

# The association of walkability with physical activity at baseline and 3-year follow up

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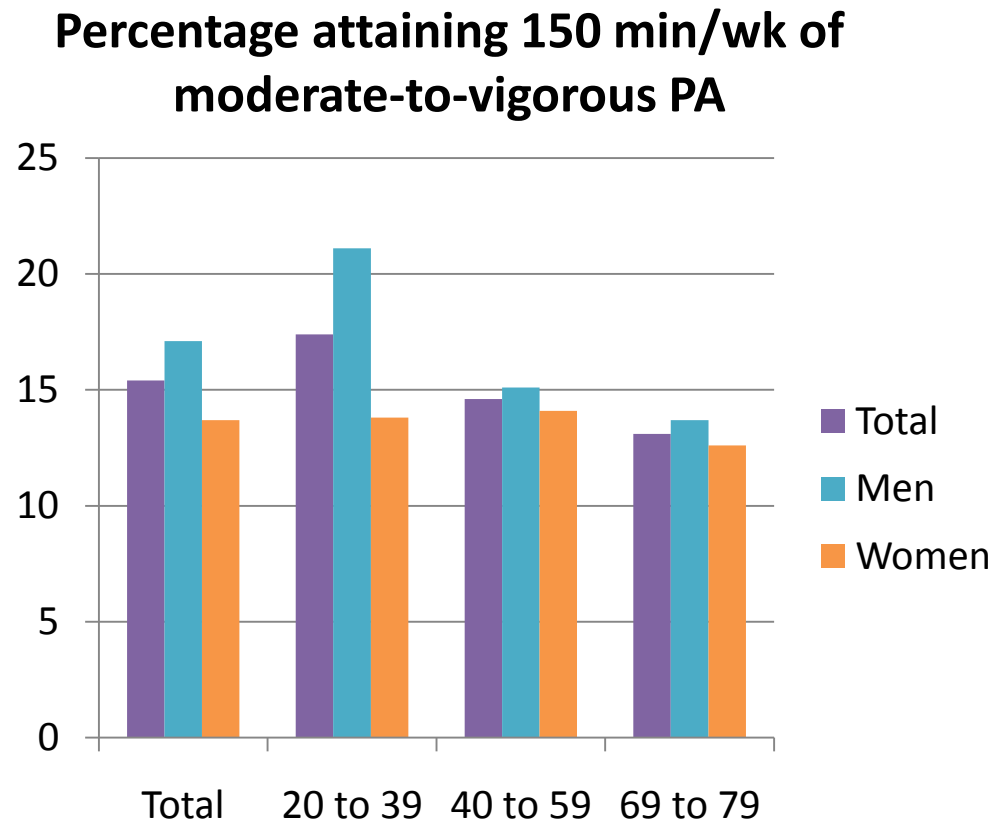
# Outline

- Background
- Methods
- Results
- Conclusions



# Background

- Physical activity (PA) is associated with many health benefits, yet rates are declining world wide.



# Background



# Aim

The objectives of this study were to examine the associations between neighbourhood walkability (measured by Walk Score)

and two domains of PA:

- Leisure Time (LTPA)
- Active Transport (AT)

# Methods

- Multi-cultural Health Assessment Trial (M-CHAT)
  - Adults 30-65 years of age.
  - Self-identified as Aboriginal, Chinese, European or South Asian origin.
- Measures:
  - Modifiable Activity Questionnaire to assess LTPA and AT.
  - Sociodemographics (age, gender, educational attainment, employment, marital status).
  - Neighbourhood walkability using Walk Score.
  - Baseline and 3-year follow-up



Cities & Neighborhoods Apartment

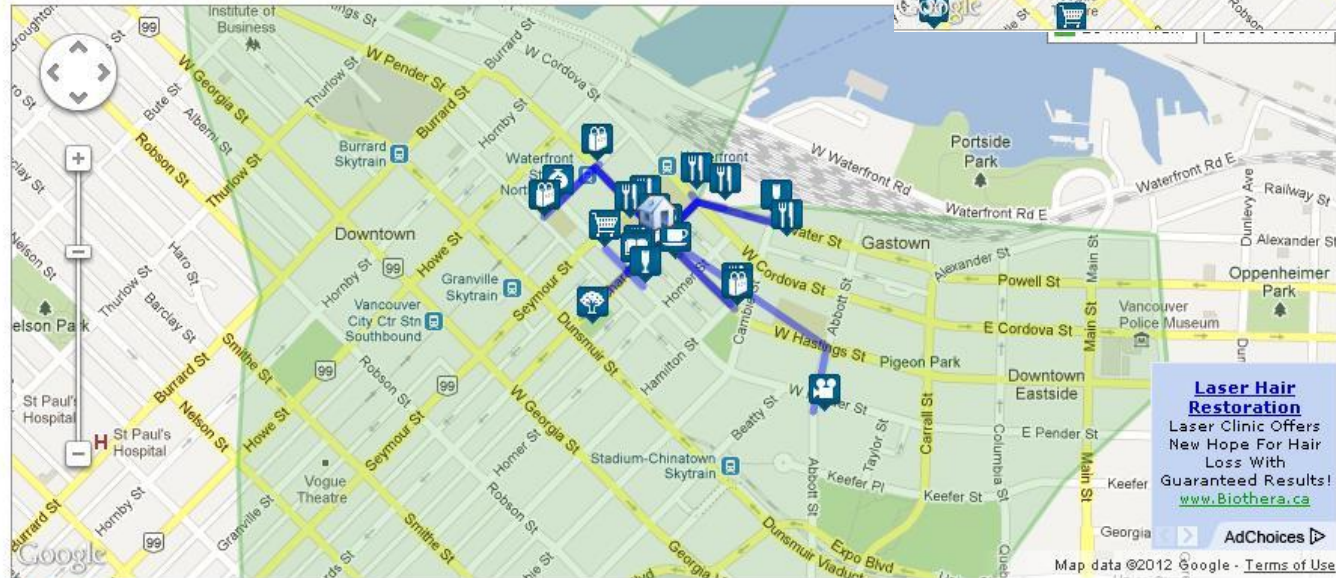
Type a place: 515 West Hastings St Vancouver BC

**Street Smart** Beta

**96**  
Out of 100

**Walker's Paradise**  
515 W Hastings St Vancouver

Overview More Amenities Your Commute



Add a place Click an amenity to remove

### Understanding Your Score

Street Smart Walk Score is calculated using walking distances to the following amenities.

Category	Points	Name	Distance
Groceries	20 out of 20	D J's On Pender	.1 km
Restaurants and Bars	20 out of 20	Century Restaurant	.1 km
		Gorilla Food	.1 km

