

# Heat Health Planning

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District Health Board  
Te Poari Hauora o Waitaha

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Ngā mihi mahana kia Koutau

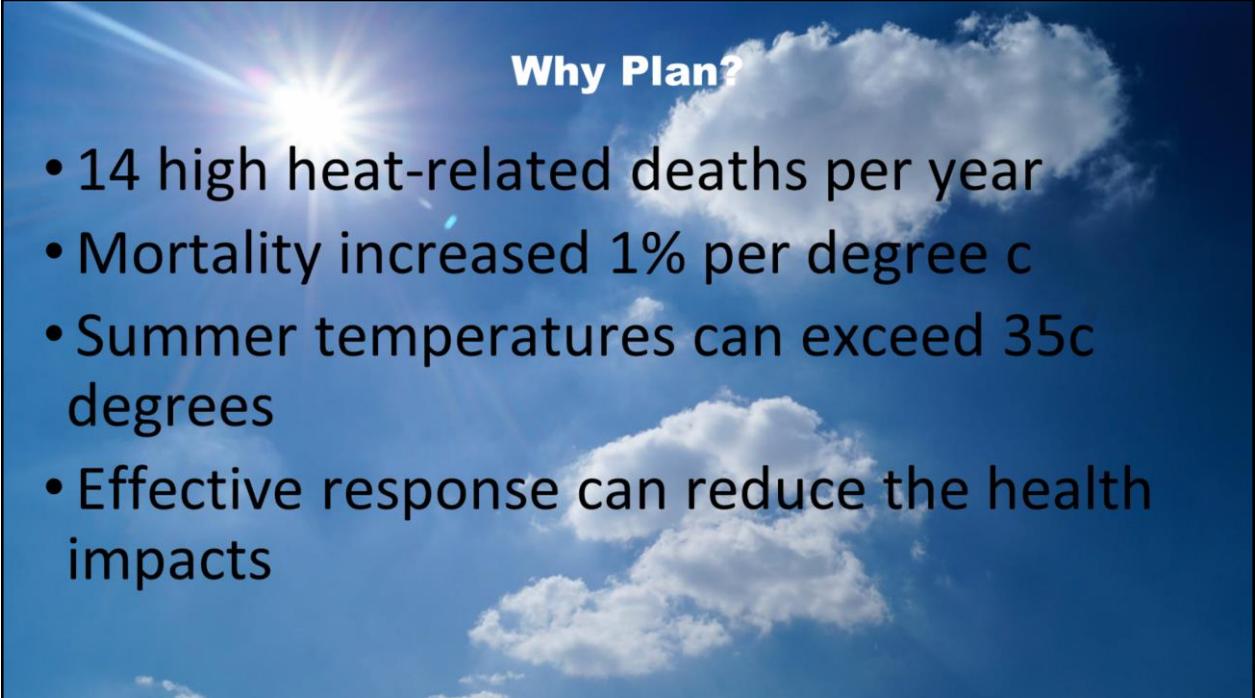
He Kai mahi au te mana ora

Ko Leanne Bayler toku ingua

Today I would like to talk to you about Heat Health Planning

Why it is important?

And what we can do?



## Why Plan?

- 14 high heat-related deaths per year
- Mortality increased 1% per degree c
- Summer temperatures can exceed 35c degrees
- Effective response can reduce the health impacts

- An average of 14 high heat-related deaths occur per year in people aged over 65 years in Auckland and Christchurch (McMichael et al., 2003)
- Mortality from all causes increased by 1% per degree Celsius on hot days in Christchurch (Hales et al., 2000)
- Canterbury summer temperatures can rise rapidly during Nor'westers and can exceed 35 degrees centigrade, leading to heat stress (Hales, Salmond et al 2002).
- Global temperatures and the frequency and intensity of heatwaves are rising as a result of climate change (WHO)
- Effects of heatwaves on heat health are greater in temperate areas because the residents aren't used to heat rise (McMichael et al 2008)
- Expedient and effective response action can significantly reduce the health impacts of exposure to excessive heat

# If it's getting hot in the UK – warning bells should be ringing



- If its getting this hot in the UK, the warning bells should be ringing for NZ
- BBC Updates 25/26 July 2019:  
UK - Second hottest day ever, with temperature reaching 38.1C in Cambridge.  
Scotland's hottest night ever - 20.9C in Achnagart, North-West Scotland.  
Edinburgh registered 31.6C - its hottest day ever  
New high temperature records in France, Germany, and the Netherlands

### Heat Health Plans : Guidelines

- Expectation for Health led Regional Heat Health Plans
- Objectives
  - Raise awareness
  - Identify those who are most vulnerable
  - Encourage and guide organisations to prepare Heat Health Plans
  - Develop consistent messaging

