

Despite the perceived hazard posed by flood waters, few respondents tested their water after the flood (6.5%, $n=92$), primarily because they did not know how or where to test (54.3%, $n=92$). Respondents indicated a need for information about testing labs (91.5%) and treatment options (78.7%, $n=94$). Most well owners reported that they were not provided with assistance or information about their wells before or after the flood (94.5%, $n=109$).

Conclusion: The extent to which the population represents all flood-impacted well owners is unknown, but these data support a need for routine resident training and emergency response planning by state officials targeting rural private well owners. Given that over half a million Louisiana residents rely on private wells and the fact that climate models predict global warming trends will increase Louisiana's chances of similar flooding events in the future, failure to address this need could have widespread public health impacts.

P32. Evaluation of Waterborne Lead Levels in New Orleans, LA: Policy Implications for Monitoring and Exposure Reduction



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Purpose: Waterborne lead is not a priority public health concern in New Orleans (NOLA) as drinking water meets regulations which require utilities to monitor water lead levels (WLLs) in first-draw tap samples (FD), and advise residents to flush taps under certain conditions. Researchers evaluated whether FD samples represented worst-case exposures, as regulators intended; and whether prevailing flush guidelines (30 seconds to 2 minutes) reduce WLLs.

Methods: In 2015 and 2016, a convenience sample of 405 NOLA households were asked to report water consumption habits and collect FD and flushed tap samples for metal analyses.

Results: Most consumed unfiltered water (93%, $n=272$), indicating a need to evaluate impacts of regulatory sampling and flush recommendations. WLLs ranged from <1 (detection limit) to 283 ppb ($n=1739$ samples). While median WLLs were low (1.4 ppb) ($n=1739$ samples); 73% had detectable WLL, indicating widespread occurrence. There was no significant difference between WLLs in FD samples and after 30 seconds (median=1.6, signed rank test $p>0.05$, $n=380$) or 2-minutes (median=1.2, $p>0.05$, $n=379$). However, 15% of both flush samples had WLLs exceeding those in FDs (>1 ppb), indicating FDs may not characterize highest WLLs. As 46% and 40% of 30-second and 2-minute samples, respectively, had increased or no change in WLLs, flushing appears inconsistently effective. Despite recommendations, only 17% of respondents flush their water ($n=333$)—most for <30 seconds (56%), and none >2 minutes. WLLs were not correlated with other metals, indicating leaching of lead from lead service lines (LSLs), which may account for 65–80% of NOLA lines.

Conclusion: Regulatory sampling can miss highest WLLs in some systems and prevailing flush guidelines are inconsistently effective. With continued consumption, low-level lead exposures may present a public health issue, given the potential for lead bioaccumulation, prevalent consumption of unfiltered water, and widespread occurrence of LSLs and lead in NOLA water.

P33. Hypertension in Mexican Americans: Assessing Disparities in Air Pollutant Risks



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Purpose: Independent and combined effects of air pollution and psychosocial stressors among U.S. Hispanics are not well studied. We used qualitative and quantitative methods to evaluate the effects of psychosocial stressors and ambient ozone (O_3) on prevalent hypertension among individuals of Mexican origin in Houston.

Methods: Nearly 2,500 individuals in the MD Anderson Cancer Center cohort study of Mexican-American families in Houston participated in our study. We administered a pilot-tested questionnaire on individual and neighborhood-level psychosocial stressors. We used data from the Texas Commission on

Environmental Quality to construct annual average O_3 exposure for the year preceding enrollment for each participant using inverse distance interpolation. We applied logistic regression to examine the relationship between psychosocial stressors and hypertension, as well as O_3 exposure and hypertension; stratified analysis was used to examine interaction between psychosocial stressors and O_3 .
Results: We found relatively strong associations between hypertension and selected psychosocial stressors, such as unfair treatment due to race/ethnicity or immigration status (adjusted OR =1.55 95% CI [1.04–2.32]), having too much litter or trash in the neighborhood (adjusted OR =1.48 95% CI [1.06–2.07]), experiencing stress-related conditions, such as anxiety or depression (adjusted OR =1.36 95% CI [1.06–1.75]) and worrying about one's health (adjusted OR =1.65 95% CI [1.30–2.06]) and money (OR =1.27 95% CI [1.01–1.6]). A moderate level of stress due to domestic violence was protective (adjusted OR =0.60 95% CI [0.40–0.90]). We observed an inverse association with O_3 exposure (highest quartile adjusted OR =0.55, 95% CI [0.42–0.72]) There was no conclusive evidence of interaction between psychosocial stressors and O_3 .

Conclusion: Our findings confirm earlier studies on individual and family stressors and hypertension. Future research is needed to evaluate the impact of both short- and long-term exposures on incident hypertension and further examine the modifying role of psychosocial stressors.

P34. Associations between Repeated Measures of Agricultural Pesticide Exposures and Pubertal Markers in a Cohort of Girls



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Purpose: Pesticide exposures are suspected of leading to earlier pubertal development by altering endocrine function, particularly among young girls. However, evidence from longitudinal studies is limited and conflicting. We examined the association between agricultural pesticide exposure and pubertal markers in children of participants in the Agricultural Health Study.

Methods: Thirty-five girls ages 7–14 years old provided urine and saliva samples and reported on their recent participation in six farm pesticide-related activities at each of three time points over a period of six months. Pubertal markers included levels of DHEA in saliva and creatinine-adjusted E_3G and $Pd3G$ in urine. We used generalized estimating equations to quantify the association between pesticide exposures and log-transformed pubertal markers, stratified by menarche status and controlling for age and BMI. Robust standard errors accounted for dependence between measurements over time.

Results: 43% of girls reported activities involving possible pesticide exposure sometime in the 12 months prior to or during the study. In adjusted models, exposure was associated with significantly lower DHEA levels among post-menarchal girls (β : -0.63, 95% CI: -1.15, -0.11), but the association was only marginal among premenarchal girls (β : -0.19, 95% CI: -0.39, 0.01). The associations also differed by menarchal status for E_3G and $Pd3G$ (interaction term $p \leq 0.001$): exposure predicted levels that were lower for post-menarchal girls and rose earlier for premenarchal girls. Pesticide exposure was associated with elevated FSH levels regardless of menarchal status (β : 0.45, 95% CI: 0.18, 0.72), although premenarchal girls still had higher FSH levels than post-menarchal girls (β : 0.57, 95% CI: 0.19, 0.94).

Conclusion: Performing pesticide-related agricultural activities was significantly associated with puberty-related endocrine levels. Studies should account for menarchal status. These pilot study results should be confirmed in larger studies with longer follow-up.

P35. Cumulative Effects of the Gulf Oil Spill and Other Disasters on Mental Health Among Reproductive-aged Women: The GROWH Study



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