Establishing Digestive Health as a Priority for Canadians

The Canadian Digestive Health Foundation
National Digestive Disorders Prevalence & Impact Study Report

November 2009
20 million Canadians suffer from digestive disorders

We believe this is unnecessary and unacceptable.
Establishing Digestive Health as a Priority for Canadians

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Note: This report is based on the findings of
The Canadian Digestive Health Foundation National Digestive Disorders Prevalence & Impact Study Report
supplemented with data from the Canadian Digestive Health Foundation archives
and selected peer-reviewed references cited in the document.

November 2009
The Canadian Digestive Health Foundation
National Digestive Disorders Prevalence & Impact Study Report
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Message from the President of the Canadian Digestive Health Foundation

November 4, 2009

Dear Digestive Health Guardians,

Canada is in the midst of a digestive health crisis. This year, approximately 20 million Canadians will suffer from at least one digestive disorder, we will incur $18 billion in healthcare costs and lost productivity, and thousands of people will die unnecessarily. As key stakeholders in the digestive health community, we recognize the urgent need to combine our collective wisdom, expertise, and energies to ensure both the public and policy makers are aware of the serious impact that digestive diseases have on our society and to effect change.

You are reading the Canadian Digestive Health Foundation 2009 National Digestive Disorders Prevalence & Impact Study Report, Establishing Digestive Health as a Priority for Canadians. This document is an abridged version of an extensive study that outlines the prevalence, incidence and impact, both social and economic, of digestive disorders in Canada.

We have learned much from conducting this study. Government bodies, physicians, patients, and the public-at-large are not fully communicating about the prevalence and impact digestive diseases have on the lives of Canadians. Because people are uncomfortable talking about the symptoms and stigma associated with their bowels, important conversations are stopping before they begin. As a result, the life-changing and often devastating impact of digestive disease on Canadians remains undiscovered or worse, ignored.

www.CDHF.ca
The realities are many. Digestive disorders do not discriminate and can affect anyone. Certain geographic areas and populations, however, are disproportionately affected – northern communities, First Nations people, the obese, and the elderly in particular. The risk of cancers related to digestive disease is increasing. Resources for diagnostic, care and critical research, which are already limited, are shrinking. Our economy is being impacted as millions miss work and perform poorly. Related healthcare costs are soaring while wait times and access to diagnosis and care are increasing.

Now that we know that almost two out of every three Canadians are affected, it is time to acknowledge our situation and take action to restore the digestive health and quality of life of Canadians. Some of the most devastating digestive diseases are easily identifiable and treatable. In fact, up to 42% of digestive diseases are preventable. Solutions exist. They require a long term, integrated commitment and planning that involves all levels of government and society. We must develop effective partnerships both within and outside the health sector to engage the public, healthcare providers, their professional organizations, non-governmental organizations, industry, and the media to empower Canadians to become guardians of and leaders in digestive health.

There is a clear and pressing need to establish digestive health as a national priority and part of a healthy lifestyle that we value and protect. The time to introduce solutions – solutions that will require changes in the way we live and provide care – is long overdue.

Together we can make a difference. Please join me.

Dr. Richard Fedorak
President, Canadian Digestive Health Foundation
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Establishing Digestive Health as a Priority for Canadians
Executive Summary

Digestive diseases have an enormous and under-appreciated impact on individual Canadians, Canadian society, and the Canadian healthcare system. Most digestive diseases strike individuals in their most productive, energetic years, seriously compromising their personal and professional productivity. The alarming facts highlighted below warrant our urgent and long-overdue attention.

Prevalence

- Digestive disorders, some of them chronic and serious, affect about 20 million Canadians
- Irritable bowel syndrome alone may affect up to 5 million Canadians
- First-nations people are 1.5 to 2 times more likely to develop digestive disorders
- The number of Canadians with ulcers has increased as much as 50% since 1996. This trend is likely to continue as our population ages thereby increasing the number of patients using anti-inflammatory medications and as long as obesity remains a problem
- Almost 30,000 Canadians die of digestive disease every year, about 8,900 of them from colorectal cancer
- While people can get colorectal cancer at any age, people over 70 have a substantially elevated risk

Impact

- Digestive diseases result in an annual loss of $18 billion in healthcare costs and lost productivity (based on 2000 figures)
- Digestive diseases represent 15 percent of the total direct health-economic burden in
Executive Summary

Canada – more than almost any other disease category, including respiratory disease and diabetes

- Irritable bowel syndrome has a “severe impact” on more than 45 percent of the millions of Canadians affected by this disorder – about 70 percent of them women – and costs the Canadian healthcare system $1.5 billion per year
- People with digestive illnesses miss an average of 13.4 days of work per year, adding up to 18 million days lost per year throughout the country
- The annual costs of acute inpatient care for colorectal cancer exceed $200 million
- Several digestive diseases, including inflammatory bowel disease (IBD), increase susceptibility to cancer

