A guide by
RCPsych's Planetary Health and Sustainability Committee

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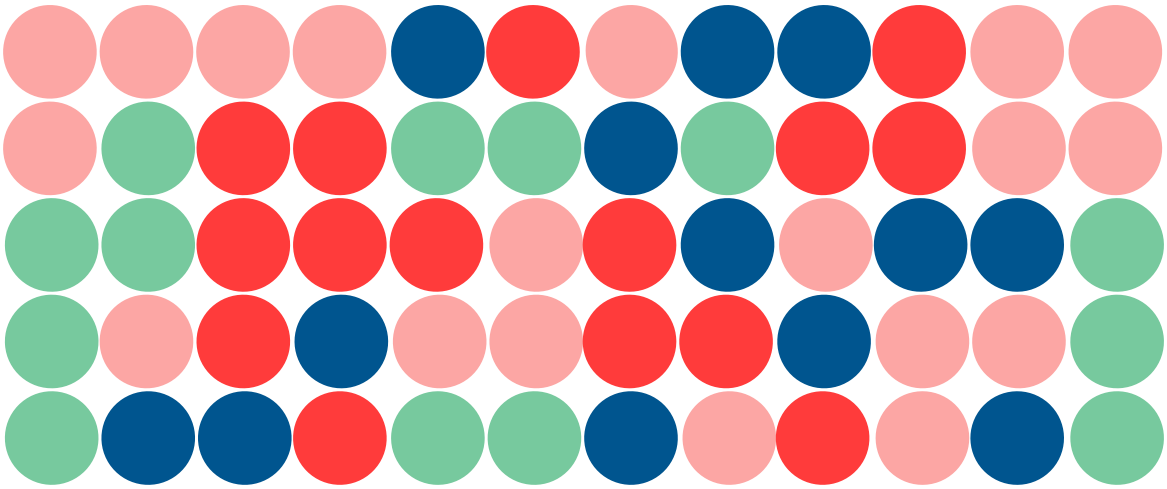
Heatwaves and mental health:

What every psychiatrist needs to know



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What every psychiatrist needs to know

Heatwaves are a mental health risk

As heatwaves become more frequent and intense, psychiatrists should be aware of the often-overlooked risks that extreme heat poses to individuals with mental illness and understand how best to support them.

Why it matters to your practice

Some key clinical considerations:

- People with mental illness may be less able to regulate their body temperature or stay sufficiently hydrated. This may be due to the effects of psychotropic medication, physical health comorbidities or the mental illnesses themselves.
- The physical, psychological and cognitive effects of heat stress can precipitate psychiatric and physiological crises.
- People with mental illnesses may live or work in conditions where the health risks from extreme heat are hard to avoid due to structural inequalities (such as living in substandard housing, working outdoors or lacking access to cool and green spaces).
- Heat-related symptoms and illness can escalate quickly – from discomfort to heat exhaustion, which, if untreated, can progress to life-threatening heatstroke.

What does the data show?

Limited but growing research has found increased risks for people with mental illness during extreme heat, including:

- mental health-related deaths rising by **2.2%**[1]
- suicide incidence rising by **1.5%**[2]
- mental health-related emergency department visits rising by **8%**[3]
- psychiatric hospital admissions rising by **9.7%**[4]

In people with psychosis, dementia and substance use disorders, one study observed a **4.9%**[5] increase in risk of death per 1°C rise in temperature above extreme heat thresholds.

During the 2021 Canadian 'Heat Dome' – an extreme heat event that brought record-breaking temperatures – one study found that people with schizophrenia accounted for **16%**[6] of heat-related deaths, despite comprising only 1% of the population.

Who is most at risk from the effects of heat?

High-risk groups include:

- People with severe mental illness, dementia, substance use and intellectual disabilities
- People taking psychotropic medications
- Individuals with physical health comorbidities (such as cardiovascular or renal conditions) which can independently put them at higher risk of heat-related illness like heat exhaustion or heat stroke
- People who are homeless, elderly, socially isolated or in care homes
- Anyone affected by structural inequalities, such as substandard housing (e.g. poor ventilation or insulation), limited access to care and systemic barriers linked to race, gender or income.

