

# The reliability and validity of self-reported puffing behavior: Evidence from a cross-national study

Lion Shahab, David Hammond, Richard J. O'Connor, K. Michael Cummings, Ron Borland, Bill King, Ann McNeill

## **Abstract**

Self-reported puffing behavior has considerable potential as an indicator of smoking intensity, particularly in survey research evaluating population-based changes in smoking patterns. However, little is known about the reliability and validity of self-reported puffing behavior. This study compared smokers' perceptions of their puffing behavior with measures of both machine-determined puffing behavior and nicotine uptake to assess the utility of self-report. We assessed self-reported puffing behavior as well as demographic and smoking characteristics of 118 smokers from Australia, Canada, the United Kingdom, and the United States. At two visits, participants were asked to provide a saliva sample and to smoke a cigarette through a portable smoking topography device, the CReSSmicro, to measure puffing behavior. Saliva samples were assayed for cotinine, a measure of nicotine uptake, to provide estimates of smoke exposure. Intraclass coefficients for all measures of self-reported general puffing behavior were above .6, indicating that self-reported measures had fair-to-good test-retest reliability. Self-report, in particular of interpuff interval and number of cigarette puffs, was correlated only moderately with machine-determined puffing measures ( $.2 < r < .4$ ), and no self-report measure related to smoke exposure as measured by cotinine. Self-reported measures of puffing behavior appear to be fairly reliable but are correlated only weakly with objective measures of smoking topography. Results suggest that smokers have a better perception of the time spent between puffs and of the number of puffs taken than of the intensity and depth of each puff or their actual smoke exposure.

## **Recommended Citation:**

Shahab L, Hammond D, O'Connor RJ, Cummings KM, Borland R, King B, et al. The reliability and validity of self-reported puffing behavior: Evidence from a cross-national study. *Nicotine & Tobacco Research* 2008 May;10(5):867-874.

Link to PDF: <http://ntr.oxfordjournals.org/content/10/5/867.full.pdf+html>