



June 2024

## Who this advice is for

This advice is based on [UK Health Security Agency \(UKHSA\)](#) guidance for healthcare professionals working in community, care home or hospital environments, including those working in managerial and in-patient facing roles. It offers advice on caring for people most at risk during hot weather.

UKHSA guidance has been adapted where necessary to ensure information provided is relevant for Wales. This advice should also be read alongside the Heat Health Risk: Advice Note for Wales Health and Social Care System Partners from Welsh Government.

## Main messages

In all settings, healthcare professionals should:

- Adapt individual care plans to respond to hot weather.
- Have action plans in place for your organisation and/or place of work tailored to the local context.
- Know who is at risk.
- Know how to treat heat related illnesses.
- Be alert to increased cardiovascular and respiratory complications.
- Be aware of medications that increase patient risk during hot weather (see below).
- Promote environmental and behavioural changes that could reduce the risk of hot weather.
- Monitor your local weather [forecast](#).
- Familiarise yourself with the [advice for the public](#) to share with patients.

## About hot weather and health

Severe hot weather is dangerous to everyone. Hot weather can happen suddenly, and rapid rises in temperature affect people at higher risk very rapidly and can be fatal. Climate change means dangerous hot weather is becoming more common in the UK.

Deaths and morbidity from hot weather are preventable and requires careful preparation. Plans need to be in place **before** high temperatures are forecast.

## Who is at risk?

While anyone can be affected by hot weather, some groups are at higher risk than others. People adapt to heat with physiological responses (like sweating) and behavioural changes (changing clothes). Individuals are at increased risk from heat when one or more of these mechanisms is limited, for example by illness (including physical and mental/cognitive health problems), frailty, or medication.

Consider what:

- The individual's risk factors are for being ill during hot weather.
- Can be changed to protect them.

An individual's risk is related to a combination of factors relating to their health, behaviours and environment. High-risk groups include:

- Older people aged over 65 years.
- Babies and young children under the age of 5 years.
- People with underlying health conditions, particularly heart problems, breathing problems, dementia, diabetes, kidney disease, Parkinson's disease or mobility problems.
- Pregnant women.
- People on certain medications.
- People with serious mental health problems.
- People who are already ill and dehydrated (for example from diarrhoea and vomiting).
- People with alcohol or drug dependence.
- People who are physically active and spend a lot of time outside such as runners, cyclists and walkers.
- People who work in jobs that require manual labour or extensive time outside.
- People experiencing homelessness, including rough sleepers and those who are unable to make adaptations to their living accommodation such as sofa surfers or those living in hostels.
- People who live alone and may be unable to care for themselves.

[Air pollution](#) combined with hot weather can also worsen symptoms for people with existing breathing problems or heart conditions.

## **The effects of heat on health**

During severe hot weather, there is a risk of developing heat exhaustion, heatstroke and other heat-related illnesses including respiratory and heart problems.

However, the main causes of illness and death from hot weather are respiratory and cardiovascular diseases. This is because heat can exacerbate existing conditions, and also increase the chances of serious health issues such as heart attacks and strokes. Part of this rise may be due to air pollution, which can worsen in hot weather.

Hot weather and dehydration also increase the risk of infection and sepsis caused by Gram-negative bacteria, particularly *Escherichia coli*. The risk is greatest in individuals aged over 65, emphasising the importance of ensuring adequate fluid intake in older people.

The following heat-related illness information describes the effects of overheating on the body, which in the form of heatstroke can be fatal.

### **Heat-related illnesses**

There is a spectrum of heat-related illness ranging from heat cramps, through heat exhaustion to heatstroke. These are avoidable and preventable by early intervention and preparation.

## Heat cramps

Heat cramps are caused by electrolyte imbalance, often following exercise. While the individual with heat cramps will have a normal cognitive state and they will still be able to sweat, other symptoms may include:

- Painful muscular spasms
- Intense thirst with muscle cramps
- High heart rate

## Heat exhaustion

Symptoms of heat exhaustion include:

- Body temperature rising but still capable of dissipating heat.
- Flushed and sweaty appearance.
- Feeling hot.
- Mild cognitive dysfunction with mild confusion, irritability, anxiety and poor coordination.

Other signs of organ dysfunction may be present, including decreased urine output, headache, thirst, fainting, low blood pressure after sitting down or standing up (orthostatic hypotension) and nausea.

How to cool someone down if they have symptoms of heat exhaustion:

- Move to a cooler place such as a room with air conditioning or somewhere in the shade or cool the room down if it is not possible to move them.
- Remove all unnecessary clothing like jackets or socks.
- Help them drink a rehydration drink or cool water.
- Apply cool water by spray or sponge to exposed skin – cold packs wrapped in a cloth and put under the armpits or on the neck can also help.

## Heatstroke

Heatstroke is a medical emergency and needs urgent management in hospital.

Heatstroke falls into two categories. Classic heatstroke occurs due to passive exposure to extreme heat; exertional heatstroke occurs as a result of strenuous physical exercise.

In both cases, the body loses the capacity to get rid of heat and there is central nervous system impairment. Heatstroke commonly presents with:

- A very high temperature.
- Hot skin that is not sweating and might look red (this can be harder to see on brown and black skin).
- A high heart rate.
- Hypotension.
- Hyperventilation.
- Confusion and lack of coordination.
- A seizure or fit.
- Loss of consciousness.
- Shock.

The loss of the ability to sweat is a late and severe sign of heatstroke. Multiple organ dysfunction and death can rapidly occur.

