

Lung cancer risk increases with expression of specific genes

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A recent study published in the October 2009 issue of the *Journal of Thoracic Oncology* determined that variations of specific genetic markers identified in previous research, or SNPs, may indicate a greater lung cancer risk in African Americans than in whites. The genes *CHRNA3* and *CHRNA5* may contribute to lung cancer risk due directly or through their association with nicotine dependence. Although their presence is less frequent in African Americans, the risk for lung cancer may be greater when present.

Researchers from the Karmanos Cancer Institute in Detroit, MI and the MD Anderson Cancer Center in Houston, TX evaluated data on 1,508 non-small cell [lung cancer](#) (NSCLC) patients (38 percent of which were African American) selected from the Detroit SEER Cancer registry and 1,314 corresponding control patients matched based on age, gender and race. The three case-controlled studies examined family history of lung cancer, smoking history, and age. Using unconditional logistical regression, a type of statistical analysis, researchers identified associations between SNPs and lung cancer risk while controlling for age, sex and smoking behavior.

Despite reporting lower levels of smoking, lung cancer incidence remains higher for African Americans, than for whites, so this is an important population in which to study the role of *CHRNA3* and *CHRNA5* genes and risk of lung cancer.

Previous conclusions from the genome-wide associates studies (GWAS)

identified associations between NSCLC risk, smoking behaviors and SNPs on the chromosome 15q25.1. The present study concentrated on the genes *CHRNA3* and *CHRNA5*, confirming a stronger association with the risk of lung cancer than with nicotine dependence in African Americans.

"This research confirms that differences on a genetic level can alter our risks for lung cancer," said lead investigator Ann Schwartz. "This research extends the need for such discoveries across diverse populations."

Source: International Association for the Study of Lung Cancer

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