### Heat Health Plans : Guidelines

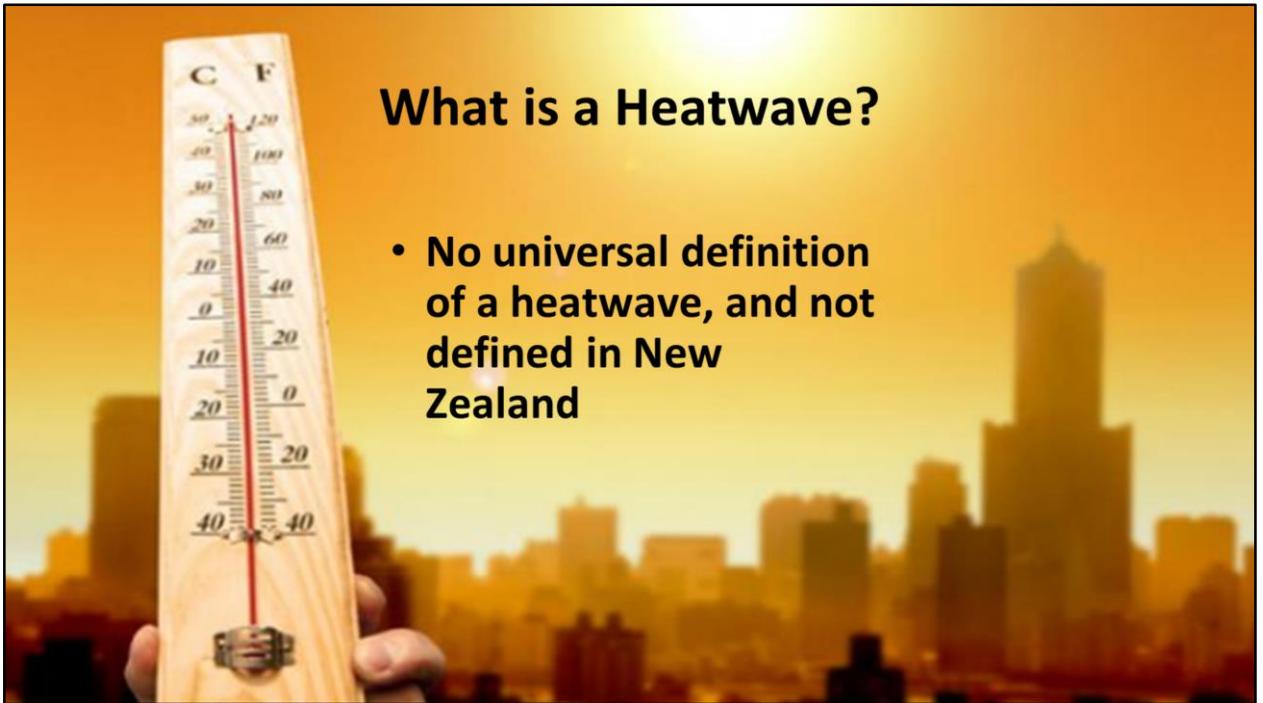
- Expectation for Health led Regional Heat Health Plans
- Aimed at:
  - DHBs and PHUs
  - Health and community service providers
  - Local Government and other community organisations  
to help them prepare their own heat health response plans
- Objectives
  - Raise awareness of the negative health effects of high temperatures
  - Identify those who are most vulnerable to extreme heat
  - Encourage and guide organisations to prepare Heat Health Plans
  - Develop consistent messaging about the health impacts of extreme heat

<https://www.health.govt.nz/system/files/documents/publications/heat-health-plans-guidelines-dec18.pdf>

## How this impacts housing – why is it so hot inside?



- Better insulation and ventilation for winter (but for summer as well)**
- Overexposure to Sunlight – use drapes from CEA Curtain bank**
- Multi-Level Home – more at risk**
- Fear of opening the house up – could add lock screens**



## What is a Heatwave?

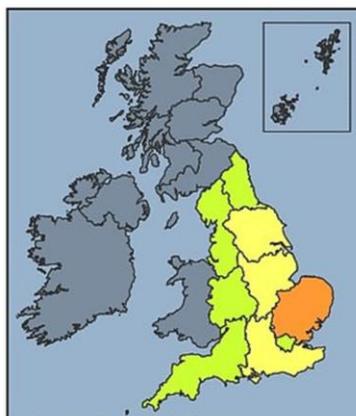
- No universal definition of a heatwave, and not defined in New Zealand

- No universal definition of a heatwave, and not defined in New Zealand
- **However it is agreed that it is the increase above average temperatures, rather than an absolute temperature, that causes adverse impacts on health.**
- MoH seem to favour the Meteorological World Organisation's definition, which is:
- "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**."

# Heat Health Planning – we are currently working on a plan!

- The MoH Guidelines lack:
  - a heatwave early warning system
  - don't provide a threshold temperature for triggering a Heatwave Response Plan
- Therefore CDHB is working with Environmental Science Research (ESR)& NIWA to formulate a Canterbury Region Heatwave Early Warning System but:
  - calculating the average temperature for each of the summer months in Christchurch and landward areas
  - determining temperatures, above the average ones, which present a risk to the health of people in Christchurch and the landward areas (threshold temperatures)
- It is complex and time consuming so may not be in place for this summer

## Heat-health watch



Key:

- Region not included
- Summer preparedness and long-term planning
- Alert and readiness
- Heatwave action
- National Emergency

Current watch level: Level 3 - Heatwave Action

Issued at: 08:55 on Fri 23 Aug 2019

There is a 90 % probability of heat health criteria being met between 0900 on Saturday and 0900 on Monday in parts of England.

High pressure will build across England, bringing very warm or hot conditions to many parts of the country during Saturday and Sunday. Highest temperatures look to be across the eastern England, with western parts turning less hot Sunday. Into Monday, fresher air is now expected to gradually move eastwards across the country, although it will remain very warm for some eastern parts.

An update will be issued when the alert level changes in any region. Alerts are issued once a day by 0900 if required and are not subject to amendment in between standard issue times. Note that the details of the forecast weather are valid at the time of issue but may change over the period that an alert remains in force. These details will not be updated here unless the alert level also changes, the latest forecast details can be obtained at the following link: <http://www.metoffice.gov.uk/public/weather/forecast/#?tab=map>

Level 1	Level 2	Level 3	Level 4	Heatwave threshold values	Regional risk values
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### Amber — Heatwave action

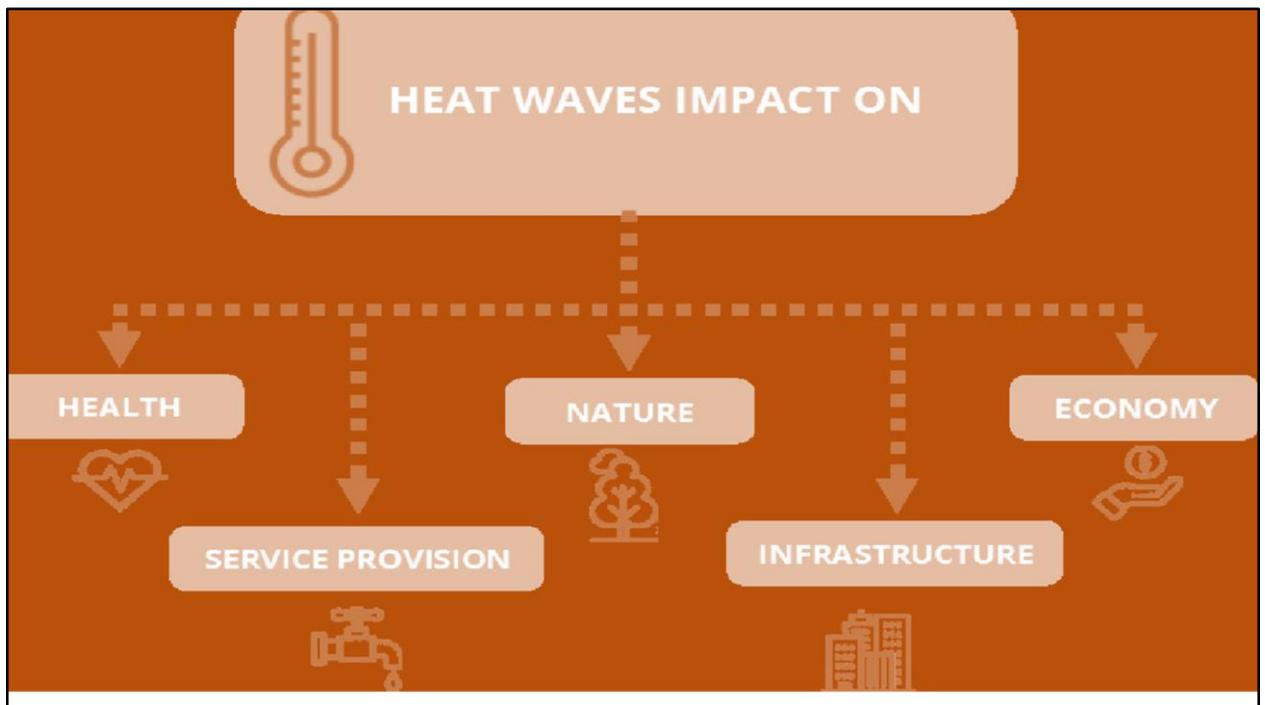
Triggered when the Met Office confirms threshold temperatures for one or more regions have been reached for one day and the following night, and the forecast for the next day has a greater than 90% confidence level that the day threshold temperature will be met. This stage requires social and healthcare services to target specific actions at high-risk groups.

