



Department of
Health

An Roinn Sláinte

Máinnystrie O Poustie

www.health-ni.gov.uk

Heatwave Advice

Supporting vulnerable people before and during a heatwave –
Advice for care home managers and staff

Contents

Advice for care home managers and staff	2
What are the risks? The effects of heat on health	3
Further information	5

Advice for care home managers and staff

Severe heat is dangerous to everyone, especially older and disabled people and those living in care homes. During a heatwave, when temperatures remain abnormally high for longer than a couple of days, it can prove fatal. In one hot ten day period in southeast England in August 2003, there were nearly 2,000 extra deaths. The biggest increase in risk of death was among those in care homes. The latest UK Government risk assessment on climate change suggests summers are going to get hotter in the future.

This factsheet has been updated with the latest information from the World Health Organisations' EuroHEAT project. The purpose of this document is to reduce the health risks by advising people what to do in the event of a heatwave, before it happens.

You should be reading this if you work in or manage a care home, where people are especially at risk during a heatwave. You are strongly urged to make the preparations in this factsheet **before** a heatwave is forecast. The effects of heat occur rapidly, and to be effective preparatory action has to be taken **before the beginning of June**.

What are the risks? The effects of heat on health

The body normally cools itself using four mechanisms:

- **radiation** in the form of infrared rays;
- **convection** via water or air crossing the skin;
- **conduction** by a cooler object being in contact with the skin; and
- **evaporation** of sweat.

When the ambient temperature is higher than skin temperature, the only effective heat-loss mechanism is sweating. Therefore, any factor that reduces the effectiveness of sweating such as dehydration, lack of breeze, tight-fitting clothes or certain medications can cause the body to overheat. Additionally, thermoregulation, which is controlled by the hypothalamus, can be impaired in the elderly and the chronically ill, and potentially in those taking certain medications, rendering the body more vulnerable to overheating. Older people appear to be more vulnerable to heat possibly due to having fewer sweat glands, but also because of living alone and at risk of social isolation.

Box 1 describes the effects of overheating on the body, which in the form of heatstroke can be fatal.

However, the main causes of illness and death during a heatwave are respiratory and cardiovascular diseases. A linear relationship between temperature and weekly mortality was observed in England in summer 2006, with an estimated 75 extra deaths per week for each degree of increase in temperature. Part of this rise in mortality may be attributable to air pollution, which makes respiratory symptoms worse. The other main contributor is the effect of heat on the cardiovascular system. In order to keep cool, large quantities of extra blood are circulated to the skin. This causes strain on the heart, which for elderly people and those with chronic health problems can be enough to precipitate a cardiac event.

Sweating and dehydration affect electrolyte balance. For people on medications that control electrolyte balance or cardiac function, this can also be a risk. Medicines that affect the ability to sweat, thermoregulation or electrolyte imbalance can make a person more vulnerable to the effects of heat. Such medicines include anticholinergics, vasoconstrictors, antihistamines, drugs that reduce renal function, diuretics, psychoactive drugs and antihypertensives.

Evidence also exists that links increased ambient temperatures and associated dehydration with an increase in bloodstream infections 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 during periods of raised temperatures to reduce the risk of infection.

Box 2 shows those groups who are at higher risk of heat-related illness.

Whatever the underlying cause of heat-related symptoms, the treatment is always the same – move the person to somewhere cooler and cool them down.

Box 1: Heat-related illnesses

The *main causes of illness and death* during a heatwave are **Respiratory and Cardiovascular diseases**. Additionally, there are specific heat-related illnesses including:

- **Heat cramps** – caused by dehydration and loss of electrolytes, often following exercise.
- **Heat rash** – small, red, itchy papules.
- **Heat oedema** – mainly in the ankles, due to vasodilation and retention of fluid.
- **Heat syncope** – dizziness and fainting, due to dehydration, vasodilation, cardiovascular disease and certain medications.
- **Heat exhaustion** – is more common. It occurs as a result of water or sodium depletion, with non-specific features of malaise, vomiting and circulatory collapse, and is present when the core temperature is between 37°C and 40°C. Left untreated, heat exhaustion may evolve into heatstroke.
- **Heatstroke** – can become a point of no return whereby the body's thermoregulation mechanism fails. This leads to a medical emergency, with symptoms of confusion; disorientation; convulsions; unconsciousness; hot dry skin; and core body temperature exceeding 40°C for between 45 minutes and eight hours. It can result in cell death, organ failure, brain damage or death. Heatstroke can be either classical or exertional (e.g. in athletes).

