The development of an elderly specific guide for assessing heat illness risk in the UK

Kirsty Waldock

University of Brighton

Centre for Sport and Exercise Science and Medicine

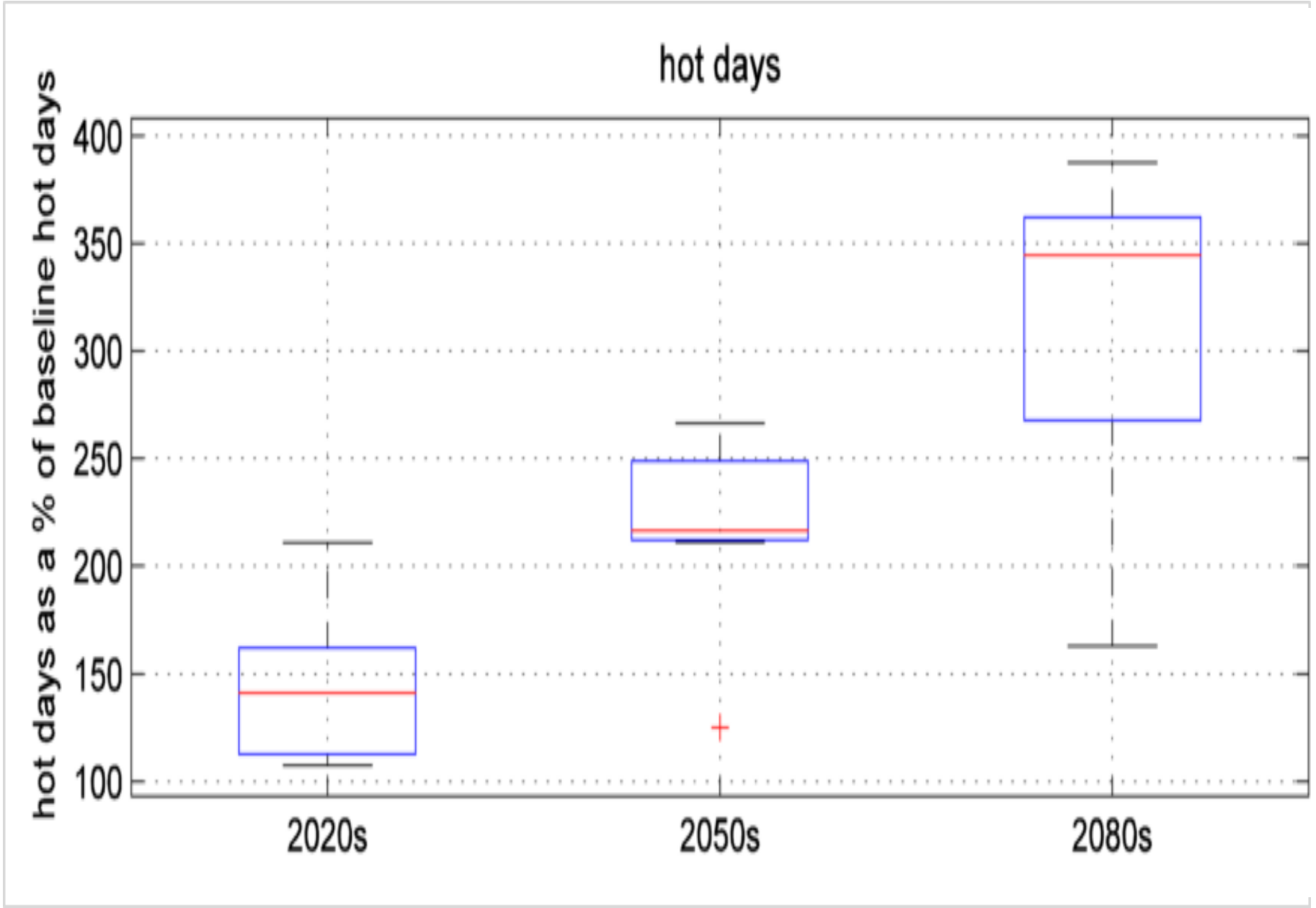
Public Health England

Presentation Aims

- Provide a rationale for conducting research in the UK, that investigates the elderly's responses to the heat
- Explain my ongoing research study and the preliminary result
- Discuss a research dissemination programme
- Outline plans for future research

