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# Women and Lung Cancer

Although lung cancer has traditionally been thought of as a ?man?s disease,? lung cancer is the second most common cancer and the leading cause of cancer deaths in women living in the United States. The primary cause of these lung cancer cases is smoking cigarettes; however, more than 20,000 never-smokers in the United States are diagnosed with lung cancer each year.

**Smoking among women**

Although more men smoke than women, the number of women in the United States who smoke has increased significantly over the past few decades. Meanwhile, the number of lung cancer deaths in women increased by more than 600% between 1950 and 1997. Recently, though, the number of new cases of lung cancer in women has begun to decrease. However, this rate of decline has been smaller than the rate of decline in men. Between 2004 and 2008, new cases of lung cancer decreased by 1.9% in men each year while it only fell by 0.3% in women.

Although the health risks of cigarette smoking have been well publicized in the United States, many women still decide to start smoking, most as teenagers and young adults. According to the U.S. Centers for Disease Control and Prevention, at least 500,000 teenage girls use tobacco products. Some of the reasons girls and women may be attracted to smoking include a belief that smoking can help control weight and advertising messages that focus on themes of friendship with other women, self-confidence, freedom, and independence.

**Risk factors for women**

It is important to understand that although smoking is the biggest cause of lung cancer, women who have never smoked are also diagnosed with this disease. In fact, lung cancer is diagnosed three times more in never-smoking women than in never-smoking men. This may be linked to exposure to carcinogens (substances that can cause cancer, such as secondhand smoke [1], radon, and asbestos), which increase the risk of lung cancer. In addition, women may have genetic and hormonal differences that affect the development of lung cancer in never-smokers, as well as in those who smoke. These include:

- Genes that make women more vulnerable to the harmful effects of tobacco smoke
- Differences in how the chemicals in tobacco are metabolized (broken down) by the female body
- Higher levels of the female hormones estrogen and progesterone, which could directly or indirectly affect cancer growth

Women may also have an increased risk of developing lung cancer if they have abnormal changes in genes that keep tumors from developing or in genes that repair damaged DNA.

More research needs to be done to figure out how much difference there is between the risk factors for lung cancer in men and women.

**Gender differences in treatment effectiveness**

Studies have found that some types of treatment work better for women with lung cancer than men. For example, chemotherapy with cisplatin (Platinol) seems to be more effective for women. In addition, women seem to benefit from drugs like gefitinib (Iressa) and erlotinib (Tarceva) more than men. However, for most patients, gefitinib and erlotinib are recommended only as treatment options when the first treatment is no longer effective. Currently the U.S. Food and Drug Administration limits the use of gefitinib to people who are already taking it, people who had taken it in the past with a good effect, and people participating in clinical trials.

Learn more about lung cancer treatment [2].

**Gender differences in survival**

Women with lung cancer typically live longer than men for reasons that are still not completely understood. For example, the five-year relative survival rate (the percentage of people who survive at least five years after the cancer is detected, excluding those who die from other diseases) is higher in women. Women with early-stage lung cancer who have surgery to remove the tumor live longer than men, as do women who are treated for lung cancer that has spread outside the lung. In addition, researchers have found that older women with early-stage lung cancer live longer regardless of the type of treatment they received.

Among the possible reasons for the differences in survival between men and women with lung cancer is that women are more likely to be diagnosed when lung cancer is in an early stage. However, more research is needed to understand the factors contributing to women?s survival advantage. Learn more about lung cancer statistics [3].

Researchers are just beginning to understand how lung cancer is different in women compared to men, and how this difference affects treatment and

survival. More clinical trials are needed to learn more about preventing, diagnosing, and treating lung cancer in women.

**More Information**

Guide to Lung Cancer [4]

Tobacco [5]

Risk Factors and Prevention [6]

2012 ASCO Annual Meeting Highlights on Lung Cancer, Melanoma, and GIST, with Sylvia Adams, MD [7]

2012 ASCO Annual Meeting Highlights on Ovarian Cancer, Leukemia, Kidney Cancer, Melanoma, and Lung Cancer, with Carol Aghajanian, MD [8]

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**Links:**
[1] http://www.cancer.net/node/25004
[2] http://www.cancer.net/node/19155
[3] http://www.cancer.net/node/19149
[4] http://www.cancer.net/node/19148
[5] http://www.cancer.net/node/25002
[6] http://www.cancer.net/node/24868
[7] http://www.cancer.net/node/22917
[8] http://www.cancer.net/node/22918