Gaps in Care

- Up to 42 percent of digestive diseases – including colorectal cancer – are preventable, but Canadians are not making full use of preventive strategies to preserve their digestive health
- The total wait time (time to consultation + time to procedure) for digestive health issues rose from 127 days in 2005 to 155 days in 2008, far above the Canadian Association of Gastroenterology’s evidence-based benchmarks
- Two-thirds of patients with clinically significant IBD wait more than 18 weeks for treatment; the CAG recommends a maximum of 2 weeks
- Canada has about 550 gastroenterologists – half as many as needed – and 33 percent of them are expected to retire over the next 10 years
Local efforts alone cannot bridge these gaps. To prepare for the escalating digestive-health needs of the Canadian population, Canada needs a national strategic and action plan for digestive disease and health, just as it has for cancer, diabetes, and heart health. Failing to take concerted action will perpetuate the human suffering caused by digestive disease and exacerbate the ever-growing burden on our healthcare system and on national productivity.

A Canadian Digestive Health Strategy and Action Plan would help demystify digestive disease to the Canadian public, create an infrastructure to enable timely access to services, and use innovation to enhance digestive disease prevention and care, thereby meeting Canada’s urgent need and propelling our country to a position of international leadership in digestive health.
Introduction

We are in the midst of a genuine national health crisis

The devastating impact of cancer and heart disease is well known to many Canadians. What fewer people may realize is that digestive diseases have at least as great an impact on individual Canadians, Canadian society, and the Canadian healthcare system.

While some digestive diseases may shorten life, digestive diseases generally erode quality of life more than lifespan. Most digestive diseases strike individuals in their most productive, energetic years, seriously compromising productivity, participation in the workforce, family life and activities of daily living. Digestive diseases strain the Canadian healthcare system on many fronts: repeated physician visits, long delays to diagnosis and treatment, repeated emergency visits and hospital stays, and long-term (often life-long) drug use.

Awareness of the digestive health crisis in Canada continues to lag behind the alarming statistics, both among professional stakeholders and in the population at large. The media's focus on other important diseases, along with a lingering perception that digestive diseases constitute an inevitable part of living and aging, may help explain this surprising lag.

As a progressive, health-centred nation, we have the resources to reduce the suffering of Canadians affected by digestive disorders and to ease the strain of digestive disease on our society and healthcare system. Failing to take action will perpetuate the poor health, impaired quality of life, and health-economic hardship caused by digestive disease in this country.

Canada has a strategy for cancer prevention and control, a strategy for diabetes prevention and care, and a framework for lung and heart health. We urgently need a national strategy for digestive disease and health. The health of individuals, workplaces, and Canadian society is at stake.
the RATES of many digestive diseases appear to be RISING
Digestive disorders affect about 60 percent of the Canadian population, or 20 million people. While some cases are transient and merely bothersome, many others are chronic and severe, substantially impairing both productivity and quality of life.

If the high prevalence of digestive disease in Canada warrants concern, the fact that Canada has a higher rate of digestive disease than all but 6 other countries in the world is even more worrisome. For reasons that are not entirely clear, Canada has the highest incidence of gastrointestinal ulcers in the world – 7 times higher than the incidence in the U.S. Canada also has one of the highest rates of irritable bowel syndrome in the world.

### Estimated number of people affected by digestive disorders in Canada

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gastroesophageal reflux disease</td>
<td>5,000,000 *</td>
</tr>
<tr>
<td>Irritable bowel syndrome</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Stomach ulcer</td>
<td>1,300,000</td>
</tr>
<tr>
<td>Pancreatitis</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Duodenal ulcer up to</td>
<td>850,000</td>
</tr>
<tr>
<td>Barrett’s esophagus</td>
<td>800,000</td>
</tr>
<tr>
<td>Celiac disease</td>
<td>330,000 +</td>
</tr>
<tr>
<td>Inflammatory bowel disease</td>
<td>250,000</td>
</tr>
<tr>
<td>Diverticular disease</td>
<td>130,000</td>
</tr>
<tr>
<td>Colorectal cancer</td>
<td>93,000+**</td>
</tr>
<tr>
<td>Lactose intolerance</td>
<td>7,000,000</td>
</tr>
</tbody>
</table>

*experience symptoms at least once a week  ** 10-year prevalence-duration

The digestive disease crisis is especially acute among First Nations people, who have 1.5 to 2 times the likelihood of developing these diseases compared to people from other ethnic groups. Of particular note, hepatitis A and B are twice as prevalent in the Canadian Arctic as they are in the southern areas of the country.
Still more alarming is that the rates of many digestive diseases appear to be rising. Using information acquired from the Régie de l’assurance maladie du Québec, researchers discovered that the prevalence of Crohn’s disease more than tripled in Québec between 1993 and 2002.\(^3\) Data from Statistics Canada show that bowel disorders in general are increasing at an unprecedented rate throughout the country.\(^1,6,7\)

