

New analysis casts doubt on results of tobacco industry studies into safety of cigarette additives

December 20 2011

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Published tobacco industry scientific research on the safety of cigarette additives cannot be taken at face value, according to an analysis led by Stanton Glantz from the Center for Tobacco Control Research and Education at the University of California in San Francisco, and published in this week's [PLoS Medicine](#).

In the *PLoS Medicine* study, the authors reanalyzed data from "Project MIX" in which chemical analyses of smoke, and the potential toxicity of 333 cigarette additives were conducted by scientists from the [tobacco company](#) Philip Morris. The results of these analyses were published in Food and Chemical Toxicology in 2002.

The authors of the independent analysis used documents made public as a result of litigation against the [tobacco industry](#) to investigate the origins and design of Project MIX, and to conduct their own analyses of the results. Internal documents revealed post-hoc changes in analytical protocols after the industry scientists found that the additives increased cigarette toxicity by increasing the number of particles in the [cigarette smoke](#). Crucially, the authors also found that in the original Project MIX analysis, the published papers obscured findings of toxicity by adjusting the data by Total Particulate Matter concentration: when the authors

conducted their own analysis by studying additives per cigarette, they found that 15 [carcinogenic chemicals](#) increased by 20% or more. The authors also found that the failure to identify many toxic [biological effects](#) was because the studies [Philip Morris](#) carried out were too small to reliably detect toxic effects.

The authors conclude that their independent analysis provides evidence for the elimination of the use of the studied additives (including menthol) from cigarettes on public health grounds.

The authors say: "The results demonstrate that toxins in cigarette smoke increase substantially when additives are put in cigarettes, including the level of [Total Particulate Matter]. In particular, regulatory authorities, including the [Food and Drug Administration] and similar agencies elsewhere, could use the Project MIX data to eliminate the use of these 333 additives (including menthol) from cigarettes."

More information: Wertz MS, Kyriss T, Paranjape S, Glantz SA (2011) The Toxic Effects of Cigarette Additives. Philip Morris' Project Mix Reconsidered: An Analysis of Documents Released through Litigation. *PLoS Med* 8(12): e1001145.
[doi:10.1371/journal.pmed.1001145](https://doi.org/10.1371/journal.pmed.1001145)

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Citation: New analysis casts doubt on results of tobacco industry studies into safety of cigarette additives (2011, December 20) retrieved 4 May 2024 from
<https://medicalxpress.com/news/2011-12-analysis-results-tobacco-industry-safety.html>

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