



# Respiratory Disease: One of Three Leading Causes of Death Among BC Women

**R**espiratory system diseases are the third leading cause of death for older women (age 65-74) in British Columbia (BC)<sup>1</sup>. A 2007 report on life expectancy in the province highlighted how respiratory diseases, along with cardiovascular disease and diabetes, are the largest drivers of mortality for women<sup>2</sup>. While the morbidity and mortality rates for lung cancer and respiratory system diseases in men are decreasing, the rates for women are on the rise. This is partly because of a cohort effect—men’s tobacco use started declining in the 1960s whereas women’s smoking rates peaked in the 1970s. As a result, the rate of women’s deaths from lung cancers increased by about 300% from 1971 to 2001 and will probably continue to rise for the next few years before starting to decline (assuming the number of female smokers also declines)<sup>3</sup>.

Across the country, respiratory diseases are a significant social and economic burden. According to data from 2007, more than 3 million Canadians have asthma, chronic obstructive pulmonary disorder (COPD), or cystic fibrosis<sup>4</sup>. Approximately 6.5% of total health care costs in the country are related to respiratory diseases and this figure does not include the costs associated with lung cancer<sup>5</sup>. Tobacco use is the primary preventable risk in respiratory diseases and it exacerbates symptoms associated with both chronic (e.g., asthma, COPD, and lung cancer) and acute respiratory diseases (influenza, pneumonia and tuberculosis). While these diseases have different symptoms, require different treatment, and have different rates of mortality and morbidity, many of them co-occur and share similar sex- and gender-specific issues connected to risk, diagnosis, management, and treatment. Other risks include exposure to second-hand smoke (SHS) or environmental contaminants. Respiratory conditions also

have an impact on heart disease and diabetes—all three of which are mostly preventable.

## Sex-based Risks

Through a gender-based analysis of women’s respiratory disease in BC, a recent report called *Women’s Respiratory Health: An Evidence Review* identified sex and gender-based risks, and some of women’s unique experiences with the presentation, diagnosis, management, and outcomes of respiratory disease.

A number of sex-based (i.e., biological) risks make women susceptible to respiratory diseases. For example, estrogen enhances the damaging effect of smoking and SHS by influencing the metabolism of cigarette smoke. Cyclical hormonal changes also worsen symptoms in asthma. Because women have relatively smaller lungs than men, they experience a greater decline in lung function than men do with similar amounts of exposure to cigarette smoke. Women who don’t smoke or who are light smokers are also at greater risk for diseases compared to men who don’t smoke or who are light smokers.

## Gender-based Risks

Gender plays a role in respiratory diseases. Internationally, tobacco advertising has been very effective in aggressively targeting women: products targeted at and significantly used by women like “light” or “harm-reduced” cigarettes may enhance women’s risk for respiratory disease as they required the smoker to inhale more deeply or have higher concentrations of cancer-causing chemicals<sup>6</sup>. In fact, approximately 50-60% of female smokers smoke lights<sup>7</sup>. Women’s gender roles also mean that they are more likely to be exposed to environmental contaminants and second-hand smoke. Men and women smoke for different reasons. Women smoke to organize

1 Provincial Health Services Authority. (2009). *Women’s Respiratory Health: an Evidence Review*. <[www.phsa.ca/PopulationHealth](http://www.phsa.ca/PopulationHealth)>. The evidence reviews on type-2 diabetes and women’s heart health are also available at this location.

2 Provincial Health Services Authority. (2007). *Life Expectancy as a Measure of Population Health*. <[www.phsa.ca/PopulationHealth](http://www.phsa.ca/PopulationHealth)>

3 Ibid.

4 Public Health Agency of Canada. (2007). *Life and Breath: Respiratory Disease in Canada 2007*. Public Health Agency of Canada: Ottawa.

5 Ibid.

6 Greaves, L.J. and L.A. Richardson. (2007). *Tobacco Use, Women, Gender, and Chronic Obstructive Pulmonary Disease: Are the Connections Being Adequately Made?* p. 675-679.

7 Joossens, L. (1999). *Some Like it Light: Women and Smoking in the European Union*. European Network for Smoking Prevention: Brussels.

social relationships, create an image, control emotions, and as social support—they are also more likely than men are to smoke as a result of stress. When gendered differences in exposure combine with sex-based differences in susceptibility, women are at even greater risk than men for respiratory diseases, especially lung cancer and COPD.