As a rule, digestive diseases have a greater impact on quality of life than on lifespan itself. Still, about 4 percent of all deaths in Canada can be traced to a digestive disease.\(^8\) This stands to reason when one considers that one in 7 of all cancers in Canada involve the digestive tract.\(^1\) Of the 21,500 Canadians diagnosed with colon cancer every year, about 8,900 will die. All told, almost 30,000 Canadians die of digestive diseases every year – many of them preventable and treatable.\(^8\)

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**Prevalence**

30,000 Canadians die of digestive disease

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**Not just a bowel problem**

Encompassing Crohn’s disease and ulcerative colitis, inflammatory bowel disease (IBD) is more common in Canada than either multiple sclerosis or HIV and as common as Type 1 diabetes. Many people develop the disease in their 20s, coincident with their peak years of productivity and family life. The disease may become severe enough to prevent such individuals from realizing their personal and professional ambitions.
Prevalence

References
2. Statistics Canada – Health Reports. 82-003-X. Vol. 20 no. 1. Cancer prevalence in the Canadian population. Table 1. www.statcan.gc.ca/pub/82-003-x/2009001/article/10800/tb/t1-eng.htm

N.B.: All other data extracted from the 2009 Canadian Digestive Health Foundation National Digestive Disorders Prevalence & Impact Study.
some digestive disorders INCREASE susceptibility to CANCER
The cancer connection
Certain digestive diseases, while not classified as cancer, increase the risk of cancer over time.

- Infection with Helicobacter pylori (the bacterium that causes ulcers) increases the risk for stomach cancer by as much as six-fold, and the World Health Organization has identified H. pylori infection as a carcinogen.
- As many as 30 percent of patients with untreated celiac disease may develop a malignancy.
- Barrett's esophagus, a condition involving changes in the cells lining the lower esophagus, is believed to increase the risk of developing esophageal cancer.
- Gallstone disease triples the risk of developing cancer of the gallbladder.
- People with inflammatory bowel disease have an elevated risk of colorectal cancer.

Personal suffering and impairment
Digestive diseases impair the quality of life of millions of Canadians. In 2002, the Ipsos-Reid IBS [Irritable Bowel Syndrome] in Canada Survey shed light on the extent of impairment and dysfunction caused by this “everyday” digestive disease. More than 85 percent of respondents to the survey ranked their symptoms as “extremely or very bothersome” (to the extent of interfering with work, socializing and travel), and 45 percent reported their IBS had a “severe impact” on overall quality of life. In another survey, IBS patients maintained they would give up a quarter of their remaining years of life, on average, to be free of the disease. Gastroesophageal disease, in turn, impairs quality of life to the same degree as a history of acute coronary events.

A few times a month the pain was so bad I felt as though I had just drunk acid.
Shawn Richarz, lawyer, living with gastroesophageal reflux disease

Certain digestive disorders may also increase in severity over time, further eroding quality of life. The majority of patients with Crohn’s disease require hospitalization at some point, and more than half eventually require surgery. Other digestive disorders may increase susceptibility to other illnesses or lead to complications such as cancer (see box to the right).
Establishing Digestive Health as a Priority for Canadians

Productivity

On average, people with digestive illnesses miss 13.4 days of work per year, which adds up to millions of days over the course of a year. Gastroesophageal reflux disease (GERD) symptoms cause affected people to miss 16 percent of their work year. Even when they do attend the workplace, people with chronic upper gastrointestinal symptoms work 8 times less productively than their healthy colleagues. Diarrhea alone accounts for about 150,000 sick days per year.

Along with their impact on attendance and efficiency at work, digestive diseases may prevent people from participating in the workforce altogether. In 1999, a study based on a national survey found that 28.9 percent of people with inflammatory bowel disease (IBD) were not working, as opposed to just 18.5 percent of those without the disease. Accordingly, indirect labour costs incurred by IBD (primarily from long-term work loss) exceed $1 billion per year.

Economic burden

Accounting for 10 percent of all hospitalizations, digestive diseases represent 15 percent of the total direct health-economic burden in Canada – more than any other disease category, including cardiac and respiratory disease.

Consultation and treatment for indigestion alone sets the Canadian healthcare system back by $460 million per year. In 2008, inflammatory bowel disease (IBD) incurred direct medical costs of $700 million, including $162 million for prescription drugs – $809 per patient – and $134 million for additional physician visits and outpatient surgeries. At $1.5 billion per year, the direct medical costs traceable to irritable bowel syndrome (IBS) soar still higher.
For colon cancer, the second most expensive cancer to treat, each hospital stay costs $13,000 and lifetime treatment costs can run as high as $750,000 per patient. All told, the costs of acute inpatient care for colorectal cancer approached $215 million in 2004-05. With each hospital stay for ulcerative colitis carrying a price tag of $9,400, the costs of hospitalization for this disease alone ballooned to an estimated $120 million in 2008. While the duration of hospital stays has thankfully decreased for some digestive disorders, such as GERD, the costs remain high.