Box 2: At-risk groups

- **Older people**, especially those over 75 years old, or those living on their own and who are socially isolated, or in a care home;
- those with **chronic and severe illness**, including heart conditions, diabetes, respiratory or renal insufficiency, Parkinson's disease, or severe mental illness;
- those on medications that potentially affect renal function, sweating, thermoregulation or electrolyte balance;
- those who are unable to adapt their behaviour to keep cool, including those with Alzheimer's, disabilities, or who are bed bound.

Further information

- Check the weather forecast and any high temperature warnings at:

Met Office Weather page : <http://www.metoffice.gov.uk/>

BBC Weather Page: <http://www.bbc.co.uk/weather/>

- Log on to NI Direct at www.nidirect.gov.uk for advice about hot weather.

Information on air quality

In 2013 a new SMS text messaging service called 'Air Aware' was launched by DOE in conjunction with DoH. The primary purpose of the service is to allow individuals, who could benefit from air pollution alerts, to sign up to receive a text message alert about air quality to their mobile phone. The alert notifies subscribers when air pollution levels are HIGH (or VERY HIGH) or forecast to be HIGH (or VERY HIGH), so they can choose whether they need to adjust their daily routine.

Signing up to the 'Air Aware' text messaging service is easy. It is available via the NI Direct 66101 number, by texting the word '**Air**' to **66101**. The initial text message to register with the service is charged at the standard network operator's messaging rates. Alerts are received free of charge for UK mobiles. Should individuals wish to opt out they can do so by texting STOPAIR to 66101.

If you would like more information about air pollution in NI:

- Updates on levels of particulate matter (PM₁₀ and PM_{2.5}), sulphur dioxide, nitrogen dioxide, ozone and carbon monoxide are available on the DOE website: <http://www.airqualityni.co.uk> and a freephone helpline (0800 556677) provides a regularly updated air pollution bulletin service.
- Additional information on air quality can also be found from the weather websites above.

Advice to those with respiratory problems is consistent with the advice to all others during a heatwave – to keep windows shaded and closed when outside temperatures are hotter during the daytime to reduce heat (and ozone) entering the home; and opening windows at night or when it is cooler outside, to aid cooling of their home.

Ozone is the main air pollutant that affects respiratory symptoms and has a diurnal variation, peaking during the hottest period of the day and dropping to very low levels at night. Other air pollutants tend to be at lower levels indoors, and therefore the other main advice to those with respiratory problems is to restrict going outside, especially during the hottest period of the day.

Sun protection

Ten ways to minimise Ultraviolet Ray (UVR)-induced skin and eye damage:

- Take sensible precautions to avoid sunburn, particularly in children.
- Remember that a suntan offers only modest protection against further exposure. It is not an indication of good health.
- Limit unprotected personal exposure to solar radiation, particularly during the four hours around midday, even in the UK.
- Seek shade, but remember sunburn can occur even when in partial shade or when cloudy.
- Remember that overexposure of skin and eyes can occur while swimming and is more likely when there is a high level of reflected UVR, such as from snow and sand.
- Wear suitable head wear, such as a wide-brimmed hat, to reduce exposure to the face, eyes, head and neck.
- Cover skin with clothing giving good protection - examples are long-sleeved shirts and loose clothing with a close weave.
- Sunglasses should exclude both direct and peripheral exposure of the eye to UVR, i.e. be of a wraparound design.
- Apply sunblock, or broad-band sunscreens with high sun protection factors (at least SPF 15) to exposed skin. Apply generously and reapply frequently, especially after activities that remove them, such as swimming or towelling.

Remember that certain individuals have abnormal skin responses to UVR and may need medical help. Certain prescribed drugs, medicines, foods, cosmetics and plant materials can also make people more sensitive to sunlight.

You can get advice on protecting your skin during hot weather from the Cancer Research UK SunSmart campaign website at www.cancerresearchuk.org/sunsmart/ or the Ulster Cancer Foundation 'Care in the Sun' website at <http://www.ulstercancer.org/campaigns/>.