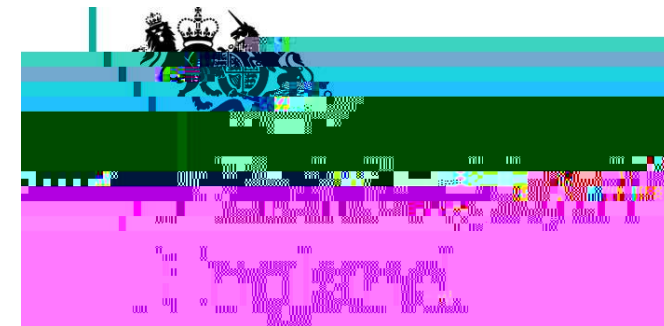


# Current exercise -heat stress research impacting the Public Health England Heatwave Plan – heat alleviation

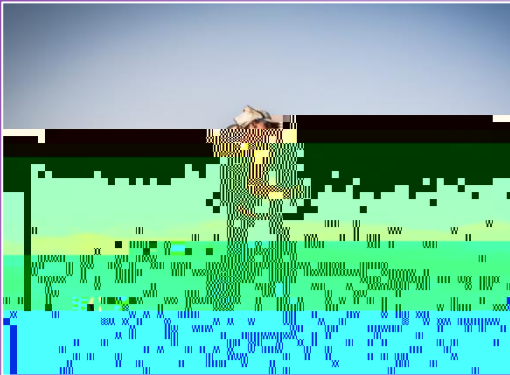
Dr Neil Maxwell





# Environmental Extremes Lab

## Theme 1 Optimising Performance in the Extremes



Hetremes

## Theme 2 Impact of Environmental Extremes on Health

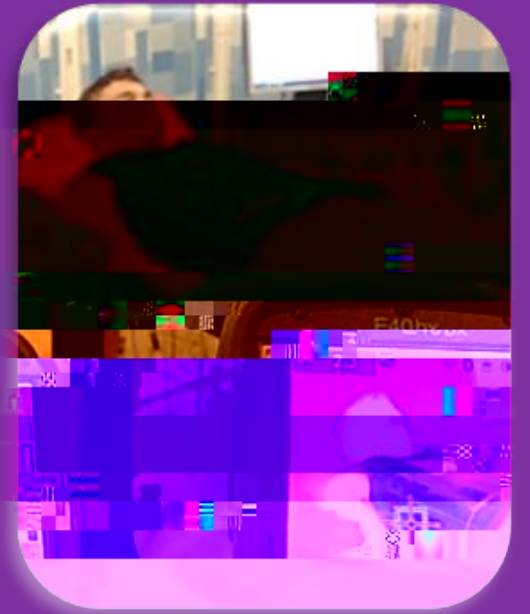


## Theme 3 Occupational Activities & Safety in the Extremes



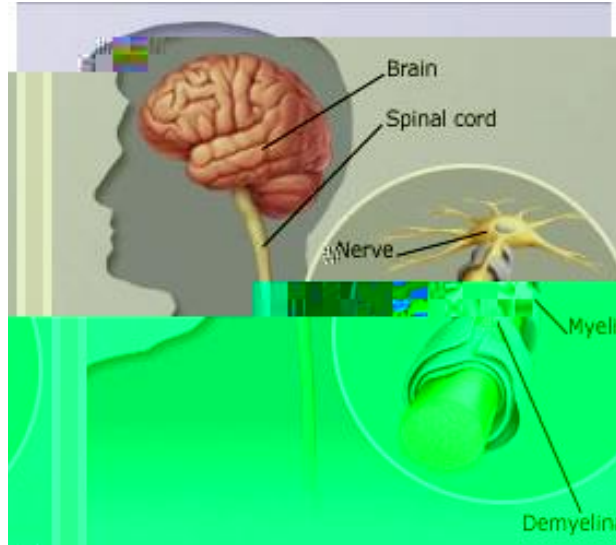
# Presentation Aim & Structure

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# Heat-Sensitive Populations



**Table 2. Prevalence and Severity of Symptoms Among Postmenopausal Women**

	No.	%	Mild	Moderate	Severe	Symptom
Number of women who reported the symptom	100	100	41	28	31	
Number of women who reported the symptom with the level of severity						
Brain with intercourse	183	18	27	34	35	
Genital itching or irritation	183	24	24	51	25	

