

Lung Cancer

Introduction

Lung cancer has played a major role in my life. I chose this topic because I had someone in my family who was diagnosed with lung cancer not only once, but twice. Each time was a primary source of cancer. The second source spread to his brain, which gave him brain cancer, and ultimately left him brain dead. This person was my grandfather. The fact that he was diagnosed with this life threatening cancer was very upsetting to me. I looked up to my grandfather more than anyone else because he was such an amazing and judge free person. I always strived to be more like him. When he had to start chemotherapy because of his lung cancer, I felt so sad every time I saw his bald head or his cold hands. I don't ever want to see another one of my family members undergo chemotherapy. The one thing that I could not stand about my grandfather was the fact that he was a heavy chain smoker. He started smoking when he was only fourteen years old. I would cringe every time he lit up a cigarette because I knew the damage he had already done to his body, and the fact that he continued to smoke cigarettes was mind boggling. Smoking cigarettes are the primary source of Lung Cancer. However, this was not the only cancer my grandfather had to deal with. He has six primary sources all over his body, and he even had his voice box taken out. This means he had to talk with a "buzzer", as my cousins and I called it, which made him sound like a robot. I wish it did not take cancer to make my grandfather realize how bad smoking was, so I hope to inform myself as well as others how bad smoking cigarettes can be for your lungs.

Another reason I wanted to research lung cancer is because my sister is a smoker. She has seen how my grandfather suffered and how his lungs were destroyed, and she still cannot seem to cut this dirty habit. Her addiction scares me every time I see her smoking a cigarette because it is very likely she will develop lung cancer and that will be horrible to deal with. I hope to gain enough information and explain to her and to others the harm she is doing to her lungs and her body each time she lights up a cigarette. I am curious to find out how lung cancer affects the body and whether it is painful or not. I know some basic facts about this terrible cancer, but I am interested in learning much more.

Section 1: Background and Problem Statement

- **Web site #1 Name:** (Healthy People 2010)
- **Web address:**
<http://www.healthypeople.gov/document/HTML/Volume1/03Cancer.htm>
- **Background Information:**

Cancer, in general, is the second leading cause of death in the United States. During 2000, an estimated 1,220,100 persons in the United States were expected to be diagnosed with cancer and 552,200 persons were expected to die from cancer. (Par 1) The overall annual costs for cancer are estimated at \$107 billion.

These costs are as follows: \$37 billion for direct medical costs, \$11 billion for costs of illness, and \$59 billion for costs of death. (Par 4) Healthy People 2010 is looking to reduce the lung cancer death rate. The target is 44.9 deaths per 100,000 populations. The baseline is 57.6 lung cancer deaths per 100,000 population occurred in 1998. The target setting method is 22 % improvement. Lung cancer is the most common cancer death among men and women in the United States. Cigarettes (the main cause of lung cancer) and exposure to pollution asbestos, pollution, and radiation also contribute to the risk of developing lung cancer. Healthy People 2010 addresses the issue of cancer in general, and it also explains the effect of lung cancer on the population.

- **Web site #2 Name: Lung Cancer Alliance**
- **Web address: <http://www.lungcanceralliance.org/facing/about.html>**
- **Background Information:**

Lung Cancer is a disease that begins in the tissue of the lungs. The lungs are sponge-like organs that are part of the respiratory system. The majority of lung cancers fall into two categories: non-small cell lung cancer, and small cell lung cancer. Non-small cell lung cancer is the most common type of lung cancer and accounts for about 85% of all lung cancer cases. This type spreads slower than small cell lung cancer. Small cell lung cancer makes up about 20% of all lung cancer cases. This type of lung cancer is associated with cancer cells that are smaller than cells in most cases. Although the cells are small, they grow rapidly to produce life threatening tumors. Small cell cancer is almost always caused by cigarette smoking or second hand smoke. Lung cancer will kill more people than breast, prostate, colon, liver, kidney, and melanoma cancers... combined.

