In this issue of the *BJC*, Sir Richard Doll and colleagues from Oxford present findings from the 50 years of follow-up of British doctors in relation to cancer risk (Doll *et al*, 2005). There are many important aspects surrounding this article, some of which deserve wider and deep reflection.

This has been a study that was completely innovative and ingenious in its construction and remarkable in the perseverance of its follow-up. When Richard Doll and Austin Bradford-Hill undertook this cohort study, they probably did not realise that they were setting a new paradigm for modern epidemiology, and choosing to do such a study among doctors was quite ingenious. Which group would be able to be followed to death by a variety of sources including via the Medical Register?

The initial results (Doll and Hill, 1954; Doll and Peto, 1976) were highly significant and of great value in identifying a new and significant cancer risk, but the true worth of this study increased as follow-up increased and the flow of new information emerged. During the course of the follow-up, and in particular in the reports after 40 years follow-up (Doll *et al*, 1994) and 50 years of follow-up (Doll *et al*, 2004), the real impact of tobacco smoking on a wide variety of diseases and life expectancy itself was fully revealed. Half of the smokers die from a tobacco-related disease and half of these deaths occur in middle age. The impact of these deaths on the loss of nonsmokers life expectancy is enormous. Stopping smoking at any age is effective in reducing the loss of nonsmokers life expectancy. Stopping smoking even if a smoker stops smoking in middle age he starts to win back some of nonsmokers life expectancy has evolved in several years now, that the effect of tobacco on cancer risk, and indeed on overall mortality, is far in excess of any other common risk factor or treatment effect. Information nowadays taken for granted (half of smokers die of a smoking-related disease, half of these deaths are in middle age, each smoking-related death in middle age loses over 20 years of a nonsmokers life expectancy, there are over 20 fatal diseases causally linked to cigarette smoking, even if a smoker stops smoking in middle age he starts to win back some of nonsmokers life expectancy) has evolved in...
large part from the work of Sir Richard Doll and his colleagues (in particular Sir Richard Peto) and from the extensive follow-up of the British doctors’ cohort.

The early findings from Doll’s group (Doll and Hill, 1952, 1954), which clearly identified smoking as a human carcinogen, had a large influence in the great decline in the prevalence of cigarette smoking, which took place in the United Kingdom since the 1950s, and in the United States and many other countries shortly thereafter (Peto et al., 2000). This has undoubtedly postponed many deaths in the United Kingdom and in many other parts of the world and has led to millions of men (and women) having several years of increased life expectancy. While such a contribution from any one research group is outstanding, that this group has made major contributions in other major disease areas including radiation and cancer, asbestos and other occupational carcinogens, oral contraceptives and disease, treatment of early breast cancer, immediate treatment of myocardial infarction and aspirin and myocardial infarction is unique and remarkable.

Unsurprisingly, Sir Richard Doll and Sir Richard Peto have received many awards and widespread recognition for their contribution to public health. Such recognition is well deserved even though such statistics-based contributions may well be undervalued (Breslow, 2003). Apart from DA Henderson (who directed the World Health Organization’s global smallpox eradication campaign (1966–1977) and helped to initiate WHO’s global programme of immunisation in 1974), it is difficult to identify a greater contribution to public health in recent times. They really made a difference.

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REFERENCES

Breslow NE (2003) Are statistical contributions to medicine undervalued? Biometrics 59: 1–8
Cogliano VC, Baan RB, Straif K, Grosse Y, Secretan MB, El-Ghissassi F, Khoury P (2004a) The science and practice of carcinogen identification and evaluation. Environ Health Perspect 112: 1269–1274
Cogliano V, Straif K, Baan R, Grosse Y, Secretan B, El Ghissassi F (2004b) Smokeless tobacco and related nitrosamines. Lancet Oncol 5: 708
Doll R, Hill AB (1952) A study of the aetiology of carcinoma of the lung. BMJ 2: 1271–1286
Doll R, Hill AB (1954) The mortality of doctors in relation to their smoking habits: a preliminary report. BMJ 228: 1451–1455
Doll R, Peto R (1976) Mortality in relation to smoking: 20 years’ observations on male British doctors. BMJ 2: 1525–1536
Doll R, Peto R, Wheatley K, Gray R, Sutherland I (1994) Mortality in relation to smoking: 40 years’ observations on male British doctors. BMJ 309: 901–911
Doll R, Peto R, Boreham J, Sutherland I (2004) Mortality in relation to smoking: 50 years’ observations on male British doctors. BMJ 328: 1519–1528

Doll R, Peto R, Boreham J, Sutherland I (2005) Mortality from cancer in relation to smoking: 50 years’ observations on British doctors. Br J Cancer 92, (this issue)
International Agency for Research on Cancer (IARC) (1986) Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 38. Tobacco Smoking. Lyon: IARC
International Agency for Research on Cancer (IARC) (2004a) Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 83. Tobacco Smoke and Involuntary Smoking. Lyon: IARC
International Agency for Research on Cancer (IARC) (2004b) Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 85. Betel-quid and Areca-nut Chewing and Some Areca-nut derived Nitrosamines. Lyon: IARC
Peto R, Darby S, Deo H, Silcocks P, Whitley E, Doll R (2000) Smoking, smoking cessation and lung cancer in the UK since 1950: combination of national statistics with two case-control studies. BMJ 321: 323–329

Figure 1 Types of cancer considered to be causally related to tobacco smoking in successive IARC monograph evaluations (International Agency for Research on Cancer, 1986, 2004a).