

# The Case for Lung Cancer Screening: What Nurses Need to Know

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**Background:** Lung cancer screening with low-dose helical computed tomography (LDCT) can improve high-risk individuals' chances of being diagnosed at an earlier stage and increase survival.

**Objectives:** The aims of this article are to present the risk factors associated with the development of lung cancer, identify patients at high risk for lung cancer qualifying for LDCT screening, and understand the importance of early lung cancer detection through the use of LDCT screening.

**Methods:** PubMed and CINAHL® databases were searched with key words *lung cancer screening* to identify full-text academic articles from 2004–2014. This resulted in 529 articles from PubMed and 195 from CINAHL.

PubMed offered suggestions for additional relevant journal articles. The National Comprehensive Cancer Network guidelines also provided substantial evidence-based information.

**Findings:** Nurses need to provide support, education, and resources for patients undergoing lung cancer screening.

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Key words: lung cancer screening; low-dose helical computed tomography; National Lung Screening Trial

Digital Object Identifier: 10.1188/16.CJON.E82-E87

An estimated 8,100 lives are saved each year through early detection of lung cancer (Goulart, Bensink, Mummy, & Ramsey, 2012). Lung cancer screening has been a hotly debated topic, with varying degrees of evidence from a variety of studies in the United States and Europe. The purpose of this article is to examine the controversy surrounding lung cancer screening with low-dose helical computed tomography (LDCT) screening, including risk versus benefit, cost, and insurance coverage. This article will explore evidence from the National Lung Screening Trial (NLST) and the National Comprehensive Cancer Network (NCCN) lung cancer screening guidelines. Management strategies and implications for nursing practice also will be presented.

## Pathophysiology

Lung cancer occurs when malignant cells begin to proliferate within the lung tissue or bronchus. Small cell and non-small cell types (squamous, large cell, undifferentiated, and adenocarcinoma) make up about 95% of lung cancers (Humphrey et al., 2013).

Lung cancer is staged based on the American Joint Committee on Cancer by the tumor, node, and metastasis (TNM) staging system (Edge et al., 2010). Staging incorporates tumor size, node involvement, metastasis, and specific levels of invasion. Stage 0 represents carcinoma in situ, stages IA and IB include tumors 2–5 cm at their greatest dimension with no node involvement, and stages IIA and IIB include tumors 5–7 cm in diameter with only one positive lymph node (Edge et al., 2010). Stages 0 through IIB are considered to be early stages and have the best survival rates (Crinò, Weber, van Meerbeek, & Felip, 2010).

## Etiology

Cigarette smoking is the leading cause of lung cancer worldwide, with 85% of lung cancer cases occurring in smokers (U.S. Department of Health and Human Services, 2014a). In the United States, an additional 7,000 deaths from 2005–2009 were attributed to secondhand smoke in nonsmokers (U.S. Department of Health and Human Services, 2014b). Radon, a radioactive gas found in high levels in about 1 in every 15