

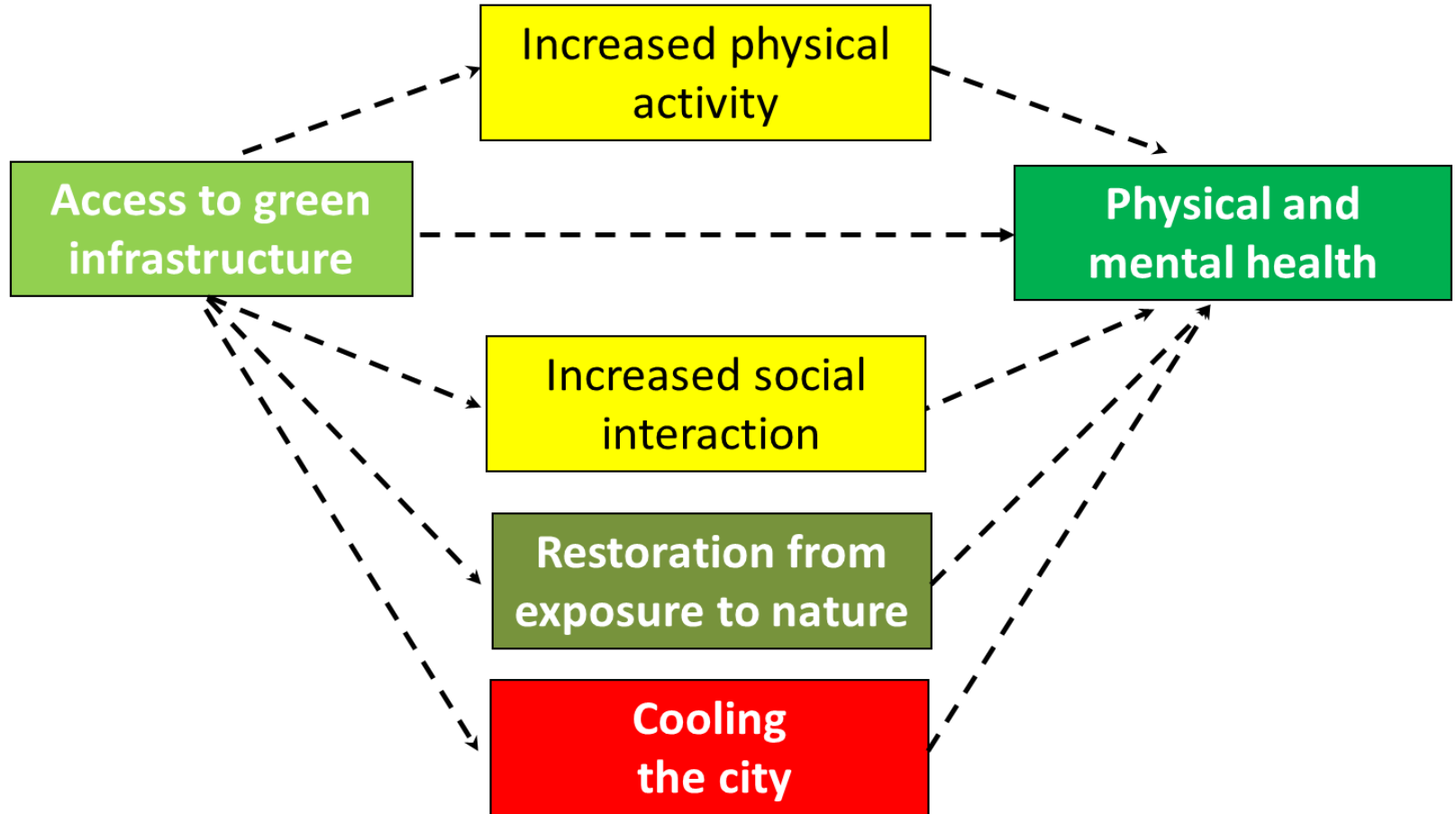
# Access to public open space: Is current urban planning policy promoting health?



## NHMRC Centre of Research Excellence in Healthy *Liveable* Communities



# Green infrastructure and physical and mental health



# Aim

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- To test whether current proximity policy measures  
† to public open space are associated with walking  
*and mental health*

# Data Source

**GIS Data:** Source of data: VEAC 2011 Public open space, VicRoad 2013 (walkable roads cleaned)

## **Behavioural data: Australian Diabetes, Obesity and Lifestyle (AusDiab3) study**

- A national cohort study of adults to examine the national prevalence and incidence of diabetes and related risk factors.
- Participants randomly selected from six CCDs from seven Australian states and territory.
- This study used data from the third survey (2011–2012), a sample of 319 participants who lived in Victorian Urban areas.

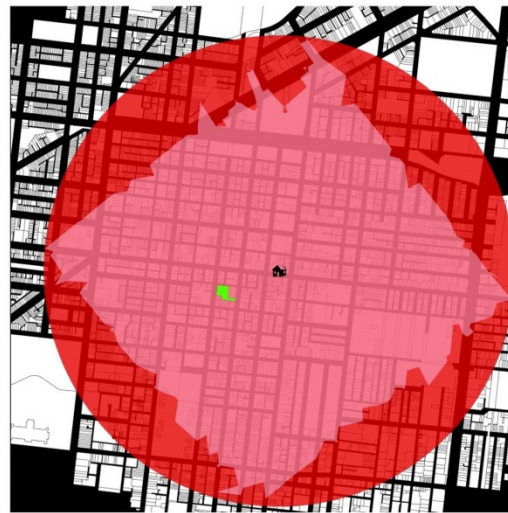
# Outcomes

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- Self-reported measure of any leisure walking within neighbourhood in the past week.
- Self-reported measure of total walking within neighbourhood in the past week.
- Self reported depression (measured by Center for Epidemiologic Studies Short Depression Scale)

# POS proximity measures

- Distance to the closest POS.
- Size of the closest POS.
- Total number of POS within 200, 400, 800, 1000, & 1600m.
- Total number of POS within 200, 400, 800, 1000, & 1600m.



(a)



(b)

 Participant's location

 POS

 Areas within 1Km Euclidean buffer

 Areas within 1Km Network buffer

# Results

		Number of participant	Percentage
Distance to the closest POS (m)	= < 400 m	221	69%
	> 400 m	98	31%

	Size	Number of participant	Percentage
Local park	<= 0.3 ha	109	34.2%
Small neighbourhood park	0.3 ha to <= 0.5 ha	65	20.4%
Medium neighbourhood park	0.5 ha to <= 1.5 ha	60	18.8%
Large neighbourhood park	1.5 ha to <= 2.5 ha	43	13.5%
District park	2.5 ha to <= 4.0 ha	12	3.8%
Regional park	> 4.0 ha	30	9.4%

# Results (Regression)

## Associations of POS proximity measures with walking behaviour and depression

	Any walking for recreation inside neighborhood OR (95% CI)	Any total walking inside neighborhood OR (95% CI)	Depression (CESD-10)
Distance to the closest POS	> 400 m	221	1.00
	<= 400 m	98	1.12 (0.61, 2.05)
Size of the closest POS	<= 1.5 ha	1.00	1.00
	> 1.5 ha	<b>1.90 (1.03, 3.50)*</b>	<b>2.66 (1.25, 5.65)*</b>
Total number of POS within 200 m	0.97 (0.69, 1.36)	1.01 (0.68, 1.51)	0.84 (0.53, 1.31)
Total number of POS within 400 m	0.98 (0.81, 1.19)	1.05 (0.84, 1.32)	0.83 (0.64, 1.08)
Total number of POS within 800 m	1.04 (0.95, 1.13)	1.06 (0.95, 1.18)	0.95 (0.85, 1.07)
Total number of POS within 1000 m	1.00 (0.93, 1.06)	1.02 (0.94, 1.10)	0.94 (0.86, 1.04)
Total number of POS within 1600 m	0.99 (0.94, 1.04)	1.03 (0.97, 1.10)	0.95 (0.88, 1.02)
Total area of POS within 200 m (m2)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)
Total area of POS within 400 m (m2)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)
Total area of POS within 800 m (m2)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)
Total area of POS within 1000 m (m2)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)
Total area of POS within 1600 m (m2)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)



# Conclusions

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- Living closer to POS ( $\leq 400$  m) was not associated with residents' walking or mental health
- Size of the closest POS more important for encouraging walking (but not mental health)
- Next question: the quality of POS?
- Smaller POS might contribute to reducing heat island effects but does not appear to be related to walking or mental health.
- Larger POS is required to encourage more walking

# Acknowledgements – CRE Team

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# Thank You

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# Descriptive information of walking behaviours and depression

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	n (%)
Any walking for recreation within neighbourhood in the past week	
Yes	212 (67.5)
Any walking within neighbourhood in the past week	
Yes	243 (77.4)
Depression	
Yes	42 (13.2)

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<b>POS proximity measures</b>	<b>Mean</b>	<b>SD</b>
Distance to the closest POS (m)	300	262
Size of the closest POS (m <sup>2</sup> )	20674	62586
Total number of POS within 200 m	0.6	0.8
Total number of POS within 400 m	1.5	1.4
Total number of POS within 800 m	4.8	3.0
Total number of POS within 1000 m	7.1	4.0
Total number of POS within 1600 m	9.8	5.2
Total area of POS within 200 m (m <sup>2</sup> )	1760	3484
Total area of POS within 400 m (m <sup>2</sup> )	6344	10628
Total area of POS within 800 m (m <sup>2</sup> )	30202	33967
Total area of POS within 1000 m (m <sup>2</sup> )	47509	44519
Total area of POS within 1600 m (m <sup>2</sup> )	131412	84047