

# Nutrition and Physical Activity Situational Analysis

A Resource to Guide Chronic Disease  
Prevention in Alberta

## Executive Summary

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## Overview

Intrinsic to the health of all Albertans is prevention of chronic diseases including cancer, diabetes, cardiovascular and cerebrovascular illness. Knowledge of which lifestyle choices and activities affect the risk of developing chronic disease is the starting point for policy development that would reduce the number of Albertans affected by these diseases. Population Health Innovation and Decision Support (PHIDS) and Alberta Health Services (AHS) have completed this Situational Analysis to provide an overview of the best evidence currently available on the changes and choices about nutrition, physical activities and weight management that can have the most substantive impact on the rate of chronic diseases.

With this information, providers and planners can help guide the prevention of chronic diseases through individual behaviour change, health-promoting public policy, and community mobilization to create environments where healthy choices become easier choices.

## Purpose and Methods

The data sources utilized for this report include the Canadian Community Health Survey 2007/2008, Alberta Active Living Survey 2009, Tracking Nutrition Trends IV completed in 2008. Data on the specific diseases came from Alberta Cancer Registry, Alberta Diabetes Surveillance System, and Alberta Health and Wellness's Interactive Health Data Application.

For this Situational Analysis multiple sources of evidence were evaluated relating to nutrition and physical activity among Albertans. Included in the nutritional information were fruit and vegetable consumption; dietary intake of fibre, sodium, and fat; overall food choices; and alcohol consumption. In terms of physical activity rates, two elements were considered: physical activity during leisure time and sedentary activities during leisure time. See [Table 1: Statistical Evidence Sources](#). Weight management was evaluated using self-reported Body Mass Index numbers from 2007/2008. In addition to these factors, the study looked at evidence of how Albertans perceive their own health, weight, and efforts to improve their overall health.

**Table 1: Statistical Evidence Sources**

Nutrition	Physical Activity	Weight Management	Other
Fruit and Vegetable Consumption Dietary Intake of Fibre, Sodium and Fat Food Choices Alcohol Consumption	Leisure-time Physical Activity Sedentary Activity during Leisure-time	Weight Status (Self-reported BMI 2007/08) Perceived Weight Status	Self-Perceived Health Status Health Improvement Efforts
Broken Down By: Age Sex Highest Level of Education Total Household Income (Annual) Weight Status Self-Reported Self-Perceived Residence within Former Regional Health Authority	<b>DATA SOURCES*:</b> Canadian Community Health Survey -Statistics Canada, CCHS 4.1., 2007/08 Alberta Centre for Active Living, 2009 -Alberta Centre for Active Living, 2009 Tracking Nutrition Trends IV -Canadian Council on Food & Nutrition, 2008 *In addition to the disease-specific data sources (e.g., Alberta/Canadian Cancer Registry, AHW Interactive Data Application, etc.)		

Chronic diseases, including cancer, type 2 diabetes and cardiovascular diseases, have a major impact on the health of Albertans. In 2005, 12,749 Albertans were diagnosed with cancer and 5,332 people died from the disease, with the most common types of cancer being prostate (men), breast (women), lung (both sexes) and colorectal (both sexes) cancers (Alberta Health Services – Alberta Cancer Board., 2008). Six percent of Albertan adults (150,092) were living with diabetes in 2007, with 15,376 newly diagnosed cases and 453 deaths during this same year (Alberta Health and Wellness - Surveillance & Environmental Health Branch). Similar to the numbers for diabetes in Alberta, there were an estimated 14,385 new cases of ischemic heart disease (IHD) and 158,635 total cases of the heart related disease in 2008. In 2007, heart disease and stroke accounted for 31% of all deaths in Alberta (Alberta Health and Wellness - Surveillance & Environmental Health Branch).

The economic cost of these illnesses is substantial. According to the Economic Burden of Illness Canada when the economic cost of each disease is added together the total cost for the province was an estimated \$3.15 billion dollars for the year 2000. With cardiovascular disease costing an estimated \$1.48 billion, diabetes costing \$234.8 million and cancer costing \$1.44 billion. As the population ages, these costs will increase, strengthening AHS's resolve to prevent chronic diseases that share common risk factors.

