



# Center for Research on U.S. Latino HIV/AIDS and Drug Abuse

FLORIDA INTERNATIONAL UNIVERSITY

## Brown Bag Lunch Lecture Series

### Effects of low-level lead exposure on blood pressure in a population-based study in Southern Brazil

Monday, November 21<sup>st</sup>

11:30 am

AHC-5, Room 300

Academic Health Center 5  
Third Floor Conference Room

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#### Presentation

**Introduction:** Environmental lead exposure is a public health issue due to lead's ability to accumulate in the organism over a long period of time. Any exposure to this metal is considered to be unsafe, and low levels of lead exposure in adults may increase blood pressure and risk of hypertension. **Objective:** to evaluate the relationship of blood lead levels (BLL) with blood pressure and hypertension in a population-based sample of adults living in a Southern Brazilian city. **Methods:** 948 adults, aged 40 years or older, were randomly selected. Information on socioeconomic, dietary, lifestyle, and occupational background was obtained via oral household interviews. Systolic blood pressure (SBP) and diastolic blood pressure (DBP) were measured according to the *VI Brazilian Guidelines on Hypertension*. Participants were considered as hypertensive if any of the following were present: a SBP of 140 mm Hg or higher, a DBP of 90 mm Hg or higher, or self-reported use of antihypertensive medication. BLL were measured by ICP-MS technique. Multiple logistic regression was used to examine associations of BLL with hypertension status and with elevated SBP and DBP. **Results:** The overall geometric mean of BLL was 1.97 µg/dl (95% CI: 1.90-2.04 µg/dl), and the means for the blood lead quartiles ranged from 0.96 µg/dL to 4.21 µg/dL in the lowest and higher quartile, respectively. Adults in the highest blood lead quartile had increased odds of DBP (OR: 2.57; 95% CI: 1.51-4.39) and of hypertension (OR: 2.54; 95% CI: 1.17-5.53) compared to those in the lowest quartile. Participants in the 90th percentile of blood lead distribution had 0.07 mmHg (95% CI, 0.03 to 0.11) higher DBP, and higher OR for hypertension, compared with those participants in the 10th percentile of blood lead. **Conclusions:** At low concentrations, BLL were positively associated with DBP and with the odds for hypertension in adults aged 40 or older. **Financial Support:** Coordination for the Improvement of Higher Level or Education Personnel, through the Ministry of Health, Brazil.

#### About the Lecturer

**Monica M. Bastos Paoliello** is a Senior Professor in the Graduate Program in Public Health, Center of Health Sciences at the State University of Londrina (UEL), Parana, Brazil. She holds a PhD (2002) in Public Health from State University of Campinas, Sao Paulo, Brazil. Her research interests include Toxicology, Epidemiology, and Environmental Health. Dr. Paoliello was the President of the Brazilian Society of Toxicology (2006-2007). She has been a consultant at the National Health Surveillance Agency (ANVISA) and at Petrobras (Brazilian Oil Company).