**Advice:** Stay out of the sun. Keep your home as cool as possible – shading windows and shutting them during the day may help. Open them when it is cooler at night. Keep drinking fluids. If there's anybody you know, for example an older person living on their own, who might be at special risk, make sure they know what to do.

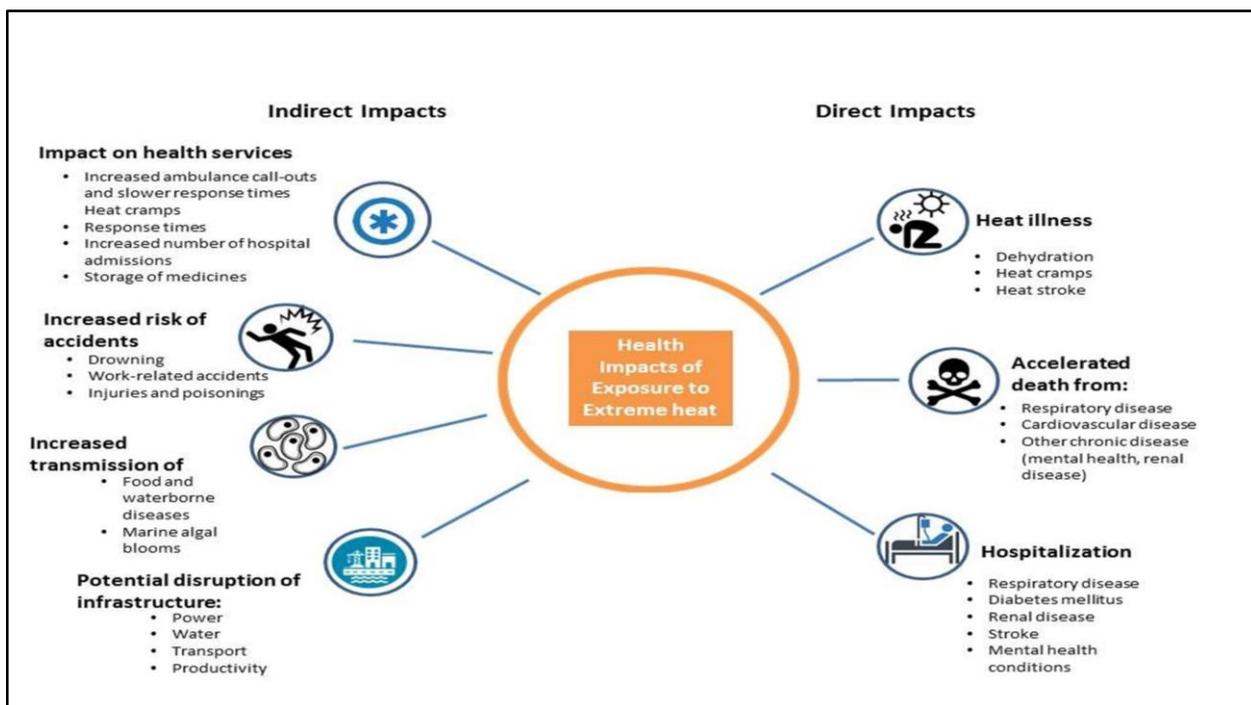
Advice on how to reduce the risk either for yourself or somebody you know can be obtained from NHS Choices at [www.nhs.uk/summerhealth](http://www.nhs.uk/summerhealth), NHS 111 or from your local chemist.

