



Trends in mortality

Lung cancer has emerged as a major cause of death this century (figure 1). Some of the increase in the early part of the century is attributable to improved diagnosis.

In the 1940s and 50s lung cancer was the most rapidly increasing cause of cancer mortality in men. This trend reversed in the 1960s and 70s, and mortality rates are now declining in men in all age groups (figure 2). Nevertheless, lung cancer remains the commonest cause of cancer mortality in men.

Over the last 50 years, lung cancer mortality has risen 9-fold in women. Mortality rates have recently begun to decline in younger women, but rates continue to increase in older women (figure 3, note different scale). Lung cancer remains the most rapidly increasing cause of cancer mortality in women.

Trends in smoking

This substantial increase in lung cancer is attributable to the widespread uptake of cigarette smoking this century. Smoking was uncommon at the beginning of the century, but by the end of the Second World War, more than 80% of men and 40% of women smoked.

The proportion of men who smoke has declined steadily since the late 1940s. In women, the prevalence of smoking declined in the 1950s, but rose again to a plateau of 40-45% in the 1960s and 70s. Smoking has declined in both sexes since then and 31% of men and 29% of women currently smoke cigarettes. However, there is considerable regional variation in smoking within the UK with the highest levels found in Scotland and the North of England.

Current vs past history of smoking

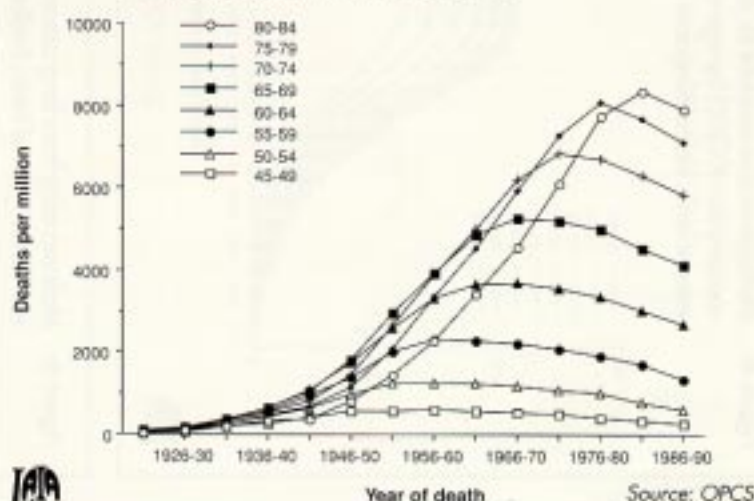
The risk of lung cancer depends most strongly on the duration of smoking, but also on the amount smoked daily and the tar yield of the cigarette smoked. Given that patterns of smoking have varied from generation to generation and that smoking became common in men some 25 years earlier than in women, a person's smoking history - and hence current risk of lung cancer - is strongly influenced by their age, sex and year of birth.

Figure 1: Lung Cancer in Great Britain 1991

- 38,000 deaths
- 8% of all male deaths and 4% of all female deaths
- More than 3-fold increase in deaths since in 1950
- Most rapidly increasing cause of cancer death in women
- Commonest cause of cancer death in men
- Commonest cause of cancer death in women in Scotland
- After breast cancer, the second commonest cause of cancer death in women in England and Wales

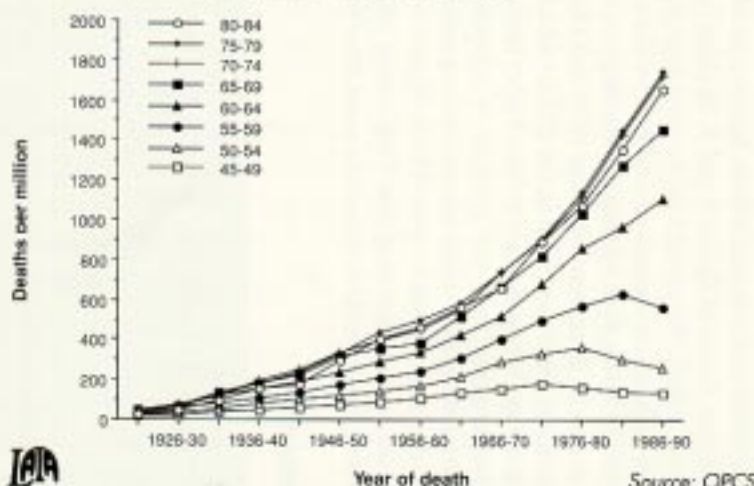


Figure 2: Male mortality from lung cancer by age and year of death, England & Wales 1921-90



Source: OPCS

Figure 3: Female mortality from lung cancer by age and year of death, England & Wales 1921-90



Source: OPCS

The changing patterns of lifetime tar exposure from cigarettes in successive birth cohorts (ie those born in a particular 5-year period) are shown in figures 4 and 5. In these figures (note different scales), the cumulative tar consumption by a given age for each cohort appears vertically above the cohort's year of birth. In males, peak lifetime tar consumption at any given age occurs in those born between 1900 and 1920; while in women, the generation born in the 1920s - which has yet to reach old age - appears likely to have higher lifetime levels of tar consumption than any previous or subsequent cohort. Similar patterns are evident in trends in lung cancer mortality when these are plotted by year of birth (figures 6 and 7, note different scales) suggesting that lung cancer mortality may continue to rise in older women for some years to come.

