

Effect of SHS Exposure on NOLA Bar Patrons

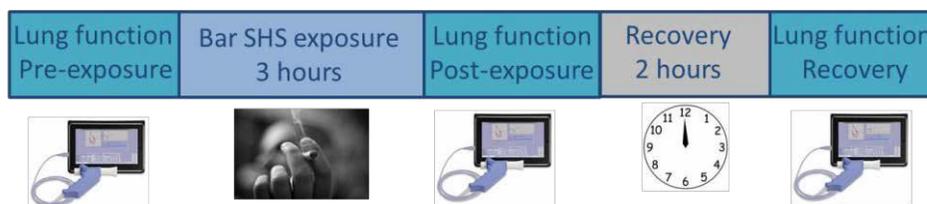
February 2014

Introduction

- The long term health effects of second hand smoke (SHS) are well known. Less information, however, is available on short term or *acute exposure* to SHS.
- The available literature suggests several biological effects of acute exposure to SHS including respiratory damage, heightened immune response and blood vessel dysfunction. Brief exposure to SHS generates vascular inflammation, a heightened immune response, alters nitric oxide modulation and initiates remodeling of the airway.
- These alterations of lung function may occur after only 1 hour of SHS exposure, and resemble the physiological changes that are seen among smokers.

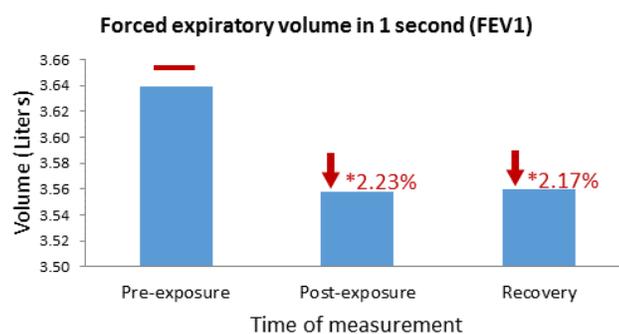
Methodology

- The Play It SAFE study was conducted in January and February 2014 as an observational study using particulate matter devices to quantify individual environmental tobacco smoke (ETS) exposure.
- 96 young (21-35 years olds), healthy, non-smoking adults were exposed to ETS for 3 hours in a typical New Orleans bar environment where indoor smoking was permitted.
- Spirometry measurements, including forced vital capacity (FVC), forced expiratory volume in 1 second (FEV1), and peak expiratory flow (PEF), were taken at three different points during a 6-hour data collection protocol outlined in the graphic below



Results

- Repeated-measures analysis of variance (RM-ANOVA) examined the effect of exposure timepoint on FVC, FEV1, and PEF. PPM and gender were included as time-invariant covariates and their interactions with timepoint were examined.
- FVC, FEV1, and PEF were all significantly reduced during measurement at post-exposure and recovery, compared to the pre-exposure baseline. There were no significant interactions with gender or PPM exposure.



*Percent decrease from pre-exposure measurement. Post-hoc pairwise comparison, $p < .001$

Discussion

- The current exclusion of bars under the Louisiana Smoke-Free Air ordinance translates to repeated short-term exposure to ETS
- and the subsequent health consequences for all bar patrons.
- Three hours of exposure to SHS in a bar can lead to a significant decrease in lung function in healthy, non-smoking young adults, with no improvement even 2 hours after removal from exposure to SHS.
- Policies aimed at banning cigarette smoking in bars and restaurants are important for limiting the negative health effects of SHS on patrons and employees.