

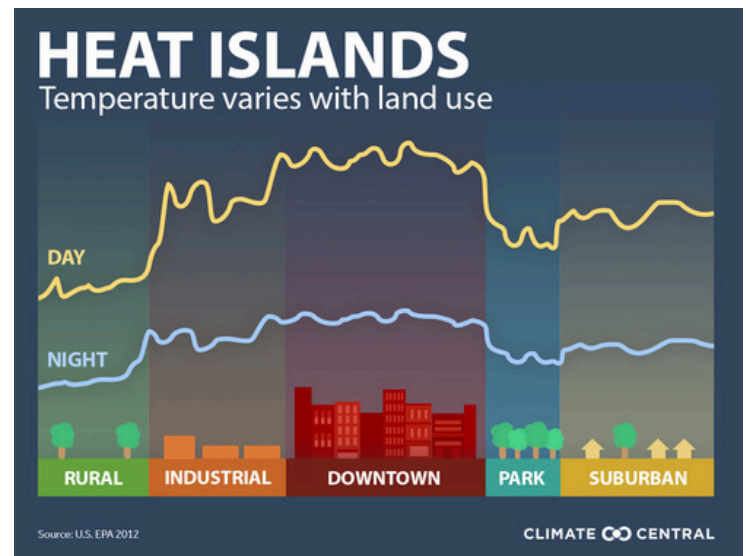
## Beating the heat in a low-income urban community of color

Residents of low-income urban neighborhoods, such as New Haven's Dwight community, face greater health risks from extreme heat. This qualitative study, which examined health impacts of heat, coping mechanisms, barriers to staying cool, and potential solutions, highlights how social vulnerability, housing insecurity, and limited access to cooling intersect to enhance risk.

### BACKGROUND

Extreme heat is a growing public health threat, causing millions of illnesses and hundreds of thousands of deaths globally each year. Heat exposure can cause heat exhaustion and heat stroke, precipitate acute events, such as dehydration, kidney failure, and heart attacks; and exacerbate chronic diseases, especially among elderly individuals and those with preexisting medical conditions.

In the United States, low-income urban communities of color, like the Dwight neighborhood of New Haven, CT, bear a disproportionate share of heat-related illness and mortality. Historic redlining and disinvestment, limited green space, and dense impervious surfaces amplify heat exposure, while renters often lack autonomy over housing conditions. To address the gap in understanding how these communities experience and respond to extreme heat, researchers from the Yale Schools of Public Health, Architecture, and Medicine conducted five focus groups with residents of Dwight, where 36.6% of residents live below the poverty line and 97.5% rent their homes. Participants described physical and psychological distress during heat events, including dizziness,



**Figure 1:** Heat-island effect: A graph showing how daytime (yellow line) and nighttime (blue line) temperatures vary across different land uses — rural, industrial, downtown, park, and suburban — illustrating how built-up areas (especially downtown) stay significantly warmer than greener or less developed zones.

irritability, feeling drained, and exacerbation of conditions like diabetes, and hypertension.

Participants identified persons with preexisting medical conditions, the elderly, children, unhoused individuals, and menopausal women as particularly vulnerable.

## POINTS FOR POLICYMAKERS

### *Urban heat vulnerability is a public health equity issue*

The study underscores the structural barriers preventing effective heat adaptation in marginalized urban communities. Participants in the Dwight neighborhood emphasized financial strain as a key challenge; some could not afford to purchase or operate AC, while some renters were prohibited from installing window AC units. Others faced intensified heat exposure due to residing in top-floor apartments or being homeless.

### *Neighborhood infrastructure deficits compound health risks*

Participants spoke about how Dwight's built environment intensifies heat exposure. They reported minimal green space, scarce tree cover, absence of bodies of water, and high building density. These factors are associated with the Urban Heat Island effect, which traps and radiates heat, keeping temperatures several degrees higher than surrounding areas. This effect amplifies thermal stress, especially for residents without home AC, outdoor workers, unhoused persons, and other vulnerable groups. Participants also pointed to lack of shaded bus stops as an additional infrastructure deficit that makes outdoor movement hazardous during heatwaves. Finally, awareness of cooling centers was low and none were located in Dwight, making them inaccessible due to distance and lack of transportation options, particularly for children, the elderly, and disabled residents.

### *Community-informed solutions can guide equitable adaptation*

Municipal and state governments, spurred on by collective action by residents, should prioritize low-income communities in heat adaptation plans through investments in green infrastructure, high-quality cooling centers, shaded bus stop shelters, recreational water such as splash pads, and renter-focused cooling programs, ensuring that climate resilience is inclusive and equitable.

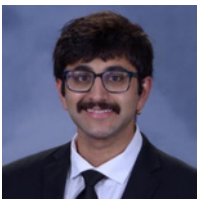
Coping strategies ranged from home air conditioner (AC) and showering to seeking public air-conditioned spaces. Yet, barriers such as not having home AC, the high cost of home AC, landlord restrictions on installing window AC, lack of tree cover for shade, lack of knowledge about and inaccessibility of public cooling centers, and poor communication about energy and cooling assistance programs hindered effective heat adaptation. ◆

## FOR MORE INFORMATION

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