Estimated direct annual costs of treatment

<table>
<thead>
<tr>
<th>Condition</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBS – Irritable bowel syndrome</td>
<td>$1,500 million</td>
</tr>
<tr>
<td>IBD – Inflammatory bowel disease</td>
<td>$700 million</td>
</tr>
<tr>
<td>Colorectal Cancer</td>
<td>$200 million</td>
</tr>
<tr>
<td>Pancreatitis</td>
<td>$120 million</td>
</tr>
<tr>
<td>Diverticular disease</td>
<td>$87 million</td>
</tr>
<tr>
<td>Peptic ulcers</td>
<td>$67 million</td>
</tr>
</tbody>
</table>

For colorectal cancer and pancreatitis: acute inpatient costs. For peptic ulcers: inpatient costs.

hospitalization for IBD costs up to $120 MILLION

“The procedure [colonoscopy] isn’t as intrusive as it may sound. When you consider the benefits, the discomfort isn’t even a bump on the road.”

Richard Grzymek, family history of colorectal cancer
Medications further inflate the cost of digestive diseases, both for individuals and for the healthcare system. Annual sales of prescription and over-the-counter antacids and anti-ulcer drugs in Canada hover around $2 billion. Despite the popularity of acid-suppressing medications, however, 42 percent of GERD patients report dissatisfaction with the outcome of drug therapy.

Given the expected increase in the disease burden, the concomitant costs are set to grow still further.

References
1. IBS in Canada Survey (Ipsos-Reid, 2002).
N.B.: All other data extracted from the 2009 Canadian Digestive Health Foundation National Digestive Disorders Prevalence & Impact Study.
Gaps in Care

Public awareness
Digestive disorders are being underreported in the general media. As a result, public awareness of symptoms and risk factors is inconsistent. It is not widely known that obesity is a risk factor for some digestive disorders (e.g., Barrett’s esophagus, some cancers) and exacerbates the symptoms of others (e.g., irritable bowel syndrome). Further, many individuals view their digestive troubles as embarrassing, shameful, or a sign of personal weakness. The lingering stigma associated with digestive disease can prevent people from seeking appropriate medical attention.

Among family doctors, awareness of the scope and range of presenting symptoms of digestive disorders is similarly inconsistent, resulting in delayed or incorrect diagnoses. For example, nearly 30 percent of children with celiac disease are initially misdiagnosed, draining the healthcare system by millions of dollars in extra physician consultations by families of affected children. Some physicians still doubt the legitimacy of irritable bowel syndrome. Physicians also need to take a more active role in educating and supporting patients with digestive health problems, so these patients can become partners in their own care.

Prevention
Up to 42 percent of digestive disease is preventable, including many cases of dyspepsia, ulcers, and cancers of the colon, and rectum. Canadians are not using preventive strategies, such as screening tests and lifestyle changes, as often or consistently as needed to preserve their digestive health. Exaggerated fears of the discomfort associated with certain tests, such as colonoscopy, may cause individuals to delay or forgo the procedure.

Colorectal cancer screening is recommended for all individuals 50 or older, in whom 94 percent of colorectal cancers are diagnosed. However, only 40 percent of Canadians in
this age bracket had colorectal cancer testing in 2008 (from 28% in Quebec to 53% in Manitoba). This alarming gap underscores the need for organized colorectal cancer screening programs in all provinces and territories.

Access to care

While access to and quality of digestive health services vary considerably across the country, long wait times, both for specialist consultations and for surgical procedures, loom as a common theme.

The Canadian Association of Gastroenterology (CAG) has established evidence-based recommendations for appropriate wait times for 24 different reasons for referral. Actual wait times fall markedly short of these targets – and are getting longer. A 2008 physician survey conducted by the CAG determined that the total wait time (time to consultation + time to procedure) for digestive health problems had risen from 127 days (18 weeks) in 2005 to 155 days (22 weeks) in 2008. For patients with positive fecal occult blood tests – an indicator of possible colorectal cancer – total wait times rose from 14 weeks in 2005 to more than 20 weeks in 2008. This stands in sharp contrast to the maximum wait of 8 weeks recommended by the CAG.