The [WHO guidelines](#) contain more details and clinical management. You can also read more about [heat exhaustion and heatstroke on the NHS website](#).

### **Emergency treatment of heatstroke**

If you suspect someone has heatstroke, call 999.

While waiting for the ambulance:

- Continue trying to cool them down using the measures outlined above.
- Encourage them to drink cool fluids if they are conscious.
- Do not give them aspirin or paracetamol.
- Put them in the recovery position if they have lost consciousness.

### **Preparing for hot weather**

Preparation before hot weather is forecast is essential to reduce the risk of harm to patients and staff. Healthcare managers should regularly review, update and share their business continuity plans to reduce the impact of hot weather on the delivery of services. Hot weather plans should be shared and staff familiarised with them before the spring/summer each year.

Preparation should include making as much use as possible of existing care plans to assess which individuals are at particular risk, and to identify what extra help they might need. Where possible, involve their family and any informal carers in these arrangements.

Preparation should also include supporting staff through training and capacity development to help them recognise those most at risk, signs of heat related illness, and medications that increase risk of poor health outcomes.

If you are advising, visiting, supporting, or caring for someone in their own home, these steps should be taken before the hot weather happens.

### **Responding to hot weather**

#### **How to keep buildings and resources cool**

Consider the following actions to keep indoor temperatures as cool as possible:

- Reduce indoor heat production by turning off non-essential appliances and heating systems.
- Externally shade south facing windows with shutters, awnings, or the placement of plants.
- Close windows when outdoor temperatures are higher than indoor temperatures (for example during the day).
- Close any external shutters or shades, blinds and curtains – this keeps cooler air in, and hotter air out.
- Close and shade windows very early in the morning so that the heat does not build up.

- Consider adding temporary internal or external shading to any windows that do not have blinds, shutters or curtains, especially if they face east, west or south.
- Open windows (if it is safe to) when the air is cooler outside than inside, for example at night – try to get air flowing through the building.
- If air conditioning is used, keep the windows closed to keep the cooler air inside.
- Check that fridges and freezers work properly with sufficient capacity to supply enough cool water and unspoilt food.
- Use fans if ambient temperature is below 35°C – if temperatures are higher than this, fans can raise body temperatures.
- Planting trees and shrubs provide shade and cool the air around the building and indoor plants may help keep the indoors cool.

### How to keep people cool

As well as keeping indoor temperatures as cool as possible using steps above, considering the following to reduce individuals' risk:

- Move the most vulnerable patients to the coolest rooms (a cool room should ideally be less than 26°C).
- Reduce physical exertion, for example reschedule physiotherapy to cooler times of the day.
- Promote regular cool showers, baths or body washes.
- Advise wearing light, loose-fitting clothes that absorbs sweat and prevent skin irritation.
- Minimise sun exposure between the hours of 11am and 3pm.
- Promote sunscreen use, consulting [further advice on sunscreen and sun safety](#).
- Sprinkle clothes with water regularly and splash cool water on individuals' faces and the backs of their necks.
- Serve cold food, particularly salads, fruit and ice-lollies which have a high-water content.
- Promote regular drinking, preferably water or fruit juice, and advise against alcohol use – if individuals refuse to reduce alcohol intake, encourage alternating alcoholic drinks with water.
- Monitor fluid intake, which can be by monitoring body weight.

### Consider extra care needs

Anyone in a high-risk category (see above) who is living alone is likely to need at least daily contact, whether by care workers, volunteers, or informal carers. Individuals at greater risk may need extra care and support.

Check that:

- Extra care and support are available if needed.
- The person can contact the primary care team if one of their informal carers is unavailable.
- Their care plan contains contact details for their GP, other care workers and informal carers.
- There are adequate arrangements for food shopping and other essentials, to reduce having to go out in hot weather.

## Medications with increased risk during hot weather

Some medications increase the risk of poor health outcomes during hot weather. The degree of risk depends on the person's lifestyle, and health status as well their medications.

The medications list below is not exhaustive but serves as a prompt to consider action and assess the risks and benefits of any changes. Medications which may increase the risk of poor health outcomes during hot weather include:

- Diuretics, especially loop diuretics, which can lead to dehydration and electrolyte abnormalities.
- Medications that interfere with cardiovascular responses such as antihypertensives and antianginal drugs.
- Medications that interfere with sweating, such as anticholinergics or beta blockers.
- Medications that cause diarrhoea or vomiting, such as colchicine, antibiotics and opiates, which can lead to dehydration.
- Medications that can impair renal function, such as certain antimicrobials, immunosuppressants, non-steroidal anti-inflammatories, anti-ulcer agents and chemotherapies.
- Agents with levels affected by dehydration, such as lithium, digoxin, antiepileptics.
- Drugs that alter states of alertness, such as hypnotics, anxiolytics and analgesics.
- Medications that can interfere with central nervous system thermoregulation, such as neuroleptics and serotonergic agonists.
- Drugs that increase the basal metabolic rate such as thyroxine.

## Storage of medications

Most medicines should be kept below 25°C, so they should be stored somewhere cool, dry, out of direct sunlight and away from windowsills. Medicines should only be stored in the fridge if specified. For further guidance on medicines storage, speak to an NHS pharmacy service.

## Staff health and wellbeing

Staff can also be at risk during high temperatures. Encourage and enable staff to carry water and stay hydrated. Ensure staff are aware of the high-risk factors that might affect them, and to report concerns about their own health promptly.

Consult the Health and Safety Executive (HSE) for advice on [wearing personal protective equipment \(PPE\) in high temperatures](#), and for advice on [managing high temperatures in the workplace](#) more generally.