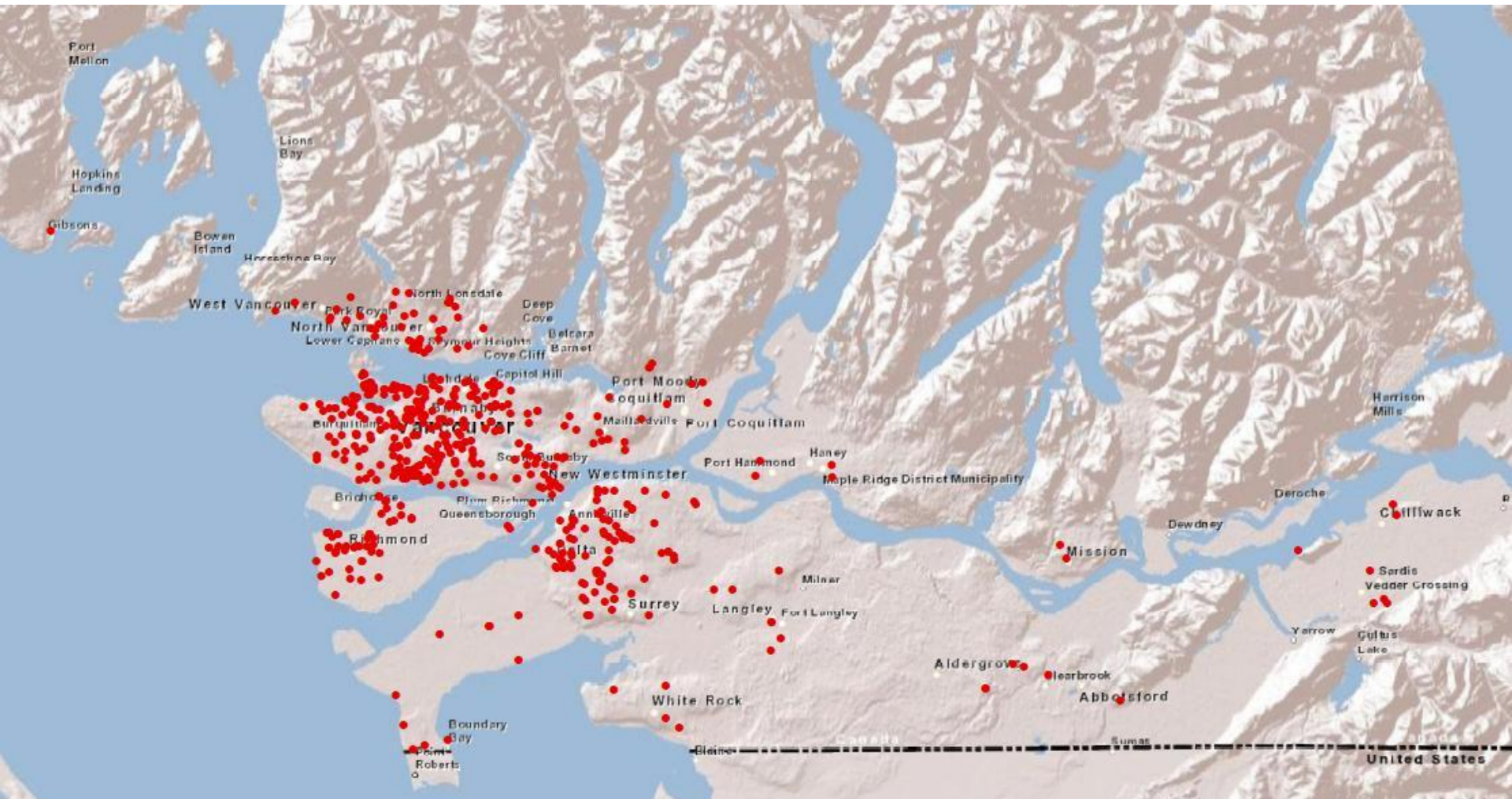
# Analysis

Does walkability increase the odds of reporting the highest amount of leisure time physical activity?

Does walkability increase the odds of engaging in active transportation?



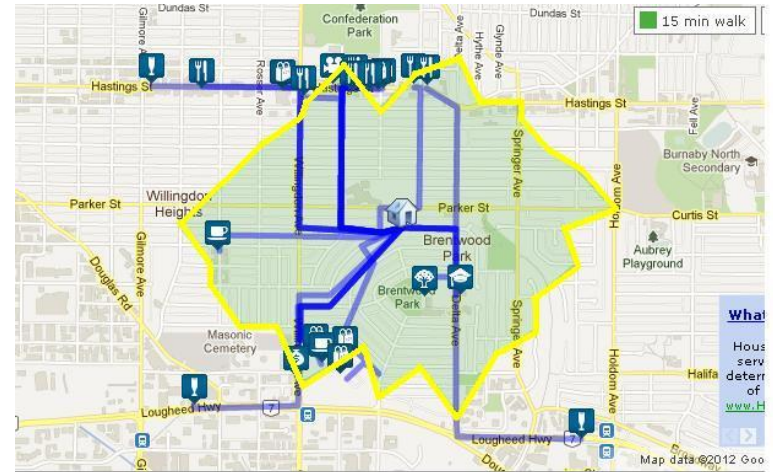
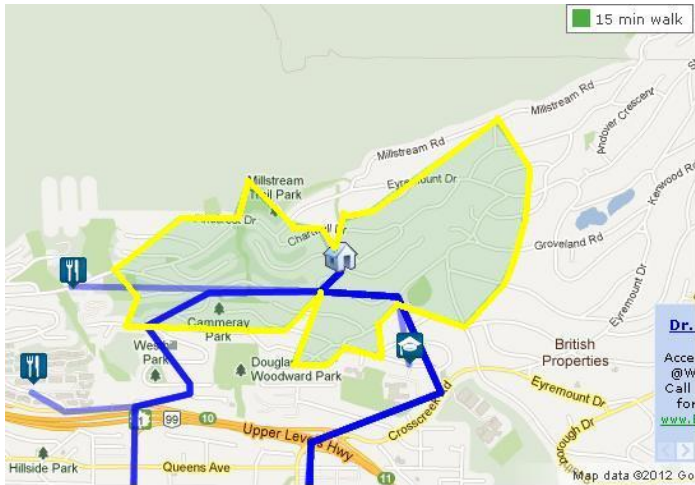
# Results