In June 2009, the Wait Time Alliance for Timely Access to healthcare produced a report called *Unfinished Business: A Report Card on Wait Times in Canada*, using results from a survey of physicians from 11 specialties including gastroenterology. Among the findings outlined in the report (see chart at left), one of the most alarming was that 67 percent of patients with clinical features of significant active inflammatory bowel disease (IBD) waited...
Gaps in Care

more than 18 weeks before receiving treatment – a sharp deviation from the 2 weeks recommended by the CAG. Similarly, 43 percent of patients with bright red rectal bleeding waited more than 18 weeks before treatment, in contrast to the recommended maximum of 2 months.

These unacceptable bottlenecks stem, in large part, from the shortage of gastroenterologists across the country. Based on 2002-03 data, Canada has a total of 550 gastroenterologists or 1.83 specialists per 100,000 population. This is half of the density in the U.S. and also falls markedly below the corresponding ratios for France and Australia. Compounding the problem, 33 percent of gastroenterologists are set to retire over the next 10 years. Based on the number of new gastroenterologists entering the field, Canadians will have 10 percent fewer gastroenterologists within 10 years – an alarming projection in view of the expected increase in demand.

Sometimes patients themselves delay visiting their doctors, often because of misguided beliefs about their conditions. It is not uncommon for people with GERD – of whom a third mistakenly attribute their disease to their food choices – to wait years before seeking medical treatment. To avert a digestive health crisis, the CAG recommends major investment in human and technical resources.

Delivery of digestive healthcare as well as approval and coverage for gastrointestinal drugs vary widely among provinces and territories. Even life-preserving medications (such as certain drugs for Crohn’s disease) are not listed in all formularies. Some digestive disorders require treatments that provincial/territorial health insurance plans do not subsidize at all. Each year, Canadian families affected by celiac disease spend $150 million to obtain gluten-free food products – the primary therapeutic option for the disease. This puts patients in an awkward financial position and causes some of them to defer or eschew treatment.

Colorectal cancer: the importance of being early
Research has shown that population screening for colorectal cancer significantly reduces the mortality rate from the disease. Depending on the patient’s family history, screening may consist of fecal occult blood testing (FOBT), flexible sigmoidoscopy, or colonoscopy. Screening can detect abnormal cells before they turn cancerous. The American Cancer Society states that “regular colorectal cancer screening or testing is one of the most powerful weapons for preventing colorectal cancer.” It is also one of the most cost-effective strategies available. Even if cancer is detected, the disease is curable if diagnosed and treated early.
Gaps in Care

Research

While the need for research into digestive health and disease continues to escalate, government funding for gastroenterology research has decreased by more than 25 percent over the past 10 years. Today, only 5.4 percent of funds allocated for medical-illness research are directed to digestive diseases – a disproportionately low figure, considering these illnesses account for 15 percent of the health-economic burden.

References


N.B.: All other data extracted from the 2009 Canadian Digestive Health Foundation National Digestive Disorders Prevalence & Impact Study.
Call to Action

The facts speak for themselves. The need for a Canadian Digestive Health Strategy and Action Plan is pressing. Failing to take action will result in more Canadians living with and dying from digestive diseases and the burden on the healthcare system will increase to unaffordable levels in the very near future.

As many of the most devastating and expensive digestive diseases are easily identifiable, treatable or even preventable, this area of healthcare represents a unique opportunity for Canadian leadership and policymakers to bring about a fundamental change.

Canada has a national strategy for cancer prevention and control, a strategy for diabetes prevention and care, and a framework for lung health and heart health. The magnitude of the digestive health crisis in our country calls for a pan-Canadian strategic plan for digestive diseases and digestive health. A committed group of stakeholders in digestive health, in partnership with the Government of Canada, has the means to make this happen.

Through systematic education, legislation, regulation, and policy, a Canadian Digestive Health Strategy and Action Plan will bridge the gaps in digestive healthcare and thereby enhance national productivity, ease a tremendous strain on our healthcare system, and alleviate the burden of suffering on untold numbers of Canadians. We cannot afford to let this call to action go unheeded in our generation.

An overarching Canadian Digestive Health Strategy and Action Plan might include the development of initiatives in the following areas:
Call to Action

- Improving digestive health and disease knowledge transfer between regional, provincial and federal bodies
- Supporting efforts to ensure that the right people are providing the right services at the right times
- Integrating with already existing health strategies
- Helping Canadians help themselves through self management programs
- Reducing obesity and other primary risk factors causing digestive disease
- Ending the digestive health crisis among aboriginal and indigenous peoples
- Beating digestive cancers by building new, and supporting existing, screening programs
APPENDIX: Salient facts about individual digestive disorders

To underscore the scope of the digestive health crisis in Canada, some key facts and statistics pertaining to individual digestive disorders are listed on the following pages.

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- Irritable Bowel Syndrome ........................................ 29
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In celiac disease, the immune system is reacting against gluten, a protein found in wheat, causing damage to villi which results in the loss of surface area for absorbing nutrients. Similar proteins are found in other grains such as rye and barley. Celiac disease is also known as gluten-sensitive enteropathy (GSE) or celiac sprue.