The evidence reviewed for this report demonstrates that a healthy diet, regular physical activity, and the maintenance of a healthy body weight have the potential to dramatically reduce the rate of morbidity and mortality from these chronic diseases. The evidence also indicates that currently there is room for improvement in terms of individual behaviour, as well as programs and policies to support the adoption of healthy measures to prevent disease.

## Prevention Through Nutrition

The data reviewed for this report clearly indicates that diet has a direct influence on developing disease. Unfortunately the research also clearly indicates that Albertans are not following diets that would prevent these chronic diseases. According to the 2007 Canadian Community Health Survey, over half of adult Albertans are eating less than 5 servings of fruit and vegetables every day. More men fail to meet this minimum requirement than women, with 64% of men eating less than 5 serving per day compared to 48% of women. In addition to meagre fruit and vegetable consumption, Albertans also consume too much sodium and saturated fat, and not enough fibre. All of these dietary elements contribute to the rates of disease in Alberta.

## Nutrition and Cancers

The evidence reviewed indicates that there are several dietary habits that can help prevent cancer. A diet containing high fibre foods, non-starchy vegetables and fruits help to decrease the risk of developing certain cancers. Avoiding large amounts of red meat, sodium, and any amount of alcohol, sugar-sweetened beverages, or nutrient deficient foods is also beneficial. In addition, a diet containing a moderate amount of milk may be beneficial but individuals should avoid exceeding daily limits.

## Nutrition and Diabetes

To help prevent the development of type 2 diabetes Albertans should include high fibre foods, polyunsaturated fat, and essential fatty acid in a varied diet. A low to moderate consumption of alcohol can actually help reduce the risk. For men, a moderate amount of alcohol is 2 alcoholic beverages per day and for women it's 1 alcoholic beverage per day. Additionally, avoiding saturated fat, nutrient deficient foods, excessive amounts of alcohol and sugar sweetened beverages also contribute to lowering the risk of this type of diabetes.

## Nutrition and Cardiovascular

To reduce the risk of cardiovascular disease increase consumption of high fibre foods, non-starchy vegetables, fruits, polyunsaturated fat and essential fatty acid. As with type 2 diabetes, avoid large amounts of alcohol, but a low to moderate consumption can help reduce the risk. Avoid saturated fat, trans fat, cholesterol, high sodium and salted foods, nutrient deficient foods and sugar-sweetened beverages. See [Table 2: Nutrition and the Prevention of Chronic Disease](#) for a summary of the recommendations listed in this section.

## Physical Activity and the Prevention of Chronic Disease

Research from multiple sources confirms that regular physical activity reduces the risk of type 2 diabetes, cardiovascular disease, and several types of cancer including breast and colorectal cancer. Furthermore physical inactivity clearly contributes to health care costs every year. In fact, it is estimated that physical inactivity

accounted for 2.6% of the total health care costs of Canada, a cost of \$3.7 billion in 2001 alone.

If an additional 10% of adult Albertans added 30 minutes of vigorous exercise 4 times a week it is estimated that health care costs could be reduced by \$150 million per year.

Physical inactivity costs in many ways. It increases the costs of health care and increases a person's risk of developing a chronic disease. In Alberta nearly half of the population is inactive. And while the prevalence of inactivity is nearly equal among men and women, it increases with age, with more than half of seniors (aged 75 and older) listing themselves as inactive. In addition both education and income level influence activity, with those with higher education and income levels reporting more activity than Albertans with the least amount of education and lower income levels. These findings suggest that seniors and lower income level Albertans need more support to get and stay active and reduce their risks.

