

ENVIRONMENTAL CARCINOGEN CONTROL IN AUSTRALIA: THE NEED FOR A STRATEGY

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This article describes the need for a strategy for the control of environmental carcinogens in Australia, which extends from identifying causative agents through to the implementation and confirmation of measures that improve health outcomes.

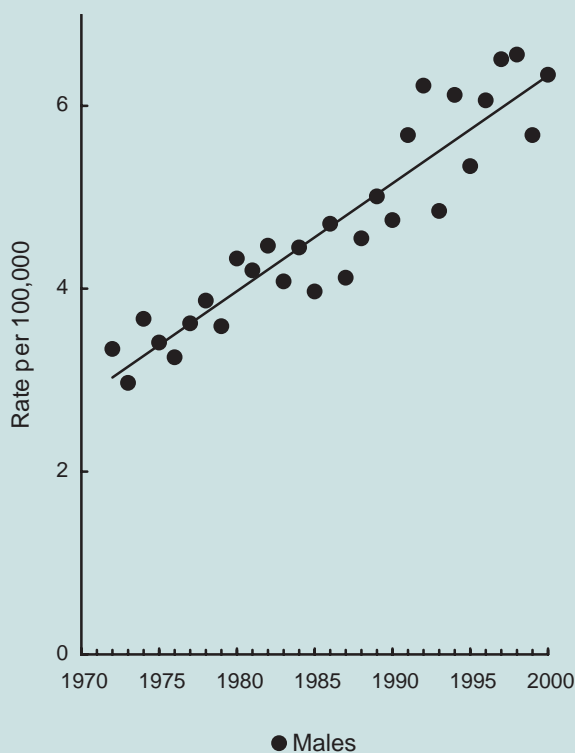
It is well accepted that, with current knowledge, many cancers are preventable by reference to a variety of risk factors.¹ Thus, smoking, over-nutrition, low intake of fruit and vegetables, sunlight exposure, lack of exercise, alcohol intake, and certain infections, all affect the burden of cancer and represent categories of risk that are avoidable to some extent. The challenges presented for control of these factors are widely recognised, often in the context of the so-called 'healthy lifestyle' and its outcome. However, in respect of cancer specifically, there are instances of individual disease, and some types of tumours generally,

which are not attributable to recognised causative agents or risk factors. Information is also limited regarding individual susceptibility, particularly in relation to genetic makeup or hormonal influences. Systems of addressing carcinogenic hazards rarely take account of these considerations, and the systems themselves are subject to marked variation. While the comprehensive regulatory approach to tobacco has been noteworthy, the degree of control for this substance may be perceived as lax by comparison to some current procedures limiting exposure to occupational asbestos, given that tobacco is one of the few substances proven to be carcinogenic in humans according to the International Agency for Research on Cancer.²

The distribution of cancer readily establishes strategic needs. Testicular cancer, non-Hodgkin's lymphoma and thyroid cancer (Figures 1 to 3) are common cancers, the incidence of which has more than doubled over 30 years.³ Asbestos use, and the consequent epidemic of mesothe-