- More than 330,000 Canadians are believed to be affected by celiac disease with only approximately 110,000 diagnosed.
- Nearly 30% of Canadian children with celiac disease (24,000) are initially misdiagnosed.
- From the first recognizable onset of symptoms, it takes an average of 1 year to obtain a diagnosis of celiac disease. In some cases, the time to diagnosis may take as long as 12 years.
- Due to under-recognition of celiac disease in pediatric patients, $2.5 million has been spent in the healthcare system as families consulted 2 or more physicians before receiving a diagnosis for their child.
- Each year, families affected by celiac disease spend $150 million to obtain gluten-free foodstuffs – the primary therapeutic option for the disease.
- Gluten-free products are 2.5 times more expensive than the natural gluten-containing counterparts, adding to the financial burden of individuals and families affected by the disease.
- Access to gluten-free foods often prevents families with celiac disease from traveling, dining out, and attending social activities thereby decreasing quality of life.
- As 30% of celiac disease patients may develop a malignancy, getting a diagnosis and adhering to a gluten-free diet is critical for preventive purposes in spite of the personal costs.
- Delayed diagnosis of celiac disease increases the risk of developing serious chronic conditions (including malignancies) that threaten life, impair productivity, reduce people’s ability to contribute to society and increase the use of the healthcare system.

N.B.: All data extracted from the 2009 Canadian Digestive Health Foundation National Digestive Disorders Prevalence & Impact Study.
APPENDIX: Diarrhea

People suffering from diarrhea experience frequent, loose, watery stools. This disorder can affect people of all ages but is particularly worrisome in the young and old because of the threat of dehydration. Physicians talk about two types of diarrhea. Acute diarrhea can be caused by bacterial, viral, or parasitic infections, food intolerance, or reactions to medicine and lasts a short time. Chronic diarrhea is usually related to other digestive disorders such as irritable bowel syndrome (IBS) or inflammatory bowel disease (IBD) and may last for the duration of the illness. Diarrhea can be a symptom of intestinal infection, celiac disease or lactose intolerance.

- Each year, 50 million people from developed countries succumb to traveler’s diarrhea.
- Each year, 4.5 billion people contract diarrhea worldwide. Of these, at least 1.8 million will die.
- 86% of acute gastrointestinal illnesses in Canadian cities involve diarrhea.
- The hospitalization costs for treating severe cases of diarrhea totaled more than $7.1 million in 2004-2005.
- Approximately 25% of people taking antibiotic medicines develop diarrhea.
- More than 21% of patients with severe diarrhea experienced medical complications.
- The Canadian over-the-counter retail sales for diarrhea remedies were $50 million in 2008. Between 2003 and 2008, this market nearly doubled in sales.
- In spite of the high mortality rates associated with diarrhea, research funding for this condition is very low – 10 times lower than funding for type 2 diabetes research.

N.B.: All data extracted from the 2009 Canadian Digestive Health Foundation National Digestive Disorders Prevalence & Impact Study.
This group of cancers includes colorectal, stomach, esophageal, pancreatic, liver, and biliary cancers. Many of these cancers are preventable.

- Next to lung cancer, digestive cancers kill more Canadians than any other cancer type—about 15,000 individuals per year.
- In 2009, about 32,000 Canadians will be diagnosed with a digestive cancer, representing one in 5 new cancer cases.
- Based on 2009 data, colorectal cancer is the fourth most prevalent cancer in Canada, behind prostate, lung and breast cancers; it is also the 2nd most expensive cancer to treat.
- Colon cancer kills more Canadians than any other digestive cancer (8,900 individuals are expected to die in 2009) and accounts for about 10 percent of all cancer deaths.
- Most people with stomach and esophageal cancer die within 5 years of diagnosis; pancreatic cancer is even more deadly, with only 3 out of 50 patients surviving past the 5-year mark.
- In 2008, almost 1,600 Canadians died from stomach cancer, 1,350 from esophageal cancer, and over 3,000 from pancreatic cancer.
- There are 800,000 Canadians are living with Barrett’s esophagus. Those with this condition are at an increased risk of developing esophageal cancer.

N.B.: All data extracted from the 2009 Canadian Digestive Health Foundation National Digestive Disorders Prevalence & Impact Study.
APPENDIX: Diverticular Disease

Diverticular disease is characterized by sac-like protrusions (called diverticula) of the wall of the colon. It may alter bowel functioning and cause serious infection or bleeding.

- Over 130,000 Canadians have diverticular disease.
- The prevalence of diverticular disease increases markedly with age; at age 55, the risk is ten times greater than it is at age 35; among Canadians over age 80, about half develop the disease.
- Every year, more than 3,000 Canadians require life-saving surgical intervention to treat their diverticular disease, and over 400 die from complications associated with the disease.
- Diverticular disease incurs direct costs of $88.6 million per year in Canada.

