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Chronic disease: What do sex and gender have to do with it?

Introduction

“While it is generally true that in most societies women live longer than men, it is also the case that women tend to be more affected by long-term and chronic illness, which significantly affects life quality.”

- Faten Ben Abdelaziz

[Women's Health and Equity Indicators](#) [1]

Fact: The number of Aboriginal women in Canada with diabetes surpasses that of Aboriginal men and is five times that of white women.

Fact: Depression is twice as common in women as in men.

Fact: Women suffer more than men from chronic obstructive pulmonary disease (COPD). At the same time, women have 20 - 60% lower mortality rates from COPD.

The evidence is fast becoming clear: chronic disease affects women and men differently. But this is relatively new knowledge: until recently, most research on chronic disease did not take sex and gender into account. Fortunately, the use of sex- and gender based analysis (SGBA)* is a tool that is now giving us valuable new insights into prevention and management of chronic diseases. Researchers are also increasingly taking an intersectional approach; that is, they are examining disease in the light not only of sex and gender, but also of ethnicity, education, income, and other social determinants of health.

With these new approaches, we are gaining a much deeper understanding of chronic disease. And we understand that it is not just about biological differences between women and men, although this is one piece of the picture. For example, we know that women and men tend to manage their chronic disease differently because of their gender roles. We also know that chronic disease can affect people differently according to their cultural background, where they live and how rich or poor they are. We are beginning to understand, too, that some of the major risk factors for chronic diseases – physical inactivity, inadequate fruit and vegetable intake, being overweight or obese, and smoking – are related in complex ways to sex, gender, income, education, geography, and a myriad of other factors.

In this special resource section, we first look at chronic disease with resources that consider the roles of sex, gender and other social determinants. Recognizing the impossibility of dealing with all chronic diseases, we have selected resources that deal with five of the most prevalent ones: diabetes Type 2, cardiovascular disease (CVD), lung diseases, autoimmune diseases, and depression.

*For more information on what SGBA is and how it is being used to further women's health, see: **Why sex and gender matter in health research, policy-making and practice.** [2]

Why should we consider sex and gender in relation to chronic disease?

These resources provide an overview of the sex and gender issues in relation to chronic diseases, demonstrating in many ways that our understanding of these issues is still in its infancy, and there is a strong need for more research that employs SGBA.

[The Burden of Illness](#) [3]

By Arlene Bierman et al., from Project for an Ontario Women's Health Evidence-Based Report: Volume 1, 2009

Demonstrates, by looking at the health of Ontario women and men, how chronic disease can be understood through a gender lens. Examines how chronic disease also differs among different groups of women, differentiated by where they live and their socioeconomic status. Chapter 3, Volume 1 of the the POWER Study.

Dissonant Disabilities: Women with Chronic Illnesses Explore Their Lives

Edited by Diane Driedger and Michelle Owen, Women's Press, Toronto, 2008

Delves into the key issues in the lives of women with chronic illnesses from the point of view of the women themselves. Explores how society reacts to women with chronic illness and how women living with chronic illness cope with the uncertainty of their bodies in a society that desires certainty.

This book is not available online. For more information about it and to order it, see this [website](#) [4].

[The Tides of Change: Addressing Inequity and Chronic Disease in Atlantic Canada](#) [5]

By Karen Hayward and Ronald Colman, Health Canada, 2003

Explores the relationships between inequity and chronic disease in Atlantic Canada by looking at sex, age, income, geography, ethnicity, and other determinants of health.

How are sex and gender used to understand chronic diseases? Some cases....

The following resources deal with specific chronic diseases not only from the perspectives of sex and gender, but also of class, ethnicity and other social determinants of health. As it would be impossible to cover all chronic diseases, we have chosen just five of the major ones to show how gender plays a crucial role in understanding disease.

Type 2 Diabetes

(Note: We are looking at type 2 diabetes, which affects 85-90% of the diabetic population, as opposed to type 1 diabetes, or juvenile-onset diabetes, which accounts for 10-15% of all people with the disease.)

