

Menthol Should Not Be Given a Free Pass Based on Studies of Biomarkers of Toxicity

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Abstract

Exposure and toxicity studies comparing menthol and nonmenthol cigarettes have resulted in mixed results. On the basis of those results, cigarette manufacturers have concluded that there is no increased harm from the addition of menthol to cigarettes. We propose that such a narrow definition of harm is not appropriate in dealing with the issue of menthol, and its broader negative public health impact. *Cancer Epidemiol Biomarkers Prev*; 20(7); 1269–71. ©2011 AACR.

In this issue, Caraballo and colleagues add to the growing body of literature concerning the biomarkers of toxicity of menthol added to cigarettes (1). Even laboratory-based exposure studies (carbon monoxide, cotinine) have had mixed results, with some studies reporting decreased values, some increased, and some no difference when menthol cigarettes (compared with nonmenthol cigarettes) are smoked (2–9). These results, and the generally null results reported following examination for increased toxicity of menthol cigarettes (10–20) are understandable for 2 reasons. First, all previous studies (both epidemiologic and laboratory-based) that have attempted to determine whether mentholation of cigarettes produces additional harm have utilized commercial menthol and nonmenthol brands. Those studies have been obfuscated by the many other ways that commercial cigarettes differ other than just menthol concentration. For policy makers to judge whether mentholation itself results in additional abuse liability or toxicity, we must be able to separate the effects of menthol from other cigarette features, such as physical characteristics and available nicotine, among others. There may also be significant misclassification of cigarette type, given that most cigarettes contain some menthol at subliminal levels (21). Second, smoking causes such overwhelming harm that epidemiologic tools are unlikely to uncover additional toxicity from the addition of menthol to cigarettes. The available evidence is insufficient to definitively conclude that the addition of menthol to cigarettes increases the intake

of tobacco smoke or the toxicity of that smoke. Continuing to focus on chemical or molecular nature of menthol, however, or even on menthol toxicity alone, will distract the scientific community, tobacco control professionals, and the public from the real harm associated with menthol in cigarettes.

Adding menthol to cigarettes is not benign. To accept it as such would be to very narrowly define the concept of public health harm. Rather the harm of menthol is in its masking of the harshness of tobacco smoke (22–24), its use in starter products for children (25–28), its interference with quitting and staying quit (29–36), and the deliberate targeting of menthol cigarettes to vulnerable populations (25, 37, 38). Menthol cigarettes are disproportionately target marketed to young African Americans, a particularly vulnerable segment of our society (38, 39).

Representatives of the tobacco manufacturers have been persistent in denial of the role of menthol in harming the public's health (40–42). They are only able to do so by keeping the definition of harm to a narrow focus on toxicity and disease outcomes. Recent meetings of the Tobacco Product Scientific Advisory Committee (TPSAC) of the U.S. Food and Drug Administration, with accompanying public testimony, have forced the manufacturers to confront the broader issues of harm. Unfortunately, in doing so, they have used very selective interpretation of selective literature to come to the conclusion that TPSAC, in their review of the available evidence, has produced "speculative hypotheses" that "cannot serve as the basis for regulatory policy" (43).

Any cigarette design characteristic that makes cigarettes easier to smoke, especially to the young and the naive smoker, is bad for the public health (44). Menthol masks the harshness of tobacco and provides a sensation of coolness (21), and makes low-tar cigarettes more attractive (45). The unique sensory effects of menthol, in combination with nicotine, contribute to the reinforcing effects of smoking (34).

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If menthol were banned from cigarettes, at both characterizing levels ("menthol cigarettes") and noncharacterizing levels ("nonmenthol cigarettes"), the incessant targeted advertising would come to a stop (25, 38, 44). So would the marketing with health reassurance messages and imagery (25, 39).

Other candy flavorings in cigarettes were banned on the basis of much less information than is known about the public health harm caused by mentholation

of cigarettes (44). It is time to remove menthol from cigarettes and stop sweetening the poison.

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