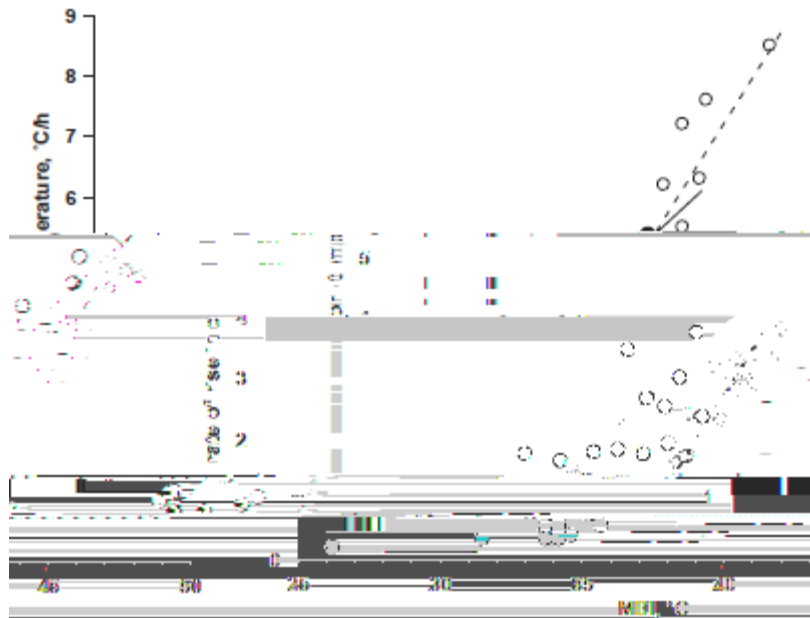
18 Percent of women who reported the symptom with the level of severity in women who have the symptom.  
 21 Percent of women who reported the symptom with the level of severity in women who have the symptom.  
 28 Percent of women who reported the symptom with the level of severity in women who have the symptom.

§Number of women who answered the question.



# Heat Sensitive Individuals

- o rest
- o exercise

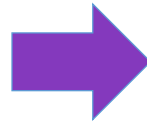
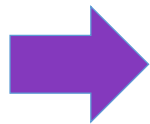


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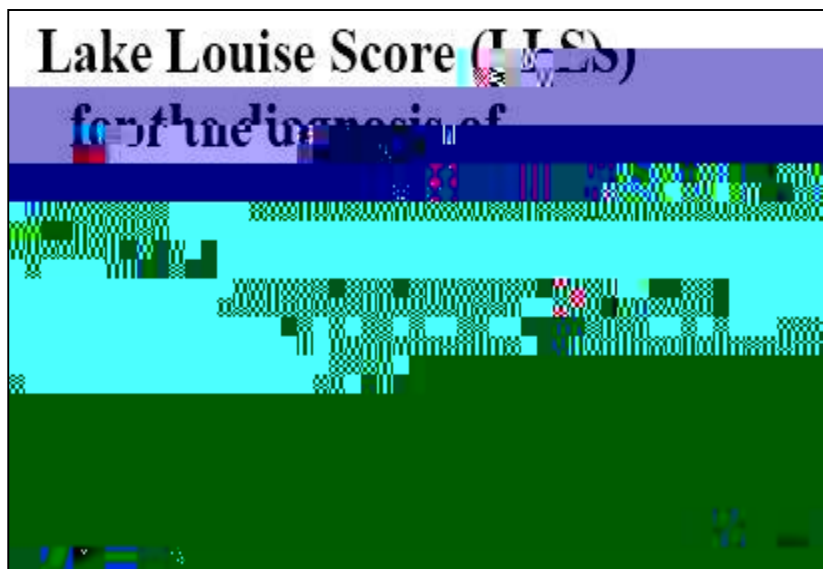




# Index of Heat Susceptibility



# Index for Acute Mountain Sickness



Total score of:

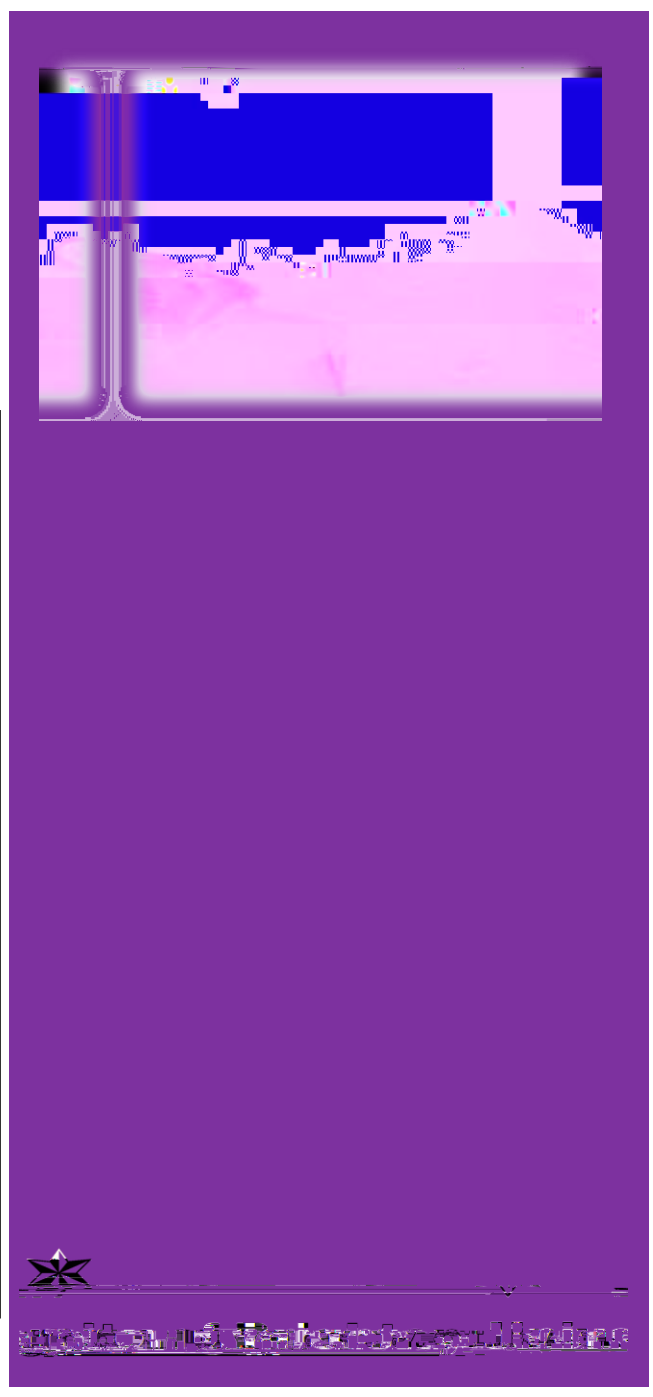
- 0-2 = no AMS
- 3-4 = mild AMS
- 5-6 = moderate AMS
- 7-9 = severe AMS

Note:

- Do not ascend with symptoms of AMS
- Descend if symptoms are not improving or getting worse
- Descend if symptoms of HACE or HAPE develop

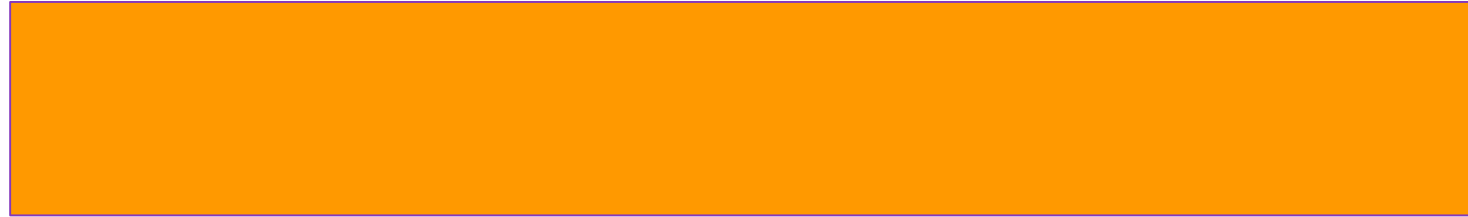
**SELECTED LLOUQUESTIONNAIRE**  
Add together the individual scores for each symptom to get the total score.

