



CANADIAN DIABETES ASSOCIATION

Frequently Used Statistics & their Sources (July 2007)

GENERAL POPULATION

OVER 2 MILLION CANADIANS LIVE WITH DIABETES.

- “The prevalence of diabetes (diagnosed & undiagnosed) is considered to be greater than 7% of the Canadian population.” (Source: *Canadian Diabetes Association 2003 Clinical Practice Guidelines for the Prevention & Management of Diabetes in Canada. Can J Diabetes. 2003, p. S1.*) Note: *Statistics Canada states Canada’s population was 31.6 million in 2003 – that means at least 2.2 million Canadians had diagnoses/undiagnosed diabetes in 2003.*
- The National Diabetes Surveillance System (NDSS), the first comprehensive compilation of Canadian diabetes data, released its first report in November 2003. NDSS identified an estimated 1.7 million adults (age 20 & over only) with diagnosed diabetes in 1998/99. NDSS data does NOT include anyone under age 20 or anyone with undiagnosed diabetes.

MORE THAN 3 MILLION CANADIANS ARE EXPECTED TO BE LIVING WITH DIABETES BY 2016. (Source: *A. Ohinmaa et al., Projection of Prevalence & Cost of Diabetes in Canada 2000-2016, Cdn Journal of Diabetes, 2004.*)

In 2007, **Ontario** research found “diabetes prevalence has increased 69% from 5.2% in 1995 to 8.8% in 2005” resulting in Ontario already surpassing the global rate of 6.4% predicted by the World Health Organization for 2030. (Source: *L. Lipscombe, ICES Research Fellow, “Trends in diabetes prevalence, incidence & mortality in Ontario, Canada 1995-2005: a population based study”, The Lancet, March 2007.*)

In 2007, **Alberta** had more than 1 in 20 or over 130,000 adults living with diabetes in & more than 12,000 new cases of diabetes being diagnosed each year. (Source: *Alberta Diabetes Atlas 2007.*)

90% OF CANADIANS WITH DIABETES HAVE TYPE 2 & 10% HAVE TYPE 1.

(Source: Centers for Disease Control, 1997 – as cited by *Diabetes in Canada Second Edition* (Health Canada 2002, p. 7).)



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DIABETES IS A LEADING CAUSE OF DEATH BY DISEASE.

- In 2002, the death rate due to diabetes in Canada was third highest among comparator countries with 19.6 deaths per 100,000 people according to the OECD's tracking of deaths due to diabetes. Austria with 28.8 deaths & the USA with 20.9 deaths per 100,000 were the top two countries in deaths by diabetes. (Source: *Conference Board of Canada, How Canada Performs, A Report Card, June 2007, p. 107.*)
- Deaths due to diabetes was the seventh leading cause of death in Canada in 1996, although government admits the actual number may be five times greater. (Source: *Public Health Agency of Canada, Diabetes in Canada, p. 1.*)
- "Canadians with diabetes are twice as likely to die prematurely as Canadians without diabetes." (Source: *Responding to the Challenge of Diabetes in Canada: First report of the NDSS 2003, p. 28*)
- Diabetes was a contributing factor in the death of 41,483 Canadians 20 years & older who have diabetes. This 'all cause' mortality "includes deaths due to external injuries & other causes that may not be directly related to diabetes. The all cause mortality rate seems to supports past calculations estimating that the number of diabetes-related deaths is over five times the number of deaths with diabetes coded as the underlying cause." (Source: *Responding to Challenge of Diabetes in Canada: First report of the NDSS 2003, p. 28.*)
- "...A 35-year-old Canadian with diabetes is 4 times more likely to die than a [35-year-old] person without diabetes" (Source: *Responding to the Challenge of Diabetes in Canada: First report of the NDSS 2003, p. 29.*)

"ONE IN EVERY 11 CANADIAN ADULTS NOW SUFFERS FROM DIABETES."

(Source: *Conference Board of Canada, How Canada Performs, A Report Card on Canada, June 2007, p. 11.*)



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57.5 % OF CANADIANS ARE OVERWEIGHT OR OBESE (WITH A BODY MASS INDEX ABOVE 25) IN 2004.

- In 2004, 5.5 million Canadians aged 18 or older were obese with a body mass index of 30 or more. 8.6 million were overweight. (Source: *Stats Canada, M. Tjepkema, "Adult Obesity", p. 2.*)
- Canadians who ate fruit & vegetables less than 3 times a day were more likely to be obese than those who ate them 5 or more times a day. (Source: *Stats Canada, M. Tjepkema, "Adult Obesity", p. 4.*)
- Unhealthy weight is a risk factor for type 2 diabetes. Only 2.1% of Canadian men with a healthy weight had type 2 diabetes compared to 3.7% of Canadian men who were overweight & compared to nearly 11% of those who were obese. (Source: *Stats Canada, M. Tjepkema, "Adult Obesity", p. 4.*)

ONE IN 3 PEOPLE WITH DIABETES HAVE IT & DON'T KNOW IT.

