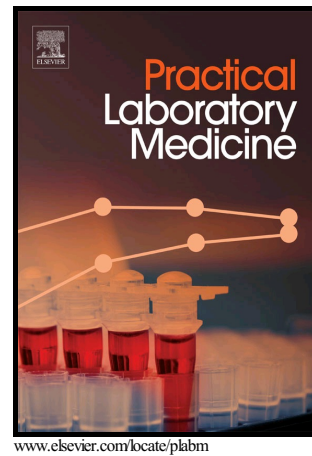


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Nicotine and Cotinine in Oral Fluid: Passive Exposure vs Active Smoking

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Abstract

Scheidweiler and colleagues have clinically tested and identified a reporting cutoff (10 ng/mL) of nicotine and cotinine in oral fluid that could reliably determine active smoking in patients. The results from that study were reevaluated using a large data set of oral fluid nicotine and cotinine results available from pain medication monitoring. Additionally, test results from patients using a nicotine transdermal patch delivery device are compared with those from smokers. Finally, oral fluid test results collected over a 2-year period were normalized and transformed to yield a near Gaussian distribution for nicotine. The normalized and transformed data reveal the presence of two independent populations: a larger population consistent with active smokers and a smaller population consistent with those passively exposed to smoke. Furthermore, application of this model to patients prescribed transdermal nicotine reveals oral fluid levels consistent with those of active smokers. The clinical delineation of smokers from non-smokers reported earlier is supported by the oral fluid nicotine data modeling presented herein. These data indicate that oral fluid is an acceptable sample matrix for determining the smoking status of patients. Further, these data indicate that oral fluid test results are indistinguishable between patients prescribed transdermal patches and active smokers; however, oral fluid testing can determine absence of patches or smoking.

Keywords: Nicotine, Smoking, Transdermal, Cotinine, Oral fluid

Introduction

Nicotine and its metabolites can be tested in oral fluids, urine, and blood to discern the use of tobacco products (1). Nicotine is also used as a pharmacological aid to smoking cessation (2)

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