As the following resources show, diabetes in Canada discriminates on the basis of sex, ethnicity and a multitude of other factors. While men overall have higher rates of diabetes than women, women between the ages of 20-34 have higher rates than men of the same age, likely because of gestational diabetes (a form of diabetes in non-diabetic women during pregnancy). This is an important factor, though, as gestational diabetes is a risk factor in women for developing diabetes later in life. And obesity is a greater risk factor for diabetes for women than for men.

There are very significant ethnic and socio-economic differences in the incidence of diabetes in Canada. Aboriginal women's rates are five times higher compared to non-Aboriginal women. Approximately two-thirds of the Aboriginal population diagnosed with diabetes are women. People in other ethnic groups, including South or West Asians and African Canadians, also have significantly higher rates than whites. In addition, the lower your income and education levels, the more likely you are to suffer from diabetes.

It is also important to note that environmental factors have recently been implicated in higher rates of diabetes. Exposure to persistent organic pollutants (POPs) puts one at much higher risk, and people living in First Nations communities often have much higher rates of exposure to this group of environmental toxins.

[Bitter Sweet or Toxic: Indigenous People, Diabetes and the Burden of Pollution](#) [6]

By John Schertow, *The Dominion*, February 2, 2010

Discusses growing evidence that diabetes is closely linked with environmental pollution, noting that more than a dozen published studies show a connection between Persistent Organic Pollutants (POPs) and higher rates of the disease, and that "Indigenous people carry an unequally high proportion of this global toxic burden."

[From the Beginning: Understanding Diabetes Using Dis-aggregated Data](#) [7]

By Lissa Donner and Margaret Haworth Brockman, in *Rising to the Challenge: Sex- and gender-based analysis for health planning, policy and research in Canada*, pp. 34-43, Atlantic Centre of Excellence for Women's Health, 2009

Explains that the incidence of diabetes in the general Canadian population is highest among First Nations women, followed by First Nations men. Concludes that diabetes prevention, detection and treatment programs will be more effective if they are both sex and age sensitive in their approach, and responsive to the needs of First Nations and other Aboriginal women and men.

Empowering Words of First Nations Women: Manual for Speaking Out About Life, Health and... Diabetes

By Katia Fecteau and Bernard Roy, Presses de l'Université Laval, 2005

Presents the stories of Attikamek, Micmac, and Innu women of Quebec who suffer from type 2 diabetes. Aims to show First Nations women that speaking openly helps people to acquire, develop, and exercise power over life and health.

The book may be purchased online on this [website](#) [8].

[Diabetes in Canadian Women](#) [9]

By Catherine Kelly and Gillian L. Booth, from Women's Health Surveillance Report, Canadian Institute for Health Information, 2003

Finds that Aboriginal women and low-income woman are particularly at risk for diabetes, as are women and men from other ethnic groups including South Asians, East Asians, African Canadians and Hispanics. Concludes that, "Further research is needed to determine the cultural groups affected and the other important determinants of health in these women of low socio-economic status."

[Our Stolen Future](#) [10]

Explores the emerging science of endocrine disruption, or how some synthetic chemicals interfere with the ways that hormones work in humans and wildlife.

If you search using the term "diabetes," you will find articles examining the possible links between chemical pollution and diabetes.

Cardiovascular Disease

Cardiovascular disease is a leading cause of death and disability in Canadians, but there are many differences in how the disease affects women and men, as shown in the following resources. While roughly the same numbers of women as men are dying of CVD, women die from different forms of it. Women also report having higher rates of high blood pressure than men; high blood pressure is a major risk factor for CVD.

There are differences, too, in how women and men are treated for CVD. For example, women's diagnoses are more often delayed and/or missed than they are with men, and women are less likely than men to receive preventative counselling, be treated by a specialist, or be transferred to another facility for treatment. Women also have higher in-hospital mortality rates following a heart attack. Drugs for heart disease, too, have a sex bias: statins, for example, which are prescribed widely to women for heart disease, have mainly been tested on men.

In addition, CVD differs according to ethnicity, education and income. For example, CVD is 1.5 times higher among First Nations and Inuit populations. CVD rates are higher for both women and men with less post-secondary education and lower incomes. And women with low incomes report more risk factors for CVD, such as smoking, physical inactivity, and/or being overweight, as well as decreased access to proper nutrition.