- "...population-based studies have identified prevalence rates to be 30 to 50% higher (than physician diagnosed prevalence rates)" (Source: *Canadian Diabetes Association 2003 Clinical Practice Guidelines for the Prevention & Management of Diabetes in Canada. Can J Diabetes. 2003, p. 1.*)
- About a third of adults with diabetes are unaware that they have the condition. (Source: *Health Canada, Don't Turn your back on Diabetes: Diabetes in Canada Facts & Figures.*)

ABORIGINAL DIABETES

PEOPLE OF ABORIGINAL DESCENT ARE 3 TO 5 TIMES MORE LIKELY THAN THE GENERAL POPULATION TO HAVE OR DEVELOP DIABETES.

- "...the age standardized prevalency of diabetes for First Nations people is 3 to 5 times that of the general population" (Source: *Health Canada's Diabetes Among Aboriginal People in Canada: The Evidence 2001 p. 10.*)



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- Approximately two thirds of First Nations people with diabetes are women. Aboriginal women have over 5 times the rate of diabetes compared to women in the general population & Aboriginal men have over 3 times the corresponding rate for men. (Source: *Diabetes Among Aboriginal People in Canada: The Evidence 2001* p. 12.)
- “The Aboriginal Peoples Survey (APS 1991) is the most recent comprehensive survey across Canada. According to this survey the prevalence of diabetes among native groups in Canada is as follows:
 - 8.5% of North American Indian peoples on Indian reserves & settlements;
 - 5.3% of North American Indian peoples off reserves;
 - 5.5% of Metis people, and
 - 1.9% of Inuit people.

(Source: *Diabetes in Canada Second Edition*. p. 64.)

TYPE 2 DIABETES IS INCREASINGLY BEING DIAGNOSED IN ABORIGINAL CHILDREN.

- “Type 2 diabetes in children & adolescents has been documented in Aboriginal & other populations in North America. The prevalence of type 2 diabetes in Canadian Aboriginal children 5 to 18 years of age has been documented to be as high as 1%, with the highest prevalence in the Plains Cree people of central Canada.” (Source: “Type 2 diabetes in Children & Adolescents”, Dr. Heather Dean, *Canadian Diabetes*, Autumn 2004.)

55 % OF ABORIGINAL CHILDREN & YOUNG PEOPLE AGED 2 TO 17 LIVING ON RESERVE ARE OVERWEIGHT OR OBESE. (Source: *House of Commons, Healthy Weights for Healthy Kids*, p. 2.)



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CHILDREN & YOUTH

ONE IN THREE AMERICANS BORN IN 2000 WILL BE DIAGNOSED WITH DIABETES DURING THEIR LIFETIME. SIMILAR RESULTS ARE PREDICTED FOR CANADA. (Source: *Extrapolation from a report from a U.S. Centers for Disease Control & Prevention Report.*)

TYPE I DIABETES IS GROWING 3% ANNUALLY AROUND THE WORLD. IT IS GROWING FASTEST AMONGST VERY YOUNG CHILDREN. (Source: *International Diabetes Federation, Unite for Diabetes, Key Messages, 2007.*)

26 % OF CHILDREN & YOUNG CANADIANS AGED 2 TO 17 TODAY ARE OVERWEIGHT OR OBESE COMPARED TO 12 % IN 1978. (Source: *House of Commons, Healthy Weights for Healthy Kids, p. 2.*)

- Over the past 25 years, the number of Canadian children & adolescents who are overweight or obese has tripled. (Source: *Peeters et al., "Obesity in Adulthood & its Consequences for Life Expectancy".*)
- Children & youth who eat fruit & vegetables at least five times a day are substantially less likely to be overweight or obese than those who eat these foods less frequently. (Source: *Peeters et al., Ibid.*)

TV VIEWING IS LINKED TO HIGHER A1C LEVELS IN CHILDREN WITH TYPE I DIABETES.

- As the average number of hours spent watching television increased, so did the A1c levels of children with type 1 diabetes. Their body mass index as well as the total amount of insulin required on a daily basis also increased. (Source: *H.D. Margeirsdottir, Diabetes Care, June 2007. Note: Study evaluated 538 Norwegian children who had been living with type 1 diabetes for at least 5 years.*)

NO CHILD SHOULD DIE OF DIABETES.

