



Mental Health Disorders and Heat Providers

Heat increases the risk of morbidity and mortality from a broad swath of mental health disorders.¹ Many studies have found higher temperatures are associated with greater risk of suicide, violence and aggression, as well as morbidity and mortality from substance abuse disorders, mood and anxiety disorders, schizophrenia and child onset behavioral disorders.¹⁻⁶ Individuals with mental health disorders have been found to be at especially high risk for mortality during heat waves.⁷⁻⁹

Heat Exposure Risks for People with Mental Health Disorders

Although many studies have established links between heat and adverse mental health outcomes, mechanisms underlying these associations have not been well established. Heat can contribute to sleep disturbance¹⁰ and poor sleep has been identified as a source of worsening mental health symptoms.¹¹ Dehydration also has been found to increase irritability and worsen mood.^{12,13} Direct effects of increased body temperature on neuronal function in the brain have been demonstrated in many studies, but further research will be necessary to connect these findings to mental health symptoms.¹⁴

Mental Health, Social Determinants, and Heat Risk

A mental health disorder may be associated with underlying adverse social determinants of health including social isolation,¹⁵ financial insecurity,¹⁶ or housing insecurity,¹⁷ each of which may influence risk of harm from heat. Social isolation, in particular, has been repeatedly identified as a risk for heat-related mortality.⁷ Financial insecurity may affect an individual's likelihood of having or using air conditioning.¹⁸ Individuals with housing insecurity often have financial insecurity and may also have lesser access to air conditioning.¹⁹

Schizophrenia

Individuals with psychotic conditions may be at particularly high risk from heat exposure owing to impairment in judgment and greater likelihood of lack of access to air conditioning and stable housing. Limited evidence suggests that schizophrenic patients may have impaired thermoregulation even when not taking psychotropic medications, which have been shown to blunt thermoregulatory responses (see Medication Considerations below).²⁰

Medication Considerations

Medications used to manage many mental health conditions, including selective serotonin reuptake inhibitors (SSRIs), serotonin–norepinephrine reuptake inhibitors (SNRIs), antipsychotics, and tricyclic antidepressants (TCAs) have been associated with greater risk of needing medical care when it gets hot outside.²¹⁻²³ Many SSRIs and SNRIs increase sweating, as do some TCAs, which may contribute to dehydration.²⁴⁻²⁶ SNRIs and TCAs are thought to increase sweating through adrenergic pathways.^{24,27}

Some TCAs however, as well as many antipsychotic medications, such as chlorpromazine, clozapine, olanzapine, quetiapine, and chlorpromazine may reduce sweating.²⁸ Some antipsychotics may directly impair the hypothalamic regulation of body temperature.²⁹

Temperatures of Concern

The temperatures that increase risk of harm for individuals with mental health conditions may be far lower than those considered dangerous to many people. For most cities in the United States, the minimum mortality temperature (the temperature above which mortality rates increase) is often just below the 80th percentile of the annual temperature range.³⁰

Temperatures tend to peak in mid to late afternoon. The time of day with the highest temperatures for your location can be found at weatherspark.com.³¹

The National Weather Service (NWS) issues heat advisories, excessive heat watches, and excessive heat warnings. To see if a heat alert has been issued for your location, check the weather app on your smart phone, or go to weather.gov and select your county or enter your zipcode. For more details on how to access NWS alerts for heat (and other weather extremes), as well as the differences between heat watches and warning, see the accompanying toolkit document titled “Accessing Weather Alerts”.

Built Environment

The forecast temperature available to patients may not accurately represent the temperature they are exposed to in their home or community. The upper levels of multi-story buildings, especially those without air conditioning, may be much warmer than lower levels.

Urban heat islands can result in temperatures more than 4°F higher than reported due to factors such as fewer trees and parks, more asphalt and concrete, and more traffic. Black American, Hispanic, and lower-wealth communities often live in neighborhoods with greater heat island effects.³² Homeless individuals, who may be more likely to have schizophrenia,³³ are at particularly high risk of heat exposure, as they may be more likely to live in urban heat islands and lack access to cool indoor environments.

Heat Action Plans for Patients with Mental Health Disorders

Appropriate guidance for patients with mental health disorders should be based upon an assessment of the severity of their disease, comorbidities, occupation (especially if outdoors), access to air conditioning at home, and excess heat exposure from an urban heat island or the home environment.

Prior to a heat event, you can work with a patient’s therapist to develop a plan. We recommend that you familiarize yourself with the “Heat Action Plan” provided in the toolkit and review it with patients with mental health disorders. The action plan can be provided during care visits and can be the basis for a discussion around safety planning and care management in the event of extreme heat. Action plans should be completed in advance of heat season in your locale.

Anticipatory Guidance for Providers to Give Patients

Anticipatory guidance for hot days may contribute to improved health outcomes. The strategies and resources below may be helpful for you to provide to patients who are at risk from excessive heat and reflect the “Heat Tip Sheet – Mental Health Disorders” available in the toolkit, which we encourage you to share with patients.

1. Before going outside, check the weather forecast on your phone, television, radio, or online (e.g., at weather.gov or weather.com).

2. If a patient does not have a thermostat or thermometer that measures room temperature in their home, they can be bought for a few dollars at hardware stores or online. Consider having inexpensive thermometers available in your clinic to distribute.
 - a. Indoor temperatures in the patient's home should ideally remain <80°F. If they cannot keep the temperature below 80°F, they should use a fan or consider moving to an air-conditioned space until the temperature cools.
3. When a heat advisory or heat alert has been announced by the NWS (see "Accessing Weather Alerts" for more information), advise patients to:
 - a. Follow their heat action plan (see "Establishing a Heat Action Plan" for guidance)
 - b. If a heat advisory is issued, patients with mental health disorders should preferably stay indoors in an air-conditioned space. If going outside is necessary, limit outdoor activities especially during the hottest part of the day (typically 11AM to 3 PM).
 - c. If an excessive heat warning is issued, patients with mental health disorders should remain in air-conditioned spaces until the warning expires.

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