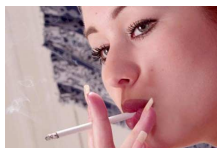


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By: Stefan Anitei, Science Editor



[Why Does Smoking Kill Even after Quitting It?](#)

Because it activates/deactivates permanently cancer-linked genes

Trendy youngsters may consider tobacco a sexy habit. After that it turns into a craving, lasting for years and leading to a "sexy" premature death, before turning your skin yellowish and filling it with wrinkles. 85 % of lung cancers are formed by people who had contact with tobacco in their life and what was puzzling the researchers was the fact that 50 % of these people are actually former smokers. A new research has shed light on why former smokers are still more prone to lung cancer than those who have never touched a cigarette. The Canadian team led by Wan L Lam and Stephen Lam from the BC Cancer Agency, sampled lung tissue from 24 current and former smokers, as well as from persons who have never smoked. The researchers employed serial analysis of gene expression (SAGE) (being the largest SAGE using study to date) to detect patterns of gene activity. Just about 20 % of the genes in a cell are active at any given time, but external factors like smoking induce shifts in the gene activity. Some changes were found to be irreversible, while others reversed with the ceasing of the smoking. The reversible genes were mainly linked to tackling chemicals foreign to the body, nucleotide metabolism and mucus secretion. Irreversibly damaged by smoking genes were some connected to DNA repair (thus cancer fighting genes) and other genes were deactivated, like those enabling to fight off lung cancer development. The team found new genes not previously linked to smoking activated by this habit, like CABYR, a gene connected to sperm movement and linked with brain tumors, which could have a ciliary function. Smoking induced gene activity, as said, can be reversible (example given: TFF3, encoding a mucus protein; CABYR, with a newly found bronchial role), partially reversible (MUC5AC, a mucus gene) and irreversible (GSK3B, linked to COX2 control). "Those genes and functions which do not revert to normal levels upon smoking cessation may provide insight into why former smokers still maintain a risk of developing lung cancer," said lead researcher Raj Chari.