A child diagnosed with type 1 diabetes will live about 11 years in Zambia, 30 months in Mali, and will die within one year in Mozambique. (Source: *International Diabetes Federation, Unite for Diabetes, Key Messages, 2007.*)



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NEW CANADIANS

77 % OF NEW CANADIANS ARE FROM POPULATIONS KNOWN TO BE OF HIGH RISK FOR TYPE 2 DIABETES.

(7.3% Latin, 57% Asian, 12.8% African descent.) (Source: Statistics Canada, 1996 census. "Not only is there high prevalence in the countries of origin of these immigrants, but their risk actually increases with lifestyle change following their arrival in Canada." Dr. Stewart Harris: *An Epidemic of the New Millennium: Diabetes Symposium Winnipeg, May 2003.*)

GESTATIONAL DIABETES

WOMEN WITH GESTATIONAL DIABETES ARE AT HIGHER RISK OF DEVELOPING TYPE 2 DIABETES.

- Approximately 4 % of women & up to 18 % of Aboriginal women in Canada will develop gestational diabetes during pregnancy. (Source: *Alberta Diabetes Atlas 2007.*)
- Gestational diabetes usually disappears after birth, but women with gestational diabetes have a 17 % to 63 % chance of developing type 2 diabetes within 5 to 16 years. (Source: *Y Shumei et al., Modifiable Risk Factors for Developing Diabetes Among Women With Previous Gestational Diabetes, Preventing Chronic Disease, January 2007.*)
- Three-quarters of First Nations women with gestational diabetes developed type 2 diabetes within four years of their pregnancy – approximately four times as high compared to other women in general. (Source: *Alberta Diabetes Atlas 2007, p. 136.*)

UP TO 40% OF WOMEN WITH GESTATIONAL DIABETES MAY DEVELOP TYPE 2 DIABETES AS THEY GET OLDER. (Source: *Diabetes in Canada, Second Edition, p. 21.5*)



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MANAGING DIABETES & ITS COMPLICATIONS

MORE THAN 50% OF CANADIANS WITH TYPE 2 DIABETES ARE NOT AT TARGET FOR BLOOD GLUCOSE CONTROL, & ARE ABOVE THE EVIDENCE-BASED RECOMMENDED TARGET LEVELS FOR A1C'S. (Source: *Diabetes in Canada Evaluation (DICE), 2003.*)

- Not achieving recommended target levels places Canadians with diabetes at high risk of developing serious complications.
 - Heart attacks – making up 32% of all heart attacks.
 - Strokes – responsible for 30% of all strokes.
 - Kidney disease – making up 51% of new dialysis cases.
 - Limb amputation – responsible for 70% of amputations.
- The longer Canadians live with diabetes, the less likely they are to achieve recommended target levels for blood glucose control.

PEOPLE WITH DIABETES SEE GPs ALMOST TWICE AS OFTEN & SPECIALISTS THREE TIMES MORE OFTEN THAN PEOPLE WITHOUT DIABETES.

- In the past 10 years, the number of GP visits has doubled in Alberta.
- People with diabetes spend 2.5 times more days in hospital each year than people without diabetes. (Source: *Alberta Diabetes Atlas, 2007.*)

LESS THAN 50 % OF CANADIANS WITH DIABETES GET TESTED FOR A1C LEVELS, BLOOD PRESSURE, CHOLESTEROL, KIDNEY HEALTH, VISION & FOOT HEALTH. (Source: *Health Council of Canada, Why Health Care Renewal Matters, p. 13.*)

- For every 1% reduction in A1C levels in people with diabetes, there is a 37 % decrease in the risk of damage to blood vessels, a 14 % drop in heart attack rates & a 21 % drop in deaths due to diabetes. (Source: *the UKPDS Group, (UKPDS 33), The Lancet, Vol. 352, 12 September 1998.*)



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74% OF CANADIANS AGED 12 & OLDER LIVING WITH DIABETES ALSO REPORT ONE OR MORE CHRONIC CONDITIONS (ARTHRITIS, HIGH BLOOD PRESSURE, HEART DISEASE, CHRONIC OBSTRUCTIVE PULMONARY DISEASE, CANCER OR MOOD DISORDERS). (Source: Health Council of Canada, *Why Health Care Renewal Matters*, p. 25.)

Cardiovascular disease:

FOUR OUT OF FIVE PEOPLE WITH DIABETES DIE OF HEART DISEASE. (Source: Canadian Diabetes Association, November 2006.)

