

FACT SHEET NO 4

July 2001

SMOKING & CANCER

Introduction

It is estimated that one in three people will develop cancer at some stage in their lives and that one in four will die from the disease. In 1995, there were 46,000 cancer deaths in the UK attributable to smoking: approximately a third of all cancer deaths.[\[1\]](#) Cigarette smoking is an important cause of cancers of the lung, larynx (voice box), pharynx (throat), oesophagus, bladder, kidney and pancreas. A 1996 review of cancers related to smoking concluded that cigarette smoking is also a cause of cancers of the stomach, liver, nose and of leukaemia.[\[2\]](#) The same review concluded that cigarette smoking may be causally related to cancer of the lip.

Lung cancer

In 1999, 22% of all cancer deaths were of lung cancer, making it the most common form of cancer. Lung cancer is the cancer most commonly associated with smoking. Over 80% of all lung cancer deaths are caused by smoking. In 1999, 34,240 people in the UK died of lung cancer.[\[3\]](#) Mortality from lung cancer in men fell from around 880 deaths per million population in 1990 to 628 in 1999, continuing the downward trend since the 1970s, which reflects the fall in tobacco consumption in the male population. Female mortality rates from lung cancer are still less than half the male rates: 301 deaths per million in 1999. This rate has remained stable throughout the 1990s.³

One in two smokers dies prematurely: of these, nearly one in four will die of lung cancer. The risk of dying from lung cancer increases with the number of cigarettes smoked per day. (See also Factsheet 5 in this series, [Smoking & Respiratory Disease](#)). Smokers who start when they are young are at an increased risk of developing lung cancer.

Results of a study of ex-smokers with lung cancer found that those who started smoking before age 15 had twice as many cell mutations as those who started after age 20.[\[4\]](#)

A recent study by Peto and Doll, examined the effects of prolonged cigarette smoking and prolonged cessation on mortality from lung cancer.[\[5\]](#) They found that if people who have been smoking for many years stop, even well into middle age, they avoid most of their subsequent risk of lung cancer. Also, stopping smoking before middle age avoids more than 90% of the risk attributable to smoking.

Cancers of the mouth and throat

Smoking cigarettes, pipes and cigars is a risk factor for all cancers associated with the larynx, oral cavity and oesophagus. Over 90% of patients with oral cancer use tobacco by either smoking or chewing it. The risk for these cancers increases with the number of cigarettes smoked and those who smoke pipes or cigars experience a risk similar to that of cigarette smokers. In total, 3522 in the UK people suffered from oral cancer in 1993.[\[6\]](#) ("Oral cancer" includes cancers of the lip, tongue, mouth and throat.)

Heavy smokers have laryngeal cancer mortality risks 20 to 30 times greater than non-smokers.[\[7\]](#) The risks associated with tobacco and alcohol multiply when exposures occur simultaneously: for those who both smoke and drink heavily, their habits are responsible for nine out of ten cases of laryngeal cancer in this category.[\[8\]](#)

People who drink alcohol and smoke have a much higher risk of oral and pharyngeal (throat) cancers than those only using tobacco or alcohol. A US study revealed that among consumers of both products the risk of these cancers was increased more than 35-fold among those who smoked forty or more cigarettes a day and took more than four alcoholic drinks a day. It has been estimated that tobacco smoking and alcohol drinking account for about three quarters of all oral and pharyngeal cancers.[\[9\]](#)

Cervical cancer

Cancer of the cervix has been found to be associated with cigarette smoking in many case-control studies. However, scientists have been unable to decide whether the relationship is causal or due to confounding factors such as the number of sexual partners. Support for the hypothesis that smoking might increase the risk of the disease is provided by the finding of changes in the cervical mucus of smokers but not of non-smokers.[\[10\]](#) A study in Sweden investigated whether environmental factors such as smoking, nutrition and oral contraceptive use were independent risk factors for cervical cancer and found that smoking was the second most significant environmental factor after human papilloma virus (HPV).[\[11\]](#)

Pancreatic cancer

Cancer of the pancreas is a rapidly fatal disease with a five year survival rate of only 4%. Cigarette smoking is a strong and consistent predictor of pancreatic cancer although the risk diminishes to that of a non-smoker ten years, on average, after cessation. Risk of the disease is related to consumption and duration of smoking. A multi-center study found that the relative risk rose to 2.7 in the highest intake category.[\[12\]](#)

Anal cancer

A recent Scandinavian study found that pre-menopausal women who are current smokers have more than 5 times the risk of anal cancer compared to someone who has never smoked. The risk increases by 6.7% per pack-year smoked (a pack-year is defined as 20 cigarettes smoked per day for one year).[\[13\]](#)

Bladder and kidney cancers

Tobacco smoking is the principal preventable risk factor for bladder cancer which is estimated to cause up to half the cases in men and a third in women. As for lung cancer, the risk is associated with both the dose and duration of smoking, while cessation of smoking reduces the risk.[\[14\]](#) Kidney cancer has consistently been found to be more common in smokers than in non-smokers and there is now sufficient evidence to show that smoking is a risk factor for the two principal types of kidney cancer.[\[15\]](#)

Leukaemia

A study of mortality among 248,000 US veterans of whom 723 died of leukaemia during 16 years of follow up showed a significant increase in the risk of leukaemia associated with cigarette smoking, together with a dose response relationship between risk and the amount smoked. The risk was calculated to be 1.53 for current smokers and 1.39 for ex cigarette smokers.[\[16\]](#) A 26-year follow-up provided further evidence of a weak relationship between myeloid leukaemia and cigarette smoking in men.[\[17\]](#)

Breast cancer

There is growing evidence of a link between both active and passive smoking and breast cancer. Seven of the eight published studies examining passive smoking and breast cancer suggest an increased risk of breast cancer associated with long term passive smoke exposure among women who have never smoked.[\[18\]](#)

Passive smoking

Non-smokers are at risk of contracting lung cancer from exposure to other people's smoke. The UK's Scientific Committee on Tobacco and Health found that the research findings were consistent with an increased risk of lung cancer in non-smokers of between 20% and 30%.[\[19\]](#) This means that passive smoking causes several hundred lung cancer deaths in non-smokers each year. (For further information see [Factsheet No. 8, Passive Smoking.](#))

References

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