N.B.: All data extracted from the 2009 Canadian Digestive Health Foundation National Digestive Disorders Prevalence & Impact Study.
APPENDIX: Gastroesophageal Reflux Disease (GERD)

Gastroesophageal reflux disease (GERD) is a disorder affecting the valve between the esophagus (swallowing tube) and the stomach. Reflux refers to a reverse flow of the stomach’s contents into the esophagus. Most people living with GERD suffer from indigestion, heartburn or acid reflux. Recent studies show that GERD in infants and children is more common than previously thought and may produce repeated vomiting, coughing and other respiratory problems, or failure to grow.

- GERD patients are absent from work 16% of each year due to their symptoms. In Canada, this represents a workforce productivity loss of 1.7 billion hours.
- On average, 5 million Canadians experience heartburn and/or acid regurgitation at least once each week.
- Patient concerns about indigestion cost the Canadian healthcare system $460 million each year.
- Persons with chronic upper gastrointestinal complaints are absent 9 times more often than healthy persons. As well, while at work, the productivity of symptomatic individuals is 8 times lower than those who are not affected by GERD.
- Canada is ranked as the 12th largest consumer of indigestion and heartburn remedies in the world.
- Annual sales of prescription and over-the-counter antacids and anti-ulcer drugs hover around $2 billion in Canada.

N.B.: All data extracted from the 2009 Canadian Digestive Health Foundation National Digestive Disorders Prevalence & Impact Study.
APPENDIX: Hepatitis

Most cases of hepatitis can be traced to a group of viruses. Symptoms, which include fever, jaundice, abdominal pain and weakness, may vary widely in severity and duration.

- In 2005-2006, hospitalization costs for disorders of the hepatobiliary tract were $30 million.
- In North America, healthcare costs for hepatitis C are projected to quadruple between 1990 and 2015.
- Each year, more than 600 Canadians are hospitalized for hepatitis.
- In 2004-2005, hospital stays for hepatitis alone cost more than $7 million.
- Approximately 270,000 Canadians carried the hepatitis B virus in 2008.
- Each year, 470 Canadians acquire hepatitis C while the national prevalence is 270,000 cases.
- Worldwide, the hepatitis C virus ranks among the 10 top causes of deaths from infectious diseases.
- Similar to other arctic areas, Canadian arctic residents have a two-fold higher prevalence of hepatitis A and B chronic infections compared to the southern areas of the country.
- In Canada, injection drug users in urban centres are ten times more likely to become infected with hepatitis C than with HIV.

N.B.: All data extracted from the 2009 Canadian Digestive Health Foundation National Digestive Disorders Prevalence & Impact Study.
Inflammatory bowel disease (IBD) consists principally of two separate disorders that cause inflammation (redness and swelling) and ulceration (sores) of the small and large intestines. These two disorders are called ulcerative colitis and Crohn’s disease. Malnutrition and blood disorders are common conditions in IBD patients.

- Canada has one of the highest incidence and prevalence rates of IBD in the world with more than 200,000 Canadians living with the disease.
- The total direct and indirect costs of IBD are $1.8 billion.
- Sick leave and absenteeism attributed to IBD cost the Canadian economy $104.2 million per year.
- Absenteeism and early retirement due to IBD are estimated to cost the Canadian market $746 million.
- In a single year, the Canadian workforce suffers a productivity loss of $138 million due to short-term absences of IBD patients.
- The average age of IBD onset coincides with the most important socioeconomic period of an individual’s life. As such, the indirect costs of IBD are enormous, as symptom severity may prevent patients from realizing their career potential or creating families.
- Every year, 1 person out of every 20 patients with Crohn’s disease or ulcerative colitis is hospitalized.
- The majority of Crohn’s disease patients will require hospitalization at some point and more than half will require surgery.
- Almost half of IBD patients have additional health issues affecting their joints, skin, eyes, and biliary tract that may be more debilitating than the bowel symptoms.
- Patients with moderate to severe Crohn’s disease have an increased risk of premature death similar to that reported for moderate smokers.

N.B.: All data extracted from the 2009 Canadian Digestive Health Foundation National Digestive Disorders Prevalence & Impact Study.
APPENDIX: Irritable Bowel Syndrome (IBS)

Irritable Bowel Syndrome, or IBS, is a chronic gastrointestinal disorder. Those affected may experience recurrent abdominal pain and irregular bowel patterns that are often painful. The symptoms of IBS may last for months or years and impact the ability of those affected to work, attend school, take part in social activities or participate in sporting events. IBS affects significantly more women than men and is one of the most common causes for work and school absenteeism.