This is the system used in UK: Heat Health Early Warning System

- Public Health England – 5 warning levels
- The countries which already has the similar systems are:
  1. Public Health Wales -
  2. Météo France – 4 phase alert system
  3. Some Australian States
  4. India



- The Health sector is unable to prevent heat wave related deaths/illnesses alone
- Heatwaves should be viewed from a socio-ecological perspective because the majority of factors which influence poor outcomes, during heatwaves, sit outside of the health system



- Excess deaths result directly from heat-related conditions
- Rise in mortality as a result of very warm weather follows very sharply, within one or two days of the temperature rising
- Mental health: a lot of drugs used for mental health will also make patients vulnerable to heat wave
- Disability: People's disability also makes them vulnerable
- Therefore there is a very short window of opportunity for effective action following the start of a heatwave
- Advanced planning and preparedness is essential

## Who is Vulnerable to Heatwaves ?

**We are all vulnerable but some of us are more vulnerable than others.**



- Children and the Elderly are very vulnerable because they don't sweat like normal adults
- People with medical conditions – cardiac, respiratory, renal, diabetes, mental health
- Outdoor and Manual workers
- The poor, displaced and homeless
- Pregnant women
- People on prescribed medications
- **Cultural factors (Cultural-and-language-diverse communities:**
  - May not be culturally appropriate to take flyers
  - Clothing (full clothing and head coverings)
  - Saving money to help others back at home so won't run air conditioners
  - Not familiar with how to use appliances like heat pumps and fans
  - Housing quality
  - No swimming
  - Different type of heat – hot dry winds in Canterbury
  - Fear of opening house – in the past it may not have been safe
  - Language barriers – may even be illiterate in their own mother tongue

- Isolation
- Water / fear (water quality in their past may not have been good – so may not be used to drinking water)

SIGNS OF

**HEAT EXHAUSTION**

**HEAT STROKE**

- DIZZINESS & FAINTING**
- EXCESSIVE SWEATING**
- RAPID, WEAK PULSE**
- NAUSEA OR VOMITING**
- COOL, PALE CLAMMY SKIN**
- MUSCLE CRAMPS**



- THROBBING HEADACHE**
- NO SWEATING**
- RAPID, STRONG PULSE**
- NAUSEA OR VOMITING**
- RED, HOT DRY SKIN**
- MAY LOSE CONSCIOUSNESS**

Access to help in the early stage when people start to feel uncomfortable!

## Accelerated Death

### We lose people in the first two days!

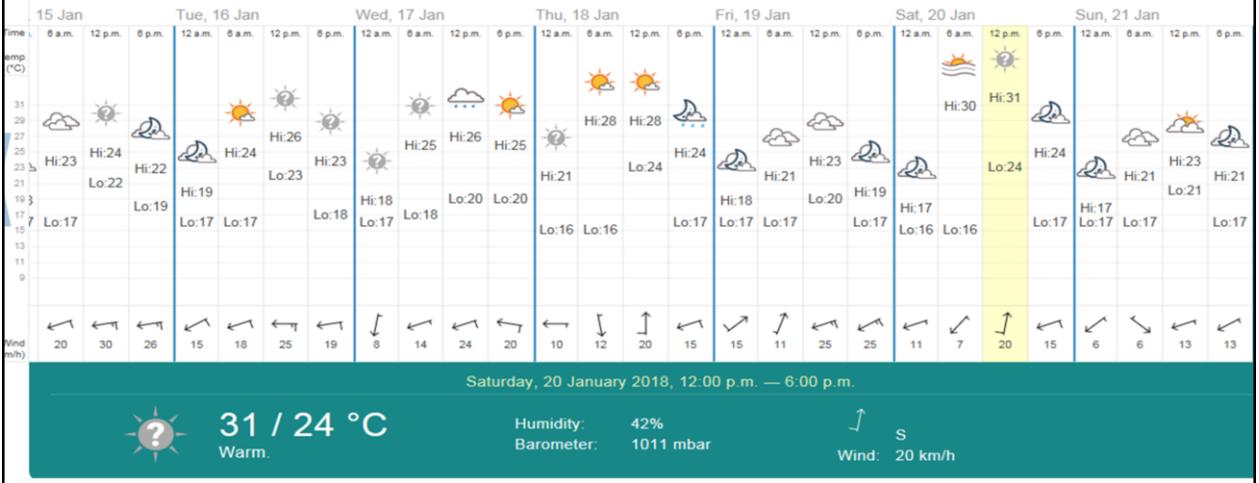


Heat waves are not well understood. As global warming impacts we expect to see heat waves as an emerging issue.

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# A personal Story

January 2018 Weather in Christchurch — Graph



## Leanne’s personal story

- Heat waves, excessive heat, hot spell – extreme heat has different names.
- What is means is temperatures that are exceptionally high relative to local conditions – or reach levels that may be harmful to human health or infrastructure.