[Sex and Gender in Women's Heart Health](#) [7]

By Lorraine Greaves, Ann Pederson and Natalie Hemsing in *Rising to the Challenge: Sex- and gender-based analysis for health planning, policy and research in Canada*, pp. 74-75, Atlantic Centre of Excellence for Women's Health, 2009

Examines CVD among women in British Columbia, demonstrating how SGBA can effectively be used to understand chronic disease.

[Evidence for Caution: Women and Statin Use](#) [11]

By Harriet Rosenberg and Danielle Allard, *Women and Health Protection*, 2007

Examines the troubling issue of statins, one of the most common drugs prescribed to women for the prevention of heart disease. Notes that the clinical trials to assess statins' benefits and safety have focused on men. Shows that, for women with no history of

heart disease, there is no substantial clinical trial evidence that statins reduce the number of heart events or deaths in women of any age.

[Cardiovascular Disease \[12\]](#)

By Sherry L. Grace, Rick Fry, Angela Cheung and Donna E. Stewart, from Women's Health Surveillance Report, Canadian Institute for Health Information, 2003

Argues that health research, practice, and policy still do not adequately take into account the many significant differences in how CVD affects women and men. Explains that differences include symptoms, risk factors, age of onset, and how women and men seek treatment. Notes that the women in Canada who are most vulnerable to CVD are Aboriginal women, South Asian women, and women with type 2 diabetes.

[Cardiovascular Disease \[13\]](#)

Our Lens on the Sex, Gender, and Diversity Issues on This Topic, The Source

Presents a brief overview of CVD from the perspectives of sex, gender and diversity. Notes that “more research is needed to understand gender-specific risk factors that may contribute to cardiovascular disease, such as depression, physical inactivity, smoking, education, and low income.”

[Heart Healthy Women \[14\]](#)

Provides practical and easy-to-access information about cardiovascular disease in women.

[Gender and Cardiovascular Disease \[15\]](#)

Gender and Health Collaborative Curriculum

Provides an overview of women and cardiovascular disease, from the perspective of the health practitioner. Presented as an online interactive learning unit of the gender and health training for Ontario medical schools.

Lung Disease

That lung disease is becoming a serious health issue for women is made clear in the resources below. Chronic obstructive pulmonary disease (COPD) in particular has become one of the leading causes of death in women worldwide, killing more women than do breast and lung cancer combined. The most important cause of COPD is smoking, and the rate of smoking is increasing in women, particularly in developing countries.

Women with COPD suffer more than men – they report worse symptoms for similar severity of COPD due to smaller lung capacity, and smaller airways and muscles required for breathing. At the same time, women have 20 - 60% lower mortality rates from COPD than men and are less likely to die during hospital admissions, although they are more likely to die if they require mechanical ventilation.*

There are also gendered issues with this disease; for example, women are specifically targeted by light cigarette ads.

The following resources look at lung diseases in women and their relationship to smoking, as this is the major preventable risk factor.

[Lung Disease](#) [16]

U.S. Department of Health and Human Services, Office on Women's Health, 2010

Provides an excellent overview of the three main lung diseases in women: asthma, COPD and lung cancer.

[Women and COPD, A National Report](#) [17]

The Lung Association, 2006

Examines COPD in women in Canada. States that "COPD has emerged as a crucial women's health issue," with more than 425,000 women in Canada diagnosed in 2006, and more than 4,300 who died of the disease that same year.

[Turning a New Leaf: Women, Tobacco, and the Future](#) [18]

Edited by Lorraine Greaves, Natasha Jategaonkar and Sara Sanchez, BC Centre of Excellence for Women's Health and International Network of Women against Tobacco, 2006

Provides an overall picture of women's growing tobacco use. Identifies the health effects of tobacco, and describes women's role in tobacco production and marketing. Provides direction on assessing and addressing the gendered issues of tobacco control in policy, programming, and research to reduce the devastating effects of tobacco on women.

[Asthma](#) [19]

Our Lens on the Sex, Gender, and Diversity Issues on This Topic, The Source

Briefly looks at asthma through the perspectives of sex, gender and diversity.