HAVING DIABETES INCREASES THE RISK OF CARDIOVASCULAR DISEASE (CVD) TO THAT OF SOMEONE 15 YEARS OLDER.

- Men with diabetes go from moderate to high risk for CVD at age 41; women with diabetes transition into high risk for CVD at age 48. (Source: G. Booth, *Relationship between age & cardiovascular disease in men & women with diabetes*, *The Lancet*, July 2006.)

HEART DISEASE IS 2 TO 4 TIMES MORE COMMON IN PEOPLE WITH DIABETES THAN WITHOUT. (Source: H. Gerstein, *Evidence Based Diabetes Care*, 2001 p. 489.)

- “People with diabetes are two to four times more likely to develop cardiovascular disease than people without diabetes. People with type 2 diabetes have the same risk of heart attack as people without diabetes who have already had a heart attack.” (Source: IDF web site, *Did You Know?*)
- “... cardiac admissions rates continue to be two to three-fold greater among those with diabetes mellitus. The risk of cardiovascular disease appears to occur earlier in persons with diabetes with rates in young adults mirroring those of non-diabetes individuals who are at least 15 years older.” (Source: *Diabetes in Ontario an ICES Practice Atlas June 2003 p. 124.*)



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A PERSON WITH DIABETES IS 11 TIMES MORE LIKELY TO BE ADMITTED TO HOSPITAL FOR A HEART ATTACK THAN SOMEONE WITHOUT IT. (Source: *Diabetes in Ontario ICES Practice Atlas June 2003.*)

THE RISK OF A STROKE DOUBLES AFTER DIAGNOSIS OF TYPE 2 DIABETES.

- People aged between 30 to 44 years have a 5.6-fold increase in stroke risk if they have type 2 diabetes. (Source: *T. Jeerakathil, Stroke Journal, June 2007. Note this is from a Canadian study at the University of Alberta.*)
- People with diabetes are over 4.5 times more likely to have an emergency department visit and/or hospital admission for stroke than people without diabetes. (Source: *Alberta Diabetes Atlas 2007, p. 63.*)

APPROXIMATELY 80% OF PEOPLE WITH DIABETES WILL DIE AS A RESULT OF A VASCULAR EVENT. (Source: *Canadian Diabetes Association 2003 Clinical Practice Guidelines for the Prevention & Management of Diabetes in Canada. Can J Diabetes. 2003, p. 58.*)

Retinopathy:

DIABETES IS A LEADING CAUSE OF ADULT BLINDNESS.

- “Diabetic retinopathy is the most common cause of new cases of legal blindness in North America in people of working age, & the sole or contributing cause of blindness in about 86% of the eyes of people with type 1 diabetes & in 33% of the eyes of people with type 2 diabetes.” (Source: *Canadian Diabetes Association 2003 Clinical Practice Guidelines for the Prevention & Management of Diabetes in Canada. Can J Diabetes. 2003, p. 76.*)
- People with diabetes are 1.5 to 2 times more likely to develop cataracts and glaucoma. (Source: *Alberta Diabetes Atlas 2007, p. 97.*)

20 % OF ALL PEOPLE WITH DIABETES WILL BECOME BLIND. (Source: *Ontario Diabetes Task Force, Sept. 2004.*)



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400 CANADIANS WITH DIABETES ARE AFFECTED BY RETINOPATHY ANNUALLY.

- It affects almost all people who have lived with diabetes for more than 30 years. (Source: *Stats Canada, Health State Descriptions for Canadians: Diabetes.*)
- The number of people with diabetic retinopathy & vision-threatening diabetic retinopathy is expected to triple in the United States by 2050 according to the US Center for Disease Control. Cataracts will increase an estimated 238% from 2005 to 2050. (Source: *J. Boyle, Center for Disease Control researcher, speaking to American Diabetes Association's 67th annual scientific conference, June 2007.*)
- Follow-up exam rates are very poor, & five years after diagnosis, 12 % of Ontarians living with diabetes aged 30 & over will not have had a single eye exam. (Source: *Ontario Diabetes Task Force, Sept. 2004.*)
- In Alberta, only 60% of people with diabetes have had an eye exam by an ophthalmologist within 3 years of a diagnosis of diabetes. (Source: *Alberta Diabetes Atlas 2007, p. 97.*)

Nephropathy:

DIABETES IS A LEADING CAUSE OF KIDNEY FAILURE.