- **Web site #3 Name: Medline Plus**
- **Web address: <http://www.nlm.nih.gov/medlineplus/ency/article/000122.htm>**
- **Background Information:**

Most lung cancer cells are very small and dangerous. Although they are tiny, these cells grow and spread rapidly to other parts of the body such as the brain, liver, and bone. Symptoms of lung cancer include bloody sputum (phlegm) chest pain, cough, loss of appetite, shortness of breath, weight loss, and wheezing, facial swelling, fever, hoarseness or changing voice, swallowing difficulty, and weakness. If one is experiencing these symptoms, they can get a number of screening tests done. These tests include: bone scan, chest x-ray, complete blood count, CT scan, liver function tests, MRI, positron emission, tomography scan, sputum test, thoracentesis. If one is diagnosed with lung cancer, they may undergo a combination of chemotherapy and radiation treatment. However, the treatment only helps relieve symptoms. It does not cure the disease.

Section 2: Research

- **Web site #1 Name: PubMed Central: British Journal of Cancer**
- **Web address: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2363609/>**
- **Summary of the research:**

The Cancer Research Campaign did a study on a three-year mass screening program for lung cancer using mobile low-dose spiral computed tomography scanner. The purpose of this study was to evaluate the usefulness of annual screening for lung cancer by low-dose computed tomography (CT) and the characteristics of identified lung cancers. The subjects in this study were 5483 general population aged 40–74 years, who received CT scans initially in 1996 and continued repetitive scans until 1998. The trial detected nearly 11 times the expected annual number of early lung cancers. Repeat CT scans allowed the detection of more aggressive, rapidly growing lung cancers, compared to those in the initial screening.

- **Web site #2 Name: Cancer of Research**
- **Web address:**
http://cancerres.aacrjournals.org/cgi/content/abstract/44/12_Part_1/5940
- **Summary of the research:**

There are two categories of evidence that indicate smoking to be the major cause of lung cancer. Studies have shown a consistent connection between smoking and lung cancer in men and women. Chemical analyses of cigarette smoke reveal “a multitude of known mutagens and carcinogens.” These chemicals are absorbed, metabolized, and cause genetic changes in smokers. Consequences of smoking are evaluated. The results of treatment of lung cancer are not encouraging; the 5-year survival rate remains less than 10%. Also, the social and economic costs of lung cancer and the smoking habit impinge on the productiveness of our society.

- **Web site #3: [U.S. National Library of Medicine National Institutes of Health](#)**
- **Web address: <http://www.ncbi.nlm.nih.gov/pubmed/8602180>**
- **Summary of the research:**

Scientists conducted an experiment in order to detect the “Effects of a Combination of Beta Carotene and Vitamin A on Lung Cancer and Cardiovascular Disease.” It has been proposed that carotenoids and retinoids are agents that may prevent lung cancer. The scientists conducted, “a multicenter, randomized, double-blind, placebo-controlled primary prevention trial - the Beta-Carotene and Retinol Efficacy Trial - involving a total of 18,314 smokers, former smokers, and workers exposed to asbestos. The effects of a combination of 30 mg of beta carotene per day and 25,000 IU of vitamin A in the form of retinyl palmitate per day on the primary end point, the incidence of lung cancer, were compared with those of placebo.” (Par 1) The results showed that a total of 388 new cases of lung cancer were diagnosed during the years of follow-up. The active-treatment group had a risk of lung cancer of 1.28 when compared with the placebo group. In the active-treatment group, the relative risk of death from lung cancer was 1.46. This study clearly shows that the IU of vitamin A was helpful in preventing lung cancer.

Section 3: Statistics

- **Web site #1 Name: Healthy People 2010**
- **Web address:**
<http://www.healthypeople.gov/document/HTML/Volume1/03Cancer.htm>
- **Summary of the statistics:**

This Web site has many statistics that are very accurate and relatively recent. In one of the bar graph charts on this Web site, statistics show that 74,600 women died from lung cancer in 2000, and 89,500 men died from lung cancer in 2000. This shows that more men than women die as a result of lung cancer in a year. It is the most common cause of cancer death of both males and females in the United States. Statistics indicated that 164,100 new cases of lung cancer would be diagnosed in 2000. 156,900 persons would die from lung cancer in 2000, accounting for 29 percent of all cancer deaths. These statistics show that about 90% of all people who are diagnosed with lung cancer will die from it. This Web site also explains that cigarettes account for 68 to 78 percent of lung cancer deaths among females and 88 to 91 percent of lung cancer deaths among males.