[Lung Cancer](#) [20]

Our Lens on the Sex, Gender, and Diversity Issues on This Topic, The Source

Briefly looks at lung cancer through the perspectives of sex, gender and diversity. Notes that, while lung cancer incidence and mortality rates for men over 69 have levelled off due to overall decreases in tobacco use over the last thirty years, women's lung cancer rates have only begun to level off recently, and lung cancer mortality in women continues to increase.

*From: [Literature Review - Behavioural Guidelines for Adjusting to Medical Conditions](#) [21]

Autoimmune Diseases

An autoimmune disease is an illness that occurs when the body's tissues are attacked by the body's own immune system. Common autoimmune diseases include rheumatoid arthritis, systemic lupus erythematosus (lupus), multiple sclerosis, type 1 diabetes, Sjogren's syndrome and inflammatory bowel disease.

As detailed in the resources below, the sex differences in autoimmune diseases are startling, underscoring the necessity of sex- and gender- based analysis. Most occur in women, and most often during their childbearing years. Approximately 79% of the 8.5 million individuals worldwide diagnosed with an autoimmune disease are women.*

These diseases also often occur differently in women and men, with different age of onset, and different kinds of symptoms.

The following resources provide an overview of information about autoimmune diseases in women with a selection of resources on arthritis, multiple sclerosis, and lupus.

[Autoimmune Diseases: Overview](#) [22]

U.S. Department of Health and Human Services, Office on Women's Health, 2010

Provides a clear-language introduction to autoimmune diseases in women, their symptoms, treatment and management.

[Lupus](#) [23]

U.S. Department of Health and Human Services, Office on Women's Health, 2009

Provides easy-to-understand information about lupus in women, including the ethnic differences in its incidence: African American women are three times more likely to get lupus than white women and tend to develop lupus at a younger age and have more severe symptoms than white women. Notes that lupus is also more common in Hispanic/Latina, Asian, and Native American women.

[The Impact of Arthritis on Canadian Women](#) [24]

By Naomi M. Kasman and Elizabeth M. Badley, from Women's Health Surveillance Report, Canadian Institute for Health Information, 2003

Discusses that arthritis is one of the most prevalent chronic conditions in Canada and affects women far more than it does men. Points to the pressing need for more gender data on health care system use and access to services and doctor's prescribing practices, arguing that this data should be used to create a health care strategy to deal with the growing numbers of women with this disease.

[Autoimmunity: A Major Women's Health Issue](#) [25]

American Autoimmune Related Diseases Association, Inc.

Describes the disproportionate incidence of various autoimmune diseases in women, and argues why this group of diseases should be treated as a women's health issue.

[Gender and MS Research](#) [26]

National Multiple Sclerosis Society (US)

Provides an overview of the research and information about sex- and gender-based analysis of MS. Discusses the Society's gender initiative, which has generated new information on sex differences in disease course, the immune system, brain tissues, hormonal influences, and response to infection, and has significantly increased the body of scientists pursuing these questions in MS.

*From: **Literature Review: Behavioural Guidelines for Adjusting to Medical Conditions** [21]

Depression

According to the World Health Organization, depression is the leading cause of disease-related disability among women, and this disease has a clear gender bias. Women in developed countries are twice as likely as men to be diagnosed with depression.

Moreover, there are many significant differences in how the two sexes experience the disease. Women experience depression at a younger age and experience it more severely than men. Women also have longer recurrent episodes. On the other hand, men

with depression are more likely to suffer from alcohol and substance dependence and have higher rates of completed suicide.

There are also differences among women's experience of depression and there are both insufficient research and considerable difference of opinion as to why that is so. Some immigrant and ethnic minority women may be at increased risk of depression. Women with lower incomes are more likely to have depression than are those with higher incomes, and rural women have less access to services for treating depression than urban women.

The following resources examine these and other facts about depression from the perspective of sex, gender and diversity.

For additional resources on women and mental health, see also: **Women, Gender and Mental Health and Addictions** [27]

[Being Female: A Key Risk Factor for Depression](#) [28]

By Dr. Sarah Romans, Canadian Medical Association, 2006

Looks beyond biology to the socio-economic reasons for women suffering higher rates of depression, anxiety and mood disorders than men. Aims at educating physicians about depression in women.

