Scientists predict individual risk of lung cancer

December 20 2007

Scientists at the University of Liverpool have developed a model which can predict the risk of any person developing lung cancer within a five-year period.

Two-thirds of lung cancer cases in the UK could be predicted by screening only 30% of the population using the Liverpool Lung Project (LLP) risk model – funded in collaboration with the Roy Castle Lung Cancer Foundation and produced in collaboration with Cancer Research UK and the Wolfson Institute of Preventive Medicine. Previous lung cancer risk models have focused only on age and smoking status and fail to account for other groups who are also at risk.

Currently a 60-year-old-male with a long smoking history would be considered at 'high risk' of developing lung cancer while a non-smoker of a similar age would not. The LLP risk model, however, shows the risk of a smoker developing lung cancer in a five-year-period can be similar to that of a non-smoker who has other aggravating lifestyle factors such as a prior diagnosis of pneumonia; family history in a relative under 60; a prior diagnosis of any cancer and exposure to asbestos.

The model, which calculates the percentage risk of an individual contracting lung cancer in a five-year period, was developed through a study of 1,736 cases and controls. Scientists collected information on participants' socioeconomic and demographic characteristics, medical history, family history of cancer, tobacco consumption and lifetime occupation including exposure to asbestos. Prior diagnosis of pneumonia

revealed an elevated lung cancer risk in males over females but women who had emphysema showed a significantly increased lung cancer risk compared to men.

John Field, Professor of Cancer Studies at the University of Liverpool and Director of the Roy Castle Lung Cancer Research Programme, said: “The LLP Risk Model provides us with a more sophisticated way of identifying individuals within a five-year time frame. Current methods are limited to a patient’s smoking history.

“The model can distinguish between high and low risk individuals regardless of age and smoking history, assessing those most likely to benefit from a future lung cancer screening programme.”

Professor Stephen Duffy, Cancer Research UK’s Professor of Cancer Screening, said: “As methods for preventing lung cancer and screening for early signs of the disease are developed in the coming years, being able to identify those at high risk will be crucial, so that people who are mostly likely to benefit from screening and other treatments receive them. In the meantime, the best way for people to protect themselves from lung cancer is not to smoke.”

Source: University of Liverpool