		Headache		Gastrointestinal	
No headache	0	No symptoms	0	No symptoms	0
Mild headache	1	Mild nausea &/or vomiting	1	Mild symptoms	1
Moderate headache	2	Moderate nausea &/or vomiting	2	Moderate symptoms	2
Severe headache, incapacitating	3	Severe nausea &/or vomiting	3	Severe symptoms	3



# What Heat Alleviating Methods are Recommended by PHE?

..



# Heat Alleviation Methods

Acute



Hydration



Cooling



Rationale for Cooling:  
to  
a greater body heat storage  
delays onset of sweating  
improved thermal comfort

Chronic



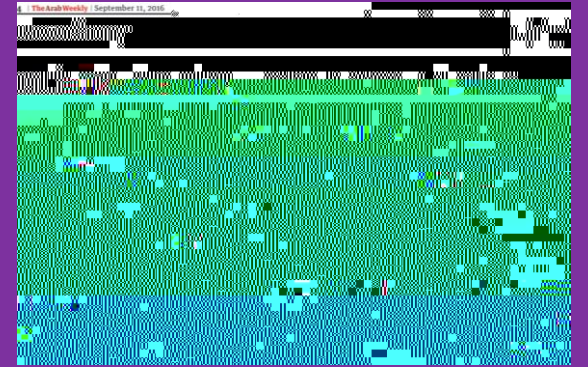
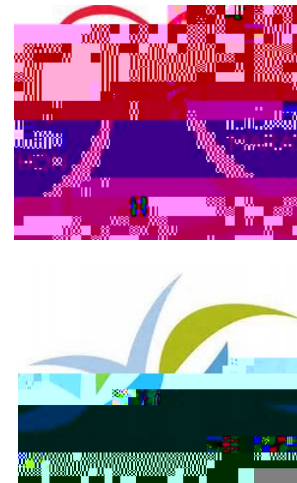
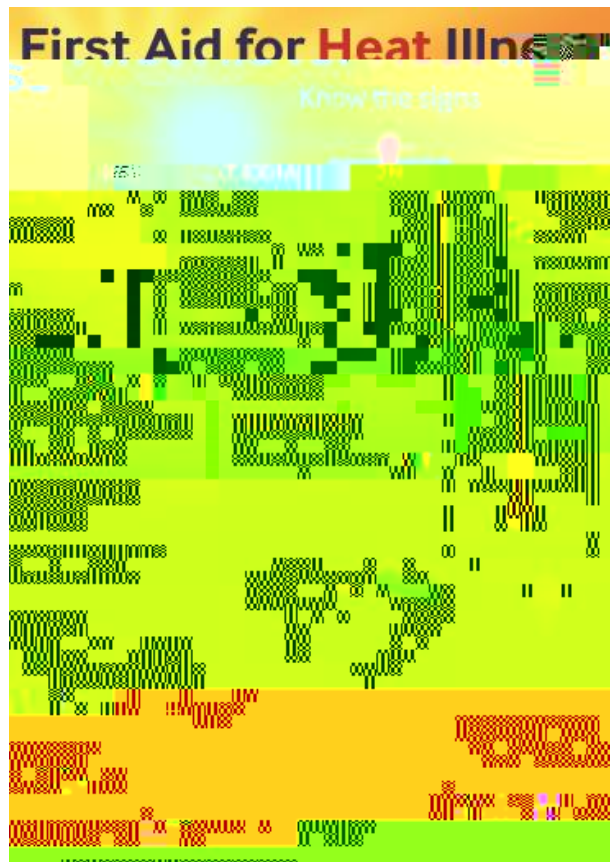
Heat Adaptation





# A Portable Cooling Vest

a novel endothermic hypothermic device for core body cooling safety



# Should fans be used in a heatwave?

above 35 °C, may not prevent heat-

[WHO, *Public health advice on preventing health effects of heat*, 2011]

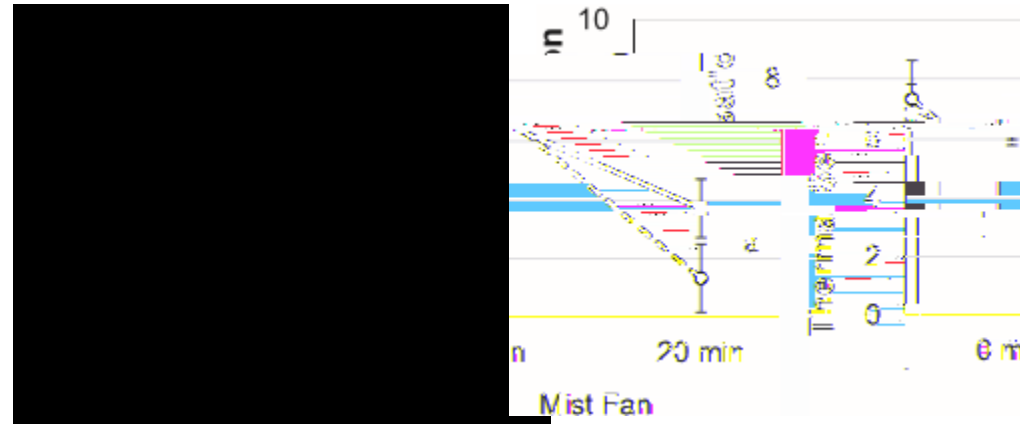
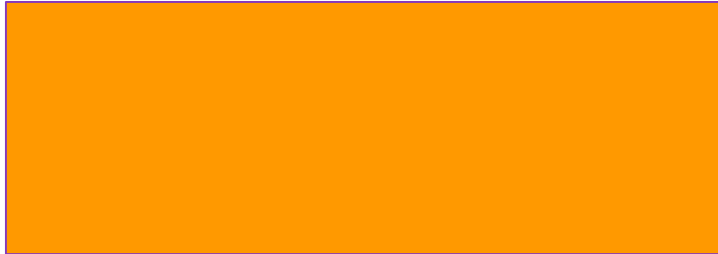
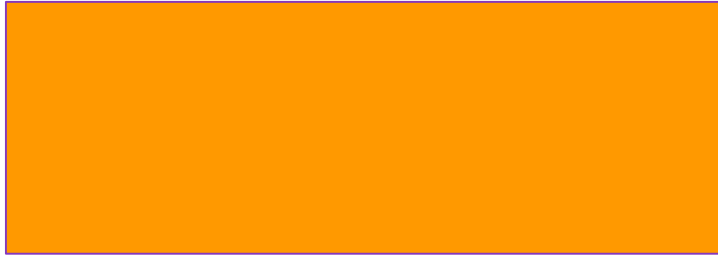
°C, but do not aim

temperature is below 35°C, but fans can cause excess dehydration so they should not be aimed directly on the body and will not be enough to keep cool at temperatures above 35°

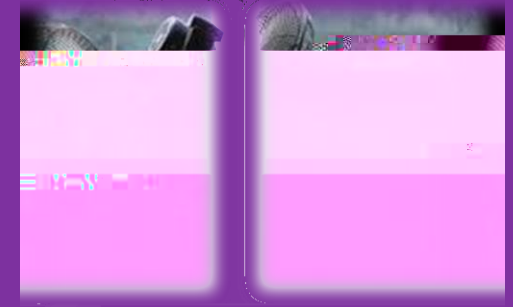
[PHE, *Beat the heat: staying safe in hot weather*, 2016]



# Should fans be used in a heatwave?



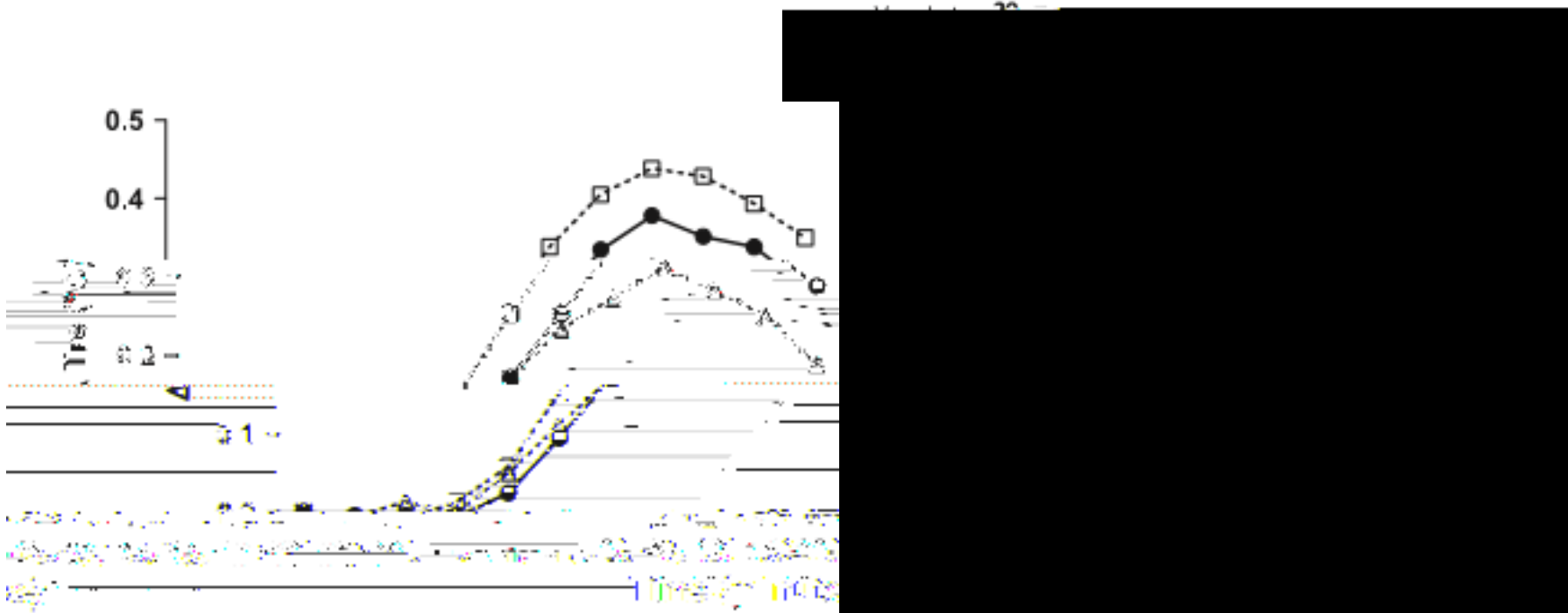
—■— Control    -●- Treatment



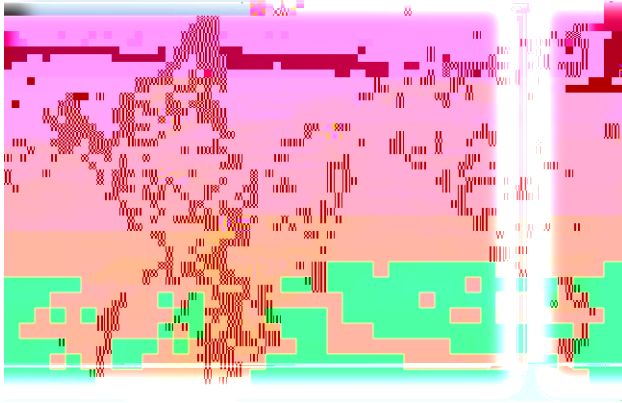


# Is Menthol the answer for keeping cool?

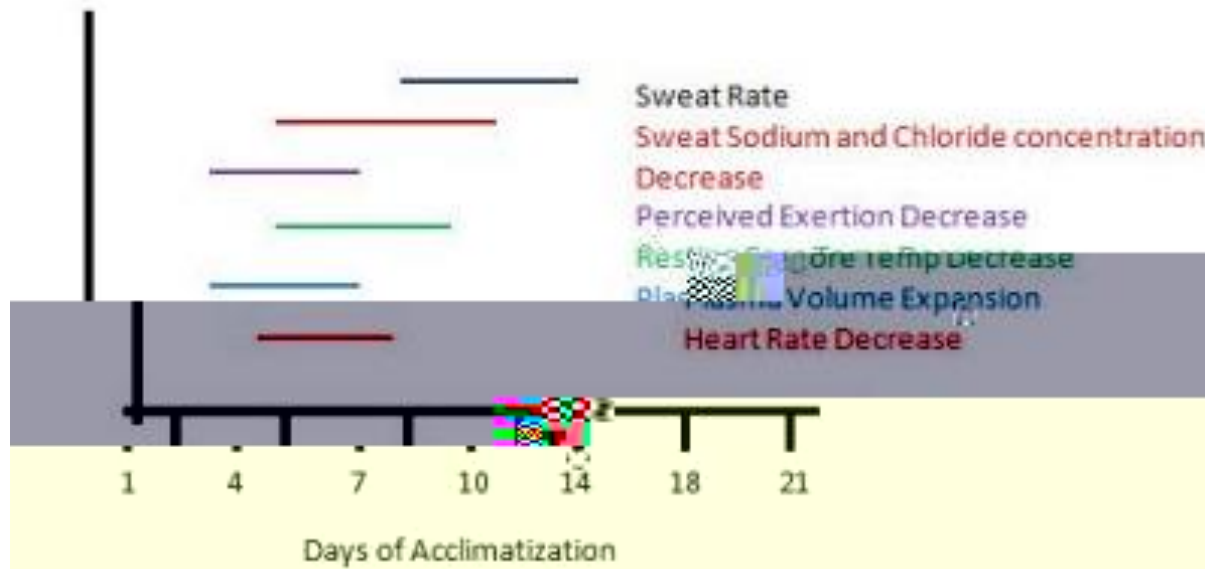
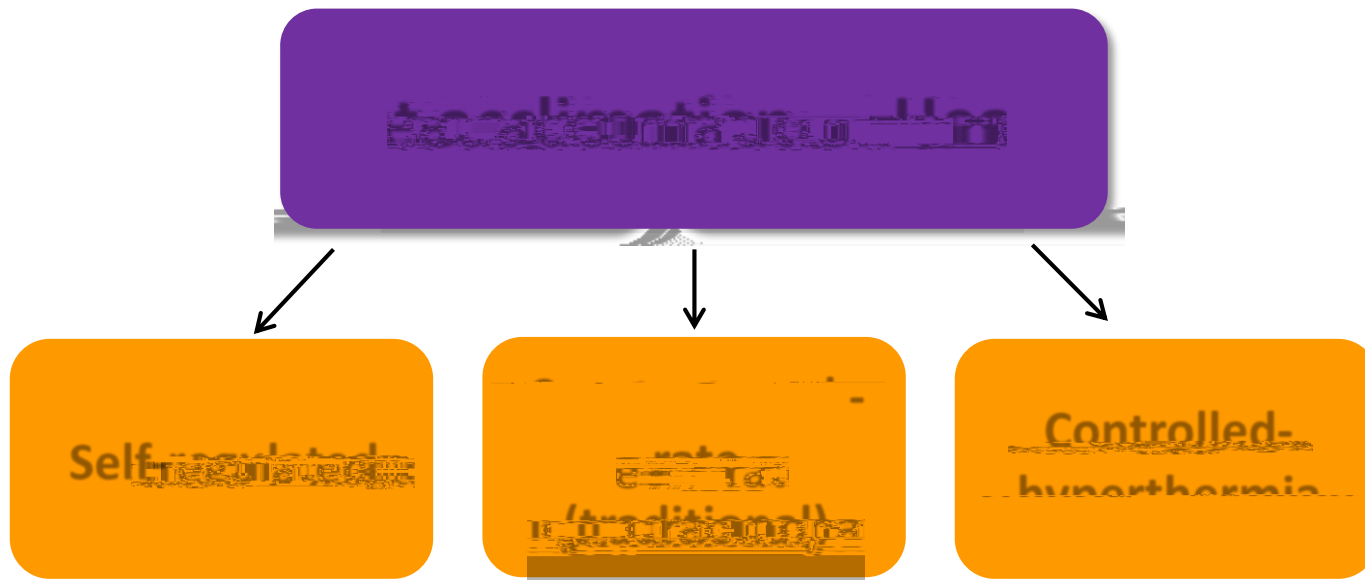
● CON    ▲ W    □ M/E



# An Ice-cream or a cup of tea?



# Prevention is better than cure: Heat Adaptation





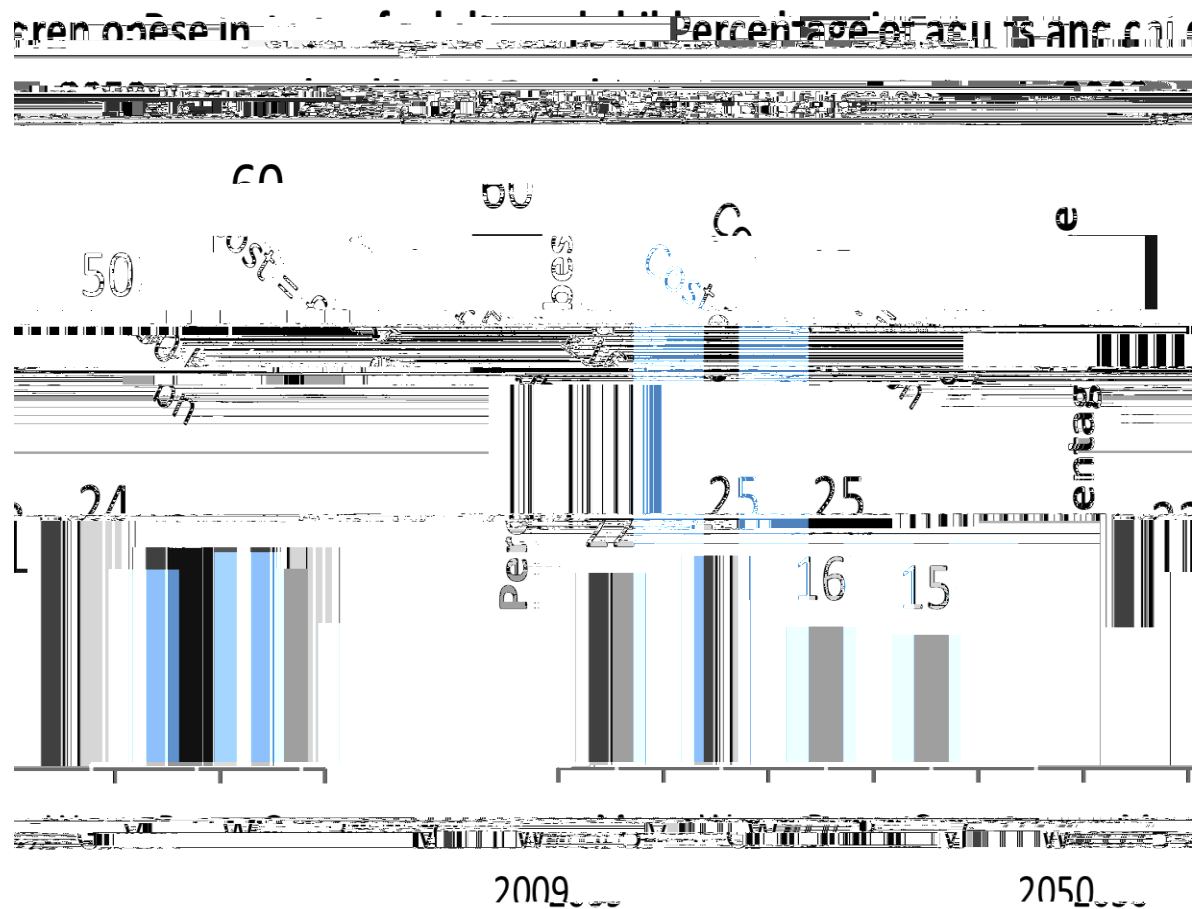
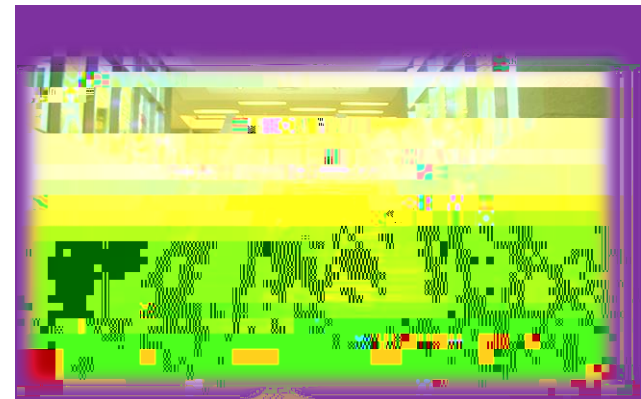
# Could hot baths be the answer?

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# The Importance of Exercise



# The Importance of Exercise







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