

Editorial

The decline in lung cancer and the genetics of nicotine addiction

Smoking causes over 85% of lung cancers (figure) in men and 70% in women. The incidence has declined over recent years and a paper from the Harvard School of Public Health has now shown that recent lung cancer risk in younger age cohorts in Ireland has declined faster than previously, particularly in males.¹ This is good news for patients and given the smoking ban in Northern Ireland introduced on 30th April 2007, this decline should be expected to accelerate further.

We know that lung cancer is generally not a hereditary disorder as most cases are smoking related, but nicotine addiction is strongly inherited and several genes have now been isolated, including CHRNA3 – the β 3 nicotine receptor subunit gene^{2,3}. It is now recognised that gene carriers (and in particular, females) are more sensitive to nicotine and have a lower addictive threshold. This may be a possible reason for the slower decline in lung cancer deaths in females when compared to males, as females find it harder to give up.

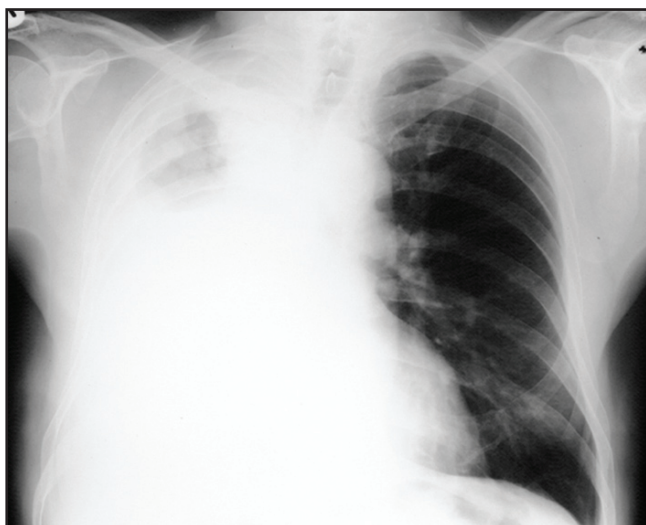


Fig 1.

What can be done about this? The smoking ban will help⁴ – standing outside in a drafty and wet environment will encourage giving up. Tax increases on cigarettes will reduce consumption further. Health advice will contribute - General Practitioners (GP's) are practising what they preach in that only 4% of GP's smoke compared to 29% of the population⁵, and they are taking plenty of exercise and are deemed

physically 'active'. The health of bar workers in the Republic of Ireland has greatly improved since the smoking ban was introduced there in March 2004. Blood carbon monoxide (CO) levels when compared to a year before and after the ban, fell by 79% and salivary cotinine by 81%⁶. Clearly, the ban has been a success.

Life expectancy will rise further if this trend continues and pension provision will get worse as treasury funds shrink from lack of cigarette advertising and tax revenue. Governments do not like this sort of trend and are perhaps cynically hoping that the rise in obesity - and a soon to follow reduction in life expectancy - will be the salvation of the pension crisis. Even if all smokers quit tomorrow, the downward trend of lung cancer will take time to reach a low level. Respiratory physicians and oncologists should not worry about empty clinics just yet – they will still have to wait until around 2040 before retraining as obesity specialists.

Those of us in most of the British Isles (but not England where the smoking ban is still to come into force) can now enjoy smoke free dining, but do not celebrate by eating too much!

Patrick J Morrison, Honorary Editor

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