FIGURE 1

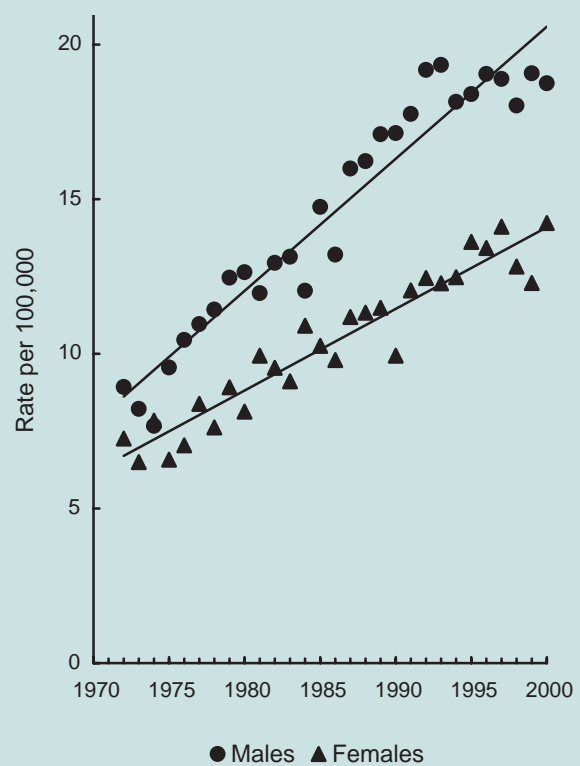
TESTICULAR CANCER, AGE-STANDARDISED INCIDENCE, NSW, 1970-2000



Source: The Cancer Council NSW.³

FIGURE 2

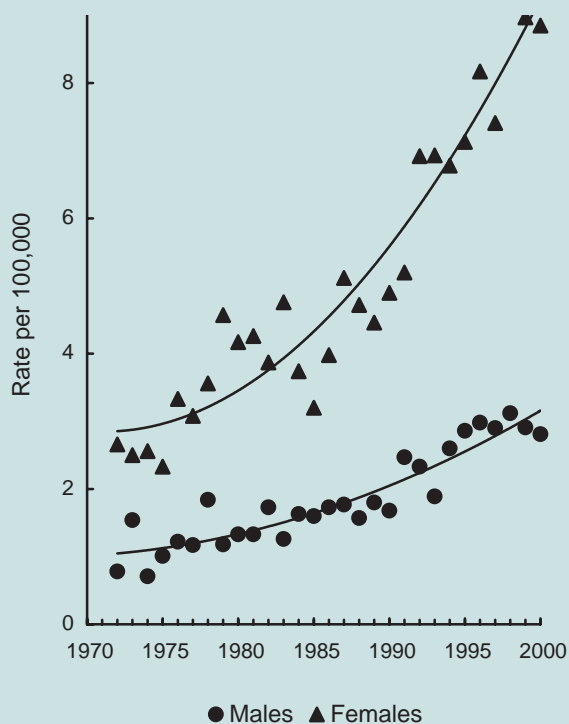
NON-HODGKIN'S LYMPHOMA, AGE-STANDARDISED INCIDENCE, NSW, 1970-2000



Source: The Cancer Council NSW.³

FIGURE 3

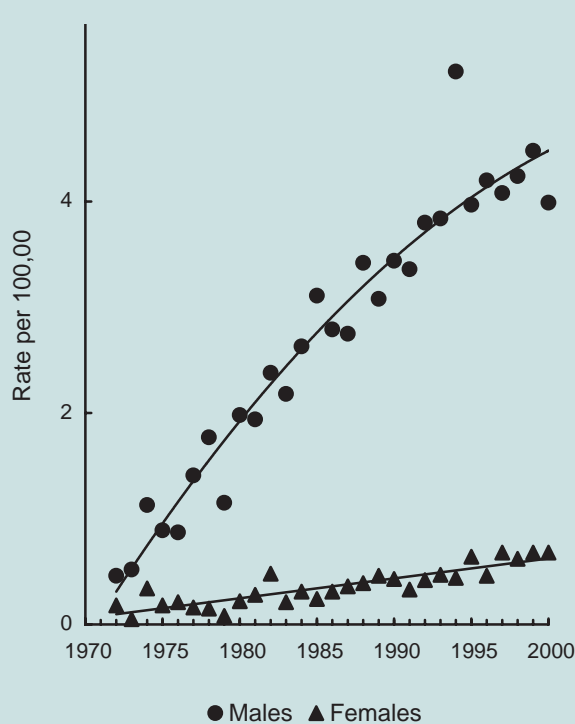
THYROID CANCER, AGE-STANDARDISED INCIDENCE, NSW, 1970–2000



Source: The Cancer Council NSW.³

FIGURE 4

MESOTHELIOMA, AGE-STANDARDISED INCIDENCE, NSW, 1970–2000



Source: The Cancer Council NSW.³

lioma, is another example (Figure 4). Indeed, there has been recent recognition that Australia has the highest rate of mesothelioma in the world.⁴

The conclusion that environmental factors have variously played a role in the increased incidence of these cancers is unavoidable. Also unavoidable is the inference that the science of quantitative carcinogenic risk assessment—and the considerable controls in place throughout the Western world that limit exposure to known hazards—have failed to prevent or even to predict these changes. These trends are not unique to Australia.

I venture to suggest that, if cancer were a communicable disease, we would spare little expense in funding programs of strategic research to find a cause; and that such a program would be wide-ranging, mobilising the considerable portfolio of scientific methods now available. Instead, we rely on investigator-initiated research that, in most cases, is only initiated after achieving success through fiercely competitive grant funding.

Of course, equally incisive scientific insights may be obtained from the study of positive trends in the incidence of malignant disease. Stomach cancer rates have

plummeted in Australia and elsewhere, but despite clear inferences about the reasons for this—among them, food preservation techniques and *Helicobacter Pylori* infection—other factors may still be revealed. These observations are but a few of the inferences concerning environmental carcinogenesis that can be drawn from descriptive epidemiology. Appropriate follow-up might illuminate our understanding of carcinogenesis and contribute to the refinement, focus, and development of those anticipatory controls that may be the responsibility of multiple departments within the structures of government.

Limiting or preventing exposure to environmental carcinogens is the responsibility of multiple authorities. Two decades of public sector reorganisation has seen the principal responsibility for carcinogen control fall to specific agencies (such as the National Industrial Chemical Notification and Assessment Scheme of the National Occupational Health and Safety Commission, and the National Registration Authority for Agricultural and Veterinary Chemicals), and the regulation of exposure settings assigned to environment and workplace portfolios (such as the NSW Environment Protection Authority and

WorkCover). While these changes have been for the better, specialisation has its disadvantages in terms of the development of clear, comprehensive strategies.

Currently the Commonwealth Department of Health and Ageing has no core focus on environmental carcinogens. NSW Health has a range of statutory and regulatory responsibilities, particularly in relation to the containment and to the control of environmental carcinogens. Yet there may be additional ways in which health departments can make a strategic contribution. The first of these, adequate response to population distribution of tumour types, has been considered. The second, the surveillance and assessment of particular hazards, builds on the traditional role of health departments in health surveillance, and may extend to the systematic collection and analysis of tissue specimens to demonstrate evidence of exposure.

Cancer is a preventable disease that kills prematurely, with 270,000 years of life lost (to age 75) nationwide in 1995.⁵ Cancer tops the health concerns of Australians,⁶ and the results of cancer are tragic, costly, and long lasting. There have been many proposals for a national cancer act. Certainly, in relation to environmental carcinogens, a

means is needed to harness the resources of government to address priorities and facilitate better surveillance and impact assessment. A national cancer act would be part of a national strategy for the control of environmental carcinogens in Australia.

REFERENCES

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