# Walk Score Quartiles

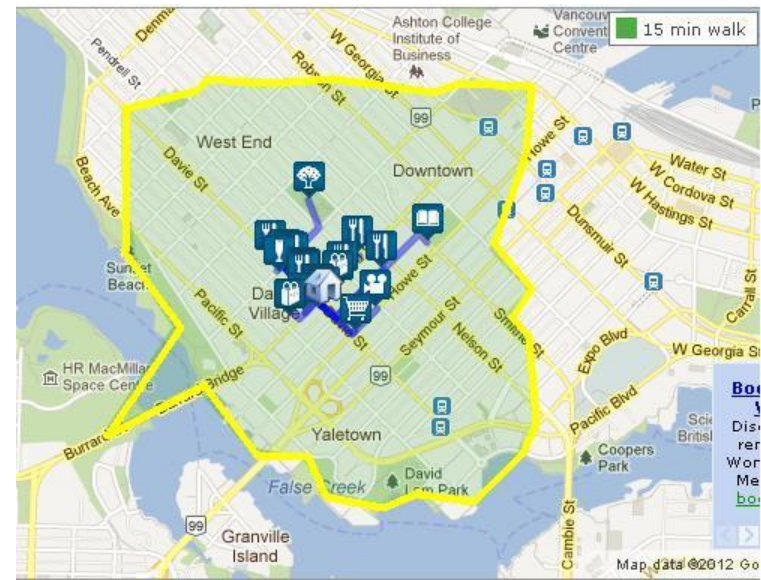
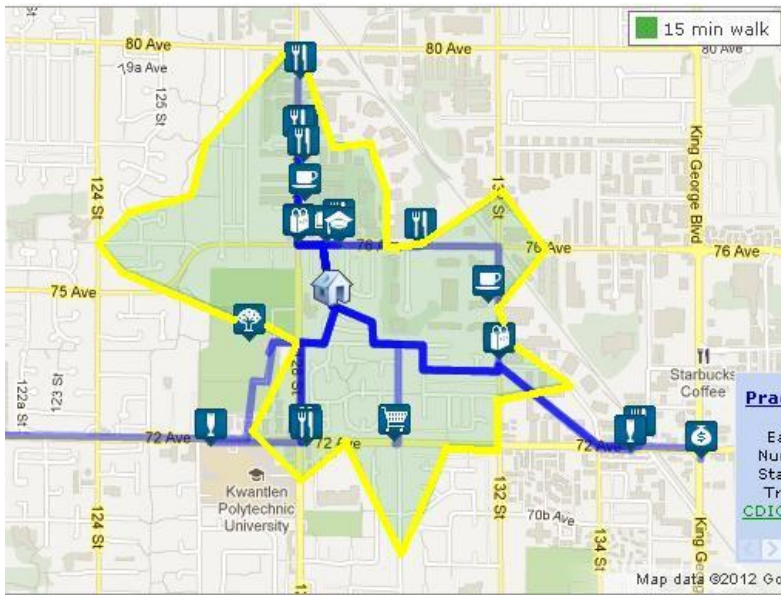
1 (0-39)

2 (40-62)



3 (63-84)

4 (85-100)



# Participant Characteristics (n=570)

Variable	Total Sample	Walk Score Quartile 1	Walk Score Quartile 2	Walk Score Quartile 3	Walk Score Quartile 4
<b>Age</b> mean (SD)	47.33 (8.96)				
<b>Male</b>	# (%) 284 (49.8)				
<b>Ethnicity*</b>					
European	172 (30.2)				
Chinese	154 (27.0)				
Aboriginal	93 (16.3)				
South Asian	151 (26.5)				
<b>Education</b>					
Post-secondary degree	235 (41.2)				
<b>Employed full-time</b>	374 (65.6)				
<b>Married**</b>	387 (67.9)				

