The “European Consensus Statement on Lung Cancer,” which appears in this issue (a slightly revised version of the paper originally published in the European Journal of Cancer Prevention\(^2\)), represents a reasonable synopsis of the current state-of-the-science of lung cancer risk factors and prevention but falls somewhat short of outlining where one could, and perhaps should, go from here.

The authors’ major points are well made and clear and are, of course, also clearly applicable to the United States. They are as follows:

- Smoking is by far the major risk factor for lung cancer.
- Adopting a diet high in fruits and vegetables is an effective way to reduce the risk of lung cancer, although for smokers it is a distant secondary option. The scientific relationship between diet and cancer incidence is remarkable, consistent, and well established. Clearly, the increased incidence of K-ras mutations in smokers caused by benzo[a]pyrenes makes the blockage of their metabolic activation by dietary agents especially important.
- The risk of lung cancer from exposure to non-tobacco carcinogens—such as radon, asbestos, and others—increases synergistically with the increased risk from smoking.
- Previous lung disease such as chronic obstructive pulmonary disease is another predictor of lung cancer.
- A previous tobacco-related cancer is associated with a higher risk of genesis of a second primary cancer in individuals in whom an unhealthy lifestyle or a genetic predisposition is a potential confounding factor.
- Finally, environmental tobacco smoke is clearly a human carcinogen.

It would have been helpful if the authors also had provided some approximate quantifications of the order of magnitude difference for these different factors. For example, the relative risk for lung cancer among lifetime tobacco smokers is about 20 to 30 times greater than that of nonsmokers. Environmental tobacco smoke, or passive smoking, in contrast, increases the relative risk only about 1.5-fold.\(^3\) Similarly, low consumption of fruits and vegetables increases the relative risk up to twofold.\(^4\)

On the other hand, the population-attributable risk for both secondhand smoke exposure and low fruit and vegetable consumption becomes significantly closer to the population-attributable risk of smoking because secondhand smoke and low fruit and vegetable consumption affect a far larger proportion of the population, not just smokers.

Furthermore, the article should have pointed out more clearly that although the associations between specific dietary components and physical activity and lung cancer are not as well established as those between a diet high in fruits and vegetables and lung cancer (let alone that between tobacco and cancer), the preponderance of scientific evidence to date

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seems to point toward a strong association between lung cancer and reduced physical activity, increased dietary fat (especially diets high in saturated/animal fat and cholesterol), high alcohol intake, and possibly even high consumption of dietary selenium, vitamin C, and even carotenoids naturally occurring in foods.\(^3,5\) (However, the \(\beta\)-Carotene and Retinol Efficacy Trial [CARET] and Alpha-Tocopherol, Beta-Carotene Cancer Prevention Study [ATBC] cited in the article appropriately present contrary evidence suggesting that smokers do not necessarily benefit from chemoprevention with \(\beta\)-carotene per se.)

The cancer-specific relative risks, however, systematically underestimate the overall beneficial effect of healthy eating because diet is a significant risk factor for other cancers, cardiovascular disease, diabetes, and other chronic diseases. Moreover, the authors’ suggestion that the “protective” effect of fruit and vegetable consumption on the risk of lung cancer seems to be accentuated among smokers could have been made more strongly, without implying that an increase in fruit and vegetable consumption is an adequate substitute for stopping cigarette use.

The consensus statement also does not address the question of how the authors’ primary lung cancer prevention recommendations (mainly smoking cessation supplemented by the consumption of five or more fruits and vegetables per day) can be implemented, and it does not specify what contribution these risk factors make to the cancer disease burden. Finally, the authors do not discuss the potential for reducing cancer incidence and mortality in the future by means of a targeted prevention campaign.

In the United States, targeted federal and state anti-tobacco programs have contributed to significant drops in cigarette consumption with attendant declines in lung cancer prevalence and mortality. Such programs include the National Cancer Institute’s (NCI) ASSIST (American Stop Smoking Intervention Study) program, the Centers for Disease Control and Prevention’s (CDC) IMPACT (Initiatives to Mobilize for the Prevention And Control of Tobacco use) program, the Robert Wood Johnson Foundation/American Medical Associa-
tion’s Smokeless States program, and the large state programs (for example, those in California and Massachusetts).

Similarly, in spite of meager funding, the NCI-sponsored national 5 A Day Program and the state 5 A Day programs (which target high-risk groups, the general population, and children to promote the consumption of at least five fruits and vegetables per day) are showing early signs of success. These interventions are important because nearly one third of all cancers are related to tobacco use and more than one third more are related to diet.

The national goal of the American Cancer Society is ambitious but realistic, provided the necessary cancer control level of effort is forthcoming across the board, and includes prevention interventions that target high-risk populations, underserved minority populations, and the general public. The reduction in cancer mortality rate projected by the American Cancer Society from the present through the year 2015 is 50% (about 6.3% to 10.7% of which could be from lung cancer [Tim Byers, MD, MPH, Professor, Department of Preventive Medicine and Biometrics, University of Colorado School of Medicine, personal communication]). The American Cancer Society goal for reduction of incidence rate is 25% (about 2.4% to 4.4% of which could be from lung cancer [Dr. Byers, personal communication]).

A broad-based American Cancer Society Blue Ribbon Advisory Group on Community Cancer Control submitted its recommendations in November 1997. Although this Blue Ribbon Group’s scope of discussion spanned the entire spectrum of cancer, the eight principles that guided its specific recommendations clearly apply to lung cancer and its prevention. These eight principles, shown in the Table, are an example of going beyond a scientific consensus and attempting to bridge the gap between the state-of-the-science of cancer control and the state-of-the-practice of cancer control.

We need to see a shift toward a population-based or community-based approach to cancer control. Our patients and the public deserve to know what they can do or where they can go to stop smoking or change their diet rather than simply receiving advice to “just do it.” In all fairness, this concern with cancer prevention practice was perhaps beyond the scope of the “European Consensus Statement on Lung Cancer.” Nevertheless, these principles are advanced not as a panacea but as an attempt to translate scientific recommendations seamlessly into a community practice environment. Not to take this final step is imprudent given the current time lag for technology transfer in cancer control.

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