

# Lung Cancer

Lung cancer, characterized by uncontrolled growth of cells of the lung, is not only the most common cancer, but also the most common cause of cancer related deaths worldwide. Initial symptoms of lung cancer may include shortness of breath, wheezing, chronic coughing, and/or coughing up of blood. Accumulation of fluid in the lung spaces and development of pneumonia is a further complication. However, the most serious complication of lung cancer is its ability to spread (metastasize) to other parts of the body and cause fresh cancers in these sites. This metastasizing ability of lung cancer is what makes it so dangerous. Nearly three out of every five patients diagnosed with this form of cancer will not survive for more than a year.

Depending on the nature and position of the cancer cells, lung cancer can be of several different types. These types include small cell, non-small cell, squamous cell, adenocarcinoma, or large cell carcinoma. In addition, the cancer in the lung could also be secondary in origin, having spread from another primary cancer site. Appropriate management of the cancer requires a proper identification of the type of cancer.

## Risk Factors

**Tobacco smoking (cigarette):** It is considered to be the leading cause for lung cancer, because it is responsible for about 90% and 83% of lung cancer cases in men and women, respectively. Risk of developing lung cancer increases with the level of consumption and duration of smoking. Also, cigar, pipe, and hookah (nargile or shisha) smoking (a water-pipe commonly used in the region), all increase the risk of development lung cancer almost as much as cigarette smoking. Non-smokers who breathe in from other people's

cigarette (also called second hand smokers or environmental tobacco smokers) are also at increased risk of developing lung cancer. Studies have also shown that smoking illegal drugs, such as cannabis (hashish), can pose a major risk factor for lung cancer.

**Radon gas:** It is considered to be the second leading cause of lung cancer after tobacco, and is the leading cause among non-smokers. Radon is a naturally occurring radioactive gas that is produced by natural breakdown of uranium in soil and rocks. It is a gas that can not be seen, tasted or smelled. Outdoors, there is so little radon that it is not dangerous. But indoors, radon can be more concentrated and becomes a serious risk for cancer.

**Exposure to certain chemicals:** There are chemicals found in some workplaces that can increase lung cancer risk, especially for smokers. These chemicals include asbestos, radioactive ores such as uranium; inhaled chemicals or minerals such as beryllium, cadmium, silica, vinyl chloride, nickel compounds, chromium compounds, coal products, mustard gas, and chloromethyl ethers; and diesel exhaust.

**Genetic:** People with a parent, sibling or other first-degree relative with lung cancer have an increased risk of the disease.

**Other factors:** Air pollution, recurring inflammation of the lung (such as tuberculosis, pneumonia, asthma), radiation therapy of the lung, diet low in fruits and vegetables, taking beta carotene supplements, and alcohol drinking can increase the risk for development lung cancer.

## Diagnosis and Management

After a comprehensive physical exam, the patient might be asked to provide a sample of sputum, which will be analyzed for traces of infections or cancer cells. For further results, a range of imaging techniques such as a chest X-ray, an MRI and CT scan are performed, depending on the severity of the symptoms. Occasionally, lung cancer might be detected on these scans, performed for another reason, although the patient did not present any of the symptoms. A bronchoscopy is carried out to examine the inside of the lungs and extract a sample for further analysis. A needle biopsy is a more sensitive method to detect lung cancer, in case bronchoscopy is uninformative. Other more thorough tests are required to diagnose lung cancer, when it has spread to other areas. A thoracentesis collects fluid accumulated around the lung, a mediastinoscopy examines the area between the lungs and a thoracotomy surgically removes the tumor during an open-chest operation for subsequent analysis.

The course of treatment is decided according to the diagnosed cancer. Surgery is the first step in the case of a localized tumor and is followed, if necessary by a combination of chemotherapy and radiation applied to target the specific kind of cancer. A prophylactic radiation of the brain may be considered to prevent the cancer of spreading and a tumor from forming.

## Lung Cancer in Arab Populations

Just as its incidence rates worldwide, lung cancer has a very high prevalence in Arab countries. Among the countries of the Gulf Cooperation Council (GCC), lung cancer is the most common cancer among males in Bahrain, Qatar, and the UAE, and ranks second, third and fourth in Kuwait, Oman, and Saudi Arabia, respectively.

Among females, Bahrain shows a much higher incidence of lung cancer when compared to other GCC countries. These results are in accordance with the prevalence of tobacco smoking in these countries. On the other hand, an elevated incidence of lung cancer has been noticed in Palestinian Arab populations, in spite of no significant increase in smoking prevalence. In this case, the increase has been attributed to changes in lifestyle and dietary habits. Lung cancer is also the most common cancer affecting males in other Arab countries, including Algeria, Jordan, Lebanon, Morocco, Syria, and Tunisia. In fact, apart from Mauritania and Sudan, all other Arab countries have lung cancer as one of the five most prevalent cancers affecting males.



Lung of a smoker.