- “Diabetic nephropathy is the most common cause of renal failure in the Western World.” (Source: *Canadian Diabetes Association 2003 Clinical Practice Guidelines for the Prevention & Management of Diabetes in Canada. Can J Diabetes. 2003, p. 66.*)
- The risk of end stage renal disease is 13 times higher in people living with diabetes compared to people without diabetes. (Source: *Canadian Diabetes Association 2003 Clinical Practice Guidelines for the Prevention & Management of Diabetes in Canada. Can J Diabetes. 2003;27 (suppl 2).*)
- The proportion of Albertans with diabetes and kidney disease has increased from 31% to 46% over the last ten years. In 2005, 32% of Albertans receiving a kidney transplant had diabetes – up significantly from 25% in 1995. (Source: *Alberta Diabetes Atlas 2007, p. 85.*)



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- Every 1% drop in A1c levels in a person with diabetes, the risk of kidney, eye or nerve-related complications is reduced by 40 percent. (Source: Dr. Francine Kaufman, University of Southern California & past President of the American Diabetes Association speaking to the American Diabetes Association's 67th annual scientific conference, June 2007.)
- “For 33% of the patients who started treatment for ESRD (end stage renal disease) in 2001, diabetes was the primary cause of kidney failure, up from 29% in 1997. The increase in diabetes among new ESRD patients was most pronounced among patients 65 years of age & older. In 2001, 30% of these patients were diagnosed with diabetes as their primary cause of kidney failure, up from 25% in 1997.” (Source: Canadian Institute for Health Information (CIHI) news release, 21 Jan 2004.)
- “In a . . . population-based case-control study from the northeastern United States, persons with type 1 & type 2 diabetes were found to have significantly increased risk of ESRD (end stage renal disease). . . . In this study the population attributable risk for kidney failure due to diabetes was 42% overall (21% for type 1 & 21% for type 2 diabetes) Thus, of all cases of ESRD in this population, 42 per cent could be ascribed to diabetes.” (Source: H. Gerstein's Evidence Based Diabetes Care, 2001 p. 434.)

Other complications:

DIABETES IS A LEADING CAUSE OF LIMB AMPUTATIONS.

- Diabetes is the most common cause of amputation that is not the result of an accident. People with diabetes are 15 to 40 times more likely to require lower-limb amputation compared to the general population. (Source: IDF, What are the complications of diabetes?)
- Albertans with diabetes are 12 to 18 times more likely to have a lower limb amputation than people without diabetes. Younger adults with diabetes are 48 times more likely to have a lower limb amputation than those without diabetes. (Source: Alberta Diabetes Atlas 2007, p. 78.)



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DIABETES IS A MAJOR CAUSE OF ERECTILE DYSFUNCTION.

- “Erectile dysfunction affects approximately 34 – 45% of men with diabetes. Risk factors include age, duration of diabetes, poor glycemic control, cigarette smoking, hypertension, dyslipidemia & cardiovascular disease.”
(Source: Canadian Diabetes Association 2003 Clinical Practice Guidelines for the Prevention & Management of Diabetes in Canada. *Can J Diabetes*. 2003, p. 81.)

DIABETES IS LINKED TO MENTAL HEALTH.

- 25 % of Canadians living with diabetes also show symptoms of depression. The combination of depression and diabetes is associated with poorer adherence and outcomes and increased health care costs. (Sources: L.E. Egede, *Effect of depression on work loss and disability bed days in individuals with diabetes*, *Diabetes Care*, 2004. *Alberta Diabetes Atlas*, 2007, p. 123.)
- The prevalence of diabetes is 2 to 3 times higher in individuals with schizophrenia compared to the general population. (Source: *Alberta Diabetes Atlas* 2007, p. 115.)
- Affective and anxiety disorders were more than 30% higher in people with diabetes aged 50 and under. (Source: *Alberta Diabetes Atlas* 2007, p. 123.)

DIABETES INCREASES HIP FRACTURES IN ELDERLY.

- Diabetes increases the risk of hip fractures by about 20% in both men and women. (Source: Lipscombe, et al., *The risk of hip fractures in older individuals with diabetes*”, *Diabetes Care*, April 2007.)

ACCESS TO MEDICATIONS & CARE

CANADIANS RECEIVE ABOUT 400 MILLION PRESCRIPTIONS EACH YEAR & SPEND \$24.8 BILLION ANNUALLY ON MEDICATIONS – AVERAGING OUT TO ABOUT \$770 PER PERSON. (Source: Health Council of Canada, *Optimal Prescribing & Medication Use in Canada*, May 2007.)



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- 51% of all Canadian seniors and 8% of all Canadians under 65 (*4 million people*) have annual drug expenses that exceed 3% of their annual family income. (Source: K. Fraser, Tristat/Fraser Group, November 2005.)
- One-quarter of Canadian Diabetes Association members reported in 2005 that they could not afford medications prescribed by their doctor nor could they access them through public drug plan or private insurance. (Source: *Diabetes Report 2005.*)

IT STILL MATTERS WHERE YOU LIVE IN CANADA IF YOU HAVE DIABETES.

