

Extreme Heat Action Planning: Training Providers in the Bronx, NY



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EXTREME HEAT & PHYSIOLOGIC ADAPTATIONS



Temperature = Absolute measured temperature



Heat index = "Apparent" temperature, or feels like temperature combined with relative humidity. Measured in the shade.

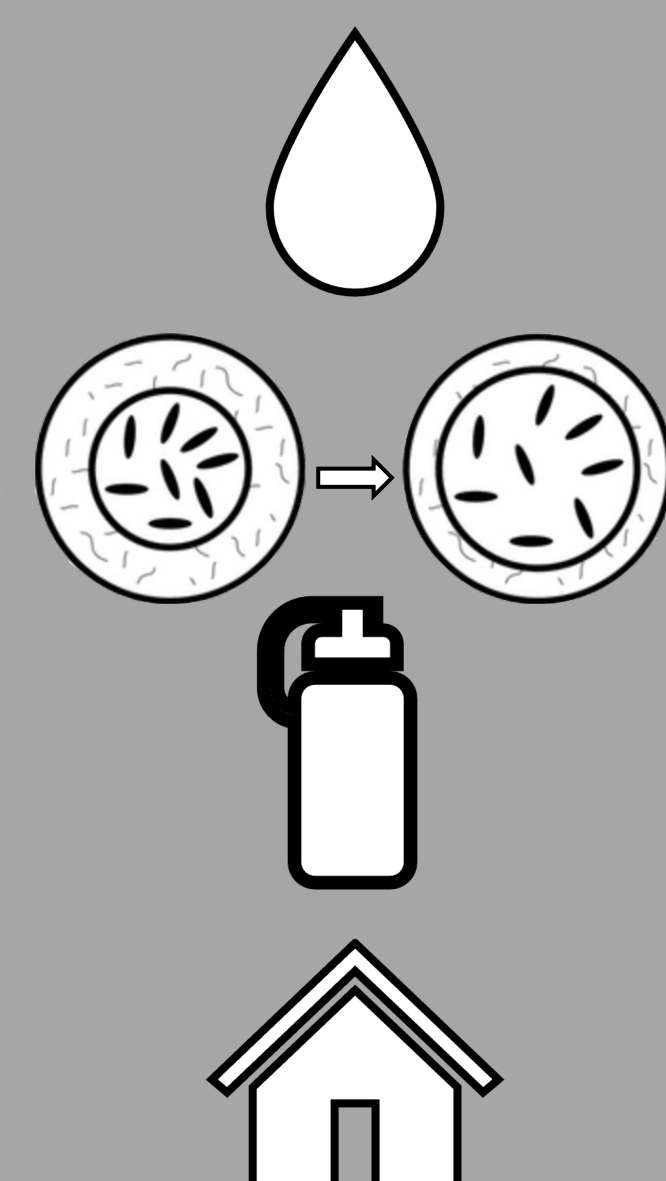


Wet bulb globe temperature = Another measure of apparent temperature, combined with relative humidity, cloud cover, wind speed, and sun angle. Measured in the sun.

National Weather Service alerts for extreme heat¹³

- **Heat advisory:** heat index ranging from 105°F to 115°F for <3 hours per day, or nighttime lows >80°F for 2 consecutive days.
- **Excessive heat warning:** issued within 12 hours of onset of a heat index of at least 105°F for >3 hours per day for 2 consecutive days, or heat index >115°F for any period of time

Major adaptations to heat



Sweating

Vasodilation

Thirst

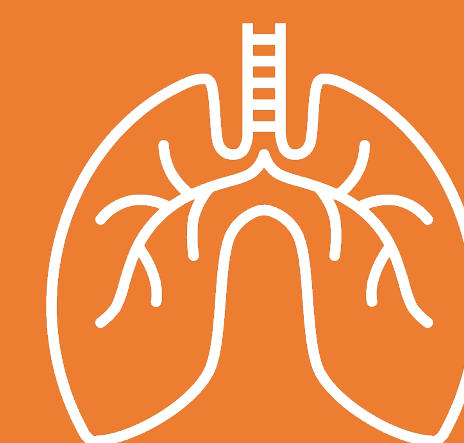
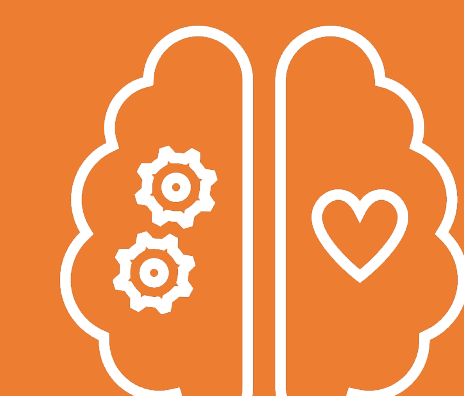
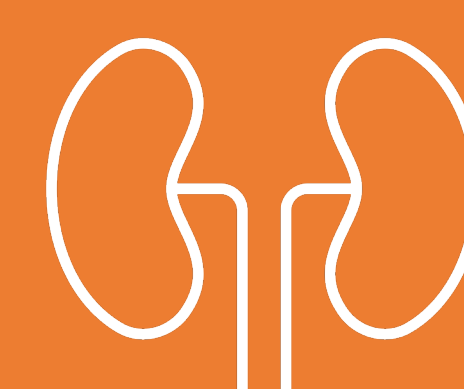
Seeking cooler location

HEAT RELATED ILLNESS, RISKS, & EXPOSURES

Heat related illness falls into two categories:

- 1) Heat exhaustion/heat stroke spectrum
 - 2) Exacerbation of other illness
- Both can be related to impairment of physiologic adaptations to heat.

Assessing risks^{1-12,14-16}



- Impaired autonomic response to heat: infants, neuropathy, neurodegeneration, alcohol/substance use
- Impaired sweating response: older adults, anticholinergic medications, pregnancy
- Impaired ability to maintain oxygenation and perfusion while vasodilated: CHF, CKD, HTN, asthma, COPD, pregnancy, beta blockers, diuretics, calcium channel blockers
- Decreased thirst: altered mental status including dementia, alcohol/substance use
- Inability to seek cooler location: altered mental status including dementia, alcohol/substance use

Assessing exposures



Housing access & cooling

Occupational exposure

Recreational exposure

MAKING AN EXTREME HEAT ACTION PLAN

1. Identify risks:

- Review conditions that increase risk for heat related illness.
- Ask about prior heat related illness and other past medical history.

2. Identify exposures:

- Ask about housing instability and energy instability.
- Assess exposure to heat through outdoor work or heavy working gear.
- Ask about participation in outdoor sports.

3. Identify strategies for decreasing risk & use shared decision making to decide when to employ them:

- Locating cooling centers.
- Measuring home temperatures and using air conditioning.
- Engaging in proactive hydration.
- Ensuring worksite regulations.
- Harm reduction related to alcohol and substance use.

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Scan for references & resources:

