

Heat Health Plans

Key information

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Heat Health Plans: Key information

Conclusive evidence shows that extreme heat and heatwaves have negative impacts on health. Even modest increases above average temperatures can harm those most vulnerable to heat, but effective planning can reduce the effects of heat on health.

Defining a heatwave

Although there is no standard definition, the World Meteorological Organization (2015) defines a heatwave as:

a marked unusual hot weather (max, min and daily average) over a region persisting at least two consecutive days during the hot period of the year based on local climatological conditions, with thermal conditions recorded above given thresholds.

If we apply this definition to New Zealand, it is necessary to determine the appropriate thresholds for different regions based on demonstrated risks to human health (which will be related to the local climatological conditions). Some regions of New Zealand are at higher risk of experiencing heatwaves, and this risk will change as the effects of climate change are realised.

Heat can cause adverse health effects even at temperatures lower than the conditions required for a heatwave. It is therefore important that everyone is aware of the health risks of heat and is able to take actions to protect their own health and the health of others during all periods of warmer weather.

Effects of heat on health

During warmer weather, the body regulates temperature by producing sweat that evaporates and cools the body. However, when a combination of high heat and high humidity occurs, the evaporation slows and the body must work harder to maintain a normal temperature. This extra work can stress the body and lead to illness and, in some circumstances, death.

The main causes of illness and death during periods of high heat are related to cardiac conditions and to asthma and respiratory illness. Specifically, the cardiovascular system can experience stress from increased pumping of blood to the skin to cool the body, while higher levels of air pollution exacerbate respiratory symptoms. Exposure to excessive heat also can cause:

- **heat rash** – due to excessive sweating

- **sunburn** – overexposure to UV radiation
- **heat cramps** – due to low salt levels in the muscles from dehydration; heat cramps are often the first sign the body is struggling to deal with heat
- **heat exhaustion** – from dehydration; if left untreated, it may evolve to heatstroke
- **heatstroke/sunstroke** – failure of the body’s thermoregulation mechanism; it can result in cell death, organ failure, brain damage or death.

Protecting your health

Actions that can prevent or mitigate these health effects include staying cool and out of the heat, limiting physical activity, adjusting work practices and drinking plenty of water.

Vulnerable populations

Risk factors for heat-related illness include:

- **older age** – especially those over 65 years of age, or living on their own and socially isolated
- **chronic, acute and severe illness** – including kidney disease, diabetes, heart conditions, respiratory insufficiency, Parkinson’s disease, cancer and severe mental illness. Medicines that potentially affect kidney function, the body’s ability to sweat, thermoregulation or electrolyte imbalance can make people in this group more vulnerable to the effects of heat
- **pregnant women** – who are more susceptible to heat exhaustion and heatstroke, which may in turn lead to an increased risk of birth defects and other reproductive problems (National Institute for Occupational Safety and Health 2018)
- **young age** – with infants vulnerable due to their immature thermoregulation and high level of dependency
- **homelessness** – due to higher rates of chronic disease, smoking, respiratory conditions, substance dependencies and mental illness among this group, as well as social isolation, lack of shelter and vulnerability to the effects of urban heat islands (urban areas experience higher temperatures than surrounding areas during heatwaves)
- **alcohol and/or drug dependence** – which is associated with poorer overall health and social isolation
- **inability to adapt behaviour to keep cool** – which may include, for example, those with Alzheimer’s disease, a disability or mental illness or who are bed bound
- **environmental factors and overexposure** – for example, living in urban areas, undertaking outdoor activities or jobs¹ that involve a high level of physical exertion, and attending outdoor public events
- **language barriers** – difficulty in understanding heat health messages and warnings.

¹ For WorkSafe New Zealand guidance on temperatures in the workplace and employers’ obligations, go to: <https://worksafe.govt.nz/topic-and-industry/temperature-at-work/>

Heat health planning

The National Health Emergency Plan (Ministry of Health 2015) identifies extreme heat and cold as hazards with consequences that the health sector needs to be able to manage. It outlines the generic planning arrangements and coordination frameworks within the sector. Within this more general context, Heat Health Plans add detail by outlining the actions and systems in place to support those most at risk during periods of extreme heat. The Ministry of Health recommends that individuals, health and community service providers, district health boards, public health units and local government prepare their own Heat Health Plans as part of their emergency planning.

Further resources

The following guidance is available from the Ministry of Health's website (www.health.govt.nz):

- *Heat Health Plan Guidelines*, with further guidance related to heatwaves and preparing Heat Health Plans
- *Protecting Your Health in an Emergency*, a booklet with advice for individuals and families on keeping themselves healthy during a wide range of emergencies
- The *National Health Emergency Plan*
- The Ministry of Civil Defence & Emergency Management's *Working from the Same Page: Consistent Messages for CDEM. Part B: Hazard-specific information – Heat* provides information for individuals and families, including how to look after pets and livestock, during heatwaves. You can find it at: www.civildefence.govt.nz
- The SunSmart website provides information about protecting yourself and others from ultraviolet radiation from sunlight. You can find it at: www.sunsmart.org.nz

References

Ministry of Health. 2015. *National Health Emergency Plan*. Wellington: Ministry of Health.

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