

Smoking, Genes, and Health

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May 31 2014

Abstract

Using a genotyped sub-sample from the Health and Retirement Study (HRS), we replicate a recently discovered relationship between individual genetic variants (SNPs) and intensive-margin smoking behavior among smokers (maximum number of cigarettes smoked per day). Exploiting the panel structure of the HRS, we find that the SNPs associated with more smoking exhibit substantial effects on the probability of ever developing a serious, non-cancerous lung illness. Biological and epidemiological evidence suggest that this effect operates primarily through smoking rather than through indirect channels. Yet these effects are much larger than one would expect given the observed relationship between the SNPs and smoking behavior: genetic variation alone can explain cross-genotype differences in the incidence of major lung illness of up to 10 percentage points. Motivated by these large health effects, we develop a life-cycle model of smoking, health, and mortality to understand the mechanisms through which these genes operate. The model allows the SNPs affect two distinct channels - the taste for cigarettes and costs associated with reduced smoking. We are using our model to explore behavioral and welfare consequences of interventions such as genetic screening.

Key Words: Genoeconomics, Smoking, Addiction, Health

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