



**On heatwave risk  
communication to the  
public: new evidence  
informing message  
tailoring and audience  
segmentation**

SCHOOL OF  
PUBLIC HEALTH



THE UNIVERSITY  
*of* ADELAIDE



**DISASTER  
RESILIENT  
AUSTRALIA**

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Source: Chicago Reader. Mass grave. Chicago heatwave, 1995

# Risk communication: What is it good for...?

Widen the range of available choices people can make to mitigate their risk to hazard

Raise risk awareness, inform preparedness planning, and adaption responses.

...Yet, it can sometimes be overwhelmingly ineffective, for a few reasons..

Risk communication does not operate in static social, environmental, economic... or political vacuums.

Messages that fail to recognize these contexts are liable to fail..miserably..



Marcus Wilson, 19

Source: <https://www.abc.net.au/news/2014-03-17/young-men-who-died-in-insulation-scheme/5322168>



## LOCAL COURT of NEW SOUTH WALES

### *Coronial Jurisdiction*

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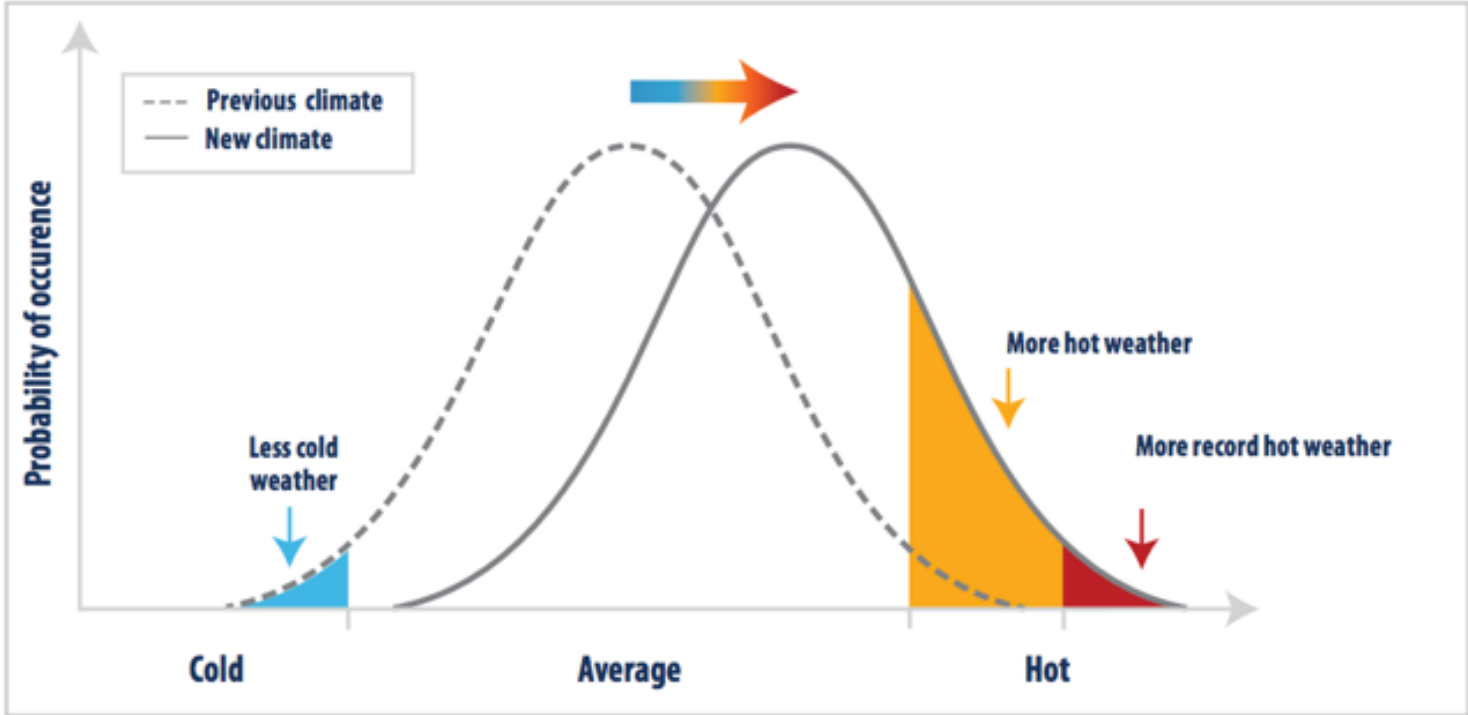
(i.)

<b>Inquest:</b>	Inquest into the death of Marcus WILSON
<b>Hearing dates:</b>	20-22 August 2012
<b>Date of findings:</b>	4 October 2012
<b>Place of findings:</b>	State Coroner's Court, Glebe
<b>Coroner:</b>	Deputy State Coroner H.C.B. Dillon
<b>Findings:</b>	I find that Marcus Wilson died on 21 November 2009 at Nepean Hospital from complications arising from hyperthermia, including total organ failure, rhabdomyolysis and coagulopathy which arose from working in very high temperatures as a roofing insulator without adequate hydration.
<b>Recommendations:</b>	(i.) I recommend that the WorkCover Authority of NSW ("the WorkCover Authority") consider undertaking publicity campaigns from time to time directed to industry bodies, industry training organisations, businesses and individuals emphasising the risks of heat stress and heat stroke, and the importance of regular consumption of water instead of, or in addition to, any other drinks, as a primary means of preventing heat stress or heat stroke. The publicity materials should include specific reference to the danger of hydrating solely with soft drinks and caffeinated drinks.

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# Climate change: new frontier of heatwave risk

Increase in Average Temperature



When average temperatures increase, the average temperature of "hot weather" and "record hot weather" will become even hotter. Source: IPCC, 2001

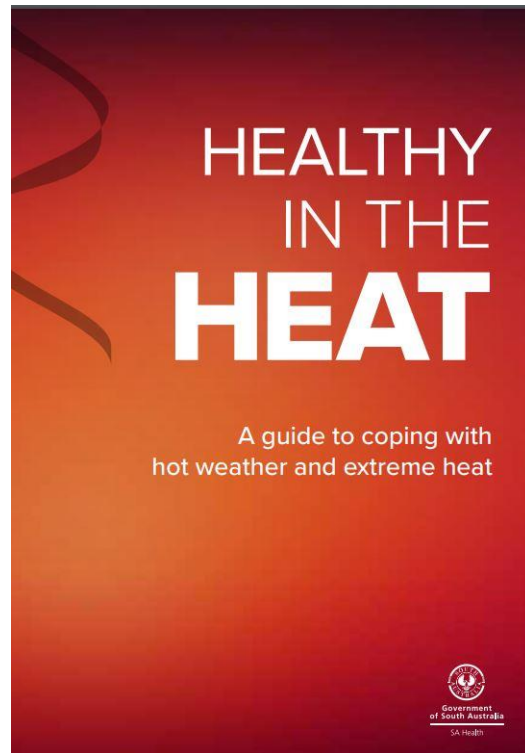
“Australian researchers have predicted that the number of “dangerously hot” days (when core body temperatures may rise by 2°C or more and outdoor activity becomes impossible), will increase. For unacclimatized people this increase will be from the current 4 to 6 days per year, to 33 to 45 days per year by 2070, and from 1 day per 5 years at present to 5 to 14 days per year for acclimatized people.” (Hanna et al., 2011. p. 19)

# Audience segmentation and message targeting

- Different audiences (communities) have different characteristics, to the extent to what they pay attention to, how they make sense of, and their capacities to act on, different messages.
- Segmentation research can inform which target audiences will benefit the most from particular communication efforts.
- Segmentation can inform decisions on resource allocation (e.g. communication campaigns to target those most vulnerable)



# Segmentation: Age and health status



Source:  
[https://www.sahealth.sa.gov.au/wps/wcm/connect/2e1d0880431be06eb42eff5fdb58e26/Healthy\\_in\\_the\\_Heat\\_-\\_A5\\_Guide+%281%29.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-2e1d0880431be06eb42eff5fdb58e26-mMFEHIB](https://www.sahealth.sa.gov.au/wps/wcm/connect/2e1d0880431be06eb42eff5fdb58e26/Healthy_in_the_Heat_-_A5_Guide+%281%29.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-2e1d0880431be06eb42eff5fdb58e26-mMFEHIB)

# 1

## INTRODUCTION

During the summer months, South Australia can experience long periods of hot weather and extreme heat.

Everyone is at risk of heat-related illness during hot weather and extreme heat, and some groups of people, such as:

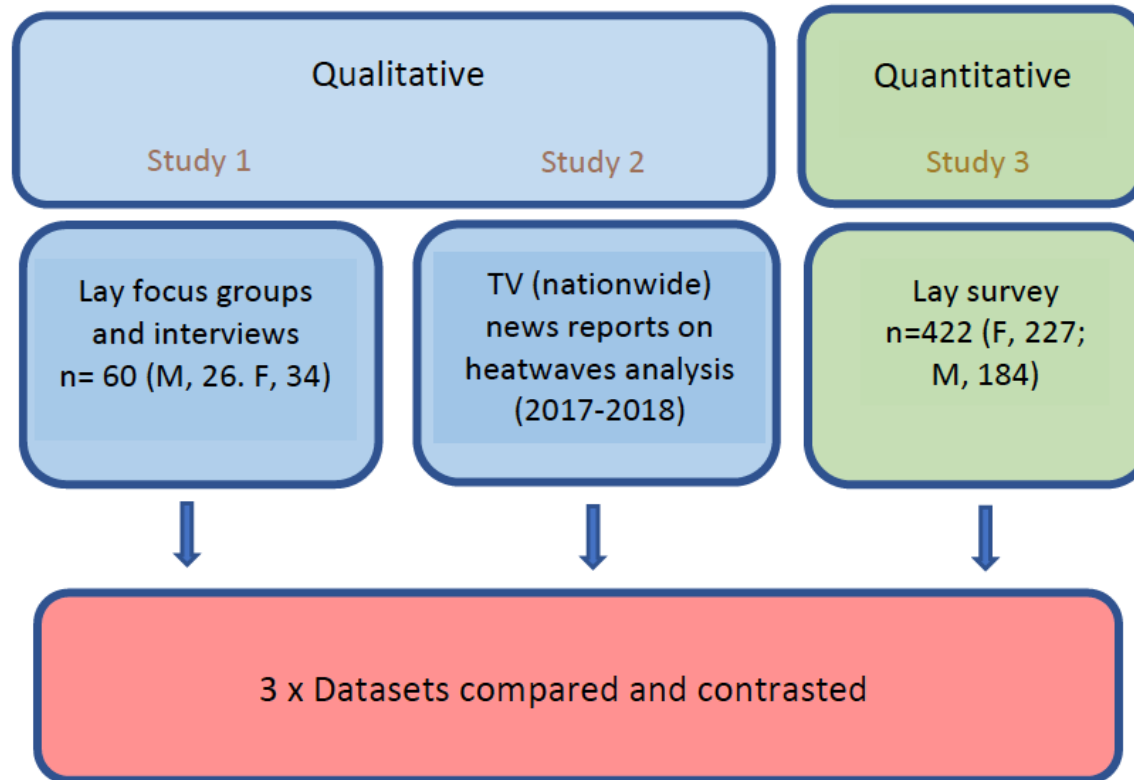
- > babies and young children
  - > pregnant women
  - > the elderly (especially those living alone)
  - > people with chronic illnesses (renal, cardiovascular and mental health)
  - > people with mobility issues
- are more at risk of heat-related illness than others.

This guide has been produced to help you to care for yourself and others when the weather is hot. It gives advice on:

- > what heat-related illness is
- > how to get ready for hot weather and extreme heat
- > how you can reduce your risk of becoming unwell
- > what to do if you or someone you know has a heat-related illness
- > what to do in an emergency and the treatment to give while waiting for an ambulance
- > how to keep safe and well after a period of hot weather.

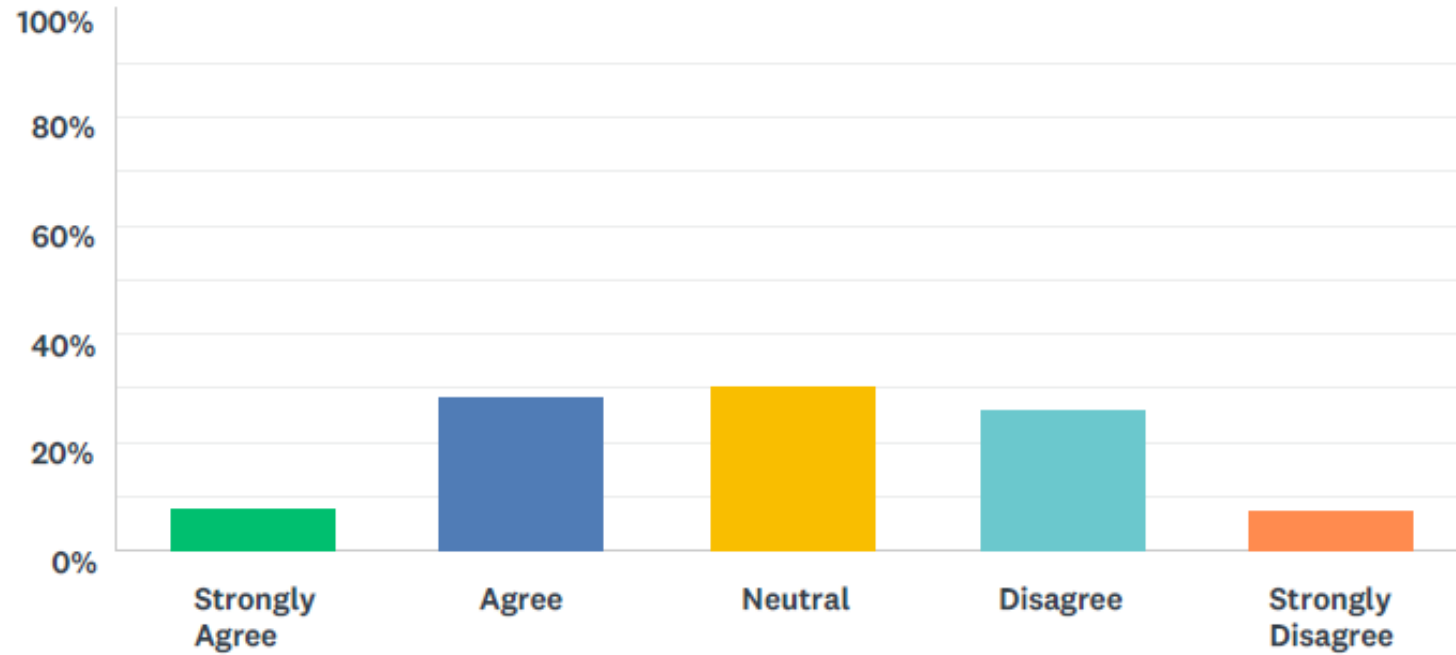
**In a medical emergency, always call triple zero (000) for an ambulance**

# What we did



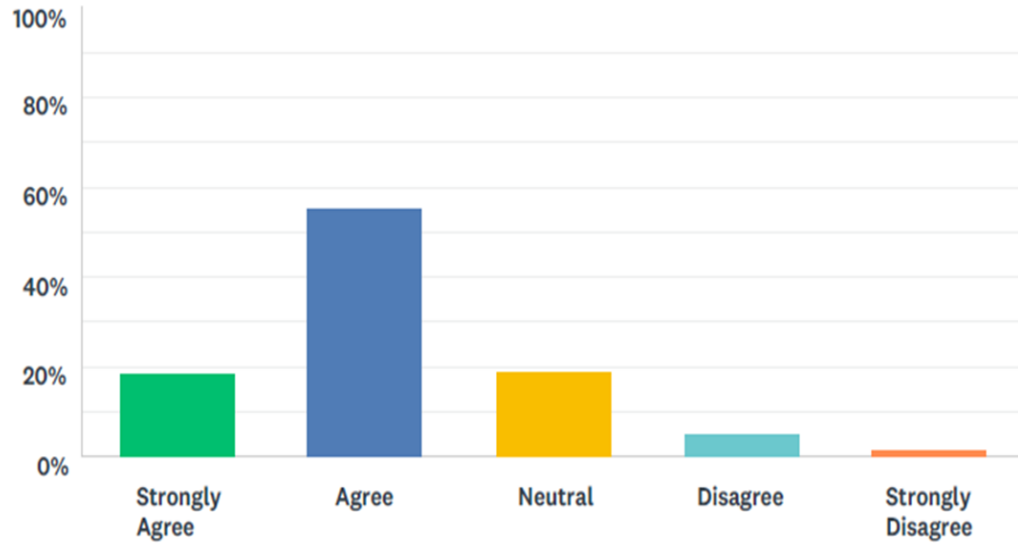
## Q10 Heatwaves present a danger to me

Answered: 399 Skipped: 23



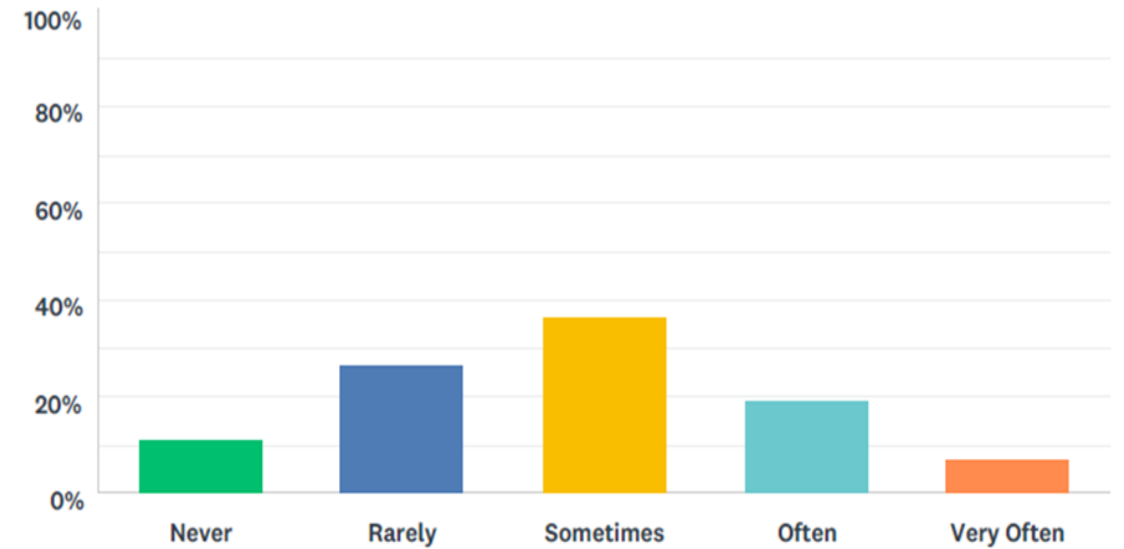
## Q24 I think I am well prepared for heatwaves in the future

Answered: 401 Skipped: 21



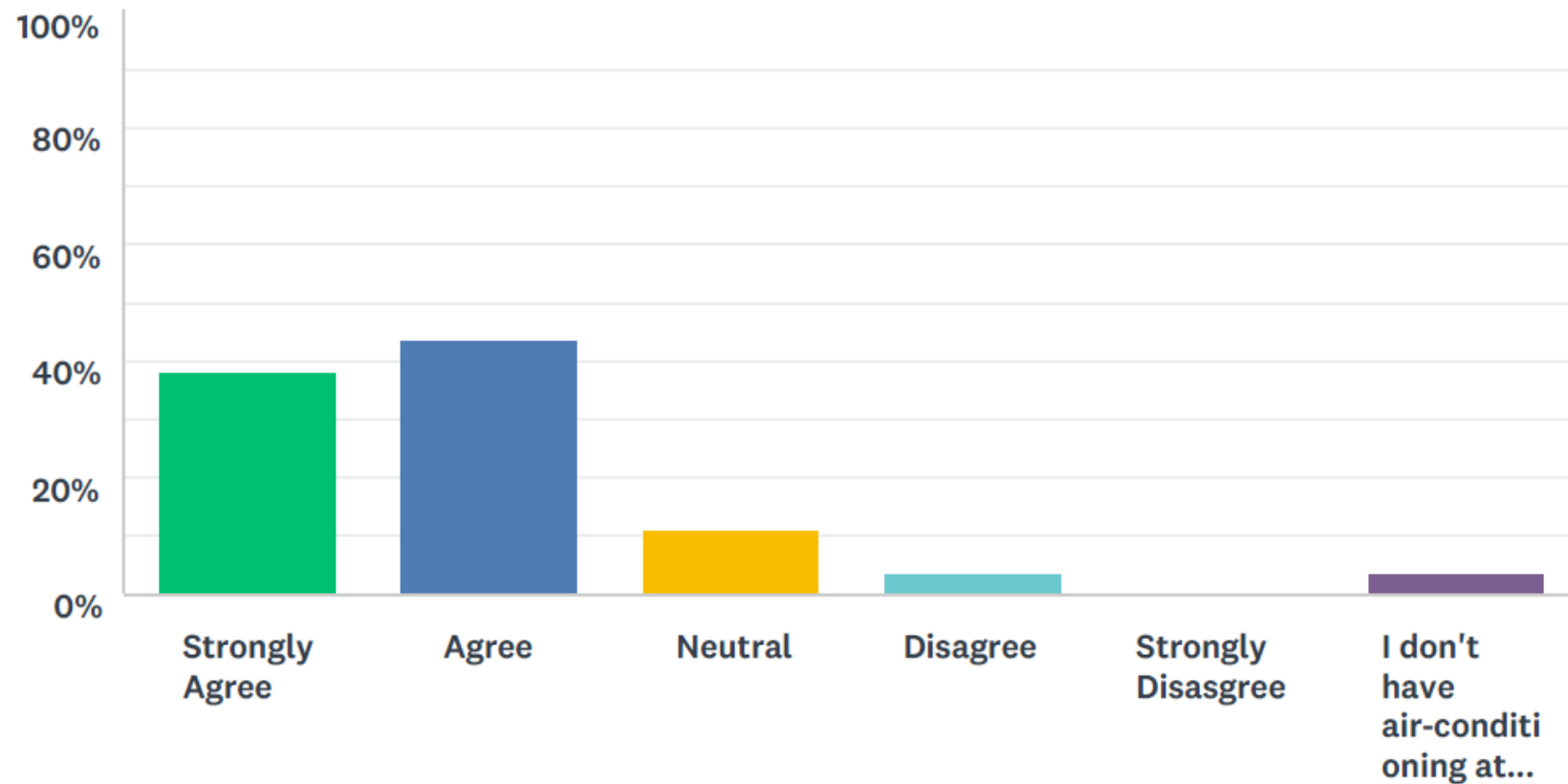
## Q9 In summer, I worry about upcoming heatwaves.

Answered: 399 Skipped: 23



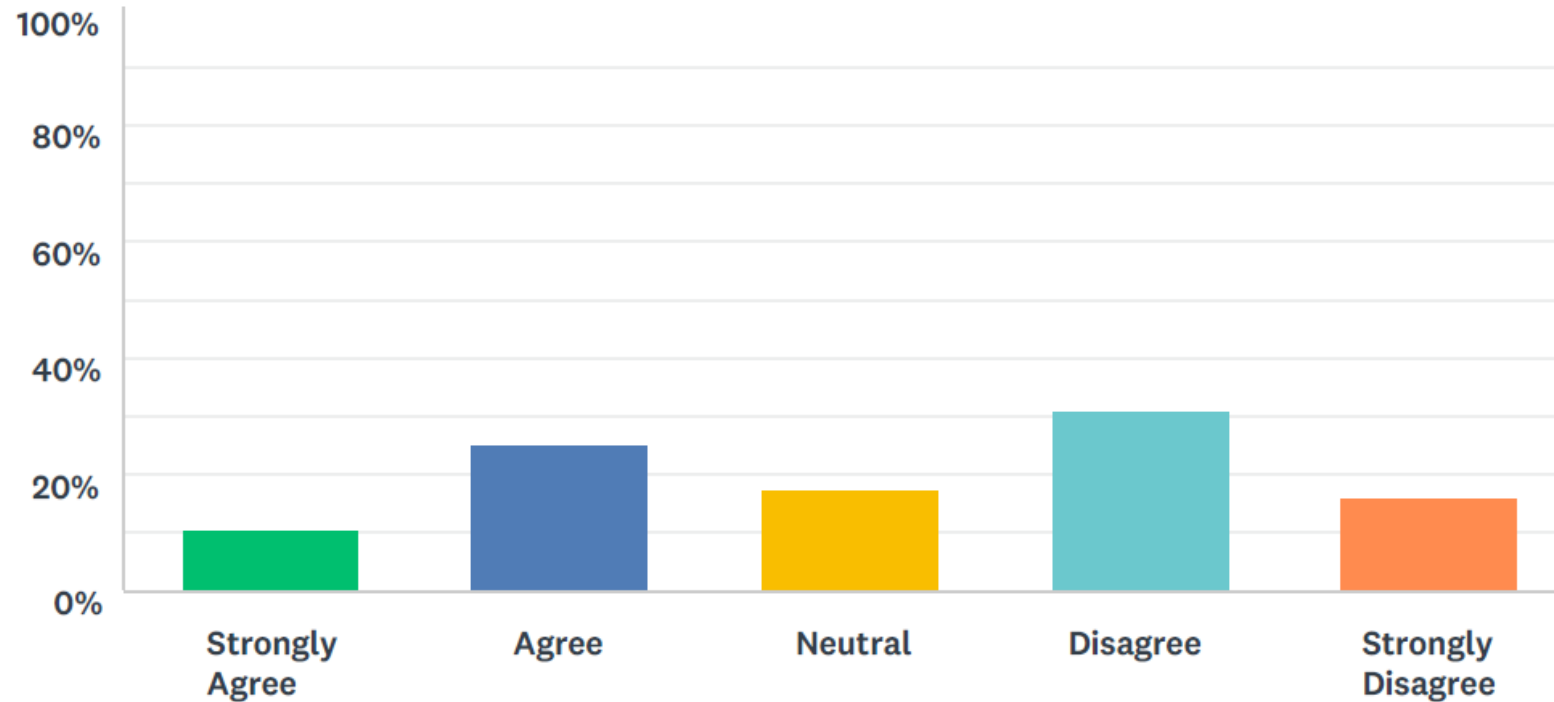
# Q16 During heatwaves, I use air-conditioning to keep cool at home

Answered: 395 Skipped: 27



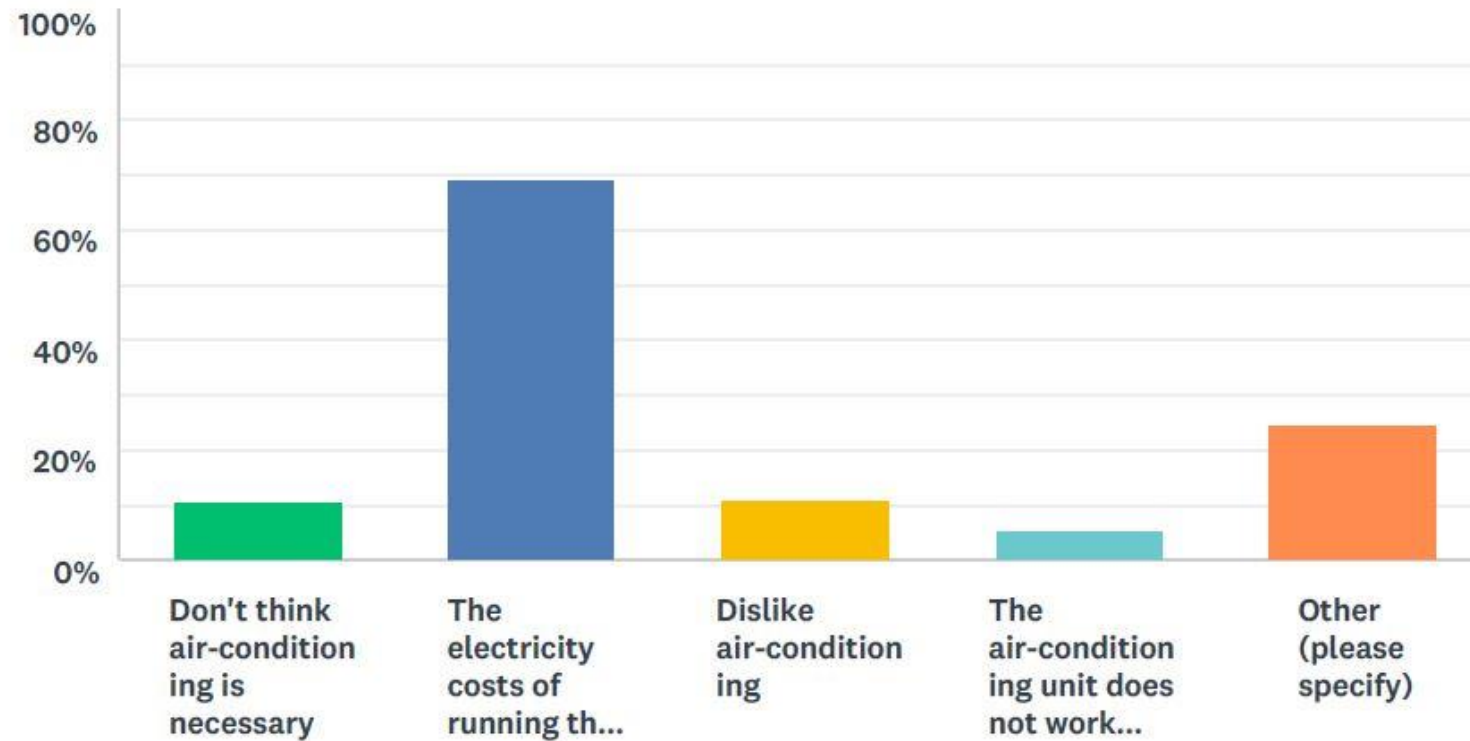
# Q17 During heatwaves, I often limit the amount of air-conditioning I use

Answered: 395 Skipped: 27



# Q18 When thinking of why you limit the amount of air-conditioning you use during heatwaves, please select from the list below (Select as many as needed)

Answered: 346 Skipped: 76



# Who to target?

P1: They warn you a couple of days before. Even today my wife said to me, “It’s going to be 35 today and tomorrow and it’s going to be 20”.

P2: The first thing that comes to my mind is “Ooh, how much is it going to cost for electricity?”

P1: That’s right, and that’s what I was saying, is that when you hear that is it dollar signs in going “This is going to cost me”? So, there’s an added anxiety that’s put on with getting that warning. (Males, 60-74, Davoren Park)



# Multiple vulnerabilities



Scott: How did you cope with heatwaves when you were homeless?

P: Not well. Because of my safety concerns I would lock the doors and have the windows up and one of the other reasons I'd have the windows up, the mosquitoes would be coming in through the window if you left the car windows open, so I wouldn't sleep, you'd just lay there and you're just in a bath of perspiration. I had an old mattress that I found, like a foam caravan mattress, which was in average condition and I lay on that and between the mattress and the roof of the car there was only just enough room. You couldn't even sit up, there was that much space between the car and the roof, I couldn't lay down in the back seats. The heat was oppressive.

Scott: Where did you park?

P: Usually down by the seafront to get a bit of a sea breeze, but some nights it was still very, very hot down there when there's no air, there's no wind, and the extreme temperatures. So I just lay there and every now and then I'd have to get out of the car and just shut the door. Like I was saying, I'd keep the windows closed and the roof vent thing closed because the mosquitoes would be coming in....

Scott: From your recollection did you used to worry a lot about the heat? It sounds like you did when you were homeless.

P: Absolutely, yeah, because if I passed out in the car no-one would know. I would just be there, there'd be no-one around to help. I was concerned, yep. Mainly because you're homeless, if you go into unconsciousness nobody knows. It's not like you've got neighbours here where they all look out for each other or maybe you live with a family or something. ...There was times when I felt really faint, but I managed to get through it. It makes you feel uneasy just thinking about it, but I want to talk about it, but it makes me feel really uneasy. You go through that – you sort of re-live that feeling. (m, 70s, Adelaide)

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P: If it's hot, it's hot, it's cold it's cold, it doesn't really – we're all right at the moment, trouble is as you get a bit older it's going to affect you a bit more, it's going to slow you down or you're going to suffer, those that don't have air conditioning or heating depending on the time of the year you're going to suffer. At the moment it doesn't worry me but down the track it may because you've got to sell the house and you've got no air conditioning, what are you going to do, sleep out in a tent outside? (M, 72, Elizabeth)

Scott: Would you say you worry about heatwaves?

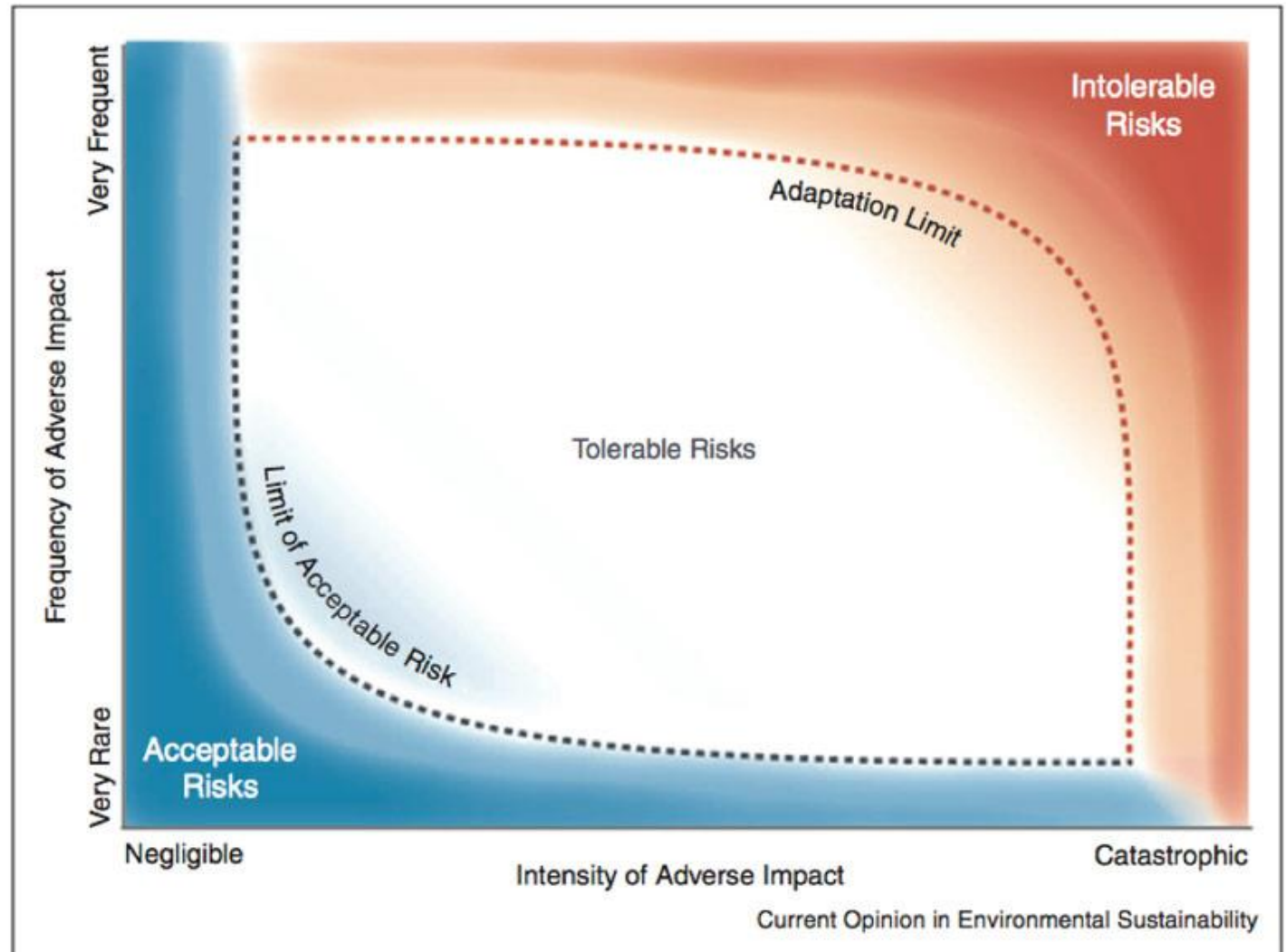
P: When I was working outside, yeah I did, because it wasn't good. Now I do as well because my house isn't air conditioned so I don't look forward to that.. Yeah, I also worry for my animals as well...I have cats (F, 23, Adelaide).

# What to do? (in the theme of 'R')

- Recalibrate the approach we use to segment and target messages to vulnerable audiences.
- Reformulating how resilience and vulnerability to heatwaves are conceptualised
- Remain cognizant of the changing nature of social vulnerability
- Regularly listening to peoples' stories of heatwaves.
- Recognise that there are *limits to adaptation*, especially for those living with significant vulnerabilities.

# Limits to adaptation

The relationship between adaptation, adaptation limits and risk. Within the 'tolerable risks' zone, adaptation can provide effective responses to impacts. In the zone to the left, acceptable risks do not require adaptation; in the zone to the right, the limits to adaptation have been exceeded the impacts are catastrophic and risks are intolerable. Source: Dow and Berkhout 2013.



Questions, comments, heckles...