\* p < 0.01

\*\*p < 0.001

# Leisure Time Physical Activity

	Walk Score Quartile 1 (0-39) n = 140	Walk Score Quartile 2 (40-62) n = 134	Walk Score Quartile 3 (63-84) n = 138	Walk Score Quartile 4 (85-100) n = 137	p-value
<b>Baseline min/wk</b>	210.4 (173.0 to 256.2)	135.9 (111.3 to 166.2)	197.8 (162.4 to 240.8)	223.2 (182.9 to 272.3)	0.003 a,b,c

**Geometric means (95 % confidence intervals)**

**a Q1 vs. Q2**

**b Q2 vs. Q3**

**c Q2 vs. Q4**

# Logistic Regression Models for LTPA

Baseline

3-year follow-up

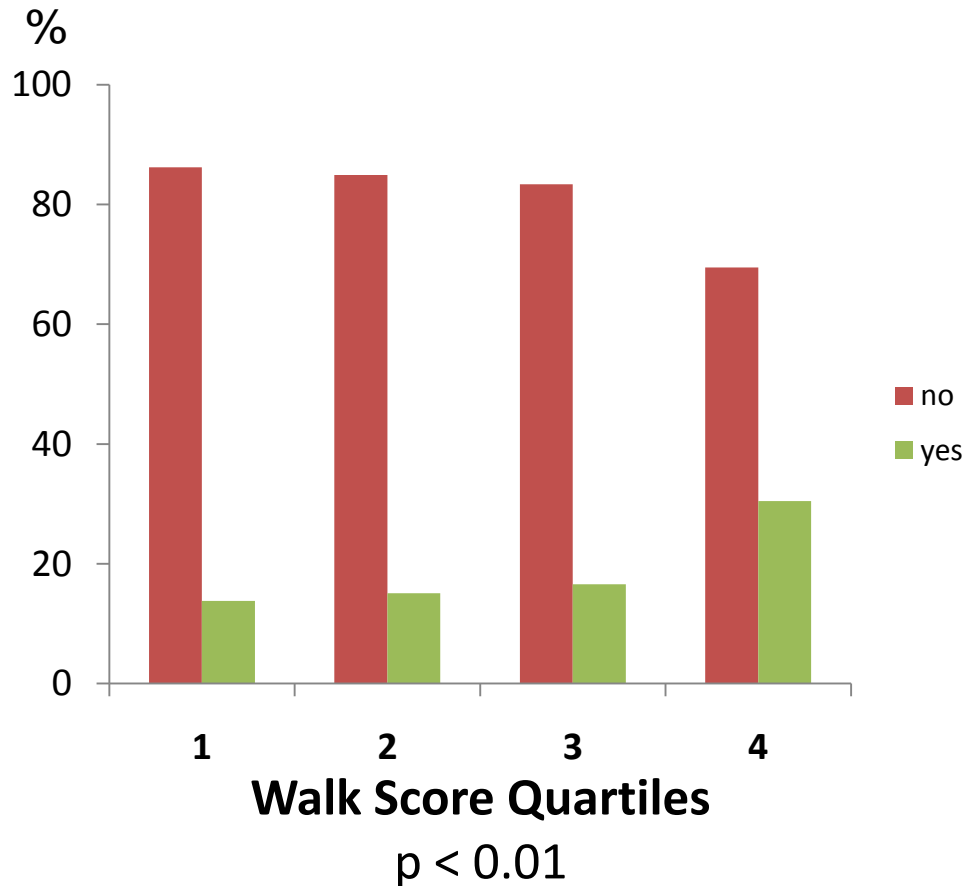
Walk Score Quartiles	Exp( $\beta$ )	95% CI	p-value
1 <sup>st</sup> Quartile	Reference group	---	---
2 <sup>nd</sup> Quartile	0.694	0.381 to 1.264	0.233
3 <sup>rd</sup> Quartile	0.934	0.536 to 1.629	0.811
4 <sup>th</sup> Quartile	1.009	0.579 to 1.758	0.974

Walk Score Quartiles	Exp( $\beta$ )	95% CI	p-value
1 <sup>st</sup> Quartile	Reference group	---	---
2 <sup>nd</sup> Quartile	0.755	0.424 to 1.346	0.341
3 <sup>rd</sup> Quartile	0.806	0.464 to 1.400	0.445
4 <sup>th</sup> Quartile	0.823	0.469 to 1.443	0.496