## Presentation, Diagnosis, Management, and Outcomes

Women and men often present with different symptoms because they *experience* different symptoms and/or there are gendered differences in reporting. For example, women with COPD are less likely than men to report sputum, perhaps because of shame or embarrassment. Symptoms of lung cancer such as a chronic cough may be misdiagnosed as asthma or COPD because of the high co-existence of other respiratory diseases.

Women with respiratory diseases tend to experience more hospitalizations, more limitations in activity, and higher rates of anxiety and depression compared to men. Women also report lower quality of life than men with respiratory diseases. Women with these diseases face stigma that stems from physical changes and signals (e.g., hair loss during cancer treatment, changes in physical appearance associated with COPD, or reliance on oxygen) as well as increasing social and physical isolation. To complicate matters, respiratory diseases are often seen as self-inflicted because of their association with tobacco use. In BC, 51% of people surveyed said that someone who smokes deserves the consequences<sup>8</sup>. This prejudice may further hinder women's access to the care and treatment they need.

## Sub-populations at Risk

Very little research examines interventions that focus specifically on the prevention of respiratory diseases in women or sub-populations of women. BC sub-populations most at risk include: Aboriginal teenaged girls, women from non-white minority groups, women having low socio-economic status, women with mental illness or addiction, and older women, because these sub-populations are more exposed to smoke, both actively and passively. In fact, smoking rates among Aboriginal teenaged girls are the highest of any group in BC (32% of female Aboriginal teens smoke compared to 22% of male Aboriginal teenagers, 17% of all BC female teens, and 13% of all BC male teens)<sup>9,10</sup>. Women who are non-white and also those who have low incomes tend to have less access to health care resources and suffer more often from diseases and disabilities.

8 The Lung Association, and Canadian Thoracic Society. (2006). *Chronic Obstructive Pulmonary Disease (COPD) A National Report Card*. The Lung Association Canadian Thoracic Society: Ottawa.

9 McCreary Centre Society. (2000). *Lighting Up: Tobacco Use Among BC Youth*. McCreary Centre: Burnaby.

10 McCreary Centre Society. (2000). *Mirror Images: Weight Issues Among BC Youth. Results from the Adolescent Health Survey*. McCreary Centre: Burnaby.

## Considerations for Action

Based on this review, there are a number of key messages and areas where action should be considered as follows:

1. **Expanding research:** Most evidence comes from population-based studies with Caucasian, male samples. Further research with diverse women could expand our knowledge of respiratory disease for all women. Emerging data on sex differences in lung cancer, for example, indicate that screening, evaluation, and treatment should be sex specific; tobacco-cessation and lung-cancer-prevention programs reflect these data.
2. **Implementing better practices and guidelines:** Prevention, diagnosis, and treatment of respiratory diseases would benefit from the implementation of sex-, gender-, and diversity-sensitive best practices and guidelines. Educating health-care providers about sex- and gender-based differences, such as differences in symptoms reporting, may help prevent the under- and misdiagnosis of disease. Women-centered pulmonary rehabilitation programs are important for improving management and outcome of respiratory disease in women.
3. **Including a sex, gender, and diversity lens in provincial and national strategies:** It is imperative that ongoing and future development of such strategies account for women's unique respiratory health needs. Strategies for respiratory diseases must consider the sex-, gender-, and diversity-based issues in women's susceptibility to diseases, presentation of symptoms, as well as diagnosis, management, and treatment of disease.
4. **Reducing risk through smoking prevention and cessation:** Studies suggest that when women quit smoking, they recover greater lung function than men who quit. Women, however, also have more difficulty quitting and experience greater relapse rates than men.
5. **Examining sub-populations at risk:** Expanding research on sub-populations most at risk could inform the development of a comprehensive respiratory disease strategy at the provincial level in BC—a strategy that does not yet exist.

Links need to be made between lung health, women's health, and tobacco-prevention research to consolidate efforts in preventing respiratory diseases. Multi-component strategies that address the reasons different women smoke and that work at reducing women's exposure to smoke will have the greatest implications in reducing mortality from respiratory diseases.