- 16 diabetes medications are approved as safe, effective & for sale in Canada. Canadians who rely on a government drug plan do not have access to all of them.

BC provides full access to 7 of the diabetes medications

AB provides full access to 11 of the 16

SK provides full access to 6 of the 16

ON provides full access to 6 of the 16

QU provides full access to 9 of the 16

NB provides full access to 5 of the 16

NS provides full access to 7 of the 16

PEI provides full access to 8 of the 16

NL provides full access to 5 of the 16

NIHB/YT/NT/NU provide full access to 11 of the 16

(Source: Canadian Diabetes Association, *Formulary Listings for Diabetes Medications in Canada*, January 2007.)

ELDERLY DIABETES PATIENTS ARE NOT RECEIVING RECOMMENDED MEDICATIONS.

- A study tracked over 105,000 Ontarians aged 65 and older with newly diagnosed diabetes between 1994 and 2001. The study found that although vascular disease accounts for the majority of deaths of people with diabetes,



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high blood pressure and cholesterol levels were not adequately treated. The study showed that:

- One-third of elderly diabetes patients did not receive anti-hypertensive medications; and
- Three-quarters of elderly diabetes patients did not receive lipid-lowering medications.

(Source: B. Shah, et al., Use of vascular risk-modifying medications for diabetic patients, Diabetic Medicine, October 2006.)

CANADIANS WITH DIABETES ARE NOT RECEIVING THE RECOMMENDED LAB TESTS.

- 50% of British Columbians with diabetes received the recommended tests for blood glucose levels, kidney function and eye health. *(Source: Health Council of Canada, Why Health Care Matters, March 2007.)*

DIABETES RESEARCH

THE CANADIAN DIABETES ASSOCIATION IS THE LEADING NON-PROFIT FUNDER OF DIABETES RESEARCH IN CANADA.

- The Canadian Diabetes Association has invested over \$83 million in diabetes research at Canadian universities & institutions over the last 30 years.
 - In 2007, our Association invested approximately \$7 million in diabetes research in Canada & committed to increasing our research funding by 10% annually for the next few years. *(Source: Canadian Diabetes Association, 2007.)*



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INTERNATIONAL DIABETES

MORE THAN 300 MILLION PEOPLE WILL HAVE DIABETES BY 2025.

- The WHO estimates the number of people with diabetes worldwide will be at least 370 million by 2030. (Source: *WHO Global Strategy on Diet Physical Activity & Health, Diabetes Facts.*)

“EVERY 10 SECONDS, 2 PEOPLE ARE DIAGNOSED WITH DIABETES SOMEWHERE IN THIS WORLD.” (Source: *International Diabetes Federation, Unite for Diabetes, Key Messages, 2007.*)

- More people will have diabetes in 2025 than the current population of the US, Canada and Australia combined. (Source: *International Diabetes Federation, Unite for Diabetes, Key Messages, 2007.*)

“EVERY 10 SECONDS, A PERSON SOMEWHERE IN THIS WORLD DIES FROM DIABETES-RELATED CAUSES.” “DIABETES IS A SILENT KILLER.” (Source: *International Diabetes Federation, Backgrounder, p. 9.*)

- Diabetes kills as many people each year as HIV/AIDS. (Source: *International Diabetes Federation, Unite for Diabetes, Key Messages, 2007.*)
- Diabetes deaths worldwide are estimated at 4 million deaths per year.
 - “The number of deaths attributed to diabetes was previously estimated at just over 800,000. However, it has long been known that the number of deaths related to diabetes is considerably underestimated. A more plausible figure is likely to be around 4 million deaths per year related to the presence of the disorder. This is about 9% of the global total.” (Source: *WHO website: The Cost of Diabetes Fact Sheet #236, Sept. 2002.*)
 - 3.5 million deaths are attributable to diabetes each year. (Source: *International Diabetes Federation, Unite for Diabetes, Key Messages, 2007.*)



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THE COST OF DIABETES

Societal costs

DIABETES COSTS THE CANADIAN ECONOMY AN ESTIMATED 13.2 BILLION (\$US) EACH YEAR. THESE COSTS WILL RISE TO \$15.6 BILLION BY 2010, \$19.2 BILLION BY 2020. (Source: Canadian Diabetes Association 2003 Clinical Practice Guidelines for the Prevention & Management of Diabetes in Canada. Can J Diabetes. 2003p. 2.)