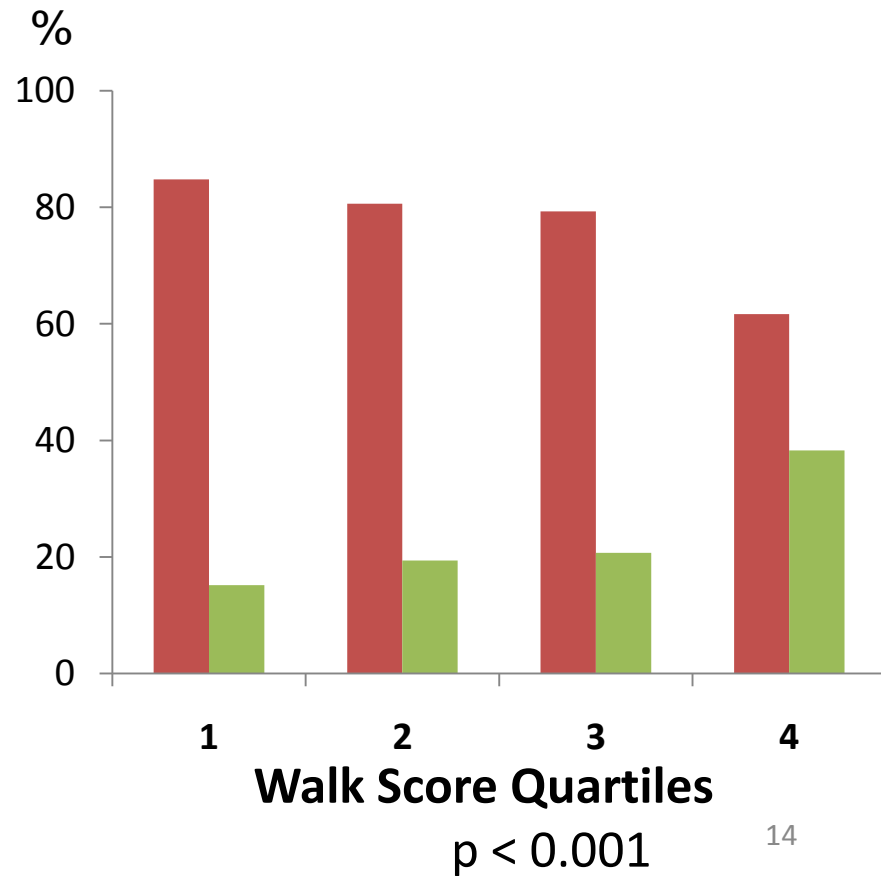
Adjusted for age, gender, ethnicity, and education

# Percentage engaging in AT

## Baseline



## 3-year follow-up



# Logistic Regression Models for AT

Baseline

3-year follow-up

Walk Score Quartiles	Exp( $\beta$ )	95% CI	p-value
1 <sup>st</sup> Quartile	Reference group	---	---
2 <sup>nd</sup> Quartile	1.148	0.584 to 2.257	0.689
3 <sup>rd</sup> Quartile	1.234	0.641 to 2.337	0.529
4 <sup>th</sup> Quartile	2.228	1.193 to 4.164	0.012

Walk Score Quartiles	Exp( $\beta$ )	95% CI	p-value
1 <sup>st</sup> Quartile	Reference group	---	---
2 <sup>nd</sup> Quartile	1.318	0.695 to 2.501	0.398
3 <sup>rd</sup> Quartile	1.372	0.734 to 2.564	0.321
4 <sup>th</sup> Quartile	2.656	1.460 to 4.831	0.001

Adjusted for age, gender, ethnicity, and education

# Strengths and Limitations

- Data collected at baseline and 3-year follow-up.
- Measurements
  - Physical activity
  - Walkability



# Conclusions

- Living in the highest Walk Score quartile was associated with an over 2-fold increase in the odds of engaging in active transportation.
- Walk Score was not associated with LTPA.
- Walk Score is an easily accessible and user-friendly tool to objectively assess the built environment.



# Thank you!

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