

Competing interests: TW is a professional adviser to Baby Milk Action, which campaigns on protecting breast feeding from commercial exploitation. JT has no competing interests.

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Preventing skin cancer

Messages should emphasise the need to cover up and stay out of the sun

Health promotion strategies to prevent deaths from skin cancer, particularly melanoma, have two components: advice on early recognition and advice on prevention. The population is perhaps heeding advice on early recognition. Five year survival from melanoma in England and Wales is improving, particularly in female patients,¹ probably because the cancer is diagnosed at an earlier stage owing to increased public awareness. But the incidence of melanoma is increasing in the United Kingdom and the United States;^{1,2} in the United Kingdom it has doubled over the past 20 years.¹ This contrasts with a falling incidence in Australia,³ but it is not clear whether this difference is attributable to the Australian prevention campaign having been active for longer or whether prevention messages are less effective in the United Kingdom. By 1996, attitudes among Australian students had already shifted positively towards avoiding exposure to the sun and away from the use of sunscreen and desire for a tan.⁴ In contrast, a study of 80 students in the United Kingdom published in 2000 found that most emphasised positive benefits of sun exposure, enjoyed sunbathing, protected themselves inadequately, and did not intend to change this behaviour.⁵

Experts believe that 90% of non-melanoma skin cancers and two thirds of melanomas may be attributed to excessive exposure to the sun.² Although no direct evidence shows that sunbeds cause skin cancer, they are a source of intense exposure to ultraviolet radiation, and according to a recent report from the National Radiological Protection Board therefore represent a potential health risk.⁶ Campaigns to prevent skin cancer have incorporated numerous messages including the need to avoid sunburn and generally reduce exposure to ultraviolet radiation by staying out of the midday sun, wearing protective clothing, seeking shade, and applying sunscreen. In recent years the advice on sunscreen has included recommendations for the use of broadband preparations with a higher sun protection factor. Early health promotional material did not give greater emphasis to any one means of protection over another. Little discussion has taken place of the fact that skin tanned by ultraviolet

radiation is damaged skin or of the potential risks of using sunbeds.

A tanned appearance remains fashionable, and, although there has been a marked increase in sales of self tanning lotions in western Europe and the United States (market data, Euromonitor 2002), no evidence has shown that this is replacing exposure to ultraviolet radiation. Despite having a good understanding of the relation between overexposure to the sun and skin cancer, 81% of Americans still think they look good after being in the sun.⁷ Risk taking behaviour with respect to exposure to the sun continues.^{5,8} The availability of sunbeds on high streets in the United Kingdom seems to be increasing, but we could find no sources of data on trends in access to and use of commercial sunbeds to confirm this. The licensing by local authorities of commercial premises in the United Kingdom offering cosmetic sunbed tanning depends on the application of bylaws and is currently discretionary. Few local authorities choose to license and data currently collected cannot be used to monitor trends. The only data we could find to support the hypothesis that the use of sunbeds is increasing was from one American tanning firm, whose turnover rose from \$2.8m (£1.8m; €2.8m) in 1990 to \$15m in 2002.⁹ In the absence of any other data these figures could alternatively represent a changing market share.

The equal emphasis placed on the use of sunscreen versus avoiding exposure to the sun or wearing protective clothing in early prevention campaigns in the United Kingdom may have led to confusion. Surveys carried out in the United Kingdom have found that sunscreen is regarded as the most important sun protection measure.¹⁰ It is still unclear, however, whether sunscreens effectively protect against skin cancer, and concern has been raised that they may directly or indirectly increase the risk of disease, primarily because of poor application and increased exposure to the sun.⁶

Sunscreens with a high sun protection factor do not always prevent sunburn, although they should if applied according to the manufacturer's directions.¹⁰ The thickness of application has been shown to be less than half that officially tested and key exposed sites (neck, temples, and ears) are often missed completely.¹¹

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Although sunscreen should be used to reduce exposure to ultraviolet radiation, evidence shows that most people use it to facilitate a tan through longer duration of exposure.⁷ For children too, despite the availability of new protective clothing and shades, sun protection consists primarily of applying sunscreen and may actually result in an increase in the time of exposure.¹² So even if sunscreens are effective at preventing sunburn, the concern is that they may be less effective at reducing exposure to ultraviolet radiation and preventing skin cancer.

Strategies to prevent skin cancer in the United Kingdom and United States have not resulted in a tanned appearance becoming less fashionable and, although evidence shows increased sales of self tanning products, recent studies still report high levels of risk taking behaviour with respect to exposure to the sun and seeking a tan. Studies also show that in the United Kingdom sunscreen is being used as the main mode of protection and that, contrary to advice, many people use sunscreen to prolong exposure. The report from the National Radiological Protection Board concludes that protection by sunscreens is less reliable than that provided by reducing exposure through other means. It recommends that educational programmes should aim to reduce cumulative exposure to ultraviolet radiation and especially high levels resulting in acute damage. Information about the prevention of skin cancer on the website of the Department of Health (http://212.161.1.31/staysafe/sunscreen_dangers.html) already contains warnings about the risks associated with sunscreen when used to spend more time in the sun.

Messages about prevention in the United Kingdom may need to shift the emphasis still further towards covering up and staying out of the sun if the trend in incidence is to be reversed. Adopting the precaution-

ary principle towards use of sunbeds would involve raising awareness of the potential risks, discouraging their use for cosmetic tanning, and monitoring their availability and use.

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Levelling the playing field for regulation of nicotine

Existing laws in Britain offer a promising framework

In a bold new report, the tobacco advisory group of the Royal College of Physicians of London has called for the establishment of a nicotine regulatory authority in the United Kingdom.¹ Regulation of tobacco has not been a conspicuous success at the level of the European Union so far. The reason, as the report from the college points out, is that tobacco legislation at the European Union level has been preoccupied with the operation of a single market rather than with the protection of public health.¹ Rather than wait for the European Union to get its act together, the British government should act now to establish a regulatory framework for tobacco and nicotine.

Of all the possible alternative ways of obtaining nicotine, smoking cigarettes remains by far the most addictive. The reason is that smoking cigarettes maximises the rapidity, frequency, reliability, and ease of attainment of the reward from nicotine.² Nicotine via cigarettes reaches the brain in 10 seconds, which is faster than via intravenous use. Regular smokers of 20

cigarettes per day reinforce their habit with an average of 200 rewards per day. It is much easier and cheaper to purchase a pack of cigarettes (for example, from petrol stations or local supermarkets) than it is to purchase a packet of nicotine gum. Unfortunately, cigarettes are the deadliest form of nicotine delivery available on the market. It is not the nicotine per se but the combustion and release of over 40 carcinogens as well as other toxic chemicals that are responsible for the bulk of premature illnesses and deaths that result when cigarettes are used as intended.

The report is not the first to have noticed the perverse twist on the inverse care law in the regulatory status quo for nicotine products.³ Currently the most toxic form of nicotine delivery is the least regulated, whereas all innovations from pharmaceutical companies (such as nicotine gum and inhalers) are subject to a lengthy and expensive approval process for their marketing, which is overseen by government regulators. The regulatory playing field is tilted distinctly in favour of the