DIABETES ACCOUNT FOR 51 % OF NEW KIDNEY DIALYSIS PATIENTS AT A COST OF \$63,000 PER YEAR PER PATIENT.

- However, if detected early (such as in the microalbuminuria stage), the care for the first year after diagnosis costs only \$62 & the care for the subsequent years costs \$10 each year (not including ACE inhibitors).

IT COST ALL CANADIANS \$5.6 BILLION TO TREAT DIABETES OR ITS COMPLICATIONS IN ACUTE CARE HOSPITALS IN 2005.

- By 2016 the predicted direct costs is projected to be \$8.14 billion – a 75% increase! (Source: A. Ohinmaa et al., Projection of Prevalence & Cost of Diabetes in Canada 2000-2016, Cdn Journal of Diabetes, 2004.)

ONE OUT OF 10 ADMISSIONS INTO AN ACUTE CARE HOSPITAL IS DIRECTLY RELATED TO DIABETES OR DIABETES-RELATED COMPLICATIONS.

- Approximately 280,330 of the 2,803,300 admissions into Canadian acute care hospitals in 2005/06 were directly related to diabetes or its complications. (Source: CIHI report, Jan 2007 & ICES Ontario Diabetes Atlas, 2003.)

TREATING CARDIOVASCULAR COMPLICATIONS IS COSTLY.

The initial surgical treatment for a heart attack costs \$18,635 & \$1,193 annually thereafter for the lifetime of the individual. Angina costs \$3,183 at the time of the event & \$1,485 annually thereafter. Transient ischemic attacks cost \$3,262 initially &



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\$73 annually thereafter. Ischemic stroke costs \$33,256 at the time of the event & \$8,769 every year following. (Source: Canadian Diabetes Association, Policy Summit on the Seriousness of Diabetes Complications in Ontario, January 2006.)

FOR EVERY \$1 INVESTED UP FRONT TO HELP CANADIANS WITH DIABETES & THEIR DOCTORS TO MANAGE EFFECTIVELY, RESEARCH SHOWS THAT GOVERNMENT WILL SAVE \$4 A YEAR FROM NOT HAVING TO TREAT DIABETES RELATED COMPLICATIONS IN OTHER PARTS OF THE HEALTHCARE SYSTEM. (Source: H. Krueger, *The relationship between long-term adherence to recommended clinical procedures and health care utilization for adults diagnosed with type 2 diabetes*, UBC October 2006.)

IT WOULD COST \$65 A YEAR PER CANADIAN FOR A FAIR NATIONAL DRUG PLAN THAT WOULD ENSURE ALL CANADIANS NEVER SPEND MORE THAN 3% OF THEIR ANNUAL FAMILY INCOME ON PRESCRIPTION MEDICATIONS. (Source: K. Fraser, Tristat/Fraser Group, *The Challenge of Catastrophic Drug Coverage*, presentation at AIMS conference, 16 May 2006.)

11% OF CANADIANS LIVING WITH DIABETES ALSO HAVE THREE OR MORE CHRONIC HEALTH CONDITIONS.

- Compared to the general population, they are:
 - 4 times more likely to be admitted to hospital or a nursing home,
 - 7 times more likely to use home care, and
 - 3 to 5 times more likely to see a health care provider.

(Source: Health Council of Canada, *Why Health Care Reform Matters*, March 2007, p. 32.)

Personal Costs

DIABETES IS EXPENSIVE FOR INDIVIDUALS & THEIR FAMILIES.

- Canadians living with diabetes must personally pay for their diabetes medications, devices & supplies even if they have a government or a private drug plan.



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- Depending on where you live in Canada, Canadians with diabetes can pay out of pocket anywhere up to \$3,800 each year just for their diabetes prescriptions, devices & supplies. (Source: *Diabetes Report 2005*.)
 - Canadians with diabetes can pay anywhere up to \$15,000 a year for all the extra costs – *medications, healthy diabetes appropriate food, insurance, foot care, eye exams for example* -- associated with living with diabetes. (Source: *Canadian Diabetes Association, The Prevalence & Costs of Diabetes*.)
- One test strip is approximately \$1. For someone with type 1 diabetes they must pay out of pocket at least \$1,095 a year.
- 46% of Canadian Diabetes Association members personally spend \$50 to \$200 a month on prescription medications, devices and supplies. 28% of them spend more than \$200 a month out of their own pocket. (Source: *Diabetes Report 2005*.)

DIABETES HITS THE POOREST HARDEST.