[Hear Me, Understand Me, Support Me: What Young Women Want You to Know About Depression](#) [29]

By VALIDITY Team (Vibrant Action Looking Into Depression in Today's Young Women), Centre for Addiction and Mental Health, 2006

Discusses the fact that when girls hit puberty, they start to experience higher rates of depression than do boys, and this sex difference continues until women hit menopause. Aims to educate not only health care providers treating young women for depression but also teachers, therapists, youth workers, researchers, and others.

[The Marketization of Depression: Prescribing SSRI Antidepressants to Women](#) [30]

By Janet Currie, Women and Health Protection, 2005

Notes that twice as many psychotropic drugs (drugs that affect the mind) are prescribed for women as for men, including selective serotonin reuptake inhibitor (SSRI) antidepressants. Asks why proven *non-drug* alternatives that address the emotional distress of women, such as exercise, support, psychotherapy, and nutritional improvements, are not being supported, funded and prioritized by government.

[Depression](#) [31]

By Donna Stewart, Enza Gucciardi and Sherry Grace, from Women's Health Surveillance Report, Canadian Institute for Health Information, 2003

Examines depression among women across Canada and finds that this illness affects women almost twice as much as it does men. Finds that there are also differences in incidence among women according to income and education level, stage of life, where they live, whether they are single or married, and many other factors.

Weight and Chronic Disease

The relationship of weight and chronic disease is one we cannot ignore in our discussion of chronic disease. We see and hear daily reports about “the war on obesity” and “the obesity epidemic.” These reports are fuelled by a growing body of scientific evidence that obese people have a higher risk for developing diseases such as arthritis, high blood pressure, type 2 diabetes, repetitive strain injuries, depression, and coronary heart disease.

However, most of the material we find on this issue presents obesity as a “modifiable” risk factor for chronic disease – that is, something that we can change. Critics of this view, proponents of the “Health at Every Size” (HAES) movement, say that this “war on fat” blames people for being overweight, and that pressuring obese people to lose weight can lead to poor self-esteem, unhealthy dieting, and more extreme measures such as eating disorders and weight-loss surgery. HAES proponents also argue that genetics – which is not modifiable – also play an important role in obesity. The HAES movement maintains that chronic disease prevention should instead focus on body self-acceptance and helping people develop healthy eating and physical activity habits.

This war on obesity has particular implications for women and girls, many of whom already struggle with culturally-imposed ideals of thinness, and suffer far more than men and boys from eating disorders and body image issues.

Obesity, whether preventable or not, is related to socio-economic status. Overall, the poorer you are, the more likely you are to be obese.* However, the relationship of obesity to income differs for men and women; while obesity among women is highest in the low and lower-middle income groups, the reverse is true for men. Among men, those with higher income and higher levels of education have the highest prevalence of obesity. Ethnicity also plays a role; in Canada, the highest rates of obesity are among Aboriginal women and men and African-Canadian women. The reasons for this have not been clearly researched. There may be a myriad of related factors including lower income among these populations, which is, in turn, related to poor nutrition and physical inactivity.

In addition, exposure to certain chemicals which have the ability to disrupt the endocrine system is also linked to the development of obesity. Of particular note is bisphenol A (BPA) which is found widely in plastics and canned food liners and has been linked to obesity in animal research.

Some of the following resources examine the issues of weight, obesity and chronic disease using a gender and diversity lens. Others present the HAES perspective.

[Physical Activity and Obesity](#) [32]

By Shirley Bryan and Peter Walsh, from Women's Health Surveillance Report, Canadian Institute for Health Information, 2003

Presentes physical activity as an important modifiable risk factor for obesity, and provides an overview of the current state of physical activity and overweight/obesity among Canadian women. Looks at the health benefits of regular physical activity, and the individual and systemic factors that determine women's adoption of regular physical activity throughout their lifespan.

Body Weight [33]

Our Lens on the Sex, Gender, and Diversity Issues on This Topic, The Source
Examines body weight issues through the perspectives of gender, sex and diversity. Critiques the use of the Body Mass Index (BMI) as a measurement of obesity.

