



**Research:** Diets High in Leafy Green Vegetables Could Protect Against Lung Cancer in Smokers and Former Smokers

**Lead Scientist(s):** Steven Belinsky, PhD

**Disease/Condition:** Lung Cancer

Leafy green vegetables, folate, and some multivitamins could serve as protective factors against lung cancer in current and former smokers, according to a study that is a first step in understanding a complex association. The study was led by Steve Belinsky, PhD, and other researchers at LRRRI. The study appeared online January 12, 2010 in the scientific journal *Cancer Research*.

Researchers examined cells that were coughed up by current and former smokers for gene methylation, a chemical modification used by the cell to control gene expression. Upon careful study of the cells and by comparing those cells with profiles of smokers' dietary intake of leafy green vegetables, folate, and some multivitamins, they found an association between those particular substances was associated with a reduced prevalence for cellular gene methylation.

In the study, slightly more than 1,100 current and former smokers from the Lovelace Smokers Cohort submitted sputum samples and completed questionnaires regarding their dietary intake. Most (75 percent) of the participants were women who had been enrolled in the study since 2001. Men were not enrolled until 2004. Previous studies have suggested an association between a low folate intake and increased lung cancer risk in current and former smokers. Higher folate intake has been associated with lower methylation of genes in colorectal tumors as well.

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