Summary

- Current trends in lung cancer reflect the smoking histories of those alive today, and future trends will have been in part already determined by past smoking patterns.
- Lung cancer mortality rates are now declining in men and younger women, but are likely to rise until at least the turn of the century in older women.

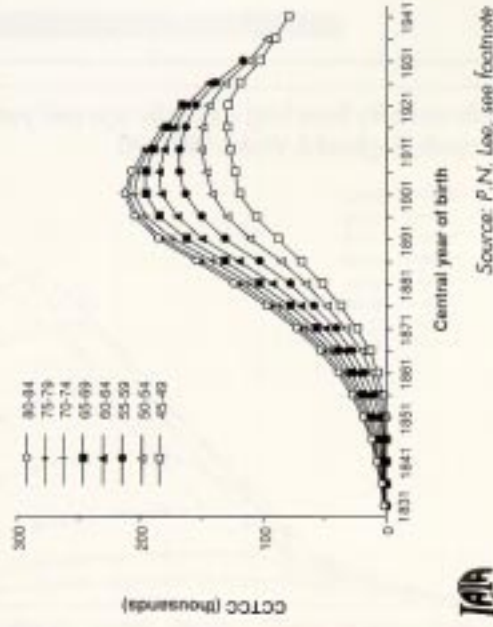
Footnote

Data presented in figures 4 and 5 are from P.N. Lee et al, Thorax 1990, 45:657-665, amended to account for errors noted subsequent to publication and updated to 1990.

The cumulative constant tar cigarette consumption (CCTCC) estimates are based on survey data relating to manufactured cigarette consumption per adult, by age, from 1946 onwards, extrapolated back and adjusted for recent reductions in tar yield.

Because aggregated data for 5-year periods have been used to derive figures 4 to 7, each cohort relates to people born over a ten-year period. For example, those aged 55-59 in 1961-65 would have been born between 1901 and 1910: the central year of birth for this cohort is 1906.

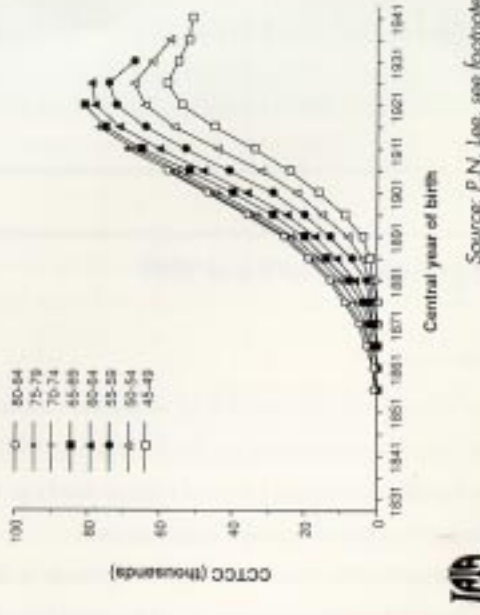
Figure 4: Male cumulative constant tar cigarette consumption (CCTCC) by age and central year of birth, United Kingdom (see footnote)



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Source: P.N. Lee, see footnote

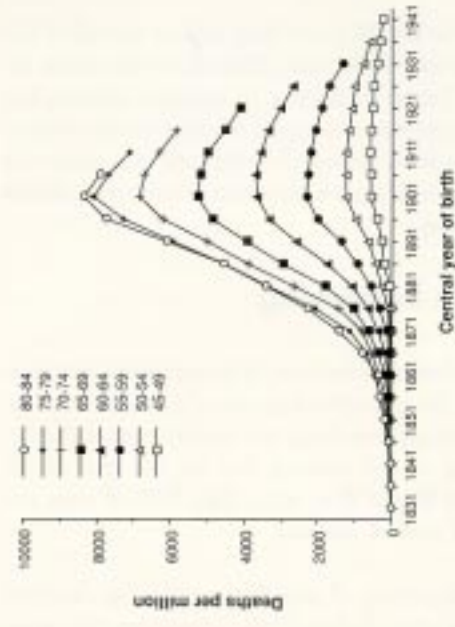
Figure 5: Female cumulative constant tar cigarette consumption (CCTCC) by age and central year of birth, United Kingdom (see footnote)



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Source: P.N. Lee, see footnote

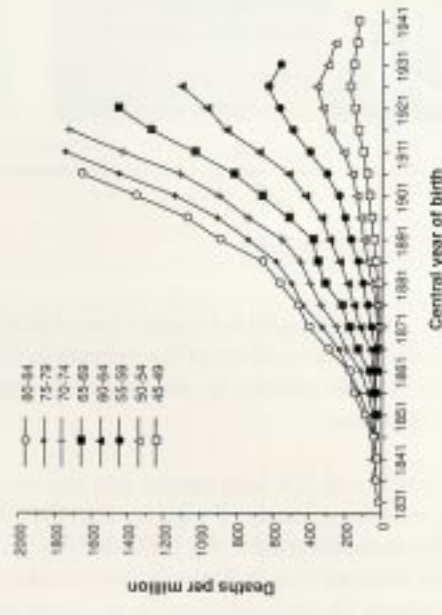
Figure 6: Male mortality from lung cancer by age and central year of birth, England & Wales



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Source: OPCS

Figure 7: Female mortality from lung cancer by age and central year of birth, England & Wales



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Source: OPCS