- **Web site #2 Name: Centers for Disease Control and Prevention**
- **Web address:**
<http://apps.nccd.cdc.gov/uscs/Table.aspx?Group=3f&Year=2005&Display=n&Variable1=Connecticut>
- **Summary of the statistics:**

This site tells the readers the statistics of lung cancer in the state of Connecticut. It shows how lung cancer affects men of all different races in this state. The first table shows the statistics of men-all races, per 100,000. Lung cancer is ranked second with 75.5. The next table shows white males in Connecticut, per 100,000. Lung cancer is ranked second, again, with 76.9. The third table shows the statistics of black males in Connecticut, per 100,000. Lung cancer is ranked second showing 63.3 black males are diagnosed with lung cancer. The last table shows Hispanic males in Connecticut, per 100,000. Statistics show that lung cancer is ranked third with 62.0. These statistics are a great way to compare the rate in the different races of men living in Connecticut who are affected by lung cancer.

- **Web site #3: The Beverly Fund**
- **Web address:**
<http://www.beverlyfund.org/statistics.html?gclid=CKTT06H4naACFUVn5Qo dx0JOdw>
- **Summary of the statistics:**

This Web site explains that lung cancer causes the most cancer deaths in the United States in both men and women. This cancer causes more deaths than the three most common cancers combined (colon, breast and prostate). The expected 5-year survival rate for all patients in whom lung cancer is diagnosed is less than 15 percent compared to 65 percent for colon, 89 percent for breast and 99 percent for prostate cancer. (Par 1) Unfortunately, only 16% of lung cancer

diagnoses are made at an early stage. Therefore, the chances of catching lung cancer when it is fairly new, is very rare. In 2009, the projected new cases of lung cancer were 215,000 and the projected deaths were 159,000. In 2008 the projected new cases of lung cancer were 215,020 and the projected deaths were 161,840. The risk of developing lung cancer is about 23 times higher in male smokers and about 13 times higher in female smokers. Scientists have found that secondhand smoke causes about 3,000 lung cancer deaths per year among adult nonsmokers in the United States.

Section 4: Consumer Information

- **Web site #1 Name: Medline Plus Trusted Health Information For You**
- **Web address: <http://www.nlm.nih.gov/medlineplus/lungcancer.html>**
- **Summary of the information:**

Lung Cancer is also known as Bronchogenic carcinoma. It is one of the most common cancers in the world. Lung Cancer is so dangerous, that it is one of the leading causes of men and women in the United States. The greatest factor of lung cancer is cigarettes. It depends on when one started smoking and how long he/she continued to smoke for. If one smokes many cigarettes and/or has been smoking for a very long time, there is a very good chance that he/she will develop lung cancer. However, cigarettes are not the only things that cause Lung Cancer. Substances like pollution, asbestos, and radiation put someone as high risk of developing this cancer as well. There are many different types of lung cancer. Each one spreads and grows differently.

- **Web Site #2 Name: National Cancer Institute**
- **Web address: <http://www.cancer.gov/cancertopics/pdq/screening/lung/Patient/page3>**
- **Summary of the information:**

There are certain tests that are used to screen for each type of cancer. These screening tests are used to detect cancer in people. Some are done early enough to hopefully decrease the chance of someone dying. There are two common screening tests used when it comes to lung cancer. The chest X-ray is used to x-ray the organs in the chest. The second test is sputum cytology. This where the doctors take a sample of mucus that is coughed up from the lungs and test it for cancer cells. It is unknown right now if either of these tests have decreased the chances of dying from lung cancer.

- **Web site #3 Name: MayoClinic.com**
- **Web address: <http://www.mayoclinic.com/health/lung-cancer/DS00038>**
- **Summary of the information:**

People who smoke cigarettes are at the greatest risk for lung cancer. The risk increases depending on the amount of cigarettes smoked and how long the cigarettes have been smoked for. Even after one has quit smoking, they are still at risk for developing lung cancer. There are certain symptoms that smokers should look for: a new cough that doesn't go away, changes in a chronic cough or "smoker's cough", coughing up even a small amount of blood, shortness of

breath, chest pain, wheezing, hoarseness, losing weight without trying, bone pain, headache. Lung cancer symptoms do not typically show in the early stages of the cancer. If these symptoms are happening to an individual, it is important that they see a doctor and get screening tests done right away because chances are, the cancer is quite advanced. If a smoker would like to quit smoking in order to decrease their chance of developing lung cancer, they should look into quitting strategies, counseling, therapy, and nicotine replacement substances.

