



## Dementia and Heat Providers

Exposure to extreme heat has been found to increase the risk of morbidity and mortality in patients with various forms of dementia.<sup>1,2</sup> Estimates suggest that while the proportion of older adults with dementia is declining, the total number of adults over 65 years old with dementia will rise in the coming decades from 7 million in 2020 to 12 million in 2040.<sup>3,4</sup>

### Heat Exposure Risks for People with Dementia

Studies worldwide have identified an increased risk of dementia-related hospitalizations in association with heat exposure.<sup>1,5,6</sup> A New York study found an increased risk of dementia-related ED visits (RR, 1.31, 95% CI, 1.22–1.41) following short-term exposure to heat.<sup>7</sup> Patients with dementia also face an increased risk of death from extreme heat exposure. In one study of over 11 million Medicare individuals in 135 US cities, exposure to extreme heat increased the risk of death by 6% for individuals with dementia.<sup>2</sup>

### Age-Related Declines in Thermoregulation

Dementia most often occurs at older ages. In 2019, about 3% of adults 70-74 years old, 22% of adults 85-89 years old, and 33% of adults 90 years or older had been diagnosed with dementia.<sup>4</sup> Age-related declines in thermoregulation increase the risk of heat-related harm among the elderly with dementia. Mechanisms of impaired thermoregulation include age-related declines in sweating and skin blood flow to facilitate cutaneous heat dissipation.<sup>8,9</sup>

### Behavioral and Cognitive Changes

Individuals with various forms of dementia may have a reduced heat awareness, which may increase their risk of heat-related harm. They are also at increased risk as individuals with dementia may have limited behavioral capacities to cope, including seeking out shade and increasing fluid intake.<sup>10</sup>

### Medication Considerations

The vast majority (91.8%) of individuals with dementia have at least one medical comorbidity, including cardiovascular disease, diabetes, stroke, or depression.<sup>11,12</sup> While more research is needed, several classes of medications used to treat these comorbidities have been found to increase the risk of heat-related hospitalization. These include ACEIs, ARBs, beta blockers, diuretics, anticholinergics, and SSRIs.<sup>13-15</sup> Similarly, antipsychotics, which are used by individuals with dementia who develop agitation and psychosis, have also been shown to increase the risk of heat-related hospitalizations.<sup>15,16</sup> No trials have been conducted to guide clinical decision making in light of these increased risks.

### Temperatures of Concern

The temperatures that increase risk of harm for patients with dementia 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 for American cities.<sup>11</sup>

Temperatures tend to peak in mid to late afternoon. The time of day with highest temperatures for your location can be found at [weatherspark.com](https://weatherspark.com).

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](http://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.<sup>12</sup> Homeless individuals are at particularly high risk of heat exposure.

## **Heat Action Plans for Patients with Dementia**

Appropriate guidance for people with dementia 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 care team to develop a plan. We recommend that you familiarize yourself with the “Heat Action Plan” provided in the toolkit and review it with patients. 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.

For additional guidance, see the accompanying toolkit document titled “Establishing a Heat Action Plan”.

## **Anticipatory Guidance for Providers to Give to 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 – Dementia” 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](http://weather.gov) or [weather.com](http://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 dementia 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 dementia should remain in air-conditioned spaces until the warning expires.

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