• Canada has one of the highest rates of IBS in the world. Up to 5 million Canadians may suffer from IBS with about 120,000 Canadians developing the disorder each year.
• The acute-care inpatient costs for IBS make it the fourth most expensive digestive disease in Canada.
• The annual economic and healthcare burden of IBS is in excess of $6.5 billion. This does not include monies spent on either over-the-counter drugs or prescriptions.
• Approximately $8 billion of lost productivity can be attributed to IBS in Canada each year.
• Patients with IBS represent the majority of referrals to gastroenterologists.
• About 40% of IBS sufferers seek medical attention.
• Obesity enhances the severity of IBS symptoms.

N.B.: All data extracted from the 2009 Canadian Digestive Health Foundation National Digestive Disorders Prevalence & Impact Study.
Lactose is the sugar in milk products. Individuals who are lactose intolerant lack the enzyme or chemical (lactase) to break down this sugar for absorption. Lactose then gets into the large bowel (colon) and may cause gas, bloating, diarrhea and abdominal cramping. Sometimes lactose intolerance occurs after digestive infections.

- Lactose intolerance affects more than 7 million Canadians.
- Only 10 percent of symptomatic patients are clinically tested for the condition.
- About a quarter of patients identified as lactose intolerant have celiac disease.
- Lactose-intolerant people who use lactase-containing products spend over $500 per year on these over-the-counter products and calcium supplements (necessary for people who avoid dairy products) which add to the cost of managing the disease.

N.B.: All data extracted from the 2009 Canadian Digestive Health Foundation National Digestive Disorders Prevalence & Impact Study.
APPENDIX: Pancreatitis

Pancreatitis, or inflammation of the pancreas, is a serious illness that requires immediate medical attention. The pancreas produces digestive enzymes needed to break down food and makes insulin, which is needed to control blood sugar. When the pancreas is inflamed it releases its own enzymes causing damage to the pancreas and surrounding structures. Severe cases may cause permanent tissue damage, organ failure, or even death.

- The incidence of both acute and chronic pancreatitis is increasing globally.
- Acute pancreatitis affects more than 600,000 Canadians, while more than 300,000 Canadians live with chronic pancreatitis.
- Each year, almost 15,000 Canadians experience a first attack of acute pancreatitis and 2,000 are diagnosed with chronic pancreatitis.
- Based on extrapolation of U.S. figures, pancreatitis incurs direct annual healthcare costs of about $200 million in Canada.

N.B.: All data extracted from the 2009 Canadian Digestive Health Foundation National Digestive Disorders Prevalence & Impact Study.
A gastric or peptic ulcer is a break in the lining of the stomach that is associated with inflammation. The most common symptom is indigestion, which can include pain, discomfort or a burning sensation in the upper abdomen (below the breastbone). Occasionally, this is associated with vomiting and difficulty finishing a normal size meal. Gastric ulcers are mainly caused by the bacterium Helicobacter pylori (H. pylori) or by chronic use of anti-inflammatory drugs for arthritis. Many of these drugs are available over-the-counter.

- It is estimated that there are 1.3 million Canadians living with stomach ulcers.
- In total, hospital care for peptic ulcer disease costs $67 million per year.
- Although peptic ulcer disease has declined due to improved medical treatments, peptic ulcer bleeding rates remain unchanged. This is primarily attributed to a growing elderly population with an increased usage of non-steroidal anti-inflammatory drugs (NSAIDs) such as naproxen or ibuprofen. Aspirin is also increasingly used for protection against heart attacks and strokes.
- A crude estimate of the Canadian prevalence of H. pylori is 8 to 10 million people.
- In First Nation communities, approximately 75% of the people are infected with H. pylori.
- H. pylori infection is considered to be a carcinogen by the World Health Organization as it is associated with the development of stomach cancer.

N.B.: All data extracted from the 2009 Canadian Digestive Health Foundation National Digestive Disorders Prevalence & Impact Study.
About the Canadian Digestive Health Foundation

Over 20 million Canadians suffer from digestive disorders every year. The Canadian Digestive Health Foundation believes this is unnecessary and unacceptable.

We reduce suffering and improve quality of life by empowering Canadians with trusted, up to date, science-based information about digestive health and disease.

We are the Foundation of the Canadian Association of Gastroenterology. As such, we work directly with leading physicians, scientists, and other healthcare professionals to help Canadians understand and take control of their digestive health with confidence and optimism.

Through education and research the Canadian Digestive Health Foundation aims to:

- **REDUCE** the incidence and prevalence of digestive disorders
- **IMPROVE** understanding of digestive health issues
- **SUPPORT** those suffering from digestive disorders
- **ENHANCE** quality of life for those living with digestive disorders
The Canadian Digestive Health Foundation is the foundation of the Canadian Association of Gastroenterology. As such, we are uniquely positioned to empower Canadians with trusted, current, science-based information so they can take charge of their digestive health with confidence and optimism.