Section 5: Solutions to the Problem (or Issue)

- **Web site #1 Name: Free to Breathe**
- **Web address: <http://www.freetobreathe.com/whoweare.html>**
- **Summary of the information:**

“Free to Breathe” was created by The National Lung Cancer Partnership. This is a lung cancer advocacy organization founded by physicians and researchers. They work together with survivors and advocates to increase lung cancer awareness and research funding. Their mission is to “decrease deaths due to lung cancer and help patients live longer and better through research, awareness and advocacy.” The National Lung Cancer Partnership’s goals are to: “Raise awareness of the deadly impact of the disease upon both women and men, increase funding for lung cancer research, and improve patient care by educating and empowering patients and healthcare professionals.” The Free to Breathe program started in 2006 as a 5 kilometer run/walk event series that has now expanded to include marathon teams, yoga-thons, and other activities. The great thing about each Free to Breathe event is that they bring together people from the community including those who have been touched by lung cancer, and those who want to participate in a sporting event for a good cause. All participants come together in an effort to raise awareness of lung cancer and increase funding for National Lung Cancer Partnership’s research, education, and awareness programs.

- **Web site #2 Name: Cancer Care**
- **Web address: <http://www.lungcancer.org/reading/prevention.php>**
- **Summary of the information:**

Cancer Care is a national nonprofit organization that provides free, professional support services for anyone affected by cancer. This site gives information about those who may be at risk for developing lung cancer, and those who already have lung cancer. It gives great tips about what people can do to prevent lung cancer. The site goes on to explain that people, who smoke, should look into programs and behavioral methods to help them to quit and reduce their chances in developing lung cancer. The site also mentions that researchers are looking into the use of chemoprevention agents which include certain vitamins. These vitamins are used to see if they can help reduce a person's risk of developing lung cancer and also to reduce the chance that the

cancer will recur, or come back. (Par 6) The site gives a very interesting list that states what happens to the body once someone quits smoking.

- **Web site #3 Name: Lung Cancer Alliance**
- **Web address: <http://www.lungcanceralliance.org/about/about.html>**
- **Summary of the information:**

Lung Cancer Alliance is the only national non-profit organization dedicated solely to providing patient support and advocacy for people living with or at risk for the disease. The mission of the Lung Cancer Alliance is, “Leading the movement to reverse decades of stigma and neglect by empowering patients, elevating awareness and changing health policy.” Their Web site is “an award winning and comprehensive Web site with the most up to date and relevant information on every aspect of lung cancer, prevention, early detection, treatment, support, resources, latest news, advocacy issues and how to get involved in the movement.” This site also encourages the fact that November is Lung Cancer Awareness Month. It continues on to give suggestions about taking action to fight off lung cancer, donate to lung cancer research, give news and events regarding lung cancer, etc. This site is very reliable and dedicated to giving their readers and participants all the information they can possibly give on lung cancer and how to prevent it.

Conclusions:

This fact sheet involved much research. I learned new information about lung cancer that I had never known before. Lung cancer has affected the lives of my loved ones, so I knew the basics on how it is caused and how high the death rate is. I hope that all the smokers who read this fact sheet will quit smoking because I learned that one can greatly reduce their risk of lung cancer once they quit smoking. Although smoking cigarettes is the number one cause of lung cancer, people must keep in mind that exposure to pollution, asbestos, and radiation cause lung cancer as well. Once a person is diagnosed with lung cancer there is an extremely low five year survival rate. If more people knew how quickly they could die from lung cancer, maybe they would think twice about lighting up a cigarette. Lung cancer is one of the nation’s leading causes of death; this statistic could be changed if people would just stop smoking tobacco. I learned an incredible amount of information on the causes, treatments, statistics, and steps to preventing lung cancer, so I hope anyone who reads this fact sheet can learn this valuable information as well.

Back to Betty C. Jung’s Web site	http://www.bettycjung.net
Back to Fact Sheet Directory	http://www.bettycjung.net/Pch202fs.htm