<https://www.ucsusa.org/sites/default/files/attach/2018/08/extreme-heat-impacts-fact-sheet.pdf>

By lunch time it was 31 degrees

This day it was 12 degrees above the average

### High & Low Weather Summary for January 2018

	Temperature	Humidity	Pressure
<b>High</b>	31 °C (20 Jan, 3:00 p.m.)	100% (3 Jan, 12:30 a.m.)	1022 mbar (3 Jan, 12:30 a.m.)
<b>Low</b>	10 °C (7 Jan, 5:30 a.m.)	22% (7 Jan, 4:00 p.m.)	995 mbar (5 Jan, 2:30 p.m.)
<b>Average</b>	19 °C	79%	1013 mbar

\* Reported 1 Jan 12:00 a.m. — 31 Jan 11:30 p.m., Christchurch. Weather by CustomWeather, © 2019

Average temperature Monthly 19 degree

## A personal note



### Leanne's personal story

Because – that is the day I lost my mum through heat related illness.

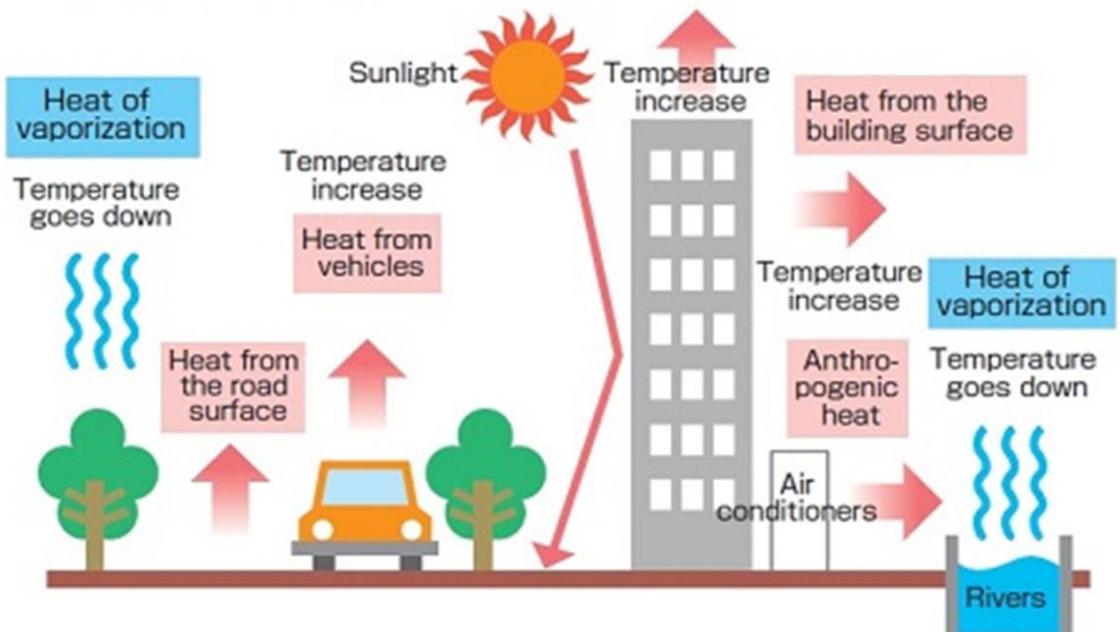
- To reiterate, this is the truth about heat related illness:
- Certain medications make people more vulnerable to heat health including the elderly and those on certain medications including depression and insomnia. In Canterbury we have the highest rates of anti depression medication use in NZ .
- Babies and children are vulnerable as are older people, those with disabilities and heat intolerant conditions such as Multiple Sclerosis.
- People living alone, those without air conditioning, living in high rise buildings, work outside or playing sport etc.
- Our poorest whanau are more at risk
- Those in fuel poverty
- Other people who might not appear at risk often are:
- New evidence suggests 40-64 may be at risk possibly because they do not perceive themselves as vulnerable and may not take appropriate measures to protect themselves
- Athletes