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1 Liu J, Varghese BM, Hansen A, Xiang J, Zhang Y, Dear K, Gourley M, Driscoll T, Morgan G, Capon A, Bi P (2021) Is there an association between hot weather and poor mental health outcomes? A systematic review and meta-analysis. *Environ Int; 153:106533. doi: 10.1016/j.envint.2021.106533.*

2 Thompson R, Lawrance EL, Roberts LF, Grailey K, Ashrafian H, Maheswaran H, Toledano MB, Darzi A (2023) Ambient temperature and mental health: a systematic review and meta-analysis. *Lancet Planet Health*, **7(7)**:e580–589 doi: 10.1016/S2542-5196(23)00104-3. Erratum in: Lancet Planet Health, 7(9):e735

3 Nori-Sarma A, Sun S, Sun Y, Spangler KR, Oblath R, Galea S, Gradus JL, Wellenius GA (2021) Association Between Ambient Heat and Risk of Emergency Department Visits for Mental Health Among US Adults, 2010 to 2019. *JAMA Psychiatry. 2022 Apr 1;79(4):341-349. doi: 10.1001/jamapsychiatry.*

4 Thompson at el (2023) as above

5 Page LA, Hajat S, Kovats RS, Howard LM (2012) Temperature-related deaths in people with psychosis, dementia and substance misuse. *British Journal of Psychiatry*, **200(6)**:485-490. doi:10.1192/bjp.bp.111.100404

6 Lee MJ, McLean KE, Kuo M, Richardson GRA and Henderson SB (2023) Chronic Diseases Associated With Mortality in British Columbia, Canada During the 2021 Western North America Extreme Heat Event. *GeoHealth*, **7(3)**: e2022GH000729.

A closer look: Mental illness and heat vulnerabilities

Biological risks

- **Physiological responses** (e.g. inflammatory, hormonal, neurotransmitter) to heat can destabilise mental and physical health.
- **Psychotropic medication** can impair thermoregulation (e.g. sweating, thirst perception and vasodilation) and increase the risk of dehydration.
- **Dehydration** increases the risk of:
  - **lithium toxicity**
  - **clozapine-induced gastric hypomotility**.
- **Altered metabolism and fluid balance** also increase the risk of **clozapine toxicity**.
- **Physical health comorbidities** (e.g. cardiovascular and renal conditions) can independently impair thermoregulation and increase the risk of dehydration and heat-related illness.
- **Substance use** further disrupts thermoregulation and hydration
- **Depression** may also affect thermoregulation.
- **Some medications need to be stored below specific temperatures** (e.g. under 25°C or refrigerated). If exposed to excessive heat, their chemical stability may be compromised, reducing their efficacy and potentially affecting safety.