- The burden of diabetes on individuals & their families is not only a financial burden, the pain, anxiety & reduced quality of life also have a devastating impact. (Source: *International Diabetes Federation, Unite for Diabetes, Key Messages*.)
- Canadians with the lowest household incomes are nearly three times more likely to have diabetes than the highest income group (7.6% compared to 2.7%). (Source: *Health Council of Canada, Why Health Care Reform Matters, p. 31*.)

COST OF UNHEALTHY WEIGHT IN CANADA

IN 1999, PHYSICAL INACTIVITY COST ALL CANADIANS APPROXIMATELY \$2.1 BILLION OR 2.5 % OF TOTAL DIRECT HEALTHCARE COSTS IN CANADA.

- “In 1999 approximately 21,000 Canadians died prematurely due to medical problems related to physical inactivity & added \$2.1 billion in direct costs to



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Canada's already burdened health care system" (Source: Katzmarzyk PT, Gledhill N, Shephard RJ, *The Economic Burden of Physical Inactivity in Canada. Can Med Assoc J* 2000;163:1435-40..)

A 1% INCREASE IN THE NUMBER OF CANADIANS WHO ARE PHYSICALLY ACTIVE WOULD RESULT IN AN EXPECTED ANNUAL SAVING OF \$877,000 (IN 1993 DOLLARS) IN THE DIRECT COSTS OF TREATING TYPE 2 DIABETES.

(Source: Conference Board of Canada, *Physical activity & the cost of treating illness, 1996 & cited in Diabetes in Canada (1999).*)

Pre-Diabetes & the Prevention of Type 2 Diabetes

AN ESTIMATED 4.7 MILLION CANADIANS AGED 40 TO 74 YEARS HAVE PRE-DIABETES (impaired fasting glucose). (Source: 2003 estimate from PHAC/CCDPC based on NHANESIII & CCHS 2002.)

PRE-DIABETES DOUBLES THE RISK OF HEART DISEASE.

- Study showed that the risk of cardiac mortality was 2.6 times higher amongst people with diabetes, & 2.5 times higher amongst people with pre-diabetes or impaired fasting glucose. (Source: J. Shaw, American Heart Association's journal - *Circulation*, June 2007. Note: This study was undertaken by the International Diabetes Institute in Melbourne, Australia.)

OVER 50% OF TYPE 2 DIABETES CAN BE PREVENTED. (Source: International Diabetes Federation, *Unite for Diabetes, Key Messages, 2007.*)

BEING PHYSICALLY ACTIVE HELPS PREVENT TYPE 2 DIABETES.

- The Diabetes Prevention Program (DPP2), found that people at risk of developing type 2 (all participants were overweight & all had impaired glucose tolerance) were able to cut their risk of developing diabetes by 58% with moderate physical activity (30 minutes a day) & weight loss (5-7% bodyweight or



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about 15 lbs.). For people over age 60, the risk was cut by almost 71%.
(Source: DPP2 sponsored by the US National Institute of Diabetes & Digestive & Kidney Diseases, June 2001.)

- “Epidemiological studies suggest that physical activity can reduce the risk of non-insulin-dependent diabetes by up to 50 percent.” (Source: Health Canada “Don’t turn your back on Diabetes”.)
- This same study showed that twice daily doses of 850 milligrams of metformin delayed the onset by 3 years on average & lead to an 8% reduction in the risk of diabetes. (Source: DPP2 sponsored by the US National Institute of Diabetes & Digestive & Kidney Diseases, June 2001.)

RECREATION HELPS PEOPLE LIVE LONGER ADDING UP TO 2 YEARS TO LIFE EXPECTANCY. (Source: Saskatchewan Health, October 2003.)

DEPRESSION RAISES THE RISK OF TYPE 2 DIABETES IN CANADIANS OVER 65 YEARS OF AGE. (Source: M. Carnethon et al, Archives of Internal Medicine, June 2007.)

Modifiable risk factors for the prevention of type 2 diabetes

Weight – “The prevalence of diabetes in adults increases by 5-10% for every 1 kg increase in population-measured body weight.” (Source: Diabetes in Canada, 2nd Ed, p. 31.)

Inactivity - “In 1998/99 65.1% of people with diabetes described themselves as inactive (versus 55.4% of the general population).” (Source: Diabetes in Canada, 2nd Ed, p. 34.)

Blood pressure – “46.5% of people with diabetes reported high blood pressure versus 13.7% of the general population in 1998/99.” (Source: Diabetes in Canada, 2nd Ed, p. 37.)

Gestational diabetes – “Up to 40% of women with gestational diabetes may develop type 2 diabetes as they get older.” (Source: Diabetes in Canada, 2nd Ed, p. 21.5)