

St. Louis City Bars Air Monitoring Study



Mark J. Travers, Ph.D., M.S. and Katharine A. Dobson, B.S.
Department of Health Behavior, Roswell Park Cancer Institute

EXECUTIVE SUMMARY

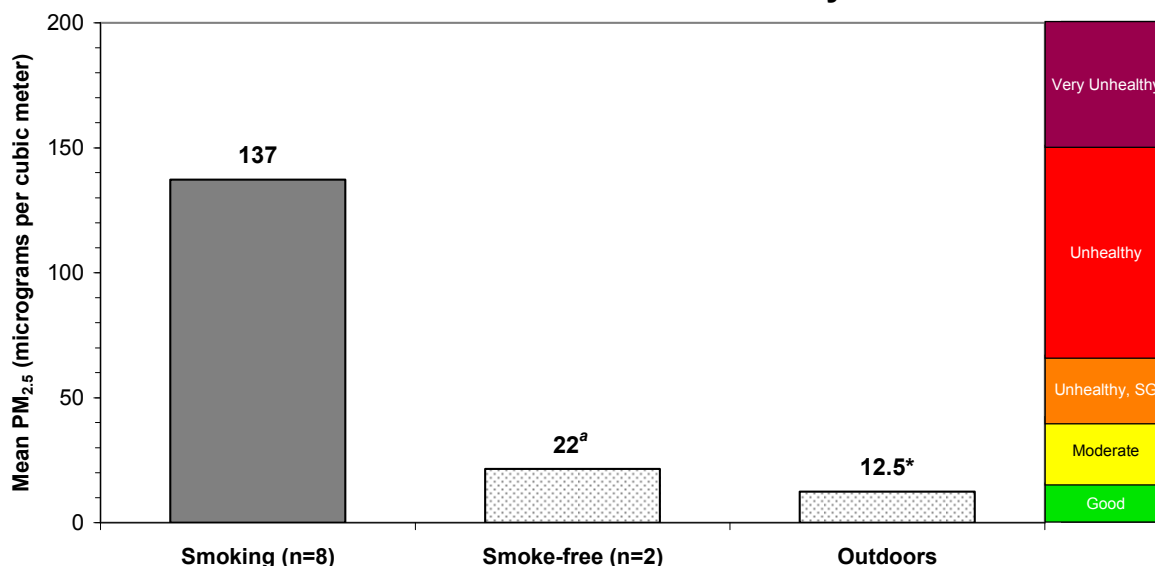
Indoor air quality was assessed in 8 randomly selected St. Louis City, MO bars where indoor smoking is permitted in July 2008. Two similar establishments were also randomly selected and sampled in St. Louis City where indoor smoking is prohibited. The concentration of fine particle air pollution, PM_{2.5}, was measured with a TSI SidePak AM510 Personal Aerosol Monitor. PM_{2.5} is particulate matter in the air smaller than 2.5 microns in diameter. Particles of this size are released in significant amounts from burning cigarettes, are easily inhaled deep into the lungs, and cause a variety of adverse health effects including cardiovascular and respiratory disease and death.

Key findings of the study include:

- The average level of fine particle indoor air pollution was 6 times higher in places in St. Louis City that allow smoking compared to the smoke-free places. (Mean PM_{2.5} concentration in St. Louis City smoking venues 137 µg/m³ versus 22 µg/m³ in smoke-free venues)
- Employees working full-time in the establishments sampled in St. Louis City are exposed annually to fine particle air pollution levels 2.7 times higher than the safe annual limit established by the U.S. Environmental Protection Agency (EPA).
- Indoor particle pollution levels in smoke-free St. Louis City bars are low and virtually the same as outdoor air.

Consistent with the findings of the U.S. Surgeon General and the American Society for Heating, Refrigerating, and Air-Conditioning Engineers, this study provides further evidence that indoor smoking causes exposure to harmful levels of indoor air pollution and that comprehensive smoke-free air policies prohibiting indoor smoking are the only effective means to eliminate the health risks from these exposures.

Indoor Air Pollution in St. Louis City Bars



^a p<0.001 for comparison of Smoking to Smoke-free (Independent samples t test of log-transformed values)

* Used for comparison purposes. Based on the 2008 average PM_{2.5} level from the EPA monitoring site in Clayton, St. Louis County, Missouri. <http://www.epa.gov/air/data/>

Note: The color-coded EPA Air Quality Index is shown to illustrate the magnitude of the measured particle concentrations. (SG=sensitive groups)