## Vulnerability Continued Rural Communities

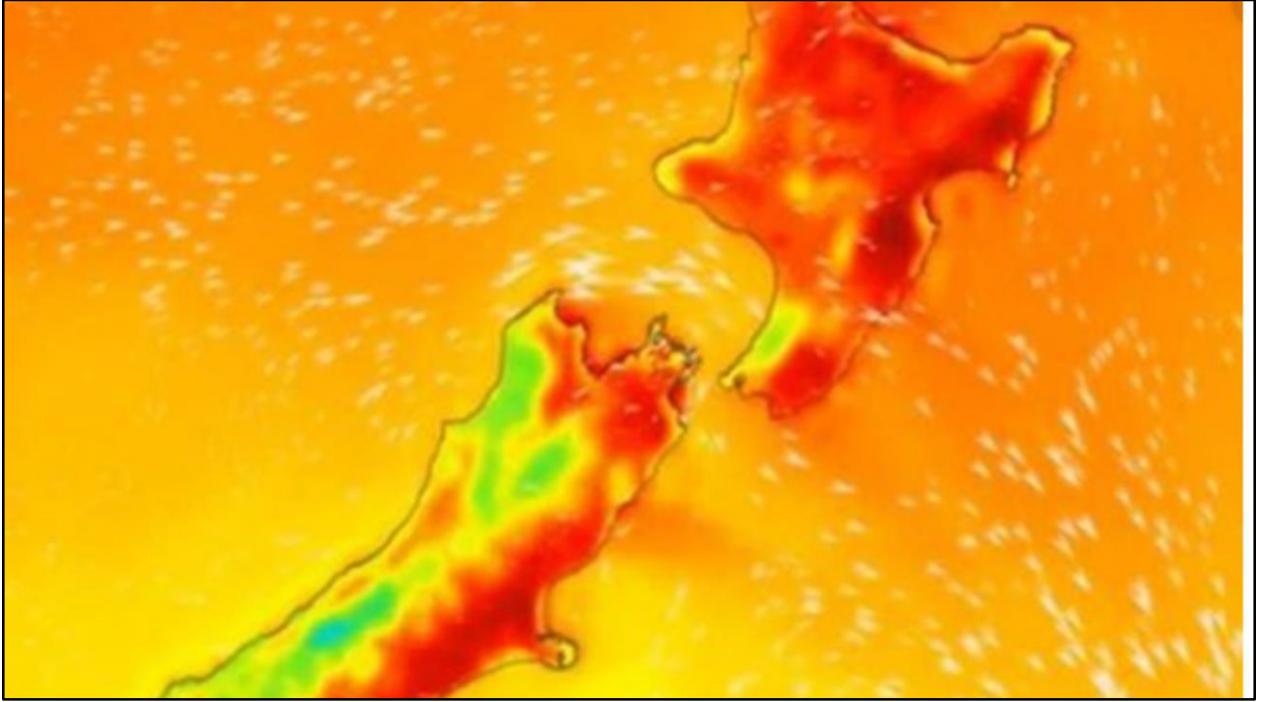


- Farmers make hay while the sun shines!!
- Farmers will often work in 38C days – they worry for their stock and their farm, but not their own health
- The only thing to stop them will be risk of fire
- Staying in the shade is not really an option as shade can be limited – encourage working in the sheds (wool and dairy shed's ) during heat of day
- Can affect flowering and photosynthesis
- Farmers often prioritise animal well-being before their own
- Dairy milk production decreasing if animals are stressed
- Potential for wildfires increases
- Affects crop prices, affects production.
- Isolated communities – it can be challenging to check on each other
- Distance to health care facilities contributes
- Many people work outside and Worksafe have some great information available – see attached link.

● How the Heat Island Phenomenon occurs

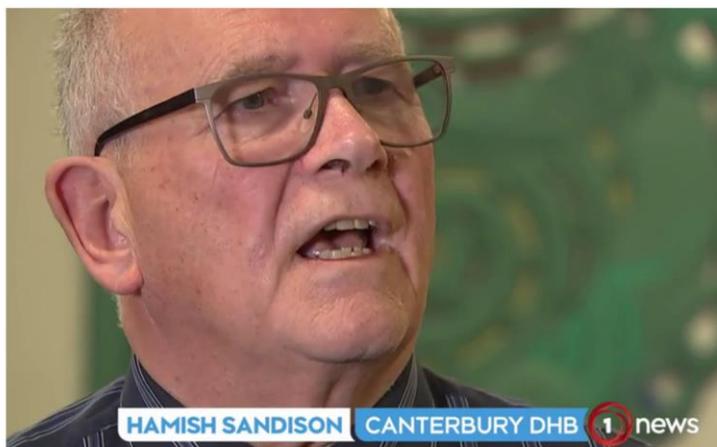


- Urban residents face unique heat related risks due to urban heat island effect.
- The temperature resembles an island of heat.
- Heat from heat pumps and air conditioners increase the outside heat
- Cities are hotter because they contain heat retaining materials and surfaces –
  - Pavement
  - Cement
  - Asphalt
- Night time temperatures stay high offering little relief
- Lower income residents are at greater risk
- High rise apartments residents are at greater risk
- Homeless people are at greater risk



<https://www.tvnz.co.nz/one-news/new-zealand/canterbury-health-officials-brace-summer-heatwaves-after-europes-scorcher-v1?auto=6081912865001>

## [Link to TVNZ Summer Heat Warning](#)



## Misperceptions.



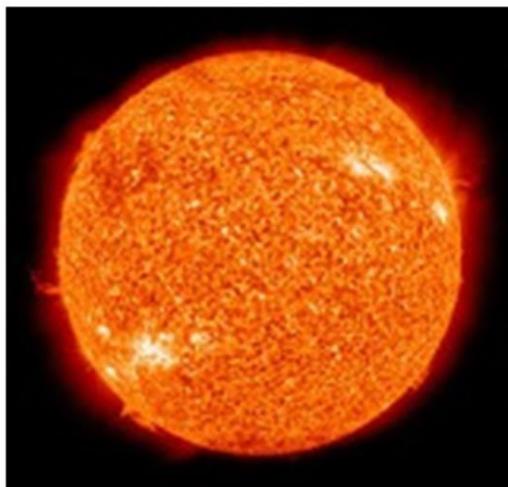
**'Who stays out of the sun when it's this hot?':**

**Britons slam 'health police' over heatwave warning for Bank Holiday with highs set to hit record 33C (and these people clearly didn't get the memo!)**

**Stay in the shade!**

## What can we do to change Misperceptions Share heat health messages!!!

- **Drink plenty of water**
- **Stay out of the heat**
- **Keeping cool**
- **Keep an eye out for each other**



### **Drink plenty of water**

- Try to drink at least two litres of water a day.
- Have plenty of cold drinks.
- Avoid drinking alcohol, caffeine and hot drinks.
- Eat nourishing cold foods – salads and fruit with a high water content.

### **Stay out of the heat**

- Keep out of the sun
- If you have to go out in the heat, walk in the shade
- Apply sunscreen
- Wear a hat
- Avoid extreme physical exertion

### **Keeping cool**

- Take a cool shower, bath or body wash
- Spray or sprinkle water over your skin or clothing, or keep a damp cloth on the back of your neck.
- Dress yourself and your children in light clothing. Cool cottons and natural fabrics are best.

### **Keep an eye out for each other**

- Look out for very young children and elderly relatives and neighbours by regularly checking on them to ensure they are drinking and eating well, keeping

cool and taking their medications properly.

- People and pets should not be left in stationary cars.

## Risk Reduction and Readiness Tips for Agencies and Organisations

- Heatwave Champion
- Heatwave Champion
- Vulnerability Risk
- Vulnerability Risk
- Heat Stress Risk
- Heat Stress Risk
- Educate staff
- Educate staff
- Plan



### Risk Reduction:

- Appoint a Heatwave Champion
- Carry out a Vulnerability Risk Assessment to identify vulnerable people in the community that you serve
- Don't forget about your staff - carry out a Heat Stress Risk Assessment of staff
- Take steps to mitigate the risk to staff
- Educate staff about heat waves
- Access Community and Public Health Website for information, advice, contact numbers

### Readiness:

- Formulate a heatwave response plan
- The plan should include provision for mitigating the effects of the heatwave for clients and staff
- Ensure that your service continuity plan has a heatwave component
- Have a communications plan in place

To find out more information please access <https://www.cph.co.nz/>  
or contact

Hamish.sandison@cdhb.health.nz or Leanne.bayler@cdhb.health.nz  
0273826582 0211807742

- Heatwaves are likely to occur in Canterbury
- Heatwaves cause death and illness – acute demand soars
- Many people in the Canterbury are particularly vulnerable
- Measures can be taken to significantly reduce vulnerability
- The Community and Public Health Division will take the lead on behalf of CDHB
- Mechanics of response still being worked out
- Depends on whether we can obtain a heatwave early warning system for Canterbury

We need your help to share these messages with our community. Please feel free to call or email us to be part of this mahi. Thanks for listening.

## Useful References

- Ministry of Health Heat Health Plans : Guidelines  
<https://www.health.govt.nz/system/files/documents/publications/heat-health-plans-guidelines-dec18.pdf>
- Human Health Impacts of Climate Change for New Zealand  
<https://royalsociety.org.nz/assets/documents/Report-Human-Health-Impacts-of-Climate-Change-for-New-Zealand-Oct-2017.pdf>
- Heatwave Plan for England  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/801539/Heatwave\\_plan\\_for\\_England\\_2019.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/801539/Heatwave_plan_for_England_2019.pdf)
- Information and public health advice: heat and health  
[https://www.who.int/globalchange/publications/HeatstressAnnouncement\\_250818.pdf?ua=1](https://www.who.int/globalchange/publications/HeatstressAnnouncement_250818.pdf?ua=1)
- Extreme heat and cultural and linguistic minorities in Australia: perceptions of stakeholders  
<https://bmcpublichealth.biomedcentral.com/track/pdf/10.1186/1471-2458-14-550>
- Temperature in the Workplace  
<https://worksafe.govt.nz/topic-and-industry/temperature-at-work/>