Linda Bacon [34]

Presents the views of the author of *Health at Every Size* and one of the leading proponents of the HAES movement.

Healthy Weight Network [35]

Presents the views of Frances Berg, another proponent and pioneer in the *HAES* movement. Provides critical links between research and practical application on weight and eating issues.

Our Stolen Future [10]

Explores the emerging science of endocrine disruption, or how some synthetic chemicals interfere with the ways that hormones work in humans and wildlife.
If you search on this website using the term "obesity," you will find articles examining the possible links between chemical pollution and obesity.

* See: **Patterns Differ for Men and Women in:**

[36]Obesity: A Growing Issue, by Christel Le Petit and Jean-Marie Berthelot [36]

Source URL: <http://www.cwhn.ca/en/node/42145>

Links:

- [1] <http://www.springerlink.com/content/nhq7274918444571/fulltext.pdf>
- [2] <http://www.cwhn.ca/en/node/41845#1>
- [3] <http://www.powerstudy.ca/the-power-report/the-power-report-volume-1/burden-of-illness>
- [4] http://www.cspi.org/books/dissonant_disabilities
- [5] http://www.phac-aspc.gc.ca/canada/regions/atlantic/Publications/Tides_of_change/tides_change-eng.php
- [6] <http://www.dominionpaper.ca/articles/3129>
- [7] http://www.acewh.dal.ca/pdf/Rising_to_the_challenge.pdf
- [8] <http://www.pulaval.com/catalogue/empowering-words-first-nations-women-8720.html>
- [9] http://www.phac-aspc.gc.ca/publicat/whsr-rssf/chap_15-eng.php
- [10] <http://www.ourstolenfuture.org/index.htm>
- [11] <http://www.whp-apsf.ca/pdf/statinsEvidenceCaution.pdf>
- [12] http://www.phac-aspc.gc.ca/publicat/whsr-rssf/chap_14-eng.php
- [13] <http://www.womenshealthdata.ca/category.aspx?catid=49&rt=1>
- [14] <http://www.hearthealthywomen.org/>
- [15] <http://www.genderandhealth.ca/en/modules/cardiovascular/>
- [16] <http://www.womenshealth.gov/faq/lung-disease.cfm>
- [17] http://www.lung.ca/_resources/Women_COPD_Report_2006.pdf
- [18] http://www.bccewh.bc.ca/publications-resources/documents/Turning_New_Leaf06-28-06_000.pdf
- [19] <http://www.womenshealthdata.ca/category.aspx?catid=52&rt=1>

- [20] <http://www.womenshealthdata.ca/category.aspx?catid=129&rt=1>
- [21] <http://www.ontla.on.ca/library/repository/mon/6000/10315486.pdf>
- [22] <http://www.womenshealth.gov/faq/autoimmune-diseases.cfm>
- [23] <http://www.womenshealth.gov/faq/lupus.cfm#3>
- [24] http://www.phac-aspc.gc.ca/publicat/whsr-rssf/chap_17-eng.php
- [25] http://www.aarda.org/women_and_autoimmunity.php
- [26] <http://www.nationalmssociety.org/chapters/MNM/programs--services/why-women/gender-and-ms-research/index.aspx>
- [27] <http://www.cwhn.ca/en/node/41856>
- [28] http://www.cma.ca/multimedia/CMA/Content_Images/Inside_cma/WhatWePublish/LeadershipSeries/English/pg36WH.pdf
- [29] http://www.camh.net/Publications/Resources_for_Professionals/Validity/validity_eng.pdf
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- [31] http://www.phac-aspc.gc.ca/publicat/whsr-rssf/chap_18-eng.php
- [32] http://www.phac-aspc.gc.ca/publicat/whsr-rssf/chap_5-eng.php
- [33] <http://www.womenshealthdata.ca/category.aspx?catid=81&rt=2>
- [34] <http://www.lindabacon.org/index.html>
- [35] <http://www.healthyweightnetwork.com/>
- [36] <http://www.statcan.gc.ca/pub/82-618-m/82-618-m2005003-eng.htm#2>