Ethos Phase 1 In-Home Trial 2023-24 Summary

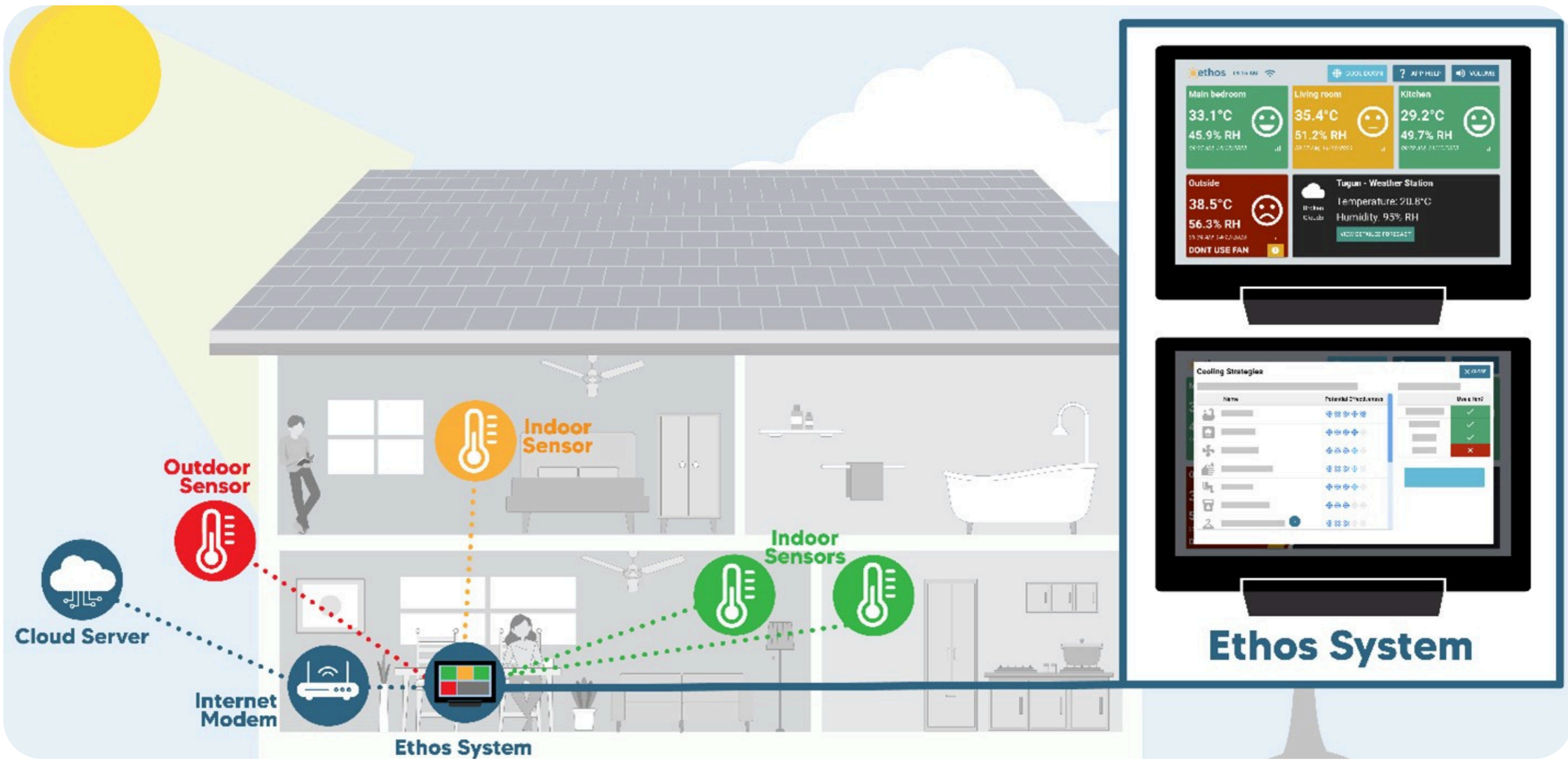
About the Ethos System

The **Ethos (Extreme heat and older persons) System** is an **intervention** focused **on improving heat management and resilience among older Australians** to protect their health and wellbeing in a warming climate.

The system is an in-home device that:

- Collects real-time humidity and temperature data from inside and outside the home using four non-invasive sensors.
- Connects to the local weather station and displays that information to the user to assist with planning daily and weekly activities.
- Provides individualised heat alerts when projected core temperature is increasing.
- Suggests cooling strategies that are acceptable and accessible to the user.

In Summer 2023-2024, the Ethos Project conducted it's first in-home trial with over 65s in Southeast Queensland to test the effectiveness and usability of the device.

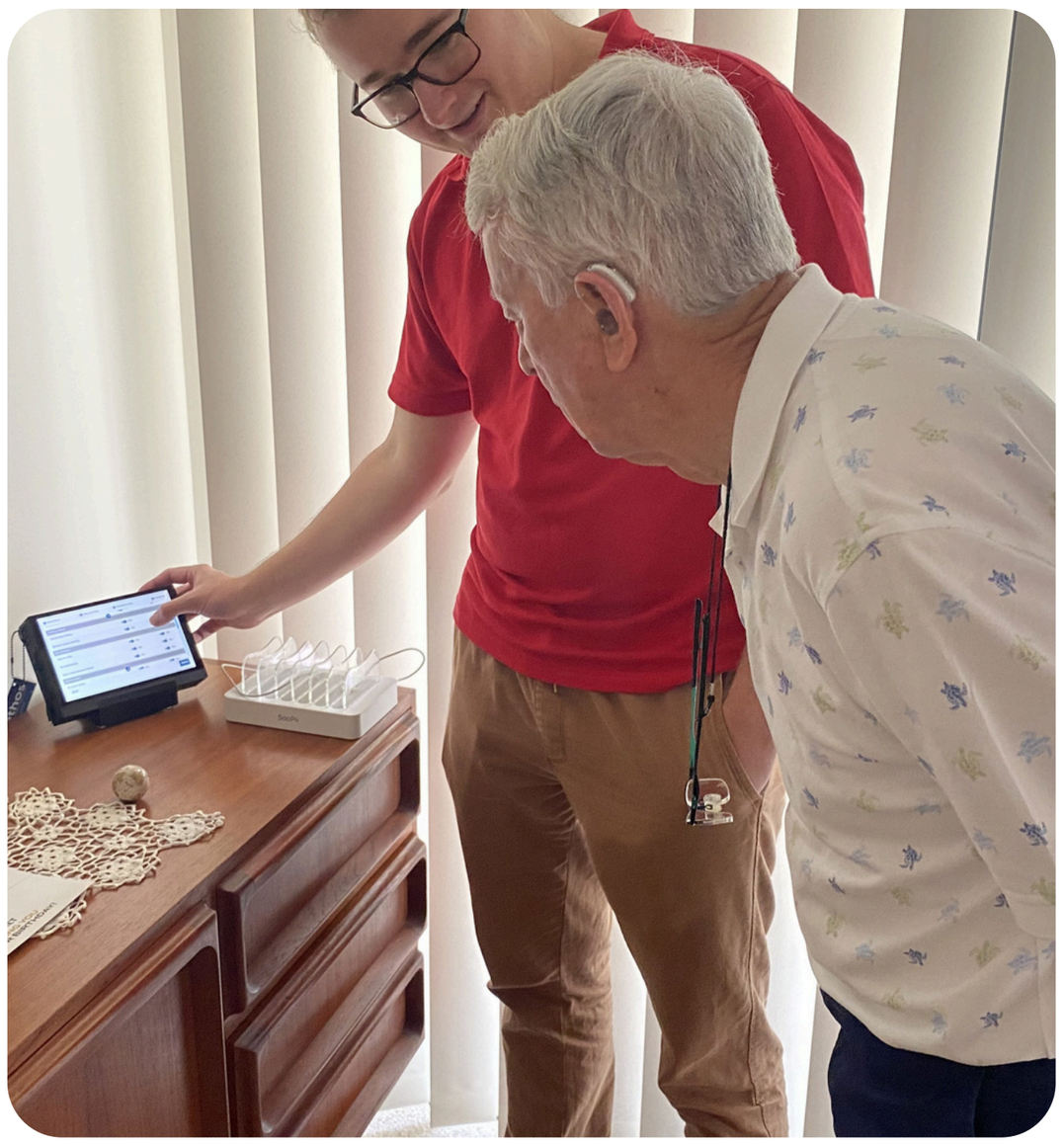


How the Ethos System works

Upon installation, Ethos team members input the **user's height**, **weight**, **age** and **sex** into the device. This allows the system to individualise heat alerts to that specific person.

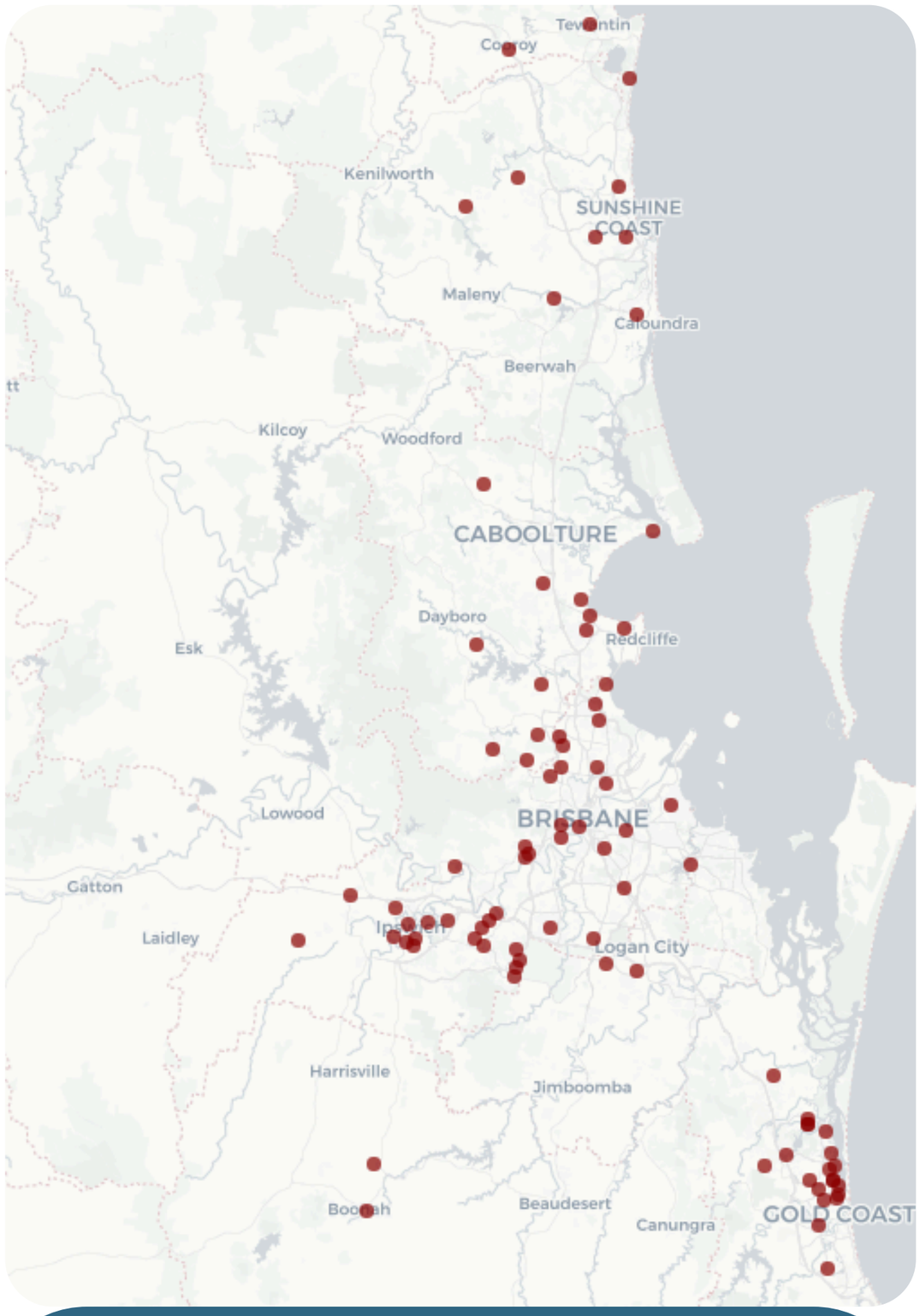
The list of cooling options offered by the system during heat alerts is personalised by **selecting strategies that are accessible and acceptable to the user.**

An Ethos-supplied Wi-Fi router allows the sensors to send information to the system and **keeps the data secure**.



Griffith UNIVERSITY
Queensland, Australia
Climate Action Beacon

Results and findings



Location of the 78 Ethos 2023-24 participants.

Demographics

Minimum age: **65**

Average age: **75**

Maximum age: **100**

System Usability Score: 78/100

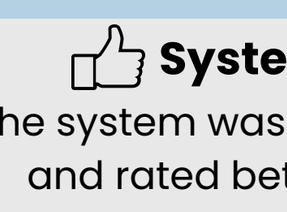
The system was considered acceptable among users and rated between good and excellent usability.

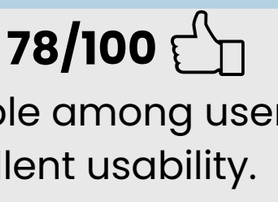
Senior Technology Acceptance Model score: 98.3 / 140

Overall, participants had positive attitudes towards and low anxiety around technology utilisation.

89% of participants had air-conditioning in their home.

Most participants resided in **free-standing homes** and lived with other people (family, friends, etc)





Over 4,500 Kms

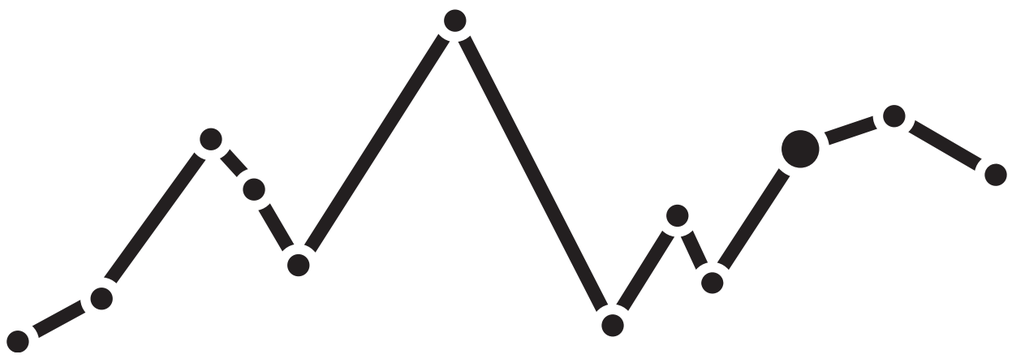
travelled by Ethos staff to install, repair, and collect the systems.

Most popular cooling strategies

1. Drinking water
2. Using the fan
3. Using the air-conditioning
4. Avoiding strenuous activities
5. Opening and closing blinds and windows

Least popular cooling strategies

1. Using ice packs
2. Using a footbath
3. Dampening clothes
4. Water misting
5. Using a forearm bath



4,252,765

measurements taken by the Ethos sensors during the 2023-24 In-Home Trials.

Average outdoor temp: **25.4℃**

Average indoor temp: **27.0 ℃**

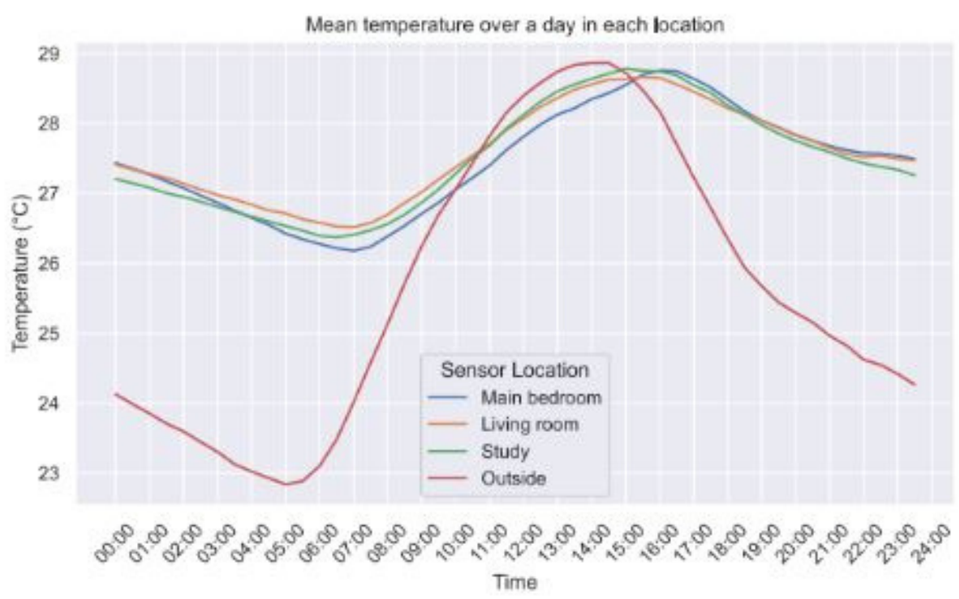
Every participant recieved an individual report of the temperature and alert data collected from their home:

Ethos Temperature Report

Thank you for participating in the Ethos 2023-2024 summer trial. Here are some preliminary statistics for your home from the trial. If you want the full temperature/humidity data, feel free to email us and request a copy (ethos@griffith.edu.au).

Statistics

- The maximum temperature recorded in your home was 32.2 °C on the 22nd January 03:49PM (higher than 26% of participants).
- The maximum recorded temperature outside was 34.1 °C on the 22nd January 03:05PM (higher than 7% of participants).
- The mean indoor temperature between 8am and 6pm was 27.9 °C (higher than 56% of participants).
- The mean outdoor temperature between 8am and 6pm was 27.7 °C (higher than 9% of participants).



13%

of participants reported being extremely concerned about the effects of heatwaves on them personally after the trial compared to 1.3% before the trial

36%

of participants were well informed about the consequences of heatwaves on their health after the trial compared to 12.9% at the beginning of the trial

46%

of participants strongly agreed that heatwaves pose a risk to their health after the trial compared to 32.1% before the trial.

Participants are

4.3 times more likely

to be well informed about heatwaves and the consequences to their health after the trial compared to before the trial.

85%

of participants felt that they were well prepared for heatwaves after the trial compared to 70% before the trial.

0%

of participants reported being unsure of their heatwave preparedness after the trial compared to 18% before the trial.

Heat preparedness increased by

3.4 times

among participants after the trial compared to before the trial.

Impacts of the system and user testimonials

I now know several solutions to help get cooler on hot days. I am now more aware of my environment and how best to cope during hot weather and especially heat waves

I don't feel the heat as much at my age and so didn't always take precautions until I was at the stage of feeling unwell. Having the Ethos system meant I could clearly see the temperature inside and out and I was turning on the air conditioning and drinking more often

Size was unobtrusive. Colour coding for room temperature worked well as it could be read at a glance from a distance

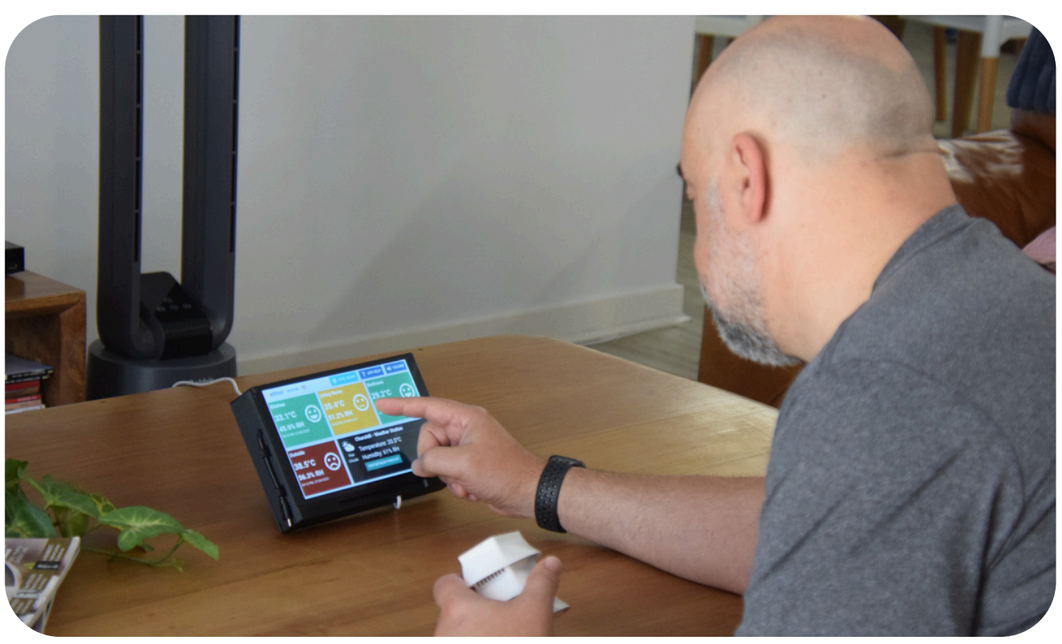
I liked the whole package: neat, easy to read & operate

I had no idea of the implications heat had on my health and was in distress before the trial, but now know I am in control

It did change confidence in our response to high temperatures - we were able to make better informed decisions in relation to heatwaves in our house

Everything was great and the support team were there if needed!

We were able to see the difference in temperature in different parts of the house compared to outside so could move to a cooler part of the house which meant less use of air conditioning or fans



https://www.griffith.edu.au/research/climate-action/climate-transitions/health/ethos-project

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