

Hurricane Harvey Study

On August 25, 2017, Hurricane Harvey made landfall along the Middle Texas Coast and stalled over Southeast Texas, dropping over 50 inches of rain and causing record-breaking and catastrophic flooding. Over 100,000 homes sustained damage or were destroyed in Houston, alone. As the floods receded and individuals returned to their homes to begin clean-up efforts, community groups with environmental health concerns reached out to us for assistance.

In response, researchers from Baylor College of Medicine, The UTHealth School of Public Health, Texas A&M University, and Oregon State University formed a multi-disciplinary team to determine the short and long-term health effects related to the flooding and potential exposures. The goal of the Hurricane Harvey Study is to recruit individuals who have been affected by flooding in their homes or have possible exposure by assisting in rescue, clean-up and remediation efforts. Recruitment is limited to one adult and one child over the age of five per household.

Study participants are asked to complete a health questionnaire, provide biosamples, and if they are living in a flooded home or helping with “muck and gut” clean-up or remediation efforts, asked to wear a lightweight silicone wristband for seven days. Additionally, participants returning to their homes are asked to provide an environmental sample by taking a swab of the wall inside of their front doors. The purpose of each component is detailed below:

- **Health Questionnaire:** The study team developed a comprehensive health questionnaire (based on tools used in the aftermath of Hurricanes Katrina and Sandy) for rapid health assessment following Hurricane Harvey. The questionnaire is used to assess current symptoms and degree of home flooding and exposures. This information is critical for a comprehensive database of individuals participating in this long-term study.
- **Wristband:** The silicone wristband, developed by Dr. Kim Anderson at Oregon State University, is a passive sampler. The wristbands can absorb a large range of chemicals (>1500), specifically organic compounds such as pesticides, personal care products, smoke, and oil compounds.
- **Bio and Environmental Sampling:** The wristbands are only capable of detecting organic compounds, so other potentially harmful exposures, such as mold, are not detected through the wristbands. Biosamples and environmental samples, however, can help detect a range of other exposures resulting from the flood.

The study team has enrolled over 150 participants from some of the most impacted communities, including Addicks, Baytown, and East Houston, to collect health data and samples within 30 days of the flooding. To study the short and long-term health effects of the storm, the team proposes to follow-up with and recruit new participants at the 6 and 12-month time points to identify unique exposures and to optimize future disaster research and response efforts.

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