Psycho-social vulnerabilities

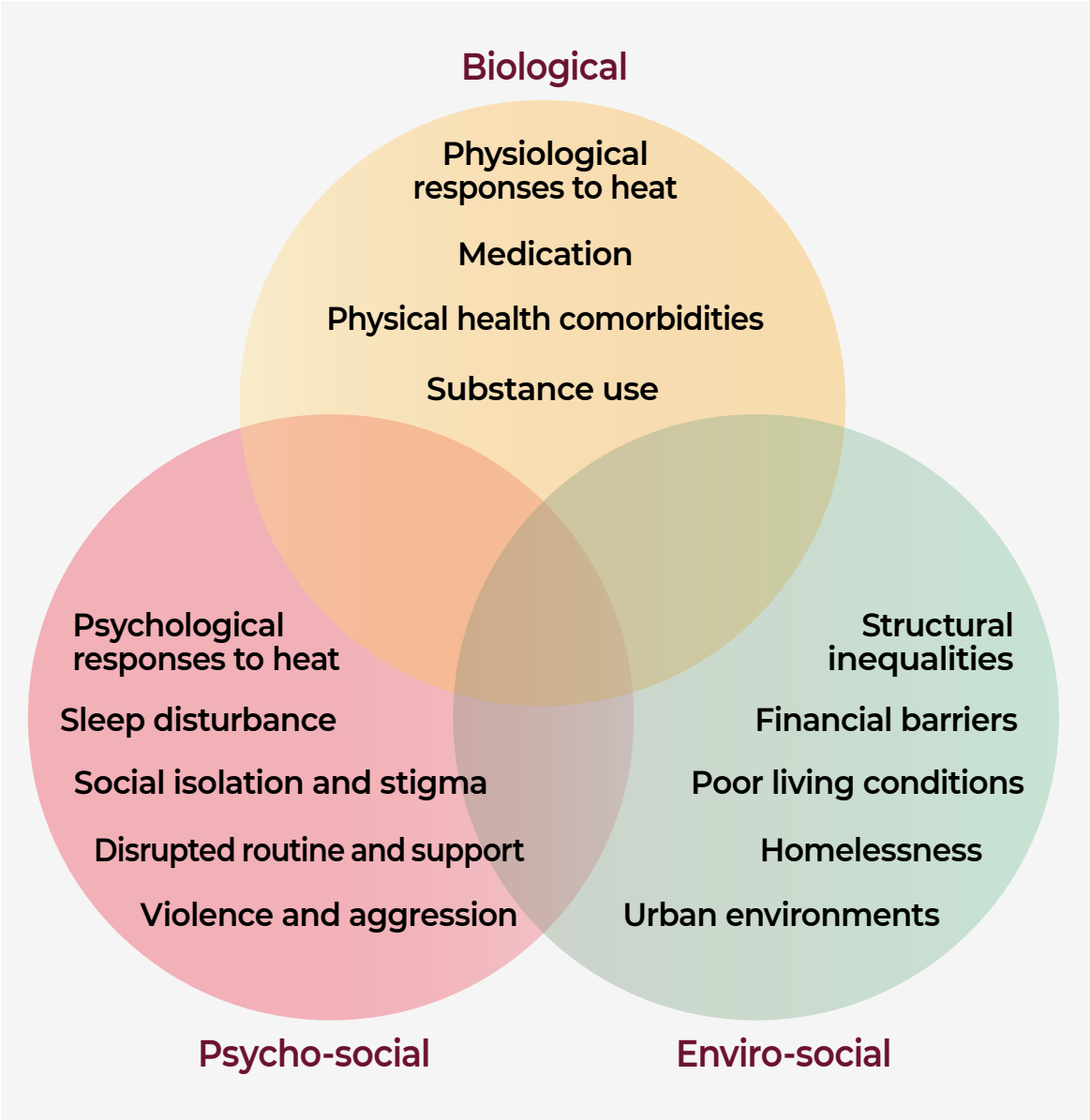
- **Impaired insight** or **cognitive function,** or **limited physical mobility** can be barriers to appropriate self-care (e.g. cooling, hydration, help-seeking) and accessing healthcare.
- **Social isolation**, compounded by **societal stigma**, can create barriers to accessing support networks, public resources or healthcare.
- **Disrupted sleep** and **routines** can destabilise mental well-being, coping behaviours and engagement with support.
- Heat stress can increase **agitation**, **anxiety**, and **emotional dysregulation**, and act as a trigger for relapse.
- Heat is also linked to heightened **irritability**, **aggression, intimate partner violence** and **suicide**.

Enviro-social inequalities

- **Financial constraints** limit access to cooling tools (e.g. fans, air conditioning), transport and access to cool, safe public spaces).
- **Substandard housing** (e.g. poor ventilation and insulation) and rough sleeping increase direct and prolonged heat exposure.
- **Urban areas** intensify heat exposure through the 'urban heat island' effect.

Intersectional factors compound

Risks can overlap – mental illness, physical health comorbidities, medication, social isolation and structural inequalities – creating compounded risks to health and safety.



What can psychiatrists do?

PREPARE

Risk stratify

- Identify patients on medications that affect hydration or thermoregulation, or whose medication is more vulnerable to losing efficacy if stored improperly during hot weather.
- Proactively review care plans, especially for patients with:
  - psychosis, bipolar disorder, intellectual disability and substance use
  - physical comorbidities (especially renal and cardiac)
  - social isolation.

Prepare your service

- Discuss heatwave contingency planning in team meetings.
- Liaise with inpatient and crisis services about cooling, hydration and ventilation strategies.
- Seek local and national guidance – such as your mental healthcare provider's heatwave plan, Heat-Health Alert action cards, and sign up to UKHSA hot weather alerts.

ACT

Ask questions, educate and communicate

- Ask patients about their living conditions and access to cool spaces.
- Educate patients and carers on the early signs of heat exhaustion and medication safety during high temperatures.
- Promote accessible resources on heat health (e.g. Heat exhaustion and heatstroke - NHS and BeatTheHeat).
- Coordinate with primary care and community teams during heat alerts.

Remember: high risk = high priority

Don't underestimate the clinical importance of rising temperatures and heatwaves. Your awareness could help prevent hospital admissions, mental health crises and even death.