

Appendix C – Relative Risk Calculation for Lung Cancer

Methods

To evaluate the risk of being diagnosed with lung cancer and living in census tracts near the SWNAS relative to the risk of being diagnosed with lung cancer and living in census tracts defined as not near the SWNAS, a statistic called the Relative Risk (RR) was applied. A crude estimate of the relative risk for developing lung cancer over the seventeen years 1982-1998 was calculated using the following formula:

$$\text{Relative Risk} = \frac{\# \text{ of lung cancer cases in SWNAS CTs} / \text{total population at risk in SWNAS CTs}}{\# \text{ of lung cancer cases in other CTs} / \text{total population at risk in other CTs}}$$

Where:

SWNAS CTs include: Weymouth CTs 4221 and 4222
Abington CT 5202.01
Rockland CT 5022

Other CTs include: Weymouth CTs 4223 through 4228
Abington CTs 5201 and 5202.02
Rockland CT 5021
Hingham CTs 5011.01, 5011.02 and 5012

The total population at risk over the seventeen years was calculated by subtracting the number of individuals diagnosed with lung cancer between 1982-1998 from the total population of each group using data from the U.S. Census. The true population at risk would exclude those diagnosed with lung cancer prior to 1982 since one is generally not diagnosed with lung cancer twice. However, since cancer incidence data for years prior to 1982 were not available, the formula has been slightly modified.

Results

	<i>Relative Risk</i>	<i>95% Confidence Interval</i>
All individuals with lung cancer	1.06	0.93 – 1.21
Non-smokers with lung cancer	0.8	0.41 – 1.62