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Labeling Cancer Risk Factors as Lifestyle Limits Prevention Activities Across the Life Span

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...the practice of pediatrics goes further than the mere diagnosing and treatment of diseased conditions, it must deal more and more with the prevention of disease as well.

Lawrence T. Royster, MD, *Journal of the American Medical Association*

August 14, 1915¹

Pediatricians have a long tradition as advocates for disease prevention and social welfare. Many pediatricians, however, may not appreciate the connection between the early life of children and the prevention of cancer later in life. Most cancers are diagnosed in adulthood and messages about cancer prevention have emphasized “lifestyle” as the focus of prevention efforts. The words we use can frame the discussion and direct our focus. Although a person’s lifestyle or way of life can reflect larger social and ecological factors as well as individual behaviors, contemporary use of the term lifestyle tends to steer us away from contextual factors and instead toward an individual-focused approach. Lifestyle medicine, for example, focuses on adult behaviors, such as smoking, diet, physical activity, and alcohol use.² A consideration of the factors in early life that influence cancer risk highlights some of the inherent limitations of using the term lifestyle when describing modifiable risk factors and opportunities for prevention.

More than half a century ago, William Haenszel³ noted that immigrants to the United States experienced different risks for cancer mortality than whites who were born in the country, with excesses and deficits in risk that varied by cancer type. He discussed these data in the context of a “host-factor determinant theory,” which today might be called gene–environment interaction. His findings also revealed the importance of early life events as determinants of lifetime cancer risk. In 1976, John Higginson, then head of the International Agency for Research on Cancer, emphasized the importance of “cancers of the cultural environment,” and pointed to lung cancer from cigarette smoking, liver cancer from

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excessive drinking, and skin cancer from sunbathing as examples.⁴ Higginson's characterization of the cultural environment 40 years ago⁴ is similar to more contemporary ecological models of population health that include multiple levels of determinants.¹

In the context of cancer prevention, the meaning of lifestyle shifted in subsequent years from broad environmental and cultural factors to specific personal behaviors. As we have discussed in a previous article,⁵ a sentinel publication over 30 years ago attributed the largest percentages of cancer deaths to tobacco and diet, and small percentages to other factors, such as occupation and pollution. In subsequent iterations of these estimates by others, the prominence given to tobacco has remained largely unchanged, whereas the importance assigned to diet has shifted to focus more on obesity and physical inactivity, and the low estimate for environmental exposures has been discredited.⁵ The term lifestyle increasingly has been used to describe a narrow set of factors (most often smoking, obesity, and physical activity) that are also associated with other chronic diseases, such as cardiovascular disease. Lifestyle interventions, for example, are intended to prevent or manage chronic diseases by focusing on specific adult behaviors believed to be modifiable. At the population level, framing risk factors within the concept of lifestyle shifts attention and resources to personal behaviors and away from environmental and policy approaches.

In the field of advertising, lifestyle is used both as an adjective to describe consumer items in the marketplace that are associated with enhanced ways of living (eg, lifestyle magazines and lifestyle amenities in apartment complexes) and as a noun to depict a way of life typified by the consumption of goods and services. The use of the term in these contexts influences our perception that lifestyle is largely a function of personal choice. In publications related to cancer prevention, both uses of the term have become conflated to refer to a narrow set of risk factors that are associated with other chronic diseases. Not only does the term lifestyle no longer refer to culture, it now encompasses undesirable risk factors that few would intentionally choose, such as smoking (an addiction) and obesity (a chronic condition). Informed consumer choices can be important for modifying cancer risk for children and communities. Paradoxically, such choices are outside the focus of traditional lifestyle interventions. For example, parents might purchase products that are labeled as free of a specific chemical carcinogen, or choose a form of transportation that generates fewer cancer-causing emissions into the atmosphere. Indoor tanning is an obviously discretionary consumer behavior that has been linked with an increased risk of cancer, but typically it is not included in the category of lifestyle factors.

Over time, cancer prevention efforts have concentrated on a narrow set of factors (such as smoking or obesity) that are themselves the result of a combination of genetic, individual, social, and environmental influences. Because vulnerable populations, including children, often have limited choices over their living circumstances, an emphasis on personal choice can be largely irrelevant. When focusing on early life, we are more likely to consider the underlying social determinants of health.⁶ For example, broad structural, socioeconomic, and environmental factors can affect the preconception health of parents, a mother's health in pregnancy, and a child's growth prenatally and after birth. Adverse social and environmental influences in early life can have lasting effects on health in adulthood in ways we are only beginning to fully understand.⁷

Success in cancer prevention requires the identification of factors that influence cancer development throughout the life span and can be modified, followed by the implementation of effective interventions to address these factors. Interventions can occur at different or multiple levels of the socioecological framework.¹ The tobacco industry has promoted the concept of personal responsibility and informed choice, and this approach serves as a playbook for other industries that market harmful products.⁸ The labeling of behavioral risk factors as lifestyle is consistent with this emphasis on personal responsibility and narrows the focus for intervention to the level of the individual. The marketplace can and often does respond to consumer demand to eliminate a particular cancer risk in the absence of government regulation. However, consumers rarely have access to the information needed to empower fully informed choices, even when lower risk alternatives are available. Interventions that focus on counseling and education may be of value, but they are generally expected to have a smaller impact at the population level than approaches that address socioeconomic factors or the environmental context in which decisions are made.⁹ Comprehensive tobacco control programs, for example, operate at multiple levels and include context-changing interventions, such as tobacco taxes, smoke-free environments, and the elimination of advertising.⁹ Ideally, a multicomponent approach to address a particular cancer risk factor in early life would integrate efforts designed to empower parents and children, strengthen linkages between pediatricians and their communities, and promote healthy environments.

We now understand that early life can set the stage for cancer development later in life.¹⁰ A focus on early life as a critical period for cancer prevention prompts us to address the policy, systems, and environmental factors that influence early life experiences or mitigate the negative effects of early life events later in the life span. Environmental and social problems call for environmental and social solutions. The term lifestyle in the context of cancer prevention has devolved to be both limiting and nonspecific. In its place, the intended set of risk factors can be specified without the superfluous use of lifestyle as a qualifier. As our understanding of the factors in early life that contribute to subsequent cancer development continues to grow, pediatricians and other health advocates can focus on the broader environmental and social conditions that give rise to these factors.

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