8	\$ 8	\$ 8
National Population Health Survey Overview 1996-97	82-567-XPB	Paper	\$35	\$35	\$35
	82-567-XIB	Internet	\$26	\$26	\$26
Nursing					
Nursing in Canada 1995: Registered Nurses [‡]	83-243-XPB	Paper	\$30	\$36	\$42
	83-243-XMB	Microfiche	\$25	\$30	\$35
Residential Facilities					
Residential Care Facilities [‡]	83-237-XPB	Paper	\$35	\$42	\$49
	83-237-XMB	Microfiche	\$25	\$30	\$35

[†] All prices exclude sales tax.

[‡] Discontinued, back issues available.

Title	Catalogue number	Format	Price†		
			Canada	US (\$ US)	Other countries (\$ US)
Therapeutic Abortion					
Selected Therapeutic Abortion Statistics, 1970-1991	82-550-XPB	Paper	\$40	\$48	\$56
Therapeutic Abortions	82-219-XPB	Paper	\$31	\$31	\$31
	82-219-XMB	Microfiche	\$26	\$26	\$26



Health Statistics Division provides a custom tabulation service to meet special resource needs and supplement published data on a fee-for-service basis. Custom tables can be created using a variety of health and vital statistics data sources maintained by the Division.

To order custom tabulations, contact:

Client Custom Services Unit
 Health Statistics Division
 Statistics Canada
 Ottawa, Ontario
 K1A 0T6
 Telephone: (613) 951-1746
 Fax: (613) 951-0792

† All prices exclude sales tax.



Microdata Files

To order the products listed below, contact:

Client Custom Services Unit
 Health Statistics Division
 Statistics Canada
 Ottawa, Ontario
 K1A 0T6
 Telephone: (613) 951-1746
 Fax: (613) 951-0972

National Population Health Survey public-use microdata files	Product number	Format	Price [†]		
			Canada	Other countries (\$ US)	
Cycle 1, 1994/95					
Household	Data, Ivision Browser	82F0001XCB	CD-ROM	\$800	\$800
	Flat ASCII Files	82F0001XDB	Diskette	\$650	\$650
Health care institutions	Flat ASCII Files	82F0010XDB	Diskette	\$250	\$250
Custom tables	Household Institutions	82C0013 82C0015	Price varies with information requirements		
Cycle 2, 1996/97					
Household and health care institutions	Cross-sectional Household Beyond 20/20 for Health File and Flat ASCII Files	82M0009XCB	CD-ROM	\$2,000	\$2,000
		First version			
		Second version			
	First version + Dummy Master Files Bootstrap variance estimation Files and program	Third version			
Second version + Cross-sectional Institutions Flat ASCII File	Longitudinal Household and Institutions Flat ASCII File (Conditional)				
Household Institutions	Documentation only	82M0009XPB	Paper	\$50	\$50
	Documentation only	82M0010XPB	Paper	\$30	\$30
Custom tables	Household Institutions	82C0013 82C0015	Price varies with information requirements		
Special package NPHS 94/95 and 96/97		2 CD-ROMs 82M0001XCB 82M0009XCB	\$2,500	\$2,500	\$2,500

[†] All prices exclude sales tax.

[‡] Discontinued, back issues available.