**Table 2: Nutrition and the Prevention of Chronic Diseases**

Types of Foods	Dietary Characteristics	Cancer (certain sites)	Type 2 Diabetes	Cardiovascular Disease
Plant Foods	High fibre foods/diets	↓	↓	↓
	Non-starchy vegetables	↓		↓
	Fruits	↓		↓
Animal Foods	Red or processed meat, smoked/grilled/charbroiled meats	↑		
	Milk	↓		
	High Calcium Diet	↑		
Fats and Oils	High total and saturated fat		↑	↑
	High polyunsaturated fat, essential fatty acid		↓	↓
	High trans fat and cholesterol			↑
Salt	High sodium, salted foods	↑		↑
Alcohol	Low-moderate alcohol	↑	↓	↓
	Excess alcohol consumption	↑	↑	↑
Energy Density	High intake of energy dense, micronutrient poor foods	↑	↑	↑
	Sugar-sweetened beverages	↑	↑	↑

## Obesity and Overweight and Prevention of Chronic Disease

Excess body weight increases the risk of developing type 2 diabetes, cardiovascular disease and several types of cancer. In 2004, 60.9% of adult Albertans were overweight or obese. More Albertan men are overweight or obese than women in the province, with 68.8% of adult males carrying extra weight versus 52.8% of women. Rates of overweight and obese adults were also higher in rural areas versus urban centers. Another issue concerning excess weight is the tendency for people to gain weight as they age. With activity levels lower in older adults, this could mean those who are already over weight are at greater risk to become obese as they age and their risks for chronic disease will dramatically increase.

### The Cost of Obesity

There are both direct and indirect costs connected to obesity in Alberta. Direct costs include hospital stays, drugs, physician visits, and stays at other institutions. Indirect costs include short and long term disability and loss of income from premature death. The annual cost of obesity in Alberta in 2005 was \$1.18 billion dollars. Included in that total is \$111.6 million for cancer costs, \$154 million in type 2 diabetes costs and a shocking \$299.4 million for cardiovascular disease costs (from Fitness of Canadian Children page 11).

### Childhood Obesity

Alberta's rates of childhood obesity are lower than national rates, but not by much. While BMI measurements do have some limitations when used with children, there is no doubt that Albertans are putting on weight at younger and younger ages. This is of great concern as children with excess weight generally remain overweight as they mature, and they become overweight and obese adults. Furthermore, it's not just future health problems, obese children run much higher risks of developing cardiovascular disease and type 2 diabetes.

## Structures, Policies, and Services to Reduce the Risk of Chronic Diseases

In Alberta it is estimated that over 99 organizations and 116 programs are currently running to help adults change their risk factors for chronic disease. These programs and services include nutrition information, and access to and education about physical activity. Some of these programs are government based while others are non-government or private. The government also offers tax credits and incentives for physical activity.

With evidence related to nutrition, physical activity and weight management constantly being produced and layered on top of the existing foundation, determining the most effective actions and opportunities for prevention programming in these areas can be difficult.

In an effort to identify, utilize and promote the growth of existing organizations and programs across Alberta, a provincial environmental scan of nutrition and physical activity initiatives was conducted. The applied research team responsible for the environmental scan had the following objectives: to develop an inventory of current organizations, programs and services related to nutrition, physical activity and weight management; to assess the ability of the initiatives surveyed to support evidence-based partnerships and chronic disease prevention program development; and to identify missing information, resources, and programs and propose strategic actions to fill in the program and research gaps.

To complete the environmental scan, existing national and provincial databases, online information and content from interviews with key informants and stakeholders were examined. While the research team was able to access provincial and regional information with ease, assistance was required to examine information at the municipal level. A separate municipal scan was conducted with the collaboration of R.A. Malatest & Associates Ltd. and surveyed 129

municipalities, including 16 cities, 109 towns and 4 specialized municipalities throughout Alberta. Within each municipality, existing programs, policies and infrastructure aimed at engaging citizens in healthy eating, being physically active and living healthier lifestyles were identified. Overall, the municipal scan resulted in 5,477 identified program and policy components, which were organized into five areas of interest, including the following:

Parks and Recreation Infrastructure and Programming **(85%)**;  
Transport Strategies **(5%)**;  
Community Safety Initiatives **(3%)**;  
Food and Nutrition Initiatives **(3%)** and;  
Healthy Living and Health Promotion Strategies **(5%)**.

Using the Public Health Agency of Canada's Canadian Best Practices Portal, 17 organizations were identified that offer programs specific to nutrition and physical activity in Alberta. Of those 17, four organizations are based in the province and all are supported or sponsored by the government of Alberta. The Portal also identified national organizations that support chronic disease prevention decision making and practice within Alberta including Health Canada, the Chronic Disease Prevention Alliance of Canada (CDPAC), Dieticians of Canada, and the Canadian Parks and Recreation Association.

### Ways to Improve Structures, Policies and Services to Reduce the Risk of Chronic

The role of healthy public policy in creating effective and long-term strategic and systemic change cannot be discounted, as it remains one of the most effective means to prevent chronic disease (World Cancer Research Fund & American Institute for Cancer Research, 2007).

While the government does offer tax credits and incentives for physical activity, there are no tax credits or incentives for healthy eating.

Furthermore the government has no formal legislation or policies concerning food labeling legislation, labeling could help Albertans make better dietary choices. The government could also develop provincial healthy eating and physical activity strategies to get all Albertans making better food and activity choices.

### Recommendations

Without effective prevention, chronic diseases will continue to cost Albertans through the loss of life, the loss of quality of life, and the overwhelming health care costs for treatment of these illnesses.

At the individual level, Albertans must be encouraged, educated and supported in an effort to make healthier lifestyle choices. This includes losing excess weight and maintaining a healthy BMI throughout their life span, and preventing the incidence of obesity in children through initiatives to improve active living and reduce screen time. Dietary initiatives and education must encourage adults to increase their consumption of fruits and vegetables; reduce sodium, saturated fat and high sugar, poor nutrient foods; while limiting their alcohol intake to moderate levels and reducing their intake of processed meat products. Physical activity needs to become a far more prevalent leisure time endeavour for all Albertans regardless of age, supporting this behaviour will include increased access to safe parks and effective programs that keep the population moving and active.

To maximize efforts to reduce the rates of disease and death from chronic diseases a strategy to prevent, manage and cure these illnesses is required. Taking an inclusive, integrated and comprehensive approach, the essential components of this strategy are prevention; early detection and screening within sub-groups at higher risk of chronic disease; treatment, palliative and rehabilitative care; and policy and advocacy. Given its focus on primary prevention of chronic diseases, this Situational Analysis provides evidence-based recommendations for individual-level behaviours, programs, interventions and

policies related to nutrition, physical activity and weight management. More specifically, groups working within and with Alberta Health Services should create functional partnerships and working groups to accomplish a number of recommendations for action, including the following:

- Creating a new baseline measures and indicators to coincide with the surveillance and monitoring of existing targets for chronic disease prevention.
- Establishing of a central group or organization to independently collect innovative health data and provide access to data from external sources.
- Conducting more foundational and applied research to examine the key target populations of the AHS and its partners, including but not limited to the following:
  - Rural Albertans, in particular residents of AHS' newly established North, Central and South zones;
  - First Nation Populations;
  - Young Adults, in particular those between 18 and 35 years old.
- Developing, implementing and evaluating disease prevention programs, policies and practices that are based on robust and critically reviewed evidence.
- Completing a comprehensive review of alternative policies intended to improve dietary habits, activity levels and rates of overweight and obesity among all Albertans.
- Establishing a collaborative cross-sectoral organization able to dedicate sustained time and resources to reduction of chronic disease through primary prevention.

- Developing, implementing, and evaluating an evidenced-based provincial workplace program intended to improve nutrition, physical activity and weight related behaviours of Albertan adults.
- Creating a comprehensive, long term strategy for the prevention and reduction of obesity in the province.
- Improving municipal and community engagement for disease prevention through the development new and fostering established functional partnerships.

This Situational Analysis found that while a great deal of work in the areas of nutrition, physical activity and weight management is currently underway in the province; the relevant health behaviours of Albertans need to improve. An examination of pertinent behaviours associated with the three factors mentioned previously is a starting point for creating feasible individual and population level recommendations and goals to keep Albertans eating nutritiously, staying active and keeping their weight at healthy levels that will effectively contribute to reduced incidence and mortality from cancer, type 2 diabetes and cardiovascular diseases in the future. Supportive programmatic and policy structures need to be created to leverage the national, provincial, regional and municipal strengths and assets to fulfill the requirements that meet chronic disease prevention objectives. Alberta Health Services' Health Promotion, Disease and Injury Prevention is committed to providing leadership and coordination across the province for enhanced capacity, partnerships and community development that will help Albertans increase and maintain their uptake of healthier dietary and activity choices.