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Kurzfassung

Aim: Much has been written about the toxicity of narghile (hookah, shisha) smoke. However, it is seldom mentioned that narghile smoke is actually far less complex than that of cigarettes. In spite of being a much simpler object to research, there has been a world of avoidable and preventable confusion due, to a great extent, to the inappropriate use of the narghile smoking machine designed at the US-American University of Beirut that now is considered to be “standardised”. This machine has allowed the claims of high yields of tar, CO, PAH, heavy metals and, lastly, volatile aldehydes. Consequently, any public health intervention against narghile (hookah, shisha) use requires a long overdue critique of this machine on which a large amount of the peer-reviewed “waterpipe” literature uncritically relies. Public health policy makers should be aware of the unprecedented degree of confusion in this field. Methods: The analysis is twofold. On one hand, the classical FTC (Federal Trade Commission) regime applied to cigarette testing (and behind the official figures printed on cigarette packs) is presented, whereby it is recalled that a 35-ml puff is drawn each minute for only a few minutes. On the other hand, a discussion follows about the relevancy of the narghile smoking machine based on averaging a complex human and social activity to a puff relentlessly drawn every 17 s over a full hour, with, marginally, the heating source (coal) in the same position over the smoking mixture (contrary to common practice). It is assumed that such stress-strain conditions result in abnormal perturbations in the chemical reactions at stake. The case of aldehyde generation is taken as an example. Results: The narghile smoking machine was modelled after the one for cigarettes, which not only is an inappropriate reference, but also is totally irrelevant for a kind of tobacco use that is different from all points of view. The narghile smoking machine and its underlying smoking topography represent a biased toxicological model of the related practice. Human-centered alternatives are presented. Conclusion: Against the background of a public health epidemic, a recommended research avenue is to focus on biological measurements of human subjects (urinary carcinogens, chemical or biological markers) carried out in a natural environment in realistic conditions and coupled with a puff-by-puff smoke analysis.