The American Cancer Society has a long history of finding answers to critical questions about lung cancer – what causes it, how can it be prevented, detected, and treated successfully, and how lung cancer patients' quality of life can be improved. These efforts have helped slash lung cancer death rates in men by nearly 30% over the past two decades, and death rates in women are following suit after increasing for many years. Despite this progress, lung cancer is still the deadliest cancer in the US, and the Society is committed to saving more lives from this lethal disease. Our research has led to several seminal discoveries that save lives from lung cancer and provide hope for the future.

Detection and Prevention

- The Society’s long-term follow-up studies, which began in the 1950s, confirmed the link between smoking and lung cancer, secondhand smoke and lung cancer, and radon exposure and lung cancer. Since then, we’ve advocated for increased excise taxes, regulation of tobacco, and smoking bans in public places, and helped more than 1 million people quit smoking. These efforts have helped slash smoking rates, leading to a substantial decline in the lung cancer death rate during the past two decades.

- While smoking is a major risk factor, other airborne carcinogens, such as asbestos, also contribute to lung cancer. Our current asbestos regulations resulted from research conducted by Society grantee Irving Selikoff, MD, contributing to a steep decline in asbestos-related lung cancer.

- Late lung cancer detection limits treatment options. Society-funded scientist Dan Kadarm, PhD, is investigating the use of imaging technologies to more accurately detect early stage lung tumors, while Society grant recipient Andrew Tsourkas, PhD, is working with nanosensors to aid in early diagnosis. The Society also provided support to launch the National Lung Screening Trial, which recently found that CT screening reduced lung cancer mortality by 20% in high-risk people. These enhanced screening capabilities should improve lung cancer prognosis for future patients.

- In other efforts, Society Research Professor Steve Hecht, PhD, is exploring natural ways to expunge cancer-causing carcinogens from our systems. Preliminary research suggests that compounds found in foods such as vegetables, fruits, whole grains, and seeds can counteract tobacco carcinogens and potentially prevent certain types of lung cancer.

Treatment

- Some lung cancers simply resist treatment. Society Research Professor Tony Hunter, PhD, and associate John Brognard, PhD, have uncovered a protein (DAPK3) critical to chemo-resistance. Restoring normal DAPK3 expression in tumor cells increases their sensitivity to chemotherapy, improving the patient’s odds of recovery.

- Often multiple lines of attack are required to destroy cancer cells. Society Research Professor Waun Ki Hong, MD, has shown that the replacement of a tumor-suppressing protein, p53, when combined with radiation therapy, leads to tumor regression.
Lung cancer is the deadliest form of cancer, accounting for almost 28% of cancer deaths in the United States.

In 2012, more than 226,000 new cases are expected, and about 160,000 people will die from the disease.

Smoking causes 80% of all lung cancer deaths.

American Cancer Society-funded research has contributed to a nearly 30% drop in lung cancer death rates in men over the past 20 years, and death rates in women are starting to decline after increasing for decades.

For the American Cancer Society, overcoming cancer is not the only goal. We also strive to achieve health equity, and work to improve the quality of life and diminish suffering of patients as they fight this cruel and deadly disease.

The lung cancer mortality rate among African Americans is higher than among any other race or ethnicity. Research conducted by Society grantee Sam Cykert, MD, suggests that this disparity is due, in part, to less common use of surgery among African Americans than other groups. Cykert is conducting a three-year test to address barriers to cancer surgery and determine how to close the treatment gap.

Another disparity in care exists depending on the type of hospital where a patient gets treatment. Society Health Services researcher Katherine S. Virgo, PhD, has discovered that some lung cancer patients treated in hospitals that care for a high percentage of uninsured and Medicaid-insured patients, so-called “high safety-net burden facilities,” were less likely to receive surgery intended to cure the disease compared with patients treated at “low safety-net burden facilities”

Society grantee Charles Cleeland, PhD, focuses his work on helping improve the quality of life for lung cancer patients undergoing chemotherapy, radiation therapy, and/or surgery. He has discovered that the overexpression of certain inflammatory genes increases the severity of painful symptoms. Therefore, by targeting these genes we may be able to ameliorate many unpleasant side effects of therapy and provide a more tolerable treatment experience.

Karen Lyons, PhD, is working to help families of lung cancer patients manage the stresses involved with the disease in order to provide more supportive care and maximize their loved one’s quality of life.

Thanks to the generous support of our donors, the American Cancer Society is now funding more than 105 grants with more than $31 million for research to help save more lives from lung cancer.

We save lives and create more birthdays by helping you stay well, helping you get well, by finding cures, and by fighting back.

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