University of Brighton

Rationale for research into elderly health and the heat



University of Brighton

Focus group outcomes

- Not enough specific advice on how to keep safe for people of their age
- Feel like they are forgotten about and that there is more heat alleviating advice for children
- Strategies they use to keep themselves cool are based on common sense
- Never heard of the heat wave readiness plan

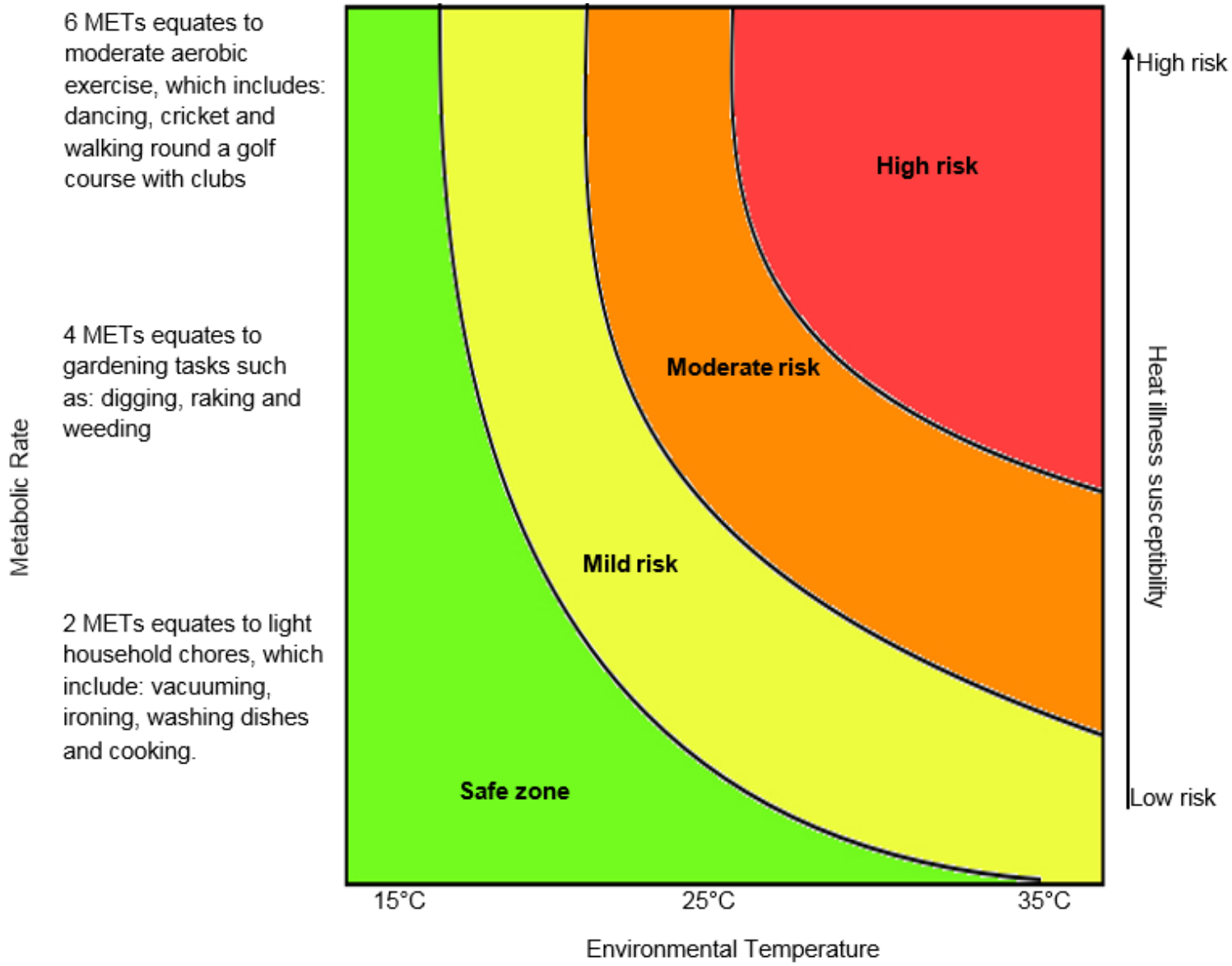
University of Brighton

Theoretical model

6 METs equates to moderate aerobic exercise, which includes: dancing, cricket and walking round a golf course with clubs

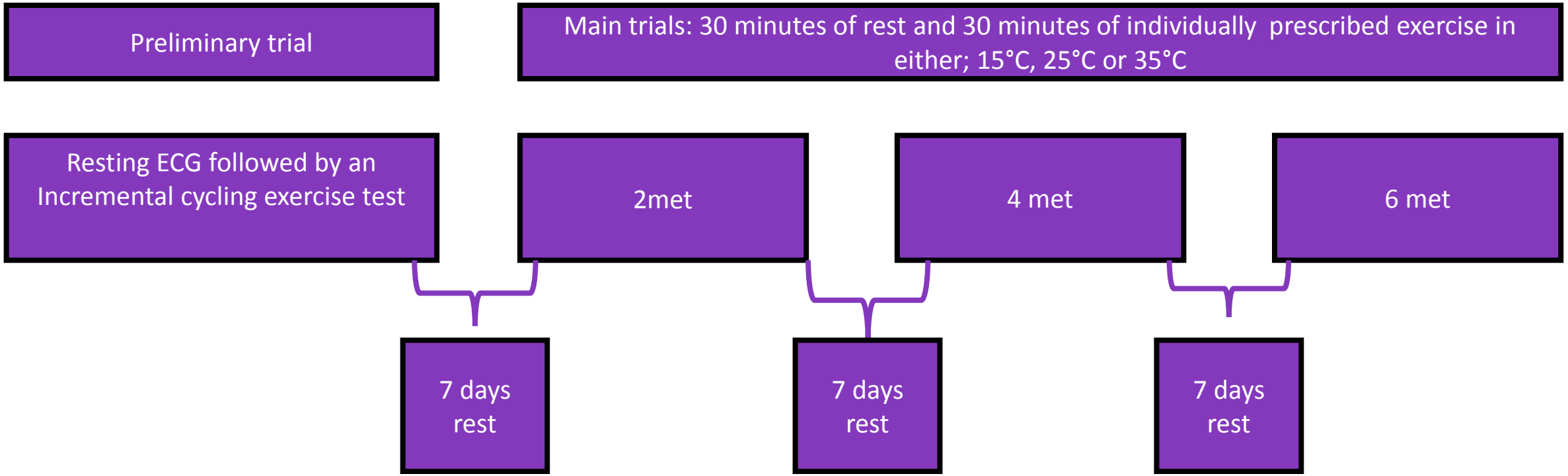
4 METs equates to gardening tasks such as: digging, raking and weeding

2 METs equates to light household chores, which include: vacuuming, ironing, washing dishes and cooking.



University of Brighton

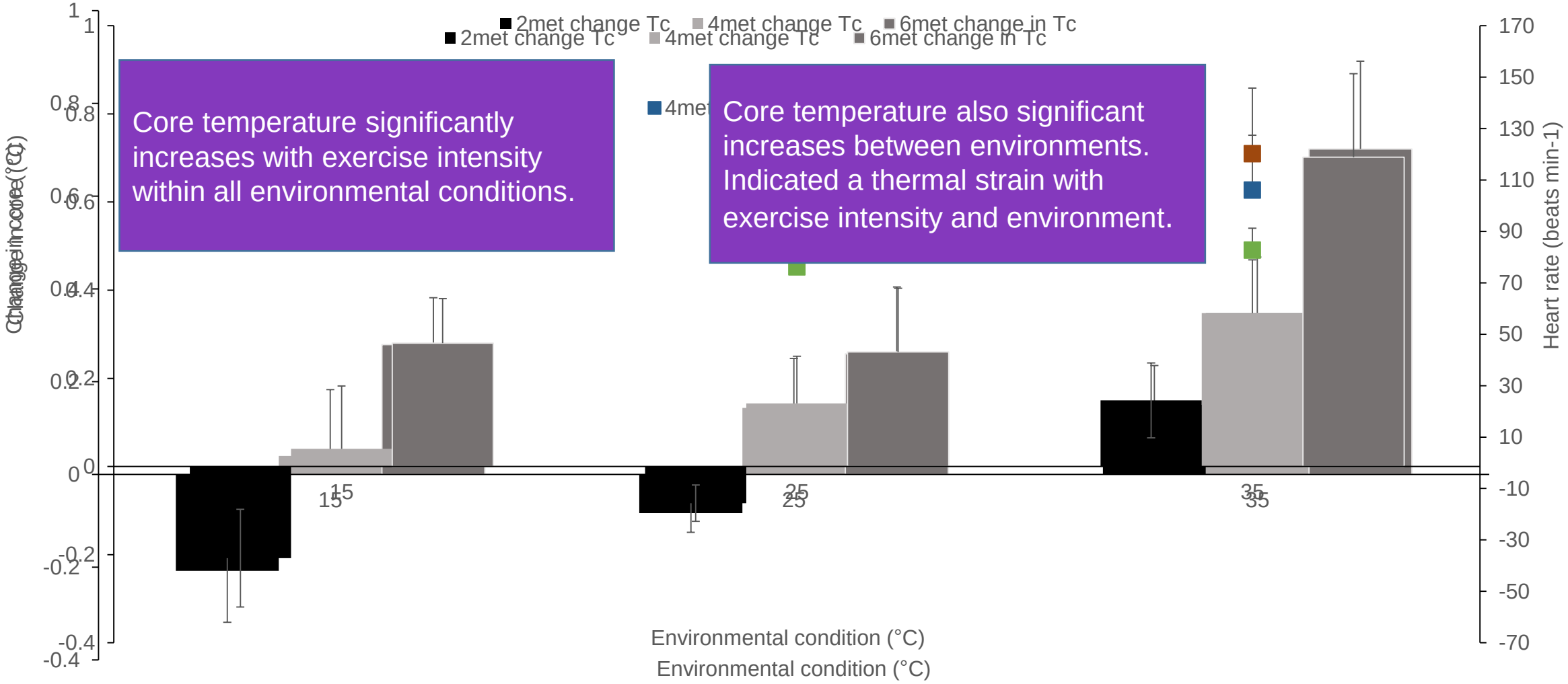
Research design



Physiological measurements were recorded every 5 minutes: core temperature, skin temperature and heart rate

We asked how the participant felt every 10 minutes, using scales for: thermal comfort, thermal sensation and rating of perceived exertion.

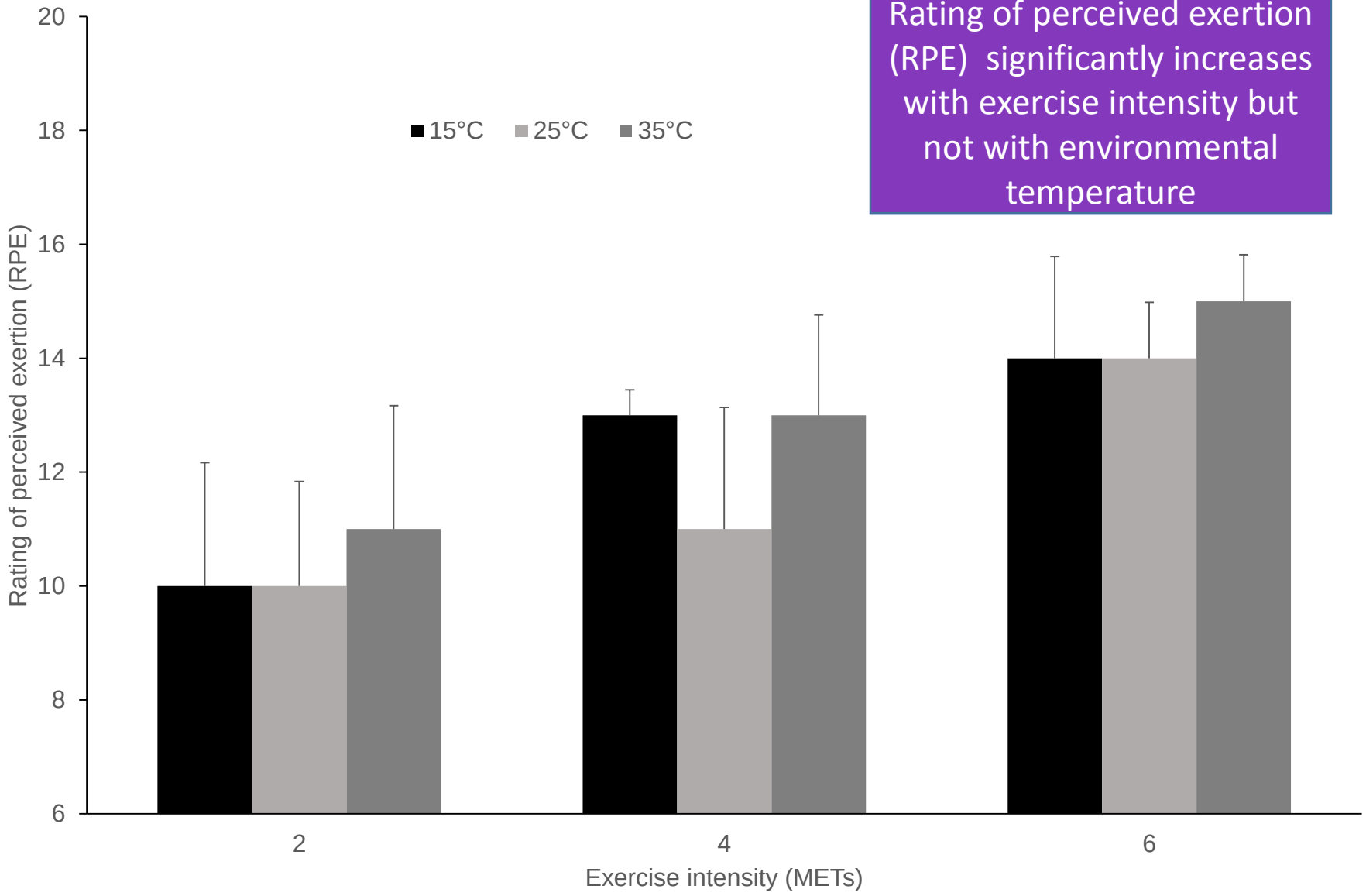
Physiological Results



Perceptual Results

RPE
20 maximal exertion
19 very, very hard
18
17 very hard
16
15 hard
14
13 somewhat hard
12
11 fairly light
10
9 very light
8
7 very, very light
6 resting

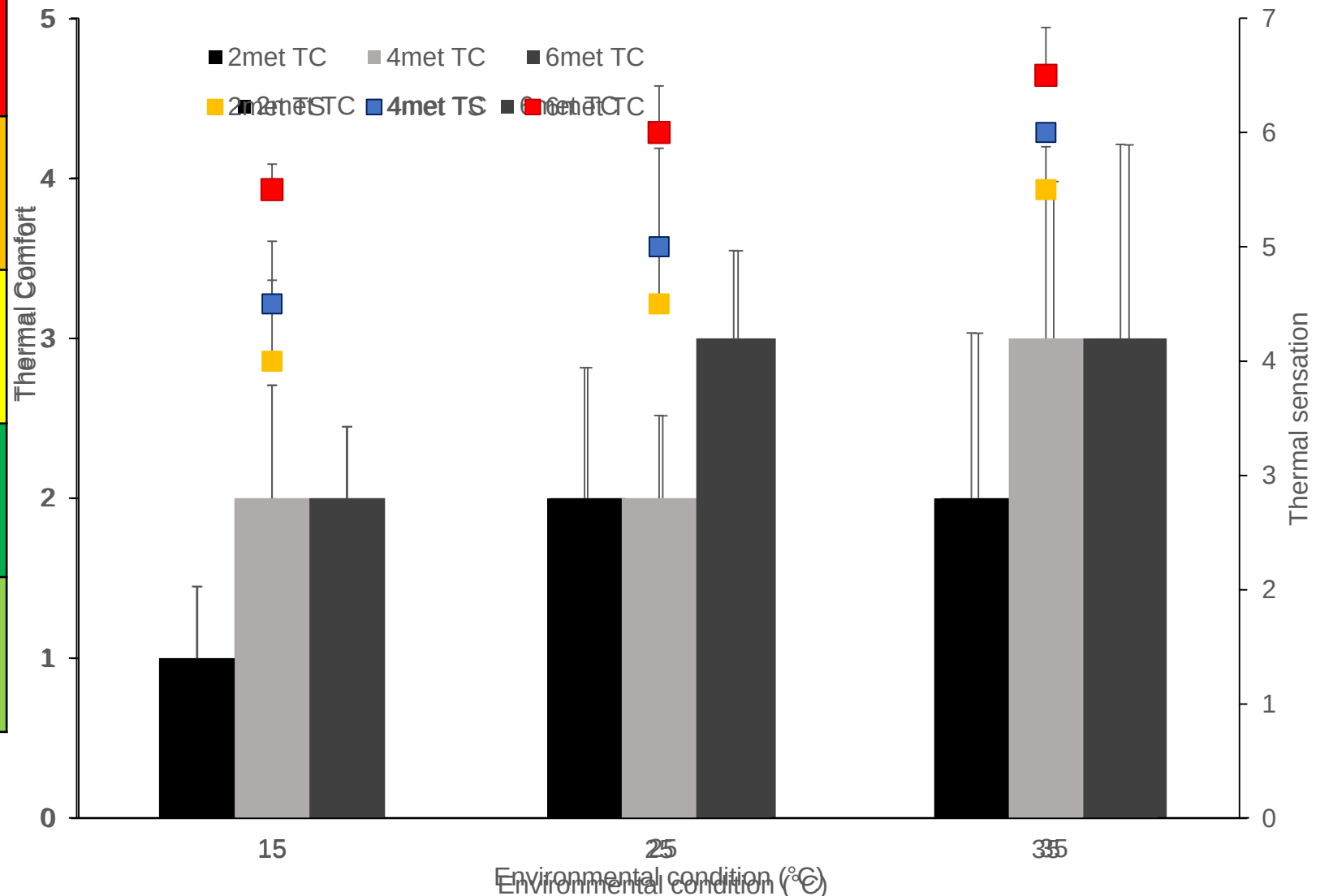
(Borg, 1962)



Perceptual Results

Thermal comfort
5 very uncomfortable
4 uncomfortable
3 just uncomfortable
2 just comfortable
1 comfortable

(Guéritée and Tipton, 2015)



Thermal sensation
8.0 unbearably hot
7.5
7.0 very hot
6.5
6.0 hot
5.5
5.0 warm
4.5
4.0 neutral
3.5
3.0 cool
2.5
2.0 cold
1.5
1.0 very cold
0.5
0.0 unbearably cold

(Young *et al.*, 1987)

Preliminary Conclusions

How a person feels drives their behaviour to remain comfortable

If we do not feel overly uncomfortable or hot then we are less likely to implement heat alleviating strategies.

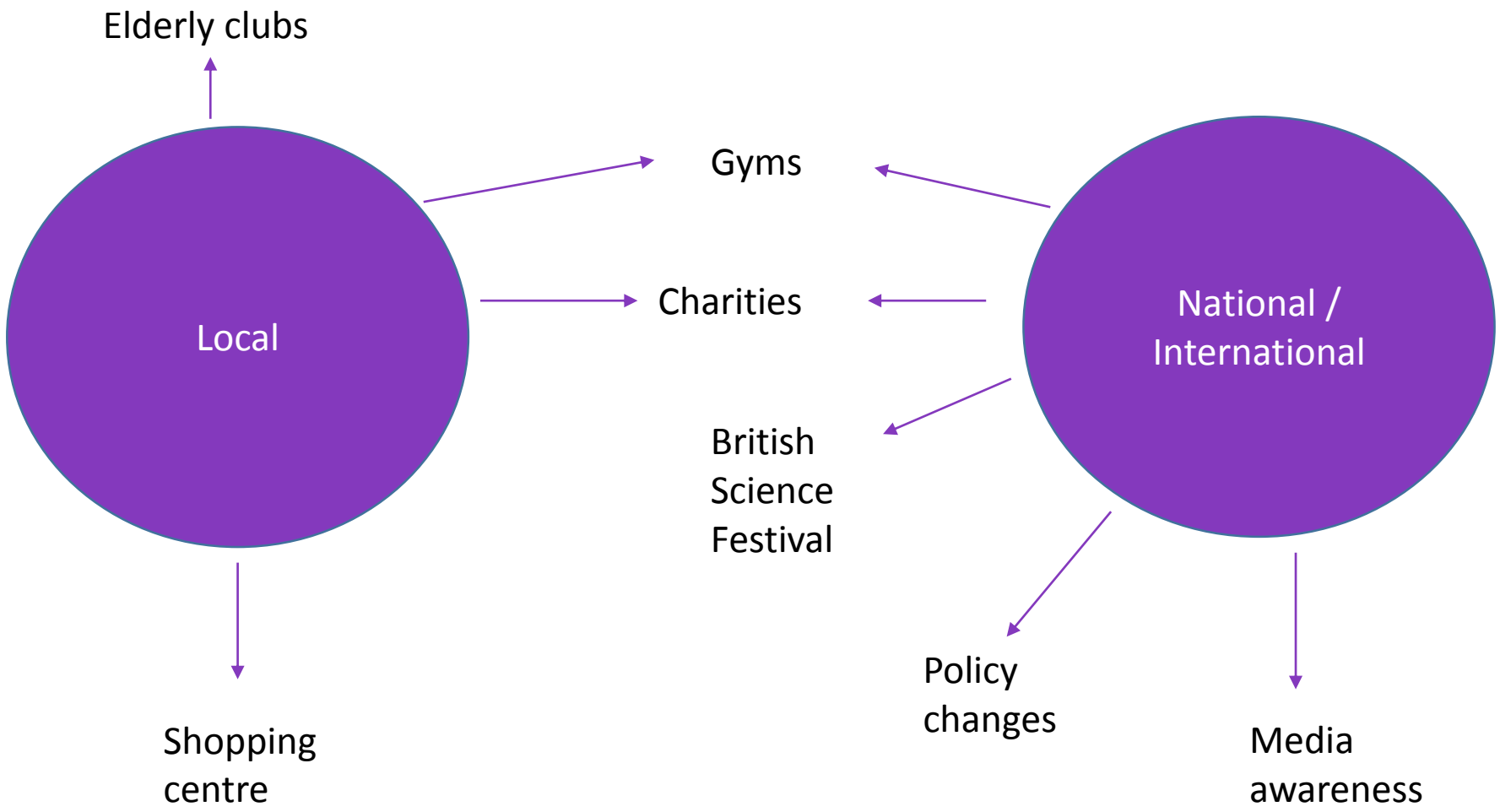
The preliminary findings suggest that people over 65 may have a decreased perceptual awareness of the environment.

The participants did not feel any more uncomfortable and only slightly warmer (0.5) at 35°C than at 25°C for the highest exercise intensity.

This is even though core temperature, which is a marker of heat illness is significantly different between these conditions.

Therefore the elderly could be at an increased risk of heat illness due to not implementing heat alleviating techniques due to decrease perceptual awareness of the environment and their activity levels.

Dissemination Programme



AGE concern Eastbourne

ageUK

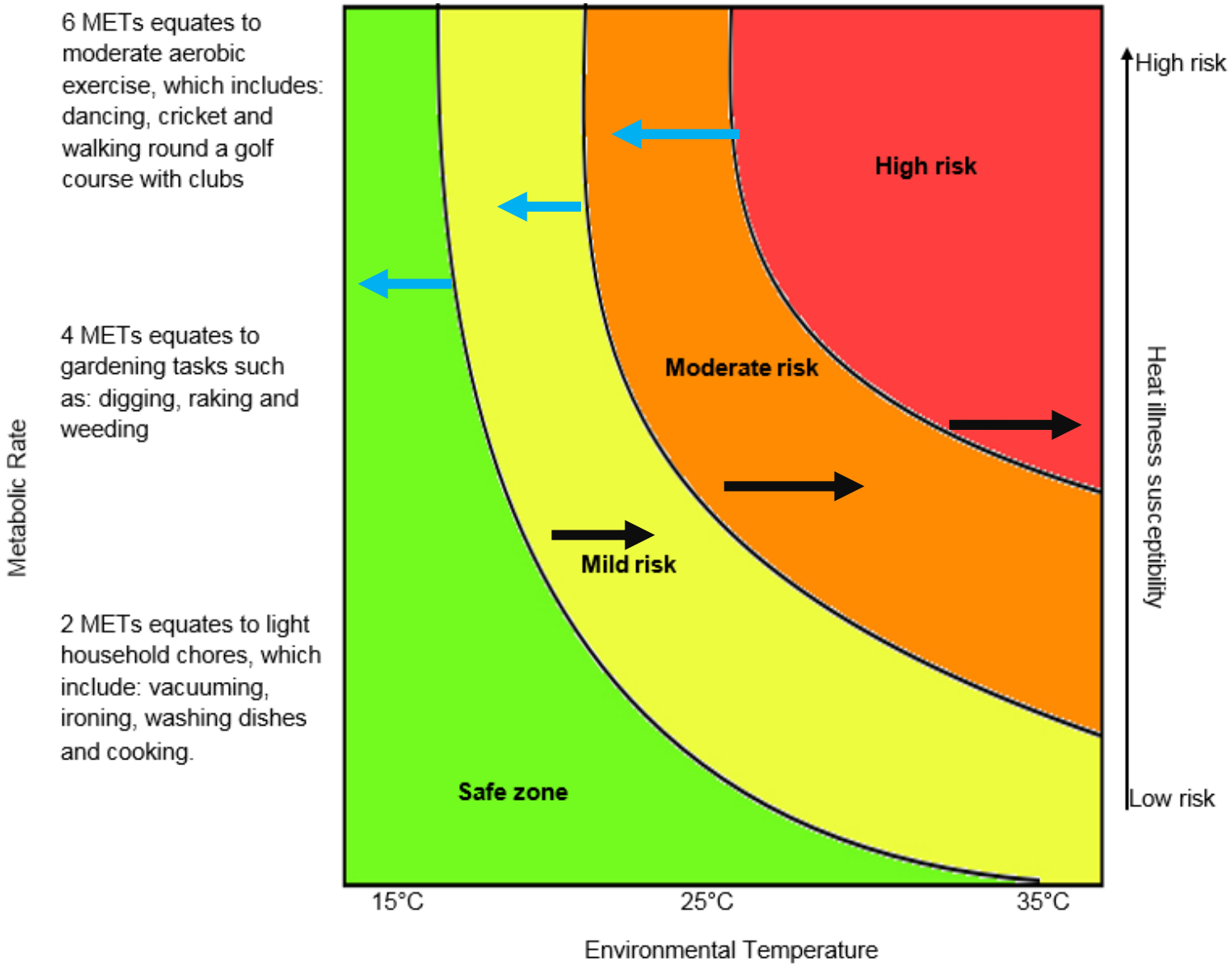
University of Brighton

Future directions

6 METs equates to moderate aerobic exercise, which includes: dancing, cricket and walking round a golf course with clubs

4 METs equates to gardening tasks such as: digging, raking and weeding

2 METs equates to light household chores, which include: vacuuming, ironing, washing dishes and cooking.



Perceptual cooling:

Increased risk of heat illness

Physiological adaptation through practical heat acclimation:

Decreased risk of heat illness

University of Brighton

We need to conduct research into practical heat-alleviating methods for a vulnerable population that is growing and could be less perceptually aware of the dangers of an increasing climate

Thank you for Listening!

Acknowledgements:

Dr Neil Maxwell

Dr Peter Watt

Dr Mark Hayes

Contact details:

k.waldock@brighton.ac.uk

Research funded by:

Eastbourne Leisure Trust

University of Brighton

University of